

SRC PE Software

SRC XML API Configuration Reference

Release

4.4.X



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Release 4.4.x

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Revision History

December 2012—Revision 1

The information in this document is current as of the date on the title page.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

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SRC Documentation and Release Notes

For a list of related SRC documentation, see <http://www.juniper.net/techpubs/>.

If the information in the latest *SRC Release Notes* differs from the information in the SRC guides, follow the *SRC Release Notes*.

Audience

This documentation is intended for experienced system and network specialists working with routers running Junos OS and JunosE software in an Internet access environment. We assume that readers know how to use the routers, directories, and RADIUS servers that they will deploy in their SRC networks. If you are using the SRC software in a cable network environment, we assume that you are familiar with the PacketCable Multimedia Specification (PCMM) as defined by Cable Television Laboratories, Inc. (CableLabs) and with the Data-over-Cable Service Interface Specifications (DOCSIS) 1.1 protocol. We also assume that you are familiar with operating a multiple service operator (MSO) multimedia-managed IP network.

Documentation Conventions

[Table 1 on page iv](#) defines the notice icons used in this guide. [Table 2 on page iv](#) defines text conventions used throughout this documentation.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2: Text Conventions

Convention	Description	Examples
Bold text like this	<ul style="list-style-type: none"> Represents keywords, scripts, and tools in text. Represents a GUI element that the user selects, clicks, checks, or clears. 	<ul style="list-style-type: none"> Specify the keyword exp-msg. Run the install.sh script. Use the pkgadd tool. To cancel the configuration, click Cancel.
Bold text like this	Represents text that the user must type.	user@host# set cache-entry-age cache-entry-age
Fixed-width text like this	Represents information as displayed on your terminal's screen, such as CLI commands in output displays.	<pre> nic-locators { login { resolution { resolver-name /realms/ login/A1; key-type LoginName; value-type SaeId; } } } </pre>
Regular sans serif typeface	<ul style="list-style-type: none"> Represents configuration statements. Indicates SRC CLI commands and options in text. Represents examples in procedures. Represents URLs. 	<ul style="list-style-type: none"> system ldap server{ stand-alone; Use the request sae modify device failover command with the force option user@host# ... http://www.juniper.net/techpubs/software/ management/src/api-index.html
<i>Italic sans serif typeface</i>	Represents variables in SRC CLI commands.	user@host# set local-address local-address
Angle brackets	In text descriptions, indicate optional keywords or variables.	Another runtime variable is <gfwif>.
Key name	Indicates the name of a key on the keyboard.	Press Enter.

Table 2: Text Conventions (*continued*)

Key names linked with a plus sign (+)	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
<i>Italic typeface</i>	<ul style="list-style-type: none"> Emphasizes words. Identifies book names. Identifies distinguished names. Identifies files, directories, and paths in text but not in command examples. 	<ul style="list-style-type: none"> There are two levels of access: <i>user</i> and <i>privileged</i>. <i>SRC PE Getting Started Guide</i> <i>o=Users, o=UMC</i> The <i>/etc/default.properties</i> file.
Backslash	At the end of a line, indicates that the text wraps to the next line.	Plugin.radiusAcct-1.class=\net.juniper.smgmt.sae.plugin\RADIUSTrackingPluginEvent
Words separated by the symbol	Represent a choice to select one keyword or variable to the left or right of this symbol. (The keyword or variable may be either optional or required.)	diagnostic line

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

Summary of SRC XML API Configuration Tag Elements

This document lists the configuration tag elements for the SRC XML API that are equivalent to configuration statements in the SRC command-line interface (SRC CLI). For information about the notation used in this document, see Table 2 on page viii. For information about the tag elements that client applications use to request, change, and commit configuration information, see the *SRC PENETCONF API Guide*.

Tag elements are listed in alphabetical order for the following components:

- CLI and System
- Juniper Networks Database
- SAE
- Network Information Collector (NIC)
- Session State Registrar (SSR)
- Subscriber Information Collector (SIC)
- SNMP Agent
- SRC Admission Control Plug-In (SRC ACP)
- Service API
- Policy API
- Subscriber API
- Redirect Server
- External Subscriber Monitor
- Dynamic Service Activator
- Sessions Database
- IP Multimedia Subsystem (IMS)
- Diameter Application
- Volume Tracking Application (VTA)
- Application Server
- SRC License Management
- Juniper Policy Server (JPS)
- Third-Generation Partnership Project Gateway (3GPP)

CLI and System Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for controlling and using the SRC CLI environment and for managing the C Series Controller. The table lists the SRC CLI configuration commands and statements that have corresponding SRC XML tag elements, and maps each command or statement to its tag element. CLI configuration commands and statements are listed in alphabetical order.

CLI Configuration Command/Statement	Configuration Tag Element
commit-configuration	<u><commit-configuration></u>
component-state component	<u><component></u>
copy	<u><copy></u>
delete	<u><delete></u>
get	<u><get></u>
insert	<u><insert></u>
interfaces interface	<u><interface></u>
interfaces interface group	<u><group></u>
interfaces interface tunnel	<u><tunnel></u>
interfaces interface unit	<u><unit></u>
interfaces interface unit family inet	<u><inet></u>
interfaces interface unit family inet6 address	<u><address></u>
rename	<u><rename></u>
rollback-configuration	<u><rollback-configuration></u>
routing-options static route	<u><route></u>
set	<u><set></u>
slot	<u><slot></u>
system	<u><system></u>
system accounting	<u><accounting></u>
system accounting destination tacplus server	<u><server></u>
system file-uploading-specifications file-uploading	<u><file-uploading></u>
system file-uploading-specifications file-uploading ftp	<u><ftp></u>

system ipmi	<u>< ipmi ></u>
system ipmi user	<u>< user ></u>
system java-orb object-adapter	<u>< object-adapter ></u>
system ldap client	<u>< client ></u>
system login	<u>< login ></u>
system login class	<u>< class ></u>
system login user	<u>< user ></u>
system login user authentication	<u>< authentication ></u>
system logrotate config-file	<u>< config-file ></u>
system logrotate config-file logfiles	<u>< logfiles ></u>
system logrotate config-file logfiles create	<u>< create ></u>
system logrotate config-file logfiles create mode-owner-group	<u>< mode-owner-group ></u>
system logrotate logrotate.conf	<u>< logrotate.conf ></u>
system logrotate logrotate.conf create	<u>< create ></u>
system logrotate logrotate.conf create mode-owner-group	<u>< mode-owner-group ></u>
system logrotate logrotate.conf logfiles	<u>< logfiles ></u>
system logrotate logrotate.conf logfiles create	<u>< create ></u>
system logrotate logrotate.conf logfiles create mode-owner-group	<u>< mode-owner-group ></u>
system ntp	<u>< ntp ></u>
system ntp authentication-key	<u>< authentication-key ></u>
system ntp broadcast	<u>< broadcast ></u>
system ntp multicast-client	<u>< multicast-client ></u>
system ntp peer	<u>< peer ></u>
system ntp server	<u>< server ></u>
system radius-server	<u>< radius-server ></u>
system services	<u>< services ></u>
system services editor	<u>< editor ></u>
system services editor policy-editor	<u>< policy-editor ></u>

system services netconf ssh	<u>< ssh ></u>
system services ssh	<u>< ssh ></u>
system services web-management http	<u>< http ></u>
system services web-management https	<u>< https ></u>
system services web-management logger logger	<u>< logger ></u>
system services web-management logger logger file	<u>< file ></u>
system services web-management logger logger syslog	<u>< syslog ></u>
system ssh-host-keys dsa-private	<u>< dsa-private ></u>
system ssh-host-keys dsa-public	<u>< dsa-public ></u>
system ssh-host-keys rsa1-private	<u>< rsa1-private ></u>
system ssh-host-keys rsa1-public	<u>< rsa1-public ></u>
system ssh-host-keys rsa2-private	<u>< rsa2-private ></u>
system ssh-host-keys rsa2-public	<u>< rsa2-public ></u>
system static-host-mapping	<u>< static-host-mapping ></u>
system syslog file	<u>< file ></u>
system syslog file contents	<u>< contents ></u>
system syslog host	<u>< host ></u>
system syslog host contents	<u>< contents ></u>
system syslog user	<u>< user ></u>
system syslog user contents	<u>< contents ></u>
system tacplus-server	<u>< tacplus-server ></u>

< commit-configuration >

Usage

```
<rpc>  
  <commit-configuration>  
    <check/>  
    <and-quit/>  
  </commit-configuration>  
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Commit the set of changes and cause the changes to take operational effect.

Contents

<check> — (Optional) Verify whether the syntax is correct, but do not apply changes.

<and-quit> — (Optional) Exit from configuration mode if the commit operation is successful.

Required Privilege Level

config-control

< component > (configuration/component-state)

Usage

```
<configuration>
  <component-state>
    <component>
      <name>name</name> <!-- identifier -->
      <state>state-choice</state>
    </component>
  </component-state>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.1.0

Description

Component state.

Contents

<name>— Name of the component.

Value—Text

<state>— Component state is enable or disable.

Value

- enable— Component is enabled.
- disable— Component is disabled.

Required Privilege Level

system

< copy >

Usage

```
<rpc>
  <copy>
    <parent1> parent1 </parent1>
    <identifier1> identifier1 </identifier1>
    <position> position-choice </position>
    <parent2> parent2 </parent2>
    <identifier2> identifier2 </identifier2>
  </copy>
</rpc>
```

Release Information

Command introduced in SRC Release 3.0.0

Description

Copy an existing configuration statement or identifier.

Contents

<parent1>— Path to an existing configuration statement or identifier.

Value—Path of a collection object

<identifier1>— Existing identifier or statement.

Value— Identifier or statement

<position>— Configuration path.

Value

- to— Transition.

<parent2>— Path to a new configuration statement or identifier.

Value—Path of a collection object

<identifier2>— New identifier or statement.

Value— Identifier or statement

Required Privilege Level

config-control

< delete >

Usage

```
<rpc>
  <delete>
    <force/>
    <object> object </object>
    <value> value </value>
  </delete>
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Delete a configuration statement or identifier. All subordinate statements and identifiers contained within the specified statement path are deleted with it.

Contents

<force>— Flag indicating that no confirmation is requested before the software clears the configuration.

Default—false

<object>— Name of the statement or identifier to delete.

Value—Path of a configuration object

<value>— Value of the statement to delete.

Value—Valid value for selected object

Required Privilege Level

config-control

< get >

Usage

```
<rpc>  
  <get>  
    <object> object </object>  
  </get>  
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Display information about a configuration object.

Contents

`<object>`— (Optional) Configuration object for which to display information. The object can be a configuration statement or an identifier for a statement.

Value—Path of a configuration object

Required Privilege Level

config-view

< insert >

Usage

```
<rpc>
  <insert>
    <parent> parent </parent>
    <identifier1> identifier1 </identifier1>
    <position> position-choice </position>
    <identifier2> identifier2 </identifier2>
  </insert>
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Insert an identifier into an existing configuration hierarchy. You must configure the identifiers before you reorder them. The **insert** command does not create new identifiers.

Contents

<parent>— Path in the configuration hierarchy to an existing configuration statement.

Value— Hierarchy path

<identifier1>— Existing identifier.

Value— Name of existing identifier

<position>— Ordering of identifiers.

Value

- *after*— Place *identifier1* after *identifier2*.
- *before*— Place *identifier1* before *identifier2*.

<identifier2>— New identifier to insert.

Value—Valid value for selected object

Required Privilege Level

config-control

< interface > (configuration/interfaces)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <name>name</name> <!-- identifier -->
      <disable/>
      <trusted/>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure interfaces on the C Series Controller.

Contents

<name>— Name of interface

Value— Interface name

<disable>—(Optional) Disable this interface

<trusted>—(Optional) Untrusted interfaces can be connected to untrusted networks. If not set, eth1 will be untrusted, any other interface will be trusted.

Required Privilege Level

interface

< group > (configuration/interfaces/interface)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <group>
        <mode>mode-choice</mode>
        <downdelay>downdelay</downdelay>
        <updelay>updelay</updelay>
        <lacp-rate>lacp-rate-choice</lacp-rate>
        <mii-monitoring-interval>mii-monitoring-interval</mii-monitoring-interval>
        <interfaces>interfaces</interfaces>
        <primary>primary</primary>
        <transmit-hash-policy>transmit-hash-policy-choice</transmit-hash-policy>
      </group>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Ethernet group interfaces. Group interfaces let you aggregate network interfaces into a single logical interface to support Ethernet redundancy.

When you configure group interfaces:

- The group interface name must not be one of the Ethernet interface names (that is, eth0, eth1, eth2, eth3).
- If an Ethernet interface is listed inside a group interface, it must not be configured as an interface by itself.
- Group interface and tunnel interface configurations are mutually exclusive. You cannot configure both types at the same time.

Contents

<mode>— Grouping mode.

Value

- `balance-rr`— Round-robin policy: Transmit packets in sequential order from the first available device through the last. This mode provides load balancing and fault tolerance.
- `active-backup`— Active-backup policy: Create only one device that is active. A different device becomes active if, and only if, the active device fails.
When a failover occurs in active-backup mode, bonding will issue one or more gratuitous ARPs on the newly active device. One gratuitous ARP is issued for the bonding master interface and each VLAN interface configured above it, provided that the interface has at least one IP address configured. Gratuitous ARPs issued for VLAN interfaces are tagged with the appropriate VLAN ID.
This mode provides fault tolerance. The primary option affects the behavior of this mode.
- `balance-xor`— XOR policy: Transmit based on the selected transmit hash policy. Alternate transmit policies can be selected with the transmit hash policy option. This mode provides load balancing and fault tolerance.
- `broadcast`— Broadcast policy: Transmit everything on all device interfaces. This

mode provides fault tolerance.

- `802.3ad`— IEEE 802.3ad Dynamic link aggregation: Create aggregation groups that share the same speed and duplex settings. Utilizes all devices in the active aggregator according to the 802.3ad specification.
Device selection for outgoing traffic is done according to the transmit hash policy, which can be changed from the default simple XOR policy via the transmit hash policy option. Note that not all transmit policies may be 802.3ad compliant, particularly in regards to the packet mis-ordering requirements of section 43.2.4 of the 802.3ad standard. Differing peer implementations will have varying tolerances for noncompliance.
- `balance-tlb`— Adaptive transmit load balancing: Create channel bonding that does not require any special switch support. The outgoing traffic is distributed according to the current load (computed relative to the speed) on each device. Incoming traffic is received by the current device. If the receiving device fails, another device takes over the MAC address of the failed receiving device.
- `balance-alb`— Adaptive load balancing: Include adaptive transmit load balancing plus receive load balancing (rlb) for IPV4 traffic, and does not require any special switch support. The receive load balancing is achieved by ARP negotiation. The bonding driver intercepts the ARP replies sent by the local system on their way out and overwrites the source hardware address with the unique hardware address of one of the devices in the bond such that different peers use different hardware addresses for the server.

Receive traffic from connections created by the server is also balanced. When the local system sends an ARP request the bonding driver copies and saves the peer's IP information from the ARP packet. When the ARP reply arrives from the peer, its hardware address is retrieved and the bonding driver initiates an ARP reply to this peer assigning it to one of the devices in the bond. A problematic outcome of using ARP negotiation for balancing is that each time that an ARP request is broadcast it uses the hardware address of the bond. Hence, peers learn the hardware address of the bond and the balancing of receive traffic collapses to the current device. This is handled by sending updates (ARP replies) to all the peers with their individually assigned hardware address such that the traffic is redistributed. Receive traffic is also redistributed when a new device is added to the bond and when an inactive device is re-activated. The receive load is distributed sequentially (round robin) among the group of highest speed devices in the bond.

When a link is reconnected or a new device joins the bond the receive traffic is redistributed among all active devices in the bond by initiating ARP Replies with the selected MAC address to each of the clients. The `updelay` option must be set to a value equal or greater than the switch's forwarding delay so that the ARP replies sent to the peers will not be blocked by the switch.

`<downdelay>`—(Optional) Time (ms) to wait before disabling a device after a link failure has been detected. This option is valid only for the MII monitor. The `downdelay` value should be a multiple of the MII monitoring interval; if not, it will be rounded down to the nearest multiple.

Value—Integer in the range 0–2147483647 ms

`<updelay>`—(Optional) Time (ms) to wait before enabling a device after a link recovery has been detected. This option is valid only for the MII monitor. The updelay value should be a multiple of the MII monitoring interval; if not, it will be rounded down to the nearest multiple.

Value—Integer in the range 0–2147483647 ms

`<lacp-rate>`—(Optional) Rate at which the link partner is requested to transmit LACPDU packets in 802.3ad mode. This option is valid only for the 802.3ad mode.

Value

- `slow`— Request partner to transmit LACPDUs every 30 seconds.
- `fast`— Request partner to transmit LACPDUs every 1 second.

`<mii-monitoring-interval>`—(Optional) MII link monitoring frequency. This option is valid only for the MII monitor.

Value—Integer in the range -2147483648–2147483647 ms

`<interfaces>`—(Multivalue) Ethernet interfaces in this group.

Value—Text

`<primary>`—(Optional) Name of device that will always be the active device while it is available. Only when the primary is off-line will alternate devices be used. This is useful when one device is preferred over another, for example, when one device has higher throughput than another. This option is valid only for active-backup mode.

Value—Text

`<transmit-hash-policy>`—(Optional) Transmit hash policy to use for device selection in balance-xor and 802.3ad modes.

Value

- `layer2`— Uses XOR of hardware MAC addresses to generate the hash. The formula is:
(source MAC XOR destination MAC) modulo slave count
This algorithm will place all traffic to a particular network peer on the same device. This algorithm is 802.3ad compliant.
- `layer34`— Uses upper layer protocol information, when available, to generate the hash. This allows for traffic to a particular network peer to span multiple devices, although a single connection will not span multiple devices.
The formula for unfragmented TCP and UDP packets is
((source port XOR dest port) XOR ((source IP XOR dest IP) AND 0xffff)) modulo

slave count

For fragmented TCP or UDP packets and all other IP protocol traffic, the source and destination port information is omitted. For non-IP traffic, the formula is the same as for the layer2 transmit hash policy.

This algorithm is not fully 802.3ad compliant. A single TCP or UDP conversation containing both fragmented and unfragmented packets will see packets striped across two interfaces. This may result in out of order delivery. Most traffic types will not meet this criteria, as TCP rarely fragments traffic, and most UDP traffic is not involved in extended conversations. Other implementations of 802.3ad may or may not tolerate this noncompliance.

Required Privilege Level

interface

< tunnel > (configuration/interfaces/interface)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <tunnel>
        <mode>mode-choice</mode>
        <destination>destination</destination>
        <source>source</source>
        <key>key</key>
        <interface>interface</interface>
        <ttl>ttl</ttl>
      </tunnel>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a tunnel interface. A tunnel allows direct connection between a remote location and an application running on the C Series Controller; a tunnel lets you use the redirect server in deployments where the JUNOSe router does not have a direct connection to the C Series Controller.

Contents

<mode>— Type of tunnel interface.

Value

- `ipip`— IP-over-IP. Encapsulates IP packets within IP packets.
- `gre`— GRE. Encapsulates traffic that uses various routing protocols within IP.
- `sit`— IPv6 in IPv4 tunnel

Default— No value

<destination>— IP address of the remote end of the tunnel.

Value—IP address

Default— No value

<source>—(Optional) Local IP address, that will not change, to receive tunneled packets. If you specify a source address, also specify a local interface.

Value—IP address

Default— No value

<key>—(Optional) For a GRE tunnel, a GRE key.

Value—Integer in the range -2147483648–2147483647

Default— No value

`<interface>`—(Optional) Existing physical interface. If you configured a source address, specify an interface.

Value— Name of interface.

Example: eth0

Default— No value

`<t1>`—(Optional) Lifetime of tunneled packets.

Value—Integer in the range 1–255

Required Privilege Level

interface

< unit > (configuration/interfaces/interface)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <unit>
        <unit-number>unit-number</unit-number> <!-- identifier -->
      </unit>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logical interfaces on a physical Ethernet interface on the C Series Controller. You can create different units to configure numerous IP addresses on an interface.

Contents

<unit-number>— Number of the unit (logical interface).

Value—Integer in the range 0–16385

Required Privilege Level

interface

< inet >

(configuration/interfaces/interface/unit/family)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <unit>
        <family>
          <inet>
            <address>address</address>
            <broadcast>broadcast</broadcast>
          </inet>
        </family>
      </unit>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for IPv4.

Contents

<address>—(Optional) IP address with destination prefix for interface.

Value— IP address/destination prefix

Default— No value

<broadcast>—(Optional) Broadcast address.

Value—IP address

Default— No value

Required Privilege Level

interface

< address >

(configuration/interfaces/interface/unit/family/inet6)

Usage

```
<configuration>
  <interfaces>
    <interface>
      <unit>
        <family>
          <inet6>
            <address>
              <address>address</address> <!-- identifier -->
            </address>
          </inet6>
        </family>
      </unit>
    </interface>
  </interfaces>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for IPv6.

Contents

<address>— IP address with destination prefix for interface.

Value— IP address/destination prefix

Required Privilege Level

interface

< rename >

Usage

```
<rpc>
  <rename>
    <parent> parent </parent>
    <identifier1> identifier1 </identifier1>
    <position> position-choice </position>
    <identifier2> identifier2 </identifier2>
  </rename>
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Rename an existing configuration statement or identifier.

Contents

<parent>— Path to an existing configuration statement or identifier.

Value—Path of a collection object

<identifier1>— Existing identifier or statement.

Value— Identifier or statement

<position>— Configuration path.

Value

- *to*— Transition.

<identifier2>— New identifier or statement.

Value—Valid value for selected object

Required Privilege Level

config-control

< rollback-configuration >

Usage

```
<rpc>  
  <rollback-configuration>  
  </rollback-configuration>  
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Return to a previously committed configuration.

Note: You can enter the **rollback** command only at the top level of the configuration hierarchy.

Required Privilege Level

config-control

< route > (configuration/routing-options/static)

Usage

```
<configuration>
  <routing-options>
    <static>
      <route>
        <destination>destination</destination> <!-- identifier -->
        <next-hop>next-hop</next-hop>
        <reject/>
      </route>
    </static>
  </routing-options>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure static routes to point to routers that connect to other networks to allow connectivity to devices on other networks.

Contents

<destination>— Destination network and mask. To configure the default route use destination 0.0.0.0/0

Value—Text

<next-hop>—(Optional) (Multivalue) Address of next hop from the C Series Controller to the destination.

Value—IP address

Default— No value

<reject>—(Optional) Drop packets to the specified destination, and send an ICMP unreachable message.

Required Privilege Level

routing

< set >

Usage

```
<rpc>
  <set>
    <object> object </object>
    <value> value </value>
  </set>
</rpc>
```

Release Information

Command introduced in SRC Release 1.0.0

Description

Create a statement hierarchy and set identifier values. When you enter a **set** command, the current level in the hierarchy does not change.

Contents

<object>— Configuration statement or identifier

Value—Path of a configuration object

<value>— Value configured for a configuration statement.

Value—Valid value for selected object

Required Privilege Level

config-control

< slot > (configuration)

Usage

```
<configuration>  
  <slot>  
    <number>number</number> <!-- identifier -->  
  </slot>  
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure slot number for component.

Contents

<number>— Number of the slot for which you want to configure values.

Value— Currently, the chassis has only one slot. The valid value is 0.

Default—0

Required Privilege Level

system

< system > (configuration)

Usage

```
<configuration>
  <system>
    <host-name>host-name</host-name>
    <domain-name>domain-name</domain-name>
    <domain-search>domain-search</domain-search>
    <name-server>name-server</name-server>
    <authentication-order>authentication-order-choice</authentication-order>
    <time-zone>time-zone</time-zone>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure system properties.

Contents

<host-name> — Hostname for the C Series Controller.

Value — hostname

Default — No value

<domain-name> — (Optional) Name of the domain in which the C Series Controller is located. This is the default domain name that is appended to hostnames that are not fully qualified.

Value — domain name

Default — No value

<domain-search> — (Optional) (Multivalue) List of domains to search.

Value — domain name

Default — No value

<name-server> — (Optional) (Multivalue) Domain name server(s).

Value — name server

Default — No value

<authentication-order> — (Optional) (Multivalue) Order in which the software tries different user authentication methods when attempting to authenticate a user. For each login attempt, the software tries the authentication methods in order configured, until the password matches.

Value

- `radius`—RADIUS authentication
- `tacplus`—TACACS+ authentication services
- `password`—Traditional password authentication

`<time-zone>`—(Optional) Name of the local time zone.

Value—time-zone

Default—UTC

Required Privilege Level

system

< accounting > (configuration/system)

Usage

```
<configuration>
  <system>
    <accounting>
      <events>events-choice</events>
    </accounting>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure system accounting.

Contents

<events>—(Optional) (Multivalue) Event types to be audited.

Value

- login— Logins are audited
- change-log— Configuration changes are audited
- interactive-commands— Interactive commands (any command-line input) are audited

Required Privilege Level

system

< server >

(configuration/system/accounting/destination/tacplus)

Usage

```
<configuration>
  <system>
    <accounting>
      <destination>
        <tacplus>
          <server>
            <server-address>server-address</server-address> <!-- identifier -->
            <secret>secret</secret>
            <timeout>timeout</timeout>
            <port>port</port>
            <source-address>source-address</source-address>
          </server>
        </tacplus>
      </destination>
    </accounting>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure TACACS+ accounting server.

Contents

<server-address>— Address of TACACS+ accounting server.

Value—IP address

<secret>— Password to use with the TACACS+ server. The secret password used by the C Series Controller must match that used by the server.

Value—Secret text

<timeout>—(Optional) Amount of time (in seconds) that the C Series Controller waits to receive a response from the TACACS+ server.

Value—Integer in the range 1–90 s

Default—3

<port>—(Optional) Port number on which to connect to a TACACS+ accounting server.

Value—Integer in the range -2147483648–2147483647

Default—49

`<source-address>`—(Optional) The address of this server used when connecting to the TACACS+ server.

Value—Text

Default— No value

Required Privilege Level

system

< file-uploading > (configuration/system)

Usage

```
<configuration>
  <system>
    <file-uploading-specifications>
      <file-uploading>
        <name>name</name> <!-- identifier -->
        <file-search-pattern>file-search-pattern</file-search-pattern>
        <random-delay>random-delay</random-delay>
        <retry-time>retry-time</retry-time>
        <interval>interval-choice</interval>
        <start-time>start-time</start-time>
        <keep>keep</keep>
        <append>append-choice</append>
      </file-uploading>
    </file-uploading-specifications>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure options for automatically uploading files to a remote FTP server.

Contents

<name>— Name of the automatic file-uploading configuration.

Value—Text

<file-search-pattern>—(Multivalue) File format to be uploaded. Specify the directory path and filename pattern you want to search for and automatically upload to the remote FTP server.

Value—Text

Default— /opt/UMC/sae/var/acct/log*

<random-delay>— Delay in seconds to connect to the remote FTP server. The upload client on the C Series Controller waits a random time between 1 and this specified delay time to connect to the remote upload server.

Value—Integer in the range 1–1000 s

<retry-time>— Retry time interval (in seconds). If the upload fails, this is the amount of time that the upload client waits before trying the upload again.

Value—Integer in the range 1–86400 s

Default— 3600

`<interval>`— Time interval for starting the next cycle of file uploading. The time should be a divisor of 24.

Value

- 1—Every one hour
- 2—Every two hours
- 3—Every three hours
- 4—Every four hours
- 6—Every six hours
- 8—Every eight hours
- 12—Every twelve hours
- 24—Every twenty-four hours

Default— 24

`<start-time>`—(Optional) Time when file uploading should begin in 24-hour format (HH:MM). For example, "00:00".

Value—Text

Default— 00:00

`<keep>`—(Optional) Keep the "n" most recent files after uploading. The kept files are compressed (gzip) after uploading and moved to a subdirectory.

Value—Integer in the range 0–30

Default— 3

`<append>`—(Optional) Suffix to append to the filenames of uploaded files. If this option is not specified, nothing is appended to the filenames.

Value

- `time-stamp`— Timestamp to append to the end of the filename in a form of "-YYYYMMDDHHMMSS"
- `host-name`— Hostname to append to the end of the filename in a form of "-hostname"
- `time-stamp-and-host-name`— Timestamp and hostname to append to the end of the filename in a form of "-YYYYMMDDHHMMSS-hostname"

Default— `time-stamp`

Required Privilege Level

system

< ftp > (configuration/system/file-uploading-specifications/file-uploading)

Usage

```
<configuration>
  <system>
    <file-uploading-specifications>
      <file-uploading>
        <ftp>
          <server>server</server>
          <user-name>user-name</user-name>
          <password>password</password>
          <port>port</port>
          <destination-path>destination-path</destination-path>
        </ftp>
      </file-uploading>
    </file-uploading-specifications>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure options for the remote FTP server where files are automatically uploaded and stored.

Contents

<server>— Name of the FTP server or host to connect to for automatic file uploading.

Value—Text

<user-name>—(Optional) Name used to log in to the FTP server used for automatic file uploading.

Value—Text

<password>—(Optional) Password used to log in to the FTP server used for automatic file uploading.

Value—Secret text

<port>—(Optional) Port number used by the FTP server used for automatic file uploading.

Value—Integer in the range 1–65535

<destination-path>— Directory in the remote FTP server where automatically uploaded files are stored.

Value—Text

Default— ~

Required Privilege Level

system

< ipmi > (configuration/system)

Usage

```
<configuration>
  <system>
    <ipmi>
      <address>address</address>
      <gateway>gateway</gateway>
      <gateway-mac-address>gateway-mac-address</gateway-mac-address>
    </ipmi>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the IPMI interface.

Contents

<address>—(Optional) IP address/destination prefix of IPMI interface. You must enter a value for the C2000 Controller. For the C4000 Controller, the address is automatically set to the IP address of the eth0 unit 0 interface.

Value—Text

<gateway>— IP address of the gateway.

Value—IP address

<gateway-mac-address>—(Optional) MAC address of the gateway. If not specified, ARP will be used to get the gateway's MAC address.

Value—Text

Required Privilege Level

system

< user > (configuration/system/ipmi)

Usage

```
<configuration>
  <system>
    <ipmi>
      <user>
        <name>name</name> <!-- identifier -->
        <encrypted-password>encrypted-password</encrypted-password>
      </user>
    </ipmi>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the IPMI user account.

Contents

<name>— Username that is used to log in to the IPMI interface of a C Series Controller.

Value— username

<encrypted-password>— Password in plaintext format.

Value— plain-text-password

Required Privilege Level

system

< object-adapter > (configuration/system/java-orb)

Usage

```
<configuration>
  <system>
    <java-orb>
      <object-adapter>
        <address>address</address>
      </object-adapter>
    </java-orb>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

system

< client > (configuration/system/ldap)

Usage

```
<configuration>
  <system>
    <ldap>
      <client>
        <base-dn>base-dn</base-dn>
        <url>url</url>
        <backup-urls>backup-urls</backup-urls>
        <principal>principal</principal>
        <credentials>credentials</credentials>
        <timeout>timeout</timeout>
        <time-limit>time-limit</time-limit>
        <eventing/>
        <polling-interval>polling-interval</polling-interval>
        <connection-manager-id>connection-manager-id</connection-manager-id>
        <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        <event-base-dn>event-base-dn</event-base-dn>
        <signature-dn>signature-dn</signature-dn>
        <blacklist/>
      </client>
    </ldap>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure directory properties used by the CLI to connect to the directory that contains SRC data.

On a C Series Controller, you use the Juniper Networks database and typically use the default configuration for the directory connection. You can add backup directories and change the password to the directory.

Contents

<base-dn>—(Optional) DN of the root directory for SRC components and applications.

Value— DN

Default—o = UMC

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— URL

Default— No value

<principal>—(Optional) DN that defines the username with which an SRC component accesses the

directory.

Value— DN

Default—cn = cli,ou = components,o = operators, < base >

<credentials>—(Optional) Password used for authentication with the directory server.

Value—Secret text

Default—cli

<timeout>—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 0–600 s

Default— No value

<time-limit>—(Optional) The number of milliseconds to wait for directory results before returning. If set to 0, wait indefinitely.

Value—Integer in the range 0–2147483647 ms

Default— 5000

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—TRUE

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–86400 s

Default— No value

<connection-manager-id>—(Optional) CLI identifier of the connection manager for the directory eventing system (within the JNDI framework).

Value— Identifier for connection manager

Example—DIRAGENT_POOL_VR

<dispatcher-pool-size>—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0–2147483647

`<event-base-dn>`—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default— o = umc, < base >

`<signature-dn>`—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value— DN

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Required Privilege Level

system

< login > (configuration/system)

Usage

```
<configuration>
  <system>
    <login>
      <announcement>announcement</announcement>
    </login>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure system announcement to be displayed at user login.

Contents

<announcement>—(Optional) Announcement displayed to every user after login.

Value— Announcement text

Default— No value

Required Privilege Level

system admin

< class > (configuration/system/login)

Usage

```
<configuration>
  <system>
    <login>
      <class>
        <name>name</name> <!-- identifier -->
        <allow-commands>allow-commands</allow-commands>
        <allow-configuration>allow-configuration</allow-configuration>
        <deny-commands>deny-commands</deny-commands>
        <deny-configuration>deny-configuration</deny-configuration>
        <idle-timeout>idle-timeout</idle-timeout>
        <permissions>permissions-choice</permissions>
      </class>
    </login>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define login classes. You can define any number of login classes.

Contents

<name>— Name that you choose for a login class.

Value— Name

<allow-commands>—(Optional) Operational mode commands that members of a login class can use.

If you omit this statement and the deny-commands statement, users can issue only those commands for which they have access privileges through the permissions statement.

You can use an extended (modern) regular expression as defined in POSIX 1003.2. If the regular expression contains any spaces, operators, or wildcard characters, enclose it in quotation marks.

Value— Operational-mode commands to allow

Default— No value

<allow-configuration>—(Optional) Configuration mode commands that members of a login class can use.

If you omit this statement and the deny-configuration statement, users can issue only those commands for which they have access privileges through the permissions statement

You can use an extended (modern) regular expression as defined in POSIX 1003.2. If the regular expression contains any spaces, operators, or wildcard characters, enclose it in quotation marks.

Value— Configuration-mode commands to allow

Default— No value

`<deny-commands>`—(Optional) Operational mode commands that the user is denied permission to issue, even though the permissions set with the permissions statement would allow it.

If you omit this statement and the allow-commands statement, users can issue only those commands for which they have access privileges through the permissions statement.

You can use an extended (modern) regular expression as defined in POSIX 1003.2. If the regular expression contains any wildcard characters, enclose it in quotation marks.

Value— Operational mode commands to deny

Default— No value

`<deny-configuration>`—(Optional) Configuration mode commands that the user is denied permission to issue, even though the permissions set with the permissions statement would allow it.

If you omit this statement and the allow-configuration statement, users can issue only those commands for which they have access privileges through the permissions statement.

You can use extended (modern) regular expression as defined in POSIX 1003.2. If the regular expression contains any spaces, operators, or wildcard characters, enclose it in quotation marks.

Value— Configuration mode commands to deny

Default— No value

`<idle-timeout>`—(Optional) Maximum amount of time that a session can be idle before the user is logged off the C Series Controller. The session times out after remaining at the CLI operational mode prompt for the specified time.

If you omit this statement, a user is never forced off the system after extended idle times.

Value— Number of minutes

Default— No value

`<permissions>`—(Optional) (Multivalue) Access privileges for each login class.

Value

- `admin`— Can view user account information in configuration mode and with the `show configuration` command.
- `admin-control`— Can view user accounts and configure them (at the [edit system login] hierarchy level).
- `all`— Has all permissions.
- `clear`— Can clear (delete) information learned from the network that is stored in various network databases (by using the `clear` commands).
- `configure`— Can enter configuration mode (by using the `configure` command).
- `control`— Can modify any configuration values.
- `field`— Reserved for field (debugging) support.
- `firewall`— Can view the firewall filter configuration in configuration mode.

- firewall-control— Can view and configure firewall filter information.
- interface— Can view the interface configuration in configuration mode and with the `show configuration operational` mode command.
- interface-control— Can modify interface configuration.
- maintenance— Can perform system maintenance, including starting a local shell on a C Series Controller, and can halt and reboot a C Series Controller (by using the `request system` commands).
- network— Can access the network by entering commands such as SSH or Telnet.
- reset— Can restart software processes by using the `restart` command and can configure whether software processes are enabled or disabled.
- routing— Can view routing information in configuration and operational modes.
- routing-control— Can view general routing information and modify routing configuration.
- secret— Can view passwords and other authentication keys in the configuration.
- secret-control— Can view passwords and other authentication keys in the configuration and can modify them in configuration mode.
- security— Can view security configuration in configuration mode and with the `show configuration operational` mode command.
- security-control— Can view security configuration in configuration mode and with the `show configuration operational` mode command.
- shell— Can start a local shell on the router by entering the `start shell` command.
- snmp— Can view SNMP configuration information in configuration and operational modes.
- snmp-control— Can view SNMP configuration information and configure SNMP (at the `[edit snmp]` hierarchy level).
- system— Can view system-level information in configuration and operational modes.
- system-control— Can view and configure system-level configuration information.
- view— Can use various commands to display current system-wide values and statistics.
- view-configuration— Can view all system configuration, excluding any secret configurations.
- service— Can view service and policy definitions.
- service-control— Can view and configure service definitions and policy definitions.
- subscriber— Can view information about subscriber definitions.
- subscriber-control— Can view and configure information about subscriber definitions.

Required Privilege Level

system admin

< user > (configuration/system/login)

Usage

```
<configuration>
  <system>
    <login>
      <user>
        <user-name>user-name</user-name> <!-- identifier -->
        <class>class</class>
        <full-name>full-name</full-name>
        <uid>uid</uid>
        <gid>gid</gid>
        <prompt>prompt</prompt>
        <level>level-choice</level>
        <complete-on-space>complete-on-space-choice</complete-on-space>
      </user>
    </login>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure access permissions for individual users.

Contents

<user-name> — Username that is used to log in to a C Series Controller.

Value — Username

<class> — User's login class. Configure one class for each user. The class referenced must already be configured.

Value — Class-name

<full-name> — Full name of the user. If the name contains spaces, enclose it in quotation marks.

Value — Name

<uid> — User identifier for the login account.

Value — Integer in the range 0–64000

<gid> — Group identifier for the login account.

Value — Integer in the range 0–64000

`<prompt>`—(Optional) Default prompt that this user sees at the SRC CLI.

Value— Prompt-text

`<level>`—(Optional) Editing level available to the user. The setting for the editing level determines which configuration commands are visible to the user.

Value

- `basic`— Minimal set of configuration statements and commands— only the statements that must be configured are visible.
- `normal`— Normal set of configuration statements and commands— the common and basic statements are visible.
- `advanced`— All configuration statements and commands, including the common and basic ones, are visible.
- `expert`— All configuration statements, including common, basic, and internal statements and commands used for debugging, are visible.

Default— Normal

`<complete-on-space>`—(Optional) Set the CLI to complete a partial command entry when you type a space. This statement enables command completion for all user sessions for this user.

To enable command completion for an active user session, use the `set cli complete-on-space` operational mode command.

Value

- `on`— Turn on command completion—allow either a space or a tab to be used for command completion.
- `off`— Turn off command completion—a space or a tab after a partial command name does not complete the command.

Default— On

Required Privilege Level

system admin

< authentication >

(configuration/system/login/user)

Usage

```
<configuration>
  <system>
    <login>
      <user>
        <authentication>
          <plain-text-password-value>plain-text-password-value</plain-text-password-value>
          <encrypted-password>encrypted-password</encrypted-password>
          <ssh-authorized-keys>ssh-authorized-keys</ssh-authorized-keys>
        </authentication>
      </user>
    </login>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Authentication methods that a user can use to log in to a C Series Controller. You can assign multiple authentication methods to a single user.

Contents

<plain-text-password-value>—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

<encrypted-password>—(Optional) Password in encrypted format.

Value— Encrypted-password

<ssh-authorized-keys>—(Optional) (Multivalue) Public key for SSH.

Value— Public-key

Required Privilege Level

system admin

< config-file > (configuration/system/logrotate)

Usage

```
<configuration>
  <system>
    <logrotate>
      <config-file>
        <file-name>file-name</file-name> <!-- identifier -->
      </config-file>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Name of a logrotate configuration file.

Contents

<file-name> — Each logrotate configuration file defines the files to be rotated. Log rotation behavior is defined by both global directives defined in the global configuration file and local directives defined here. Local directives can override global directives.

Value — filename

Required Privilege Level

system

< logfiles >

(configuration/system/logrotate/config-file)

Usage

```
<configuration>
  <system>
    <logrotate>
      <config-file>
        <logfiles>
          <name>name</name> <!-- identifier -->
          <compress/>
          <delay-compress/>
          <copy/>
          <daily/>
          <weekly/>
          <monthly/>
          <yearly/>
          <rotate>rotate</rotate>
          <size>size</size>
          <minimum-size>minimum-size</minimum-size>
          <maximum-age>maximum-age</maximum-age>
          <no-create/>
          <copy-truncate/>
          <if-empty/>
          <missing-ok/>
          <filenames>filenames</filenames>
          <shared-scripts/>
          <pre-rotate>pre-rotate</pre-rotate>
          <post-rotate>post-rotate</post-rotate>
          <first-action>first-action</first-action>
          <last-action>last-action</last-action>
        </logfiles>
      </config-file>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local options for specific log files.

Contents

<name>— One or more log files.

Value—Text

<compress>—(Optional) Old versions of log files are compressed with gzip by default.

<delay-compress>—(Optional) Postpone compression of the previous log file to the next rotation cycle. This only has effect when used in combination with the compress option. This option can be used when a program cannot be instructed to close its log file and thus may continue writing to the previous log file for some time.

<copy>—(Optional) Make a copy of the log file but do not modify the original log file. Use this option to

make a snapshot of the current log file, or when some other utility needs to truncate or parse the file. When this option is used, the create option has no effect because the original log file stays in place.

`<daily>`—(Optional) Log files are rotated every day.

`<weekly>`—(Optional) Log files are rotated each week. This option rotates log files if the current weekday is less than the weekday of the last rotation, or if more than a week has passed since the last rotation.

`<monthly>`—(Optional) Log files are rotated each month. This option rotates log files the first time logrotate is run in a month (this is normally on the first day of the month).

`<yearly>`—(Optional) Log files are rotated yearly. This option rotates log files if the current year is not the same as the last rotation.

`<rotate>`—(Optional) Rotate log files the specified number times before removing them. If set to 0, old versions are removed rather than rotated.

Value—Integer in the range 0–2147483647

`<size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes. If size is followed by k, the size is assumed to be in kilobytes. If size is followed by M, the size is assumed to be in megabytes. If size is followed by G, the size is assumed to be in gigabytes. For example, size 100, size 100k, size 100M, and size 100G are all valid. The size option is mutually exclusive of the time interval options, and it causes log files to be rotated without regard for the last rotation time.

Value—Integer in the range k|M|G

`<minimum-size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes, however not before the additionally specified time interval (daily, weekly, monthly, or yearly). The related size option is similar except that it is mutually exclusive with the time interval options, and it causes log files to be rotated without regard for the last rotation time. When you use this option, both the size and timestamp of a log file are considered.

Value—Integer in the range k|M|G

`<maximum-age>`—(Optional) Remove rotated log files older than the specified number of days. The age is only checked if the log file is to be rotated.

Value—Integer in the range 0–2147483647 days

`<no-create>`—(Optional) New log files are not created (this overrides the create option).

`<copy-truncate>`—(Optional) Truncate the original log file after creating a copy, instead of moving the old log file and optionally creating a new one. When set, this option copies the active log file to a backup and truncates the active log file. This option is useful when programs can not be instructed to close their log file and thus might continue writing (appending) to the previous log file forever.

`<if-empty>`—(Optional) Rotate the log file even if it is empty.

`<missing-ok>`—(Optional) If the log file is missing, go on to the next one without issuing an error message.

`<filenames>`— Names of the log files to rotate.

Value—Text

`<shared-scripts>`—(Optional) Normally, the scripts you specify with the pre-rotate and post-rotate options are run for each log which is rotated and the absolute path to the log file is passed as the first argument to the script. This means a single script may be run multiple times for log file entries which match multiple files. If you specify the shared-scripts option, the scripts are only run once, regardless of how many logs match the wildcard pattern, and the entire pattern is passed to them. However, if none of the logs in the pattern require rotating, the scripts are not run at all. If the scripts exit with error, the remaining actions are not executed for any logs.

`<pre-rotate>`—(Optional) The lines between pre-rotate and endscript (both of which must appear on lines by themselves) are executed (using /bin/sh) before the log file is rotated and only if the log will actually be rotated. These directives may only appear inside a log file definition. Normally, the absolute path to the log file is passed as first argument to the script. If the shared-scripts option is specified, the whole pattern is passed to the script.

Value—Multi-line text

`<post-rotate>`—(Optional) The lines between the post-rotate and endscript (both of which must appear on lines by themselves) are executed (using /bin/sh) after the log file is rotated. These directives may only appear inside a log file definition. Normally, the absolute path to the log file is passed as the first argument to the script. If the shared-scripts option is specified, the entire pattern is passed to the script.

Value—Multi-line text

`<first-action>`—(Optional) The lines between `first-action` and `endscript` (both of which must appear on lines by themselves) are executed (using `/bin/sh`) once before all log files that match the wildcard pattern are rotated, before the pre-rotate script is run, and only if at least one log file is actually to be rotated. These directives may only appear inside a log file definition. The entire pattern is passed to the script as the first argument. If the script exits with error, no further processing is performed.

Value—Multi-line text

`<last-action>`—(Optional) The lines between `last-action` and `endscript` (both of which must appear on lines by themselves) are executed (using `/bin/sh`) once after all log files that match the wildcard pattern are rotated, after the post-rotate script is run, and only if at least one log is rotated. These directives may only appear inside a log file definition. The entire pattern is passed to the script as the first argument. If the script exits with error, just an error message is shown (because this is the last action).

Value—Multi-line text

Required Privilege Level

system

< create > (configuration/system/logrotate/config-file/logfiles)

Usage

```
<configuration>
  <system>
    <logrotate>
      <config-file>
        <logfiles>
          <create>
            <default/>
          </create>
        </logfiles>
      </config-file>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Create log file immediately after rotation (before the post-rotate script is run). Create the log file with the same name as the log file just rotated. Mode specifies the mode for the log file in octal (the same as `chmod(2)`). Owner specifies the username that owns the log file. Group specifies the group the log file belongs to. Any of the log file attributes may be omitted, in which case those attributes for the new file use the same values as the original log file for the omitted attributes. This option can be disabled using the `no-create` option.

Contents

`<default>`—(Optional) New log files are created with the same permission, owner, and group as the original log file.

Required Privilege Level

system

< mode-owner-group > (configuration/system/logrotate/config-file/logfiles/create)

Usage

```
<configuration>
  <system>
    <logrotate>
      <config-file>
        <logfiles>
          <create>
            <mode-owner-group>
              <mode>mode</mode>
              <owner>owner</owner>
              <group>group</group>
            </mode-owner-group>
          </create>
        </logfiles>
      </config-file>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Contents

<mode>— New log files are created with the specified mode in octal, for example 0644.

Value—Text

<owner>— New log files are created with the specified owner (username).

Value—Text

<group>— New log files are created with the specified group.

Value—Text

Required Privilege Level

system

< logrotate.conf >

(configuration/system/logrotate)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <include>include</include>
        <compress/>
        <delay-compress/>
        <copy/>
        <daily/>
        <weekly/>
        <monthly/>
        <yearly/>
        <rotate>rotate</rotate>
        <size>size</size>
        <minimum-size>minimum-size</minimum-size>
        <maximum-age>maximum-age</maximum-age>
        <no-create/>
        <copy-truncate/>
        <if-empty/>
        <missing-ok/>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the global logrotate configuration file. This file defines global directives and includes all other logrotate configuration files which set their own local directives. Local directives can override global directives.

Contents

<include>—(Optional) Reads the file given as an argument as if it was included inline where the include directive appears. If a directory is given, most of the files in that directory are read in alphabetic order before processing of the including file continues.

Value—Text

<compress>—(Optional) Old versions of log files are compressed with gzip by default.

<delay-compress>—(Optional) Postpone compression of the previous log file to the next rotation cycle. This only has effect when used in combination with the compress option. This option can be used when a program cannot be instructed to close its log file and thus may continue writing to the previous log file for some time.

<copy>—(Optional) Make a copy of the log file but do not modify the original log file. Use this option to make a snapshot of the current log file, or when some other utility needs to truncate or parse the file.

When this option is used, the create option has no effect because the original log file stays in place.

`<daily>`—(Optional) Log files are rotated every day.

`<weekly>`—(Optional) Log files are rotated each week. This option rotates log files if the current weekday is less than the weekday of the last rotation, or if more than a week has passed since the last rotation.

`<monthly>`—(Optional) Log files are rotated each month. This option rotates log files the first time logrotate is run in a month (this is normally on the first day of the month).

`<yearly>`—(Optional) Log files are rotated yearly. This option rotates log files if the current year is not the same as the last rotation.

`<rotate>`—(Optional) Rotate log files the specified number times before removing them. If set to 0, old versions are removed rather than rotated.

Value—Integer in the range 0–2147483647

`<size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes. If size is followed by k, the size is assumed to be in kilobytes. If size is followed by M, the size is assumed to be in megabytes. If size is followed by G, the size is assumed to be in gigabytes. For example, size 100, size 100k, size 100M, and size 100G are all valid. The size option is mutually exclusive of the time interval options, and it causes log files to be rotated without regard for the last rotation time.

Value—Integer in the range k|M|G

`<minimum-size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes, however not before the additionally specified time interval (daily, weekly, monthly, or yearly). The related size option is similar except that it is mutually exclusive with the time interval options, and it causes log files to be rotated without regard for the last rotation time. When you use this option, both the size and timestamp of a log file are considered.

Value—Integer in the range k|M|G

`<maximum-age>`—(Optional) Remove rotated log files older than the specified number of days. The age is only checked if the log file is to be rotated.

Value—Integer in the range 0–2147483647 days

`<no-create>`—(Optional) New log files are not created (this overrides the create option).

`<copy-truncate>`—(Optional) Truncate the original log file after creating a copy, instead of moving the old log file and optionally creating a new one. When set, this option copies the active log file to a backup and truncates the active log file. This option is useful when programs can not be instructed to close their log file and thus might continue writing (appending) to the previous log file forever.

`<if-empty>`—(Optional) Rotate the log file even if it is empty.

`<missing-ok>`—(Optional) If the log file is missing, go on to the next one without issuing an error message.

Required Privilege Level

system

< create >

(configuration/system/logrotate/logrotate.conf)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <create>
          <default/>
        </create>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Create log file immediately after rotation (before the post-rotate script is run). Create the log file with the same name as the log file just rotated. Mode specifies the mode for the log file in octal (the same as `chmod(2)`). Owner specifies the username that owns the log file. Group specifies the group the log file belongs to. Any of the log file attributes may be omitted, in which case those attributes for the new file use the same values as the original log file for the omitted attributes. This option can be disabled using the no-create option.

Contents

`<default>`—(Optional) New log files are created with the same permission, owner, and group as the original log file.

Required Privilege Level

system

< mode-owner-group > (configuration/system/logrotate/logrotate.conf/create)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <create>
          <mode-owner-group>
            <mode>mode</mode>
            <owner>owner</owner>
            <group>group</group>
          </mode-owner-group>
        </create>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Contents

<mode>— New log files are created with the specified mode in octal, for example 0644.

Value—Text

<owner>— New log files are created with the specified owner (username).

Value—Text

<group>— New log files are created with the specified group.

Value—Text

Required Privilege Level

system

< logfiles >

(configuration/system/logrotate/logrotate.conf)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <logfiles>
          <name>name</name> <!-- identifier -->
          <compress/>
          <delay-compress/>
          <copy/>
          <daily/>
          <weekly/>
          <monthly/>
          <yearly/>
          <rotate>rotate</rotate>
          <size>size</size>
          <minimum-size>minimum-size</minimum-size>
          <maximum-age>maximum-age</maximum-age>
          <no-create/>
          <copy-truncate/>
          <if-empty/>
          <missing-ok/>
          <filenames>filenames</filenames>
          <shared-scripts/>
          <pre-rotate>pre-rotate</pre-rotate>
          <post-rotate>post-rotate</post-rotate>
          <first-action>first-action</first-action>
          <last-action>last-action</last-action>
        </logfiles>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local options for specific log files.

Contents

<name>— One or more log files.

Value—Text

<compress>—(Optional) Old versions of log files are compressed with gzip by default.

<delay-compress>—(Optional) Postpone compression of the previous log file to the next rotation cycle. This only has effect when used in combination with the compress option. This option can be used when a program cannot be instructed to close its log file and thus may continue writing to the previous log file for some time.

<copy>—(Optional) Make a copy of the log file but do not modify the original log file. Use this option to

make a snapshot of the current log file, or when some other utility needs to truncate or parse the file. When this option is used, the create option has no effect because the original log file stays in place.

`<daily>`—(Optional) Log files are rotated every day.

`<weekly>`—(Optional) Log files are rotated each week. This option rotates log files if the current weekday is less than the weekday of the last rotation, or if more than a week has passed since the last rotation.

`<monthly>`—(Optional) Log files are rotated each month. This option rotates log files the first time logrotate is run in a month (this is normally on the first day of the month).

`<yearly>`—(Optional) Log files are rotated yearly. This option rotates log files if the current year is not the same as the last rotation.

`<rotate>`—(Optional) Rotate log files the specified number times before removing them. If set to 0, old versions are removed rather than rotated.

Value—Integer in the range 0–2147483647

`<size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes. If size is followed by k, the size is assumed to be in kilobytes. If size is followed by M, the size is assumed to be in megabytes. If size is followed by G, the size is assumed to be in gigabytes. For example, size 100, size 100k, size 100M, and size 100G are all valid. The size option is mutually exclusive of the time interval options, and it causes log files to be rotated without regard for the last rotation time.

Value—Integer in the range k|M|G

`<minimum-size>`—(Optional) Log files are rotated when they grow larger than the specified size in bytes, however not before the additionally specified time interval (daily, weekly, monthly, or yearly). The related size option is similar except that it is mutually exclusive with the time interval options, and it causes log files to be rotated without regard for the last rotation time. When you use this option, both the size and timestamp of a log file are considered.

Value—Integer in the range k|M|G

`<maximum-age>`—(Optional) Remove rotated log files older than the specified number of days. The age is only checked if the log file is to be rotated.

Value—Integer in the range 0–2147483647 days

`<no-create>`—(Optional) New log files are not created (this overrides the create option).

`<copy-truncate>`—(Optional) Truncate the original log file after creating a copy, instead of moving the old log file and optionally creating a new one. When set, this option copies the active log file to a backup and truncates the active log file. This option is useful when programs can not be instructed to close their log file and thus might continue writing (appending) to the previous log file forever.

`<if-empty>`—(Optional) Rotate the log file even if it is empty.

`<missing-ok>`—(Optional) If the log file is missing, go on to the next one without issuing an error message.

`<filenames>`— Names of the log files to rotate.

Value—Text

`<shared-scripts>`—(Optional) Normally, the scripts you specify with the pre-rotate and post-rotate options are run for each log which is rotated and the absolute path to the log file is passed as the first argument to the script. This means a single script may be run multiple times for log file entries which match multiple files. If you specify the shared-scripts option, the scripts are only run once, regardless of how many logs match the wildcard pattern, and the entire pattern is passed to them. However, if none of the logs in the pattern require rotating, the scripts are not run at all. If the scripts exit with error, the remaining actions are not executed for any logs.

`<pre-rotate>`—(Optional) The lines between pre-rotate and endscript (both of which must appear on lines by themselves) are executed (using /bin/sh) before the log file is rotated and only if the log will actually be rotated. These directives may only appear inside a log file definition. Normally, the absolute path to the log file is passed as first argument to the script. If the shared-scripts option is specified, the whole pattern is passed to the script.

Value—Multi-line text

`<post-rotate>`—(Optional) The lines between the post-rotate and endscript (both of which must appear on lines by themselves) are executed (using /bin/sh) after the log file is rotated. These directives may only appear inside a log file definition. Normally, the absolute path to the log file is passed as the first argument to the script. If the shared-scripts option is specified, the entire pattern is passed to the script.

Value—Multi-line text

`<first-action>`—(Optional) The lines between `first-action` and `endscript` (both of which must appear on lines by themselves) are executed (using `/bin/sh`) once before all log files that match the wildcard pattern are rotated, before the pre-rotate script is run, and only if at least one log file is actually to be rotated. These directives may only appear inside a log file definition. The entire pattern is passed to the script as the first argument. If the script exits with error, no further processing is performed.

Value—Multi-line text

`<last-action>`—(Optional) The lines between `last-action` and `endscript` (both of which must appear on lines by themselves) are executed (using `/bin/sh`) once after all log files that match the wildcard pattern are rotated, after the post-rotate script is run, and only if at least one log is rotated. These directives may only appear inside a log file definition. The entire pattern is passed to the script as the first argument. If the script exits with error, just an error message is shown (because this is the last action).

Value—Multi-line text

Required Privilege Level

system

< create >

(configuration/system/logrotate/logrotate.conf/logfiles)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <logfiles>
          <create>
            <default/>
          </create>
        </logfiles>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Create log file immediately after rotation (before the post-rotate script is run). Create the log file with the same name as the log file just rotated. Mode specifies the mode for the log file in octal (the same as `chmod(2)`). Owner specifies the username that owns the log file. Group specifies the group the log file belongs to. Any of the log file attributes may be omitted, in which case those attributes for the new file use the same values as the original log file for the omitted attributes. This option can be disabled using the `no-create` option.

Contents

`<default>`—(Optional) New log files are created with the same permission, owner, and group as the original log file.

Required Privilege Level

system

< mode-owner-group > (configuration/system/logrotate/logrotate.conf/logfiles/create)

Usage

```
<configuration>
  <system>
    <logrotate>
      <logrotate.conf>
        <logfiles>
          <create>
            <mode-owner-group>
              <mode>mode</mode>
              <owner>owner</owner>
              <group>group</group>
            </mode-owner-group>
          </create>
        </logfiles>
      </logrotate.conf>
    </logrotate>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Contents

<mode>— New log files are created with the specified mode in octal, for example 0644.

Value—Text

<owner>— New log files are created with the specified owner (username).

Value—Text

<group>— New log files are created with the specified group.

Value—Text

Required Privilege Level

system

< ntp > (configuration/system)

Usage

```
<configuration>
  <system>
    <ntp>
      <boot-server>boot-server</boot-server>
      <broadcast-client/>
      <trusted-key>trusted-key</trusted-key>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure NTP.

We strongly recommend that you configure NTP on every server used for an SRC deployment. The system may not recognize subscriber sessions if the clocks are not synchronized.

Contents

`<boot-server>`—(Optional) Server that NTP queries when at boot time to determine the local date and time.

When you boot the system on which the SRC software runs, the system issues an `ntpdate` request, which polls a network server to determine the local date and time. You can configure a server that the system uses to determine the time at startup. If no boot server is configured, NTP uses one of the configured servers to set the initial time.

Value— IP address of an NTP server

Default— No value

`<broadcast-client>`—(Optional) Listen for NTP broadcast messages on the local network to discover other servers on the same subnet.

`<trusted-key>`—(Optional) (Multivalue) List of keys you are allowed to use when you configure the local system to synchronize its time with other systems on the network.

Value— Positive signed 32-bit integer (1–2147483647)

Default— No value

Required Privilege Level

system

< authentication-key > (configuration/system/ntp)

Usage

```
<configuration>
  <system>
    <ntp>
      <authentication-key>
        <key-number>key-number</key-number> <!-- identifier -->
        <value>value</value>
      </authentication-key>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure NTP authentication keys so that the C Series Controller can send authenticated packets. If you configure the C Series Controller to operate in authenticated mode, you must configure a key.

NTP authentication uses the MD5 encryption algorithm.

Contents

<key-number>— Positive integer that identifies the NTP authentication key.

Value—Integer in the range 1-2147483647

<value>— The value of the NTP authentication, which can contain 1-8 ASCII characters.

Value—Secret text

Default— No value

Required Privilege Level

system

< broadcast > (configuration/system/ntp)

Usage

```
<configuration>
  <system>
    <ntp>
      <broadcast>
        <address>address</address> <!-- identifier -->
        <key>key</key>
        <t1>t1</t1>
        <version>version</version>
      </broadcast>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the C Series Controller to operate in broadcast mode with the remote system at the specified address. In this mode, the local system sends periodic broadcast messages to a client population at the specified broadcast or multicast address. Typically, you include this statement only when the local system is operating as a transmitter.

Contents

<address>— IP address to receive broadcast or multicast periodic broadcast messages.

Value— IP address

<key>—(Optional) Value of the authentication key used to encrypt authentication fields in all packets sent to the broadcast or multicast address.

Value— Positive signed 32-bit integer (1–2147483647)

Default— No value

<t1>—(Optional) TTL value to transmit.

Value—Integer in the range 1–255

Default— No value

<version>—(Optional) Version number of NTP to use in outgoing NTP packets.

Value—Integer in the range 1–4

Default— No value

Required Privilege Level

system

< multicast-client > (configuration/system/ntp)

Usage

```
<configuration>
  <system>
    <ntp>
      <multicast-client>
        <address>address</address>
      </multicast-client>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Listen for NTP multicast messages on the local network to discover other servers on the same subnet.

Contents

<address>—(Optional) IP address(s). If you specify more than one address, the system joins those multicast groups.

Value—IP address

Default— No value

Required Privilege Level

system

< peer > (configuration/system/ntp)

Usage

```
<configuration>
  <system>
    <ntp>
      <peer>
        <address>address</address> <!-- identifier -->
        <key>key</key>
        <version>version</version>
        <prefer/>
      </peer>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the C Series Controller to operate in symmetric active mode with the remote system at the specified address. In this mode, the C Series Controller and the remote system can synchronize with each other. This configuration is useful in a network in which either the local router or the remote system might be a better source of time.

Contents

<address>— IP address of an NTP peer. Do not specify a hostname.

Value—IP address

<key>—(Optional) Key number used to encrypt all authentication fields in packets sent to the specified address.

Value— Positive signed 32-bit integer (1–2147483647)

Default— No value

<version>—(Optional) Version number of NTP to be used in outgoing packets.

Value—Integer in the range 1–4

Default— No value

<prefer>—(Optional) Remote system is the preferred host. This remote system is then selected for synchronization among a set of systems that are operating correctly.

Required Privilege Level

system

< server > (configuration/system/ntp)

Usage

```
<configuration>
  <system>
    <ntp>
      <server>
        <address>address</address> <!-- identifier -->
        <key>key</key>
        <version>version</version>
        <prefer/>
      </server>
    </ntp>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the C Series Controller to operate in client mode with the remote system at the specified address. In this mode, the C Series Controller can be synchronized with the remote system, but the remote system can never be synchronized with the C Series Controller.

Contents

<address>— IP address of an NTP server. Do not specify a hostname.

Value—IP address

<key>—(Optional) Key number used to encrypt all authentication fields in packets sent to the specified address.

Value— Positive signed 32-bit integer (1–2147483647)

Default— No value

<version>—(Optional) Version number of NTP to be used in outgoing packets.

Value—Integer in the range 1–4

Default— No value

<prefer>—(Optional) Remote system is the preferred host. This remote system is then selected for synchronization among a set of systems that are operating correctly.

Required Privilege Level

system

< radius-server > (configuration/system)

Usage

```
<configuration>
  <system>
    <radius-server>
      <address>address</address> <!-- identifier -->
      <port>port</port>
      <secret>secret</secret>
      <timeout>timeout</timeout>
      <retry>retry</retry>
    </radius-server>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure RADIUS authentication. To use more than one RADIUS server, include a `radius-server` statement for each server. The software contacts the servers in order in a round-robin fashion until it receives a valid response from one of the servers or until the retry limit is reached for all servers.

To configure RADIUS for authentication, also include `radius` in the `authentication-order` option for the `system` statement.

For a user authenticated through RADIUS to be able to log in to the C Series Controller, you must create either a local profile or a remote profile to define common access privileges for all users authenticated through RADIUS or TACACS+. For information about creating user profiles, see the `system login user` statement.

Contents

`<address>`— IP address of RADIUS server.

Value— IP address

`<port>`—(Optional) Port number on which to connect to a RADIUS server.

Value—Integer in the range 0–65535

Default—1812

`<secret>`— Password to use with the RADIUS server. This secret password is used by the C Series Controller and must match the password on the RADIUS server.

Value— password

`<timeout>`—(Optional) Amount of time (in seconds) that the C Series Controller waits to receive a response from the RADIUS server.

Value—Integer in the range 1–90 s

Default—3

<retry>—(Optional) Number of times the C Series Controller tries to contact a RADIUS server.

Value—Integer in the range 1-10

Default—3

Required Privilege Level

system

< services > (configuration/system)

Usage

```
<configuration>
  <system>
    <services>
      <telnet/>
      <sftp/>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure system services.

Contents

<telnet>—(Optional) Allow Telnet connections from remote systems to the C Series Controller.

Note: Telnet connections do not allow access through `root`.

<sftp>—(Optional) Allow SFTP requests from a remote system to the C Series Controller.

Required Privilege Level

system

< editor > (configuration/system/services)

Usage

```
<configuration>
  <system>
    <services>
      <editor>
        <password-encryption>password-encryption-choice</password-encryption>
      </editor>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure access properties for external access to the Policies, Services, and Subscribers Editor.

Contents

<password-encryption>—(Optional) Encrypt the passwords of users who remotely access the Policies, Services, and Subscribers Editor using the specified encryption algorithm.

Value

- `crypt`— UNIX crypt, a one-way encryption.
- `md5`— Message Digest 5 (MD5), a 128-bit message digest.
- `sha`— SHA message digest, a 160-bit message digest.
- `plain`— No encryption.

Required Privilege Level

system

< policy-editor >

(configuration/system/services/editor)

Usage

```
<configuration>
  <system>
    <services>
      <editor>
        <policy-editor>
          <directory-eventing/>
        </policy-editor>
      </editor>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for the policy editor.

Contents

<directory-eventing>—(Optional) Enable policy editor to poll the directory for changes.

Default—true

Required Privilege Level

system

< ssh > (configuration/system/services/netconf)

Usage

```
<configuration>
  <system>
    <services>
      <netconf>
        <ssh>
          <port>port</port>
        </ssh>
      </netconf>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Use SSH for NETCONF connections.

Contents

<port>—(Optional) TCP port listening for NETCONF/SSH connections. The port reserved by IANA for NETCONF/SSH is 830, older versions of SRC used 32000

Value—Integer in the range 1–65535

Default— 32000

Required Privilege Level

system

< ssh > (configuration/system/services)

Usage

```
<configuration>
  <system>
    <services>
      <ssh>
        <root-login>root-login-choice</root-login>
        <protocol-version>protocol-version-choice</protocol-version>
      </ssh>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Allow SSH requests from remote systems to the C Series Controller.

Contents

<root-login>—(Optional) Control user access through SSH.

Value

- `allow`— Allow users to log in to the C Series Controller as `root` through SSH.(Default)
- `deny`— Disable users from logging in to the C Series Controller as `root` through SSH.
- `deny-password`— Allow users to log in to the C Series Controller as `root` through SSH when the authentication method (for example, RSA authentication) does not require a password.

<protocol-version>—(Optional) SSH protocol versions accepted.

Value

- `v1`—SSH version 1
- `v2`—SSH version 2 (Default)

Required Privilege Level

system

< http > (configuration/system/services/web-management)

Usage

```
<configuration>
  <system>
    <services>
      <web-management>
        <http>
          <port>port</port>
          <interface>interface</interface>
        </http>
      </web-management>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Use HTTP without encryption.

Contents

<port>—(Optional) TCP port to be used for incoming connections to the C-Web interface.

Value—Integer in the range 1-65535

Default—80

<interface>—(Optional) (Multivalue) List of network interfaces to accept incoming connections. If you do not specify any interfaces, the software accepts connections from all interfaces.

Value— Name of external interface, such as eth0.

Required Privilege Level

system system

< https > (configuration/system/services/web-management)

Usage

```
<configuration>
  <system>
    <services>
      <web-management>
        <https>
          <port>port</port>
          <interface>interface</interface>
          <local-certificate>local-certificate</local-certificate>
        </https>
      </web-management>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Use secure HTTP with encryption.

Contents

<port>—(Optional) TCP port to be used for incoming connections to the C-Web interface.

Value—Integer in the range 1-65535

Default—443

<interface>—(Optional) (Multivalue) List of network interfaces to accept incoming connections. If you do not specify any interfaces, the software accepts connections from all interfaces.

Value— Name of external interface, such as eth0.

<local-certificate>—(Optional) Name of the security certificate (in X.509 format) on the local system. This certificate is used to secure connections from external Web browsers to the C-Web interface.

Value— Name of digital security certificate.

Required Privilege Level

system system

< logger > (configuration/system/services/web-management)

Usage

```
<configuration>
  <system>
    <services>
      <web-management>
        <logger>
          <name>name</name> <!-- identifier -->
        </logger>
      </web-management>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a logging component for the C-Web interface. Logging can be to a file or to the system logging utility.

Contents

<name>— Name of a logging component.

Value—Text

Required Privilege Level

system system

< file > (configuration/system/services/web-management/logger/logger)

Usage

```
<configuration>
  <system>
    <services>
      <web-management>
        <logger>
          <logger>
            <file>
              <filter>filter</filter>
              <filename>filename</filename>
              <rollover-filename>rollover-filename</rollover-filename>
              <maximum-file-size>maximum-file-size</maximum-file-size>
            </file>
          </logger>
        </logger>
      </web-management>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

system system

< syslog > (configuration/system/services/web-management/logger/logger)

Usage

```
<configuration>
  <system>
    <services>
      <web-management>
        <logger>
          <logger>
            <syslog>
              <filter>filter</filter>
              <host>host</host>
              <port>port</port>
              <facility>facility</facility>
              <format>format</format>
            </syslog>
          </logger>
        </logger>
      </web-management>
    </services>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system system

< dsa-private > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <dsa-private>
        <key>key</key>
      </dsa-private>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 2 DSA private file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< dsa-public > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <dsa-public>
        <key>key</key>
      </dsa-public>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 2 DSA public file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< rsa1-private > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <rsa1-private>
        <key>key</key>
      </rsa1-private>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 1 RSA private file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< rsa1-public > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <rsa1-public>
        <key>key</key>
      </rsa1-public>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 1 RSA public file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< rsa2-private > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <rsa2-private>
        <key>key</key>
      </rsa2-private>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 2 RSA private file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< rsa2-public > (configuration/system/ssh-host-keys)

Usage

```
<configuration>
  <system>
    <ssh-host-keys>
      <rsa2-public>
        <key>key</key>
      </rsa2-public>
    </ssh-host-keys>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

SSH protocol version 2 RSA public file and key.

Contents

<key> — The key value.

Required Privilege Level

system

< static-host-mapping > (configuration/system)

Usage

```
<configuration>
  <system>
    <static-host-mapping>
      <host-name>host-name</host-name> <!-- identifier -->
      <inet>inet</inet>
      <alias>alias</alias>
    </static-host-mapping>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure static mapping to resolve hostnames.

Contents

<host-name> — Fully-qualified name of the system.

Value—Text

<inet>—(Optional) (Multivalue) IP addresses to which you want to map the hostname.

Value—IP address

<alias>—(Optional) (Multivalue) Aliases for the hostname.

Value—Text

Required Privilege Level

system system

< file > (configuration/system/syslog)

Usage

```
<configuration>
  <system>
    <syslog>
      <file>
        <name>name</name> <!-- identifier -->
      </file>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify a file to store information that has been collected.

Contents

<name>— Name of the file in which to log system messages.

Value— filename

Required Privilege Level

system

< contents > (configuration/system/syslog/file)

Usage

```
<configuration>
  <system>
    <syslog>
      <file>
        <contents>
          <name>name-choice</name> <!-- identifier -->
          <any/>
          <emergency/>
          <alert/>
          <critical/>
          <error/>
          <warning/>
          <notice/>
          <info/>
          <none/>
        </contents>
      </file>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the message groups and severity level of messages to be forwarded to a specified file, host, or user.

Contents

Group of messages that are either generated by the same software process or concern a similar condition or activity (such as authentication attempts). A message group is referred to as a facility.

Value

- any— Messages from all facilities.
- authorization— Authentication and authorization attempts.
- daemon— Actions performed or errors encountered by various system processes.
- ftp— Actions performed or errors encountered by an FTP process.
- kernel— Actions performed or errors encountered by the kernel.
- user— Actions performed or errors encountered by various user processes.
- local7— Actions performed or errors encountered by different SRC processes.

Severity level

Value

- any— Messages for all severity levels.
- emergency— System panic or other condition that causes the system to stop functioning.
- alert— Conditions that require immediate correction.
- critical— Critical conditions, such as hard drive errors.
- error

— Error conditions that generally have less serious consequences than errors in the emergency, alert, and critical levels.

- `warning`— Conditions that warrant monitoring.
- `notice`— Conditions that are not errors but might warrant special handling.
- `info`— Events or nonerror conditions of interest.
- `none`— Messages are not generated for any condition.

Required Privilege Level

system

< host > (configuration/system/syslog)

Usage

```
<configuration>
  <system>
    <syslog>
      <host>
        <name>name</name> <!-- identifier -->
      </host>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the IP address or hostname of the remote host to receive system log messages. The remote machine must be running a standard syslogd utility.

Contents

<name>— IP address or hostname of a remote system to receive system log messages. The remote machine must be running a standard syslogd utility.

Value— IP address or hostame

Required Privilege Level

system

< contents > (configuration/system/syslog/host)

Usage

```
<configuration>
  <system>
    <syslog>
      <host>
        <contents>
          <name>name-choice</name> <!-- identifier -->
          <any/>
          <emergency/>
          <alert/>
          <critical/>
          <error/>
          <warning/>
          <notice/>
          <info/>
          <none/>
        </contents>
      </host>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the message groups and severity level of messages to be forwarded to a specified file, host, or user.

Contents

Group of messages that are either generated by the same software process or concern a similar condition or activity (such as authentication attempts). A message group is referred to as a facility.

Value

- any— Messages from all facilities.
- authorization— Authentication and authorization attempts.
- daemon— Actions performed or errors encountered by various system processes.
- ftp— Actions performed or errors encountered by an FTP process.
- kernel— Actions performed or errors encountered by the kernel.
- user— Actions performed or errors encountered by various user processes.
- local7— Actions performed or errors encountered by different SRC processes.

Severity level

Value

- any— Messages for all severity levels.
- emergency— System panic or other condition that causes the system to stop functioning.
- alert— Conditions that require immediate correction.
- critical— Critical conditions, such as hard drive errors.
- error

- Error conditions that generally have less serious consequences than errors in the emergency, alert, and critical levels.
- `warning`— Conditions that warrant monitoring.
- `notice`— Conditions that are not errors but might warrant special handling.
- `info`— Events or nonerror conditions of interest.
- `none`— Messages are not generated for any condition.

Required Privilege Level

system

< user > (configuration/system/syslog)

Usage

```
<configuration>
  <system>
    <syslog>
      <user>
        <name>name</name> <!-- identifier -->
      </user>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Notify a specified user by means of a terminal session.

Contents

<name>— Name of user to receive messages.

Value— Username

Required Privilege Level

system

< contents > (configuration/system/syslog/user)

Usage

```
<configuration>
  <system>
    <syslog>
      <user>
        <contents>
          <name>name-choice</name> <!-- identifier -->
          <any/>
          <emergency/>
          <alert/>
          <critical/>
          <error/>
          <warning/>
          <notice/>
          <info/>
          <none/>
        </contents>
      </user>
    </syslog>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the message groups and severity level of messages to be forwarded to a specified file, host, or user.

Contents

Group of messages that are either generated by the same software process or concern a similar condition or activity (such as authentication attempts). A message group is referred to as a facility.

Value

- any— Messages from all facilities.
- authorization— Authentication and authorization attempts.
- daemon— Actions performed or errors encountered by various system processes.
- ftp— Actions performed or errors encountered by an FTP process.
- kernel— Actions performed or errors encountered by the kernel.
- user— Actions performed or errors encountered by various user processes.
- local7— Actions performed or errors encountered by different SRC processes.

Severity level

Value

- any— Messages for all severity levels.
- emergency— System panic or other condition that causes the system to stop functioning.
- alert— Conditions that require immediate correction.
- critical— Critical conditions, such as hard drive errors.
- error

- Error conditions that generally have less serious consequences than errors in the emergency, alert, and critical levels.
- `warning`— Conditions that warrant monitoring.
- `notice`— Conditions that are not errors but might warrant special handling.
- `info`— Events or nonerror conditions of interest.
- `none`— Messages are not generated for any condition.

Required Privilege Level

system

< tacplus-server > (configuration/system)

Usage

```
<configuration>
  <system>
    <tacplus-server>
      <address>address</address>
      <secret>secret</secret>
      <source-address>source-address</source-address>
    </tacplus-server>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure TACACS+ authentication.

To configure TACACS+ for authentication, also include `tacplus` in the `authentication-order` option for the `system` statement.

For a user authenticated through TACACS+ to be able to log into the C Series Controller, you must create either a local profile or a remote profile to define common access privileges for all users authenticated via RADIUS or TACACS+. For information about creating user profiles, see the `system login user` statement.

Contents

`<address>`—(Multivalue) Address of TACACS+ authentication server.

Value— IP address

Default— No value

`<secret>`— Password to use with the RADIUS or TACACS+ server. The secret password used by the C Series Controller must match that used by the server.

Value—Secret text

Default— No value

`<source-address>`—(Optional) The address of this server used when connecting to the TACACS+ server.

Value—Text

Default— No value

Required Privilege Level

system

Juniper Networks Database Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Juniper Networks Database. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
system ldap server	<u><server></u>
system ldap server community	<u><community></u>
system ldap server security	<u><security></u>

< server > (configuration/system/ldap)

Usage

```
<configuration>
  <system>
    <ldap>
      <server>
        <stand-alone/>
      </server>
    </ldap>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Enable the Juniper Networks database to run in standalone mode. This database contains the SRC configuration information.

Typically, you run the database in standalone mode only in testing environments. If you want to run the Juniper Networks database in a community (or group) of databases, use the `system ldap server community` statement.

Enable the Juniper Networks database in either standalone or community mode; a Juniper Networks database can run either standalone or in a community, but not both. If you do not enable the database, it will not run.

Contents

Database mode for the Juniper Networks database.

Value

- `stand-alone` — Standalone mode for the Juniper Networks database.

Required Privilege Level

system

< community > (configuration/system/ldap/server)

Usage

```
<configuration>
  <system>
    <ldap>
      <server>
        <community>
          <role>role-choice</role>
          <primary-neighbors>primary-neighbors</primary-neighbors>
          <primary-connection-type>primary-connection-type-choice</primary-connection-type>
          <secondary-neighbors>secondary-neighbors</secondary-neighbors>
          <secondary-connection-type>secondary-connection-type-choice</secondary-connection-type>
        </community>
      </server>
    </ldap>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Enable the Juniper Networks database to operate as part of a community (group) of other Juniper Networks databases. The Juniper Networks database contains the SRC configuration information.

If you want to run the Juniper Networks database standalone, use the `stand-alone` option at the `system ldap server` hierarchy level.

Enable the Juniper Networks database in either standalone or community mode; a Juniper Networks database can run either standalone or in a community, but not both. If you do not enable the database, it will not run.

Contents

`<role>`— Role of the database. The role determines the read and write access to the database.

Value

- `primary`— A database that provides read and write access to client applications. It replicates its data and distributes changes to any Juniper Networks databases configured as neighbors.
- `secondary`— A database that provides read access to client applications. If client applications try to write data to this database, the database refers the client to a primary database.

Default— No value

`<primary-neighbors>`—(Optional) (Multivalue) A database that propagates changes that it receives to other Juniper Networks databases configured as neighbors. A primary neighbor must be assigned a primary role.

Value— Primary neighbor identified by one of the following:

- IP address; for example, 192.2.4.0

- Hostname that the C Series Controller can resolve through the domain name system; for example, myhostname1
- Fully qualified hostname; for example, myhostname1.mycompany.com

Default— No value

`<primary-connection-type>`—(Optional) Connection type to primary neighbors. The connection type determines if replication is clear or secure.

Value

- `clear`— The data replication amongst all primary neighbors is done over LDAP.
- `secure`— The data replication amongst all primary neighbors is done over LDAPS.

Default— No value

`<secondary-neighbors>`—(Optional) (Multivalue) A database that only receives database changes. A secondary neighbor must be assigned a secondary role.

Value— Secondary neighbor identified by one of the following:

- IP address; for example, 192.2.4.0
- Hostname that the C Series Controller can resolve through the domain name system; for example, myhostname1
- Fully qualified hostname; for example, myhostname1.mycompany.com

Default— No value

`<secondary-connection-type>`—(Optional) Connection type to secondary neighbors. The connection type determines if replication is clear or secure.

Value

- `clear`— The data replication amongst all secondary neighbors is done over LDAP.
- `secure`— The data replication amongst all secondary neighbors is done over LDAPS.

Default— No value

Required Privilege Level

system

< security > (configuration/system/ldap/server)

Usage

```
<configuration>
  <system>
    <ldap>
      <server>
        <security>
          <enable/>
          <strict/>
        </security>
      </server>
    </ldap>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

You can secure connections to a Juniper Networks database by:

- Allowing only Secure Lightweight Directory Access Protocol (LDAPS) connections from remote systems.
- Allowing LDAP or LDAPS connections. In this case, remote SRC components can connect through LDAP or LDAPS.

To allow access to the Juniper Networks database only through LDAP, use the `delete security` command at the `system ldap server` hierarchy level.

Contents

Secure connections to the Juniper Networks database.

Value

- `enable`— Use LDAP and LDAPS connections to Juniper Networks database.
- `strict`— Use LDAPS to secure remote connections to the Juniper Networks database. Local SRC components have LDAP access to the database.

Required Privilege Level

system

Service Activation Engine (SAE) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Service Activation Engine (SAE). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared auth-cache cached-dhcp-profile	<u>< cached-dhcp-profile ></u>
shared classification-script dhcp classifier	<u>< classifier ></u>
shared classification-script dhcp classifier dhcp-classifier rule	<u>< rule ></u>
shared classification-script dhcp classifier dhcp-classifier rule condition	<u>< condition ></u>
shared classification-script dhcp classifier dhcp-classifier rule script	<u>< script ></u>
shared classification-script interface classifier	<u>< classifier ></u>
shared classification-script interface classifier interface-classifier rule	<u>< rule ></u>
shared classification-script interface classifier interface-classifier rule condition	<u>< condition ></u>
shared classification-script interface classifier interface-classifier rule script	<u>< script ></u>
shared classification-script subscriber classifier	<u>< classifier ></u>
shared classification-script subscriber classifier subscriber-classifier rule	<u>< rule ></u>
shared classification-script subscriber classifier subscriber-classifier rule condition	<u>< condition ></u>
shared classification-script subscriber classifier subscriber-classifier rule script	<u>< script ></u>
shared network application-manager-group	<u>< application-manager-group ></u>
shared network device	<u>< device ></u>
shared network device interface-classifier rule	<u>< rule ></u>

shared network device interface-classifier rule condition	<u>< condition ></u>
shared network device interface-classifier rule script	<u>< script ></u>
shared network device virtual-router	<u>< virtual-router ></u>
shared network policy-decision-point	<u>< policy-decision-point ></u>
shared sae configuration	<u>< configuration ></u>
shared sae configuration aggregate-services	<u>< aggregate-services ></u>
shared sae configuration driver	<u>< driver ></u>
shared sae configuration driver aaa	<u>< aaa ></u>
shared sae configuration driver aaa session-store	<u>< session-store ></u>
shared sae configuration driver junos	<u>< junos ></u>
shared sae configuration driver junos configuration-checking	<u>< configuration-checking ></u>
shared sae configuration driver junos lsp-tracking	<u>< lsp-tracking ></u>
shared sae configuration driver junos security	<u>< security ></u>
shared sae configuration driver junos session-store	<u>< session-store ></u>
shared sae configuration driver junos-dmi	<u>< junos-dmi ></u>
shared sae configuration driver junos-dmi session-store	<u>< session-store ></u>
shared sae configuration driver junos-ise	<u>< junos-ise ></u>
shared sae configuration driver junos-ise session-store	<u>< session-store ></u>
shared sae configuration driver junos-ptsp	<u>< junos-ptsp ></u>
shared sae configuration driver junos-ptsp session-store	<u>< session-store ></u>
shared sae configuration driver junose	<u>< junose ></u>
shared sae configuration driver junose session-store	<u>< session-store ></u>
shared sae configuration driver pcmm	<u>< pcmm ></u>
shared sae configuration driver pcmm cmts-specific-rks-plugins	<u>< cmts-specific-rks-plugins ></u>
shared sae configuration driver pcmm session-store	<u>< session-store ></u>
shared sae configuration driver scripts	<u>< scripts ></u>
shared sae configuration driver session-store	<u>< session-store ></u>

shared sae configuration driver simulated	<u>< simulated ></u>
shared sae configuration driver simulated session-store	<u>< session-store ></u>
shared sae configuration driver snmp	<u>< snmp ></u>
shared sae configuration driver third-party	<u>< third-party ></u>
shared sae configuration driver third-party session-store	<u>< session-store ></u>
shared sae configuration dynamic-radius-server	<u>< dynamic-radius-server ></u>
shared sae configuration external-interface-features	<u>< external-interface-features ></u>
shared sae configuration external-interface-features CommunityManager	<u>< CommunityManager ></u>
shared sae configuration external-interface-features EventAPI	<u>< EventAPI ></u>
shared sae configuration external-interface-features JavaScriptProcessor	<u>< JavaScriptProcessor ></u>
shared sae configuration external-interface-features PythonScriptProcessor	<u>< PythonScriptProcessor ></u>
shared sae configuration external-interface-features SAEAccess	<u>< SAEAccess ></u>
shared sae configuration external-interface-features SAEFeature	<u>< SAEFeature ></u>
shared sae configuration external-interface-features SAEFeature properties	<u>< properties ></u>
shared sae configuration file-accounting-template	<u>< file-accounting-template ></u>
shared sae configuration file-accounting-template attributes	<u>< attributes ></u>
shared sae configuration global-radius-udp-port	<u>< global-radius-udp-port ></u>
shared sae configuration idle-timeout	<u>< idle-timeout ></u>
shared sae configuration interim-accounting	<u>< interim-accounting ></u>
shared sae configuration interim-session-job-manager	<u>< interim-session-job-manager ></u>
shared sae configuration ldap	<u>< ldap ></u>
shared sae configuration ldap directory-eventing	<u>< directory-eventing ></u>

shared sae configuration ldap persistent-login-cache	<u>< persistent-login-cache ></u>
shared sae configuration ldap policy-data	<u>< policy-data ></u>
shared sae configuration ldap service-data	<u>< service-data ></u>
shared sae configuration ldap subscriber-data	<u>< subscriber-data ></u>
shared sae configuration license-manager client	<u>< client ></u>
shared sae configuration license-manager directory-access	<u>< directory-access ></u>
shared sae configuration logger	<u>< logger ></u>
shared sae configuration logger file	<u>< file ></u>
shared sae configuration logger syslog	<u>< syslog ></u>
shared sae configuration login-registration	<u>< login-registration ></u>
shared sae configuration nic-proxy-configuration	<u>< nic-proxy-configuration ></u>
shared sae configuration nic-proxy-configuration cache	<u>< cache ></u>
shared sae configuration nic-proxy-configuration nic-host-selection	<u>< nic-host-selection ></u>
shared sae configuration nic-proxy-configuration nic-host-selection blacklisting	<u>< blacklisting ></u>
shared sae configuration nic-proxy-configuration resolution	<u>< resolution ></u>
shared sae configuration nic-proxy-configuration test-nic-bindings	<u>< test-nic-bindings ></u>
shared sae configuration nic-proxy-configuration test-nic-bindings key-values	<u>< key-values ></u>
shared sae configuration plug-ins	<u>< plug-ins ></u>
shared sae configuration plug-ins event-publishers	<u>< event-publishers ></u>
shared sae configuration plug-ins event-publishers device-type-authentication	<u>< device-type-authentication ></u>
shared sae configuration plug-ins manager	<u>< manager ></u>
shared sae configuration plug-ins name	<u>< name ></u>
shared sae configuration plug-ins name acp-interface-listener	<u>< acp-interface-listener ></u>
shared sae configuration plug-ins name custom-radius-accounting	<u>< custom-radius-accounting ></u>

shared sae configuration plug-ins name custom-radius-accounting peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name custom-radius-authentication	<u>< custom-radius-authentication ></u>
shared sae configuration plug-ins name custom-radius-authentication peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name ejb-adaptor	<u>< ejb-adaptor ></u>
shared sae configuration plug-ins name external	<u>< external ></u>
shared sae configuration plug-ins name file-accounting	<u>< file-accounting ></u>
shared sae configuration plug-ins name flex-radius-accounting	<u>< flex-radius-accounting ></u>
shared sae configuration plug-ins name flex-radius-accounting peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition	<u>< radius-packet-definition ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition attributes-with-type	<u>< attributes-with-type ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition attributes-with-type type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific	<u>< vendor-specific ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific type attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific-26	<u>< vendor-specific-26 ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific-26 attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-accounting	

radius-packet-definition vendor-specific-26 type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-accounting radius-packet-definition vendor-specific-26 type attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-authentication	<u>< flex-radius-authentication ></u>
shared sae configuration plug-ins name flex-radius-authentication peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition	<u>< radius-packet-definition ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition attributes-with-type	<u>< attributes-with-type ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition attributes-with-type type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific	<u>< vendor-specific ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific type attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific-26	<u>< vendor-specific-26 ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific-26 attributes	<u>< attributes ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific-26 type	<u>< type ></u>
shared sae configuration plug-ins name flex-radius-authentication radius-packet-definition vendor-specific-26 type	<u>< attributes ></u>

attributes	
shared sae configuration plug-ins name interface-subscriber-limit	<u>< interface-subscriber-limit ></u>
shared sae configuration plug-ins name internal	<u>< internal ></u>
shared sae configuration plug-ins name internal properties	<u>< properties ></u>
shared sae configuration plug-ins name jms-adaptor	<u>< jms-adaptor ></u>
shared sae configuration plug-ins name ldap-authentication	<u>< ldap-authentication ></u>
shared sae configuration plug-ins name pcmm-rks	<u>< pcmm-rks ></u>
shared sae configuration plug-ins name pcmm-rks peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name qos-profile-tracking	<u>< qos-profile-tracking ></u>
shared sae configuration plug-ins name radius-accounting	<u>< radius-accounting ></u>
shared sae configuration plug-ins name radius-accounting peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name radius-authentication	<u>< radius-authentication ></u>
shared sae configuration plug-ins name radius-authentication peer-group	<u>< peer-group ></u>
shared sae configuration plug-ins name schedule-authorization	<u>< schedule-authorization ></u>
shared sae configuration plug-ins name ssr-reader	<u>< ssr-reader ></u>
shared sae configuration plug-ins name ssr-writer	<u>< ssr-writer ></u>
shared sae configuration plug-ins name ssr-writer plugin-attributes	<u>< plugin-attributes ></u>
shared sae configuration plug-ins state-synchronization	<u>< state-synchronization ></u>
shared sae configuration policy-management-configuration	<u>< policy-management-configuration ></u>
shared sae configuration radius-packet-template	<u>< radius-packet-template ></u>
shared sae configuration radius-packet-template radius-attributes	<u>< radius-attributes ></u>
shared sae configuration radius-packet-template radius-attributes attributes	<u>< attributes ></u>
shared sae configuration radius-packet-template radius-	

attributes attributes-with-type	<u>< attributes-with-type ></u>
shared sae configuration radius-packet-template radius-attributes attributes-with-type type	<u>< type ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific	<u>< vendor-specific ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific attributes	<u>< attributes ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific type	<u>< type ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific type attributes	<u>< attributes ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific-26	<u>< vendor-specific-26 ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific-26 attributes	<u>< attributes ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific-26 type	<u>< type ></u>
shared sae configuration radius-packet-template radius-attributes vendor-specific-26 type attributes	<u>< attributes ></u>
shared sae configuration script-extension	<u>< script-extension ></u>
shared sae configuration service-activation	<u>< service-activation ></u>
shared sae configuration service-schedule	<u>< service-schedule ></u>
shared sae configuration session-job-manager	<u>< session-job-manager ></u>
shared sae configuration subscriber-sessions	<u>< subscriber-sessions ></u>
shared sae configuration time-based-policies	<u>< time-based-policies ></u>
shared sae configuration timeout-session-job-manager	<u>< timeout-session-job-manager ></u>
shared sae dhcp-classifier rule	<u>< rule ></u>
shared sae dhcp-classifier rule condition	<u>< condition ></u>
shared sae dhcp-classifier rule script	<u>< script ></u>
shared sae group	<u>< group ></u>
shared sae subscriber-classifier rule	<u>< rule ></u>

shared sae subscriber-classifier rule condition	<u>< condition ></u>
shared sae subscriber-classifier rule script	<u>< script ></u>
slot sae	<u>< sae ></u>
slot sae initial	<u>< initial ></u>
slot sae initial directory-connection	<u>< directory-connection ></u>
slot sae initial directory-eventing	<u>< directory-eventing ></u>
slot sae java-orb object-adapter	<u>< object-adapter ></u>
slot sae radius	<u>< radius ></u>

< cached-dhcp-profile > (configuration/shared/auth-cache)

Usage

```
<configuration>
  <shared>
    <auth-cache>
      <cached-dhcp-profile>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <pool-name>pool-name</pool-name>
        <ip-address>ip-address</ip-address>
        <dhcp-options>dhcp-options</dhcp-options>
        <boot-server-name>boot-server-name</boot-server-name>
        <boot-file-name>boot-file-name</boot-file-name>
        <virtual-router>virtual-router</virtual-router>
        <local-interface>local-interface</local-interface>
        <lease-time>lease-time</lease-time>
        <user-name>user-name</user-name>
        <service-bundle>service-bundle</service-bundle>
        <radius-class>radius-class</radius-class>
      </cached-dhcp-profile>
    </auth-cache>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a cached DHCP profile.

Contents

<name>— Name of a cached DHCP profile.

Value— String

<description>—(Optional) Description of the DHCP client device.

Value— String

Default— No value

<pool-name>—(Optional) Name of the IP address pool on the JUNOS router from which a DHCP address is selected.

Value— String

Default— No value

<ip-address>—(Optional) Fixed IP address that is offered to the DHCP client if the client is part of a network in the configured DHCP pool.

Value— IP address

Default— No value

`<dhcp-options>`—(Optional) Defines DHCP options that are used to configure DHCP clients.

Value— Define DHCP options in the format: option = value [,value...].

where option is the DHCP option name or number (see the customer documentation for a list of supported DHCP options) and values are entered based on the type of option:

- int32, int16, int8—Decimal or hex prefixed by 0x
- string—Optionally surrounded by double quotes
- ip-address—Dotted decimal
- data-string—Sequence of hex-encoded bytes separated by a : (colon) or a string surrounded by double quotes

Separate multiple options by line breaks.

Value is a string containing one or more options defined as 'name = value'. Multiple options are separated by line breaks.

To include nonstandard options in a DHCP profile, use the name option-*nnn*, where *nnn* is the option number, and the value is of type data-string; that is, either a string surrounded in double quotes, or a sequence of hex-encoded bytes, separated by a colon (:).

Default— No value

`<boot-server-name>`—(Optional) Name of the server used to boot the DHCP client.

Value— String, length < 64

Default— No value

`<boot-file-name>`—(Optional) Name of a boot file used to boot the DHCP client.

Value— String, length < 128

Default— No value

`<virtual-router>`—(Optional) Name of the virtual router that holds the IP address pool.

Value— Name of the virtual router in the format vname@hostname. An * (asterisk) means that the values for the virtual router are ignored when the cached profile is used. Use an * if you do not know the virtual router to which the subscriber will connect.

Default— No value

`<local-interface>`—(Optional) Name of the JUNOSe router interface that will receive the DHCP client device's request for an IP address.

Value— Name of the virtual router in the format `vrname@hostname`. An * (asterisk) means that the values for local interface are ignored when the cached profile is used. Use an * if you do not know the interface to which the subscriber will connect or if you want to allow the subscriber to connect through multiple interfaces.

Default— No value

`<lease-time>`—(Optional) Length of time the supplied IP address is valid. This parameter is not currently implemented on the JUNOSe router. The DHCP lease time that the SAE sends to the JUNOSe router is ignored.

Value— Number of seconds

Default— No value

`<user-name>`—(Optional) Username of the DHCP subscriber without the domain name.

Value— String that specifies the information to the left of the @ character in `userName@domainName`.

Default— No value

`<service-bundle>`—(Optional) Vendor-specific RADIUS attribute that specifies the SRC service bundle to use.

Value— String

Default— No value

`<radius-class>`—(Optional) RADIUS attribute class.

Value— String

Default— No value

Required Privilege Level

system

< classifier > (configuration/shared/classification-script/dhcp)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <dhcp>
        <classifier>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </classifier>
      </dhcp>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber classifier. For more information about subscriber classifiers, see the *SRC PE Subscribers and Subscription Guide*.

Contents

<name>— Name of the classification script

Value— Text

<description>—(Optional) Description of the classification script.

Value— Text

Default— No value

Required Privilege Level

system

< rule > (configuration/shared/classification-script/dhcp/classifier/dhcp-classifier)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <dhcp>
        <classifier>
          <dhcp-classifier>
            <rule>
              <name>name</name> <!-- identifier -->
              <target>target</target>
            </rule>
          </dhcp-classifier>
        </classifier>
      </dhcp>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify a script for a rule in a classification script. Classification scripts are organized into rules. Each rule has a target and one or more match conditions.

Contents

<name>— Rule in a classification script

Value—Text

<target>—(Optional) Result of the classification script that is returned to the SAE.

Value— The result depends on the type of classification script:

- Subscriber classification script—An LDAP query that uniquely identifies a subscriber entry in the directory.
- DHCP classification script—DHCP profile.

Default— Not applicable

Required Privilege Level

system

< condition >

(configuration/shared/classification-script/dhcp/classifier/dhcp-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <dhcp>
        <classifier>
          <dhcp-classifier>
            <rule>
              <condition>
                <name>name</name> <!-- identifier -->
              </condition>
            </rule>
          </dhcp-classifier>
        </classifier>
      </dhcp>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI in SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/classification-script/dhcp/classifier/dhcp-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <dhcp>
        <classifier>
          <dhcp-classifier>
            <rule>
              <script>
                <script-value>script-value</script-value>
              </script>
            </rule>
          </dhcp-classifier>
        </classifier>
      </dhcp>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a classification script rule to use a script target.

Contents

<script-value>—(Optional) Script target. The content of the script rule is interpreted when the classifier is initially loaded. The script rule can contain definitions of custom functions, which can be called during the matching process. Because you can insert arbitrary code into a script, you can use classification scripts to perform arbitrary tasks. Because script targets use asterisks, you cannot use asterisks in other types of targets.

Value— Script enclosed in quotation marks

Default— No value

Required Privilege Level

system

< classifier > (configuration/shared/classification-script/interface)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <interface>
        <classifier>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </classifier>
      </interface>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an interface classifier. For more information about subscriber classifiers, see the *SRC PE Subscribers and Subscription Guide*.

Contents

<name>— Name of the classification script

Value— Text

<description>—(Optional) Description of the classification script.

Value— Text

Default— No value

Required Privilege Level

system

< rule > (configuration/shared/classification-script/interface/classifier/interface-classifier)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <interface>
        <classifier>
          <interface-classifier>
            <rule>
              <name>name</name> <!-- identifier -->
              <target>target</target>
            </rule>
          </interface-classifier>
        </classifier>
      </interface>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an interface classification rule

Contents

<name>— Name of the rule in the interface classification script

Value— Text

<target>—(Optional) Result of the classification script that gets returned to the SAE.

Value— Path to a policy group. For example, /sample/junose/DHCP.

Default— No value

Required Privilege Level

system

< condition >

(configuration/shared/classification-script/interface/classifier/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <interface>
        <classifier>
          <interface-classifier>
            <rule>
              <condition>
                <name>name</name> <!-- identifier -->
              </condition>
            </rule>
          </interface-classifier>
        </classifier>
      </interface>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For more information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/classification-script/interface/classifier/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <interface>
        <classifier>
          <interface-classifier>
            <rule>
              <script>
                <script-value>script-value</script-value>
              </script>
            </rule>
          </interface-classifier>
        </classifier>
      </interface>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a classification script rule to use a script target.

Contents

`<script-value>`—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

Required Privilege Level

system

< classifier > (configuration/shared/classification-script/subscriber)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <subscriber>
        <classifier>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </classifier>
      </subscriber>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber classifier. For more information about subscriber classifiers, see the *SRC PE Subscribers and Subscription Guide*.

Contents

<name>— Name of the classification script

Value— Text

<description>—(Optional) Description of the classification script.

Value— Text

Default— No value

Required Privilege Level

system

< rule > (configuration/shared/classification-script/subscriber/classifier/subscriber-classifier)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <subscriber>
        <classifier>
          <subscriber-classifier>
            <rule>
              <name>name</name> <!-- identifier -->
              <target>target</target>
            </rule>
          </subscriber-classifier>
        </classifier>
      </subscriber>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify a script for a rule in a classification script. Classification scripts are organized into rules. Each rule has a target and one or more match conditions.

Contents

<name>— Rule in a classification script

Value—Text

<target>—(Optional) Result of the classification script that is returned to the SAE.

Value— The result depends on the type of classification script:

- Subscriber classification script—An LDAP query that uniquely identifies a subscriber entry in the directory.
- DHCP classification script—DHCP profile.

Default— Not applicable

Required Privilege Level

system

< condition >

(configuration/shared/classification-script/subscriber/classifier/subscriber-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <subscriber>
        <classifier>
          <subscriber-classifier>
            <rule>
              <condition>
                <name>name</name> <!-- identifier -->
              </condition>
            </rule>
          </subscriber-classifier>
        </classifier>
      </subscriber>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/classification-script/subscriber/classifier/subscriber-classifier/rule)

Usage

```
<configuration>
  <shared>
    <classification-script>
      <subscriber>
        <classifier>
          <subscriber-classifier>
            <rule>
              <script>
                <script-value>script-value</script-value>
              </script>
            </rule>
          </subscriber-classifier>
        </classifier>
      </subscriber>
    </classification-script>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a classification script rule to use a script target.

Contents

<script-value>—(Optional) Script target. The content of the script rule is interpreted when the classifier is initially loaded. The script rule can contain definitions of custom functions, which can be called during the matching process. Because you can insert arbitrary code into a script, you can use classification scripts to perform arbitrary tasks. Because script targets use asterisks, you cannot use asterisks in other types of targets.

Value— Script enclosed in quotation marks

Default— No value

Required Privilege Level

system

< application-manager-group > (configuration/shared/network)

Usage

```
<configuration>
  <shared>
    <network>
      <application-manager-group>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <application-manager-id>application-manager-id</application-manager-id>
        <connected-sae>connected-sae</connected-sae>
        <pdp-group>pdp-group</pdp-group>
        <local-address-pools>local-address-pools</local-address-pools>
        <managing-sae-ior>managing-sae-ior</managing-sae-ior>
      </application-manager-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure application managers for the Juniper policy server (JPS).

Contents

<name>— Name of application manager group.

Value— Text string

<description>—(Optional) Information about the SAE community.

Value— Text string

Default— No value

<application-manager-id>— Unique identifier within the domain of the service provider for the application manager that handles the service session; used to specify the application manager identifier (AMID) that is included in all messages sent to and from the policy server.

This option is required. The SAE constructs the AMID value by concatenating two fields: Application Manager Tag (this option) and Application Type (this value is obtained from a service during activation).

Value— 2-byte unsigned integer

Default— No value

<connected-sae>—(Multivalued) SAEs that are connected to the specified policy server group (PDP Group). This list becomes the community of SAEs.

This option is required. When you modify a community, wait for passive session stores of the new community members to be updated before you shut down the current active SAE. Otherwise, a failover from the current active SAE to the new member is triggered immediately, and the new member's session store may not have received all data from the active SAE's session store.

Value— IP address or hostname

Default— No value

`<pdp-group>`— Name of the policy server group associated with this SAE community.

Value— Text string

Default— No value

`<local-address-pools>`—(Optional) (Multivalue) List of IP address pools that this PDP group currently manages and stores. You must configure a local address pool if you are using the NIC so that the NIC can resolve the IP-to-SAE mapping.

Value— An address pool is specified by a sequence of zero or more address sets enclosed in parentheses (). An address set can be either a range of addresses or a subnetwork with or without address exclusions.

- Specify a range by entering a start and end address separated by a space and enclosed in square brackets. For example, [10.10.10.5 10.10.10.250] denotes the address set 10.10.10.5 to 10.10.10.250 inclusive.
- Specify a subnet with optional address exclusions in curly brackets. You must include a base address and a mask or prefix length separated by a forward slash. To exclude addresses, follow the forward slash with a comma and a comma-separated list of excluded addresses. For example:
 - {10.20.20.0/24} denotes all addresses that start with 10.20.20
 - {10.21.0.0/255.255.0.0} denotes all addresses that start with 10.21
 - {10.20.30.0/24,10.20.30.0,10.20.30.255} denotes all addresses that start with 10.20.30 except 10.20.30.0 and 10.20.30.255

Default— No value

`<managing-sae-ior>`—(Optional) Common Object Request Broker Architecture (CORBA) reference for the SAE managing this policy server group. The `amIorPublisher` script provides this information when the SAE connects to the policy server. If you do not select this script when configuring initialization scripts, enter a value.

Value— One of the following items:

- The actual CORBA reference for the SAE
- The absolute path to the interoperable object reference (IOR) file
- A corbaloc URL in the form `corbaloc:: <host> :8801/SAE`
 - `<host>` —Name or IP address of the SAE host

The following examples show different CORBA references.

- Absolute path—`/opt/UMC/sae/var/run/sae.ior`
- corbaloc URL—`boston:8801/sae`
- Actual IOR—`IOR:0000000000000002438444C3A736D67742E6A756E697...`

Default— No value

Required Privilege Level

system

< device > (configuration/shared/network)

Usage

```
<configuration>
  <shared>
    <network>
      <device>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <management-address>management-address</management-address>
        <device-type>device-type-choice</device-type>
        <origin-host>origin-host</origin-host>
        <qos-profile>qos-profile</qos-profile>
        <peers>peers</peers>
        <accounting-per-attachment/>
      </device>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a device that the SAE manages.

Contents

<name>— Name of the router or other device that the SAE manages.

Value— Text; must use lowercase characters

<description>—(Optional) Description of the device that the SAE manages.

Value— Text

Default— No value

<management-address>—(Optional) IP address of the device. For networks with JUNOSe routers, the redirect component in redundant mode uses this address to send SNMP set messages to set a static route to the new redirect server after a failover.

Value— IP address

Default— No value

<device-type>— Type of device that you are configuring.

Value

- junose— JUNOSe router
- junos-ise— Intelligent service edge
- junos-ptsp— Packet trigger subscriber policy
- junos— JUNOS routing platform

- `pcmm`— CMTS device
- `third-party`— Third-party device
- `junos-dmi`— JUNOS routing platform through JUNOS Space

Default— No value

`<origin-host>`—(Optional) Devices managed through Diameter are identified through their origin host. If the origin-host is not specified, it defaults to the device name.

Value—Text

`<qos-profile>`—(Optional) (Multivalue) For JUNOSe routers, specifies quality of service (QoS) profiles that are configured on the router.

Value— Single QoS profile or a list of QoS profiles

Default— No value

`<peers>`—(Optional) (Multivalue) Peers.

Value—Text

`<accounting-per-attachment>`—(Optional) This flag is used for JUNOSe devices only. If the attribute `accounting-per-attachment` is set then attachment accounting will be calculated. If the attribute `no-accounting-per-attachment` is set then attachment accounting will be always set to false. If both the attributes `accounting-per-attachment` and `no-accounting-per-attachment` are not set then attachment accounting will be always set to true.

Required Privilege Level

system

< rule >

(configuration/shared/network/device/interface-classifier)

Usage

```
<configuration>
  <shared>
    <network>
      <device>
        <interface-classifier>
          <rule>
            <name>name</name> <!-- identifier -->
            <target>target</target>
          </rule>
        </interface-classifier>
      </device>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an interface classification rule.

Contents

<name>— Name of the rule in the interface classification script.

Value— Text

<target>—(Optional) Result of the classification script that gets returned to the SAE.

Value— Path to a policy group. For example, /sample/junose/DHCP.

Default— No value

Required Privilege Level

system

< condition >

(configuration/shared/network/device/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <network>
      <device>
        <interface-classifier>
          <rule>
            <condition>
              <name>name</name> <!-- identifier -->
            </condition>
          </rule>
        </interface-classifier>
      </device>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For more information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script >

(configuration/shared/network/device/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <network>
      <device>
        <interface-classifier>
          <rule>
            <script>
              <script-value>script-value</script-value>
              <include>include</include>
            </script>
          </rule>
        </interface-classifier>
      </device>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an interface classifier for a network device. For more information about interface classifiers, see the *SRC PE Subscribers and Subscriptions Guide*.

Contents

<script-value>—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

<include>—(Optional) Name of an existing script to include in the script you are configuring.

Value— *script-name*

Default— No value

Required Privilege Level

system

< virtual-router >

(configuration/shared/network/device)

Usage

```
<configuration>
  <shared>
    <network>
      <device>
        <virtual-router>
          <name>name</name> <!-- identifier -->
          <sae-connection>sae-connection</sae-connection>
          <snmp-read-community>snmp-read-community</snmp-read-community>
          <snmp-write-community>snmp-write-community</snmp-write-community>
          <scope>scope</scope>
          <local-address-pools>local-address-pools</local-address-pools>
          <static-address-pools>static-address-pools</static-address-pools>
          <tracking-plug-in>tracking-plug-in</tracking-plug-in>
          <user-tracking-plug-in>user-tracking-plug-in</user-tracking-plug-in>
          <authentication-plug-in>authentication-plug-in</authentication-plug-in>
          <vpn-id>vpn-id-choice</vpn-id>
          <dual-stack-delay>dual-stack-delay</dual-stack-delay>
        </virtual-router>
      </device>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a virtual router object.

Contents

<name>— Name of the virtual router.

Value— One of the following:

- For JUNOS routers, the name of the VR, which is case sensitive, must exactly match the name of the VR configured on the router.
- For JUNOS routing platforms, CMTS devices, and other third-party devices, use the name default

<sae-connection>—(Optional) (Multivalue) IP addresses of the SAEs that can manage this device. This option is required for the SAE to work with the router.

To specify the active SAE and the standby SAE, enter an exclamation point (!) after the hostname or IP address of the SAEs.

Value— IP address or a list of IP addresses

Specify the active SAE and the redundant SAE by entering an exclamation point (!) after the hostname or IP address of the connected SAEs. For example: 10.3.219.10!
10.3.219.20!

Default— No value

`<snmp-read-community>`—(Optional) SNMP community name associated with SNMP read-only operations for this virtual router. Read operations are typically used by router initialization scripts to read information, such as IP address pools, from the router.

Value— Text

Default— No value

`<snmp-write-community>`—(Optional) SNMP community name associated with SNMP write operations for this virtual router. The write community is used only by the redirect server to set a static route.

Value— Text

Default— No value

`<scope>`—(Optional) (Multivalue) The virtual router can be associated with a number of service scopes. The scopes are available for subscribers connected to this virtual router for selecting customized versions of services.

Value— Text

Default— No value

`<local-address-pools>`—(Optional) For JUNOS virtual routers, address of local address pools on the JUNOS virtual router.

- If you do not configure the PoolPublisher router initialization script for a JUNOS router, configure this option for a JUNOS virtual router.
- If you do configure the PoolPublisher router initialization script for a JUNOS router, configure this option if pool data needs to be updated. This data needs to be updated if you change the address pools on a virtual router that is actively being managed by SAE. The reason is that the initialization script is triggered only when the COPS connection is started.

For CMTS devices, you must configure either a local address pool or a static address pool so that the NIC can resolve the IP-to-SAE mapping.

Value— An address pool is specified by a sequence of zero or more address sets enclosed in parentheses (). An address set can be either a range of addresses or a subnetwork with or without address exclusions.

- Specify a range by entering a start and end address separated by a space and enclosed in square brackets. For example, [10.10.10.5 10.10.10.250] denotes the address set 10.10.10.5 to 10.10.10.250 inclusive.
- Specify a subnet with optional address exclusions in curly brackets. You must include a base address and a mask or prefix length separated by a forward slash. To exclude addresses, follow the forward slash with a comma and a comma-separated list of excluded addresses. For example:

- {10.20.20.0/24} denotes all addresses that start with 10.20.20
- {10.21.0.0/255.255.0.0} denotes all addresses that start with 10.21
- {10.20.30.0/24,10.20.30.0,10.20.30.255} denotes all addresses that start with 10.20.30 except 10.20.30.0 and 10.20.30.255

Default— No value

`<static-address-pools>`—(Optional) IP address pools that a JUNOS virtual router manages but does not store on the router because the router is not managing the allocation of these addresses. For CMTS devices, you must configure either a local address pool or a static address pool so that the NIC can resolve the IP-to-SAE mapping.

Value—

Default— No value

`<tracking-plug-in>`—(Optional) (Multivalue) List of plug-ins that are notified of interface events for this virtual router.

Value— Single tracking plug-in or a list of tracking plug-ins

Default— No value

`<user-tracking-plug-in>`—(Optional) (Multivalue) Single tracking plug-in or a list of tracking plug-ins used to track subscriber sessions associated with this virtual router.

Value— Single tracking plug-in or a list of tracking plug-ins

Default— No value

`<authentication-plug-in>`—(Optional) (Multivalue) List of plug-ins that are notified of interface events for this virtual router.

Value— Single authentication plug-in or a list of authentication plug-ins

Default— No value

`<vpn-id>`—(Optional) If the VPN identifier is set to "VRF", then the VRF name reported by the device is used as the VPN identifier for subscriber sessions. Otherwise the VPN identifier is used as configured.

Value

- VRF—Use the VRF name reported by the device.

`<dual-stack-delay>`—(Optional) If configured SAE will wait after receiving a REQ for a new interface

before sending the interface plug-in event and attempting to login a UserSession.

NOTE: configuring this attribute to a value different than 0 will lower the login rate for single-stack interfaces.

Value—Integer in the range 0–10000 ms

Default— 0

Required Privilege Level

system

< policy-decision-point > (configuration/shared/network)

Usage

```
<configuration>
  <shared>
    <network>
      <policy-decision-point>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <pdp-address>pdp-address</pdp-address>
        <pdp-group>pdp-group</pdp-group>
      </policy-decision-point>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configures the policy server as a policy decision point.

Contents

<name>— Name of policy decision point.

Value— Text string

<description>—(Optional) Information about this policy server.

Value— Text string

Default— No value

<pdp-address>— IP address of the policy server. The SAE uses this address to establish a COPS connection with the policy server.

Value— IP address

Default— No value

<pdp-group>— Name of the policy server group.

Value— Text string

Default— No value

Required Privilege Level

system

< configuration > (configuration/shared/sae)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <persistent-login-cache-remove-stale/>
        <substitution-num-engines>substitution-num-engines</substitution-num-engines>
        <substitution-cache-size>substitution-cache-size</substitution-cache-size>
        <compress-session-data/>
        <session-id-old-format/>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<persistent-login-cache-remove-stale>—

Default—true

<substitution-num-engines>—(Optional) Number of Substitution Engines

Value—Integer in the range -2147483648–2147483647

Default—16

<substitution-cache-size>—(Optional) Substitution Engine Cache Size

Value—Integer in the range -2147483648–2147483647

Default—5000

<compress-session-data>—(Optional) Enable or disable compression of the serialized data when saving the state of the SAE. You can use serialized data compression to reduce the size of sessions objects that the SAE sends across the network for the session store feature.

Enabling this option reduces the size of objects, but increases the CPU load on the SAE. We recommend that you do not enable this option because of the increase to the CPU load.

Default— Disabled

<session-id-old-format>—(Optional) Revert to the old style of generating the user session accounting id.

Enabling this attribute will cause the generated user session id to not be suitable for use as a device session id in the session database. We recommend that you do not enable this option because of session database incompatibility

Default— false

Required Privilege Level

system

< aggregate-services > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <aggregate-services>
          <keepalive-time>keepalive-time</keepalive-time>
          <keepalive-retry-time>keepalive-retry-time</keepalive-retry-time>
          <activation-deactivation-time>activation-deactivation-time</activation-deactivation-time>
          <failed-notification-retry-time>failed-notification-retry-time</failed-notification-
retry-time>
          <reactivation-verification-time>reactivation-verification-time</reactivation-
verification-time>
        </aggregate-services>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure timers and intervals associated with monitoring and activating aggregate sessions.

Contents

<keepalive-time>— Interval at which keepalive messages are sent from an aggregate service session and an associated fragment service session.

Value— Number of seconds in the range 1-2147483647

Default— 86400

<keepalive-retry-time>— Time to wait before resending unacknowledged keepalive messages.

Value— Number of seconds in the range 1-2147483647

Default— 900

<activation-deactivation-time>— Time to wait before retrying failed activation or deactivation of the fragment service session.

Value— Number of seconds in the range 1-2147483647

Default— 900

<failed-notification-retry-time>— Length of time to continue sending failure notifications if an aggregate service cannot reach a fragment service, or a fragment service cannot reach an aggregate service during shutdown of the aggregate service.

Value— Number of seconds in the range 1-2147483647

Default— 86400

`<reactivation-verification-time>`— Maximum time (in seconds) to verify fragment reactivation

Value—Integer in the range -2147483648-2147483647

Default—30

Required Privilege Level

system

< driver >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <unauthenticated-subscriber-dn>unauthenticated-subscriber-dn</unauthenticated-subscriber-
dn>
          <virtual-portal-address>virtual-portal-address</virtual-portal-address>
          <mac-cache-expiration>mac-cache-expiration</mac-cache-expiration>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<unauthenticated-subscriber-dn>— Transitional profile for subscribers who are not logged in to the SAE. For example, if a subscriber logs out of the SAE using the API method `Subscriber.logout()`, an unauthenticated subscriber session is created. The unauthenticated subscriber profile must exist and can be subscribed to services available for unauthenticated subscribers. The portal implementation determines whether unauthenticated (anonymous) subscribers can access the portal.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— *uniqueID = unauthenticated,ou = local,retailerName = default,o = Users, <base>*

<virtual-portal-address>—(Optional) IP address that policies use as a substitution to send traffic to a captive portal.

Value— IP address

Default— No value

<mac-cache-expiration>— Amount of time that a subscriber profile remains in the SAE's in-memory cache. Configure this parameter to be greater than the time required for a DHCP subscriber to transition from an unauthenticated IP address to an authenticated IP address or vice versa. The time required for a DHCP subscriber to transition from one IP address to another depends on the lease times configured on the JUNOSE router and the instructions given to the subscriber on the Web portal, such as reboot your PC now.

Value— Number of seconds in the range 0–2147483647

Default— 1800

Required Privilege Level

system

< aaa >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <aaa>
            <sae-community-manager>sae-community-manager</sae-community-manager>
            <transient-session-timeout>transient-session-timeout</transient-session-timeout>
            <max-update-interval>max-update-interval</max-update-interval>
            <update-grace-period>update-grace-period</update-grace-period>
            <resume-unrecovered/>
            <keep-alive-timeout>keep-alive-timeout</keep-alive-timeout>
            <registry-retry-interval>registry-retry-interval</registry-retry-interval>
            <reply-timeout>reply-timeout</reply-timeout>
            <sequential-message-timeout>sequential-message-timeout</sequential-message-timeout>
            <thread-pool-size>thread-pool-size</thread-pool-size>
            <thread-idle-timeout>thread-idle-timeout</thread-idle-timeout>
          </aaa>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the SAE to manage AAA NAS groups.

Contents

<sae-community-manager>— Name of the community manager that manages AAA NAS group communities. Active SAEs are selected from this community.

Value— Community name

Default— AAACommunityManager

<transient-session-timeout>—(Optional) Time to wait before expiring a temporary session.

Value— Number of seconds

Default— 90

<max-update-interval>—(Optional) Maximum interval of interim updates for user sessions.

Value— Number of seconds

Default— 3600

<update-grace-period>—(Optional) Grace period to expect an interim update for a user session.

Value— Number of seconds

Default— 900

`<resume-unrecovered>`—(Optional) Specifies whether a user session that has failed to recover from a failover should be resumed.

Value— true or false

Default— true

`<keep-alive-timeout>`—(Optional) Time to wait before expiring the registry to a Diameter server.

Value— Number of seconds

Default— 60

`<registry-retry-interval>`—(Optional) Time to wait before retrying a failed registry to a Diameter server.

Value— Number of seconds

Default— 30

`<reply-timeout>`—(Optional) Time to wait before expiring a request sent to a Diameter server.

Value— Number of seconds

Default— 25

`<sequential-message-timeout>`—(Optional) Time to wait before expiring an expected message.

Value— Number of seconds

Default— 20

`<thread-pool-size>`—(Optional) Number of working threads that process requests.

Value— Thread pool size

Default— 50

`<thread-idle-timeout>`—(Optional) Time to wait before stopping working threads after they become idle.

Value— Number of seconds

Default— 60

system

< session-store >

(configuration/shared/sae/configuration/driver/aaa)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <aaa>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </aaa>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the session store for the device driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ -

2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647

Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647

Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number

Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active

session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< junos >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos>
            <beep-server-port>beep-server-port</beep-server-port>
            <tls-beep-server-port>tls-beep-server-port</tls-beep-server-port>
            <connection-attempts>connection-attempts</connection-attempts>
            <keepalive-interval>keepalive-interval</keepalive-interval>
            <message-timeout>message-timeout</message-timeout>
            <batch-size>batch-size</batch-size>
            <transaction-batch-time>transaction-batch-time</transaction-batch-time>
            <sdx-group-name>sdx-group-name</sdx-group-name>
            <sdx-session-group-name>sdx-session-group-name</sdx-session-group-name>
            <send-commit-check>send-commit-check</send-commit-check>
          </junos>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE to manage JUNOS routing platforms. A JUNOS routing platform interacts with the SAE by using a JUNOS software process called sdx. When the sdx process establishes a TCP/IP connection to the SAE, the SAE begins to manage the router. The JUNOS router driver configuration defines parameters related to the interactions between the SAE and the sdx process.

Contents

<beep-server-port>— TCP port number that is used to communicate with the sdx process on JUNOS routing platforms. This port number must match the port number configured in the sdx process on the router.

Value— TCP port number; if this value is set to zero and the TLS BEEP server port is set, the SAE accepts only TLS connections.

If you change this port number, you need to restart the SAE before the change takes effect.

Default— 3333

<tls-beep-server-port>— TCP port number used to communicate with the sdx process on JUNOS routing platforms using a secure TLS connection.

Value— TLS port number; if this value is set to zero, the SAE does not accept TLS connections.

If you change this port number, you need to restart the SAE before the change takes effect.

Default— 3434

`<connection-attempts>`— Number of outstanding connection attempts before the SAE starts dropping new connection attempts.

Value— Positive value greater than 0; if the value is equal to or less than 0, the default value is used.

Default— 50

`<keepalive-interval>`— Interval between keepalive messages sent from the router. The `sdx` process on the router monitors the connection to the SAE by sending keepalive messages at one-third the specified interval. If the `sdx` process does not receive the expected keepalive answer within the specified timeout, it closes the connection.

A short interval results in a high load on the BEEP interface.

A long interval results in a long time before a connection failure is detected.

Value— Number of seconds in the range 0-2147483647. A value of 0 means that timeout is disabled.

Default— 45

`<message-timeout>`— Amount of time that the router driver waits for a response from the `sdx` process. Under a high load the router may not be able to respond fast enough to requests.

Change this value only if a high number of timeout events appear in the error log.

Value— Number of milliseconds in the range 0-2147483647

Default— 30000

`<batch-size>`— Minimum number of service configuration transactions that are committed at the same time. If any of the transactions in a batch fails, all transactions are aborted, and the associated service activations or deactivations fail.

To control maximum latency for a job when services are activated in parallel, specify 120% of the number of CORBA threads as the batch size.

Value— Integer in the range 0-2147483647

Default— 10

`<transaction-batch-time>`— Maximum time to collect configuration transactions in a batch. The batch is completed if either the batch size or the batch time is reached.

The completion time is calculated from the creation of a batch. Note that the batch time is a function of the total configuration size and not of the number of commands in the configuration transactions.

Value— Number of milliseconds in the range 0–2147483647

Default— 2000

`<sdx-group-name>` — Name of group on the JUNOS routing platform in which provisioning objects are stored.

Value— Name configured on the JUNOS routing platform

Default— sdx

`<sdx-session-group-name>` — Name of group on the JUNOS routing platform in which session objects are stored.

Value— Name configured on the JUNOS routing platform

Default— sdx-sessions

`<send-commit-check>` — Enables or disables commit check. If enabled, a more detailed error message is logged if a batch fails, which lets you verify individual transactions in a batch.

To maximize service activation performance, commit check should be disabled.

Value— true or false

Default— true

Required Privilege Level

system

< configuration-checking >

(configuration/shared/sae/configuration/driver/junos)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos>
            <configuration-checking>
              <configuration-checking-schedule>configuration-checking-schedule</configuration-checking-schedule>
              <configuration-checking-action>configuration-checking-action-choice</configuration-checking-action>
            </configuration-checking>
          </junos>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE to periodically check the configuration of the JUNOS routing platform.

Contents

`<configuration-checking-schedule>`—(Optional) Specifies when the SAE checks the router configuration.

Value— The schedule format is modeled on the UNIX crontab Entry Format (see UNIX crontab man pages). It consists of seven fields separated by space or tabs and enclosed in double quotation marks. The fields specify:

- Minute (0-59)
- Hour (0-23)
- Day of month (1-31, or the first three letters of the day of month)
- Month of the year (1-12)
- Day of the week (0-6 with 0 = Sunday, or the first three letters of the name of the day)
- Year (4 digits indicating the year)
- Time Zone ID: An * indicates the SAE local time zone.

For custom time zones, specify the format:

- zone = "GMT" (" + " | "-") (hour : minute | hour minute | hour)
- hour = digit digit
- minute = digit digit
- digit = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

Use the following guidelines when configuring the schedule:

An asterisk (*) is interpreted as 0 for minutes and hours and as the SAE local time zone for time zone. For all other fields, it stands for "first-last."

- Ranges of numbers and names are allowed. Ranges are two values separated with a hyphen. The specified range is inclusive. For example, 1–5 for the hour field specifies checking at hours 1, 2, 3, 4, and 5.
- Lists are allowed. A list is a set of numbers (or ranges) separated by commas. For example: "1,2,5,9", "0-4,8-12".
- Step values can be used with ranges. Following a range with "/< number >" specifies skips in the number's value through the range. For example, "0-23/2" in the hours field specifies event execution every other hour. Steps are also permitted after an asterisk, so "* /2" specifies every 2 hours.
- When determining the next event time based on a specific time pattern, the following rules apply: Seconds and milliseconds are ignored (that is, rounded up to the closest minute). If you set both a day of the month and a day of the week, only the day of month is used.

Default— No value

`<configuration-checking-action>`—(Optional) Action that the SAE takes when it detects disparities between the configuration of the SAE and the configuration on the router.

Value— One of the following:

- **detect**—Reports disparities through the SAE router driver event trap called `routerConfOutOfSynch` and through the info log. The SAE does not make any changes on the router.
- **enforce**—Enforces the state of the session layer on the router. The SAE removes all sessions that have disparities and creates new sessions with the same activation parameters as the original ones
- **synchronize**—Synchronizes the state of the session layer on the router. The SAE removes all sessions that have disparities.

Required Privilege Level

system

< lsp-tracking >

(configuration/shared/sae/configuration/driver/junos)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos>
            <lsp-tracking>
              <match>match</match>
              <file>file</file>
            </lsp-tracking>
          </junos>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure event tracking for JUNOS LSPs to provide information to an application, such as the sample IPTV application, that needs information about LSP status.

LSP tracking can configure the system log on managed JUNOS routing platforms to send notification messages to the managing SAE when LSPs are created and removed, and when bandwidth allocation for an LSP changes.

Contents

<match>—(Optional) A regular expression to identify a set of LSP names. If you do not define an expression, the SAE tracks all LSPs.

Value— Regular expression

Default— No value

<file>—(Optional) Name of the file to store syslog event messages (that provide information about LSP state changes in a JUNOS routing platform).

Value— Filename

Default— mpls4sae

Required Privilege Level

system system

< security >

(configuration/shared/sae/configuration/driver/junos)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos>
            <security>
              <need-client-authentication/>
              <local-certificate>local-certificate</local-certificate>
            </security>
          </junos>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Transport Layer Security (TLS) on the SAE.

Contents

<need-client-authentication>—(Optional) Enables or disables whether or not the SAE requests a client certificate from the router

If enabled, the SAE asks the router for a client certificate when a connection to the router is established.

If disabled, the SAE does not ask the router for a client certificate when a connection to the router is established.

Default— Enabled

<local-certificate>—(Optional) Name of certificate to be used for TLS communications

Value— Name of certificate

Default— No value

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/junos)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </junos>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the session store for the JUNOS driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ -

2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647**Default**— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647**Default**— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number**Default**— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active

session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< junos-dmi >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-dmi>
            <junos-space-server-address>junos-space-server-address</junos-space-server-address>
            <junos-space-port-number>junos-space-port-number</junos-space-port-number>
            <junos-space-user-name>junos-space-user-name</junos-space-user-name>
            <junos-space-password>junos-space-password</junos-space-password>
            <junos-space-protocol>junos-space-protocol-choice</junos-space-protocol>
            <message-timeout>message-timeout</message-timeout>
            <batch-size>batch-size</batch-size>
            <batch-time>batch-time</batch-time>
            <configuration-group-name>configuration-group-name</configuration-group-name>
            <sae-community-manager>sae-community-manager</sae-community-manager>
          </junos-dmi>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 5.0.0

Description

Configure the SAE to manage DMI devices.

Contents

<junos-space-server-address>—(Optional) JUNOS Space server that manages the routers.

Value— IP address or hostname.

Default— No value

<junos-space-port-number>—(Optional) JUNOS Space port number

Value—Integer in the range -2147483648–2147483647

Default— 8080

<junos-space-user-name>—(Optional) JUNOS Space user name

Value—Text

Default— No value

<junos-space-password>—(Optional) Password to authenticate with JUNOS Space

Value—Secret text

Default— No value

`<junos-space-protocol>`—(Optional) Protocol to communicate with JUNOS Space

Value

- `http`—
- `https`—

Default— `http`

`<message-timeout>`—(Optional) Amount of time that the router driver waits for a response from Junos Space. Under a high load the router may not be able to respond fast enough to requests.

Change this value only if a high number of timeout events appear in the error log.

Value— Number of milliseconds in the range 0–2147483647

Default— 120000

`<batch-size>`—(Optional) Minimum number of service configuration transactions that are committed at the same time. If any of the transactions in a batch fails, all transactions are aborted, and the associated service activations or deactivations fail.

To control maximum latency for a job when services are activated in parallel, specify 120% of the number of CORBA threads as the batch size.

Value— Integer in the range 0–2147483647

Default— 10

`<batch-time>`—(Optional) Maximum time to collect configuration transactions in a batch. The batch is completed if either the batch size or the batch time is reached.

The completion time is calculated from the creation of a batch. Note that the batch time is a function of the total configuration size and not of the number of commands in the configuration transactions.

Value— Number of milliseconds in the range 0–2147483647

Default— 2000

`<configuration-group-name>`— Name of group on the JUNOS routing platform in which provisioning objects are stored.

Value— Name configured on the JUNOS routing platform

Default— `sdx`

`<sae-community-manager>`— Name of the community manager that manages DMI driver communities.

Active SAEs are selected from this community.

Value— Community name

Default— DmiCommunityManager

Required Privilege Level

system

< session-store > (configuration/shared/sae/configuration/driver/junos-dmi)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-dmi>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </junos-dmi>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 5.0.0

Description

Configure the session store for the device driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ – 2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647

Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647

Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number

Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< junos-ise >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-ise>
            <sae-community-manager>sae-community-manager</sae-community-manager>
            <cached-driver-expiration>cached-driver-expiration</cached-driver-expiration>
            <enable-disconnect-ontimeout>
            <delay-service-policy-provisioning>delay-service-policy-provisioning</delay-service-
policy-provisioning>
            <keep-alive-timeout>keep-alive-timeout</keep-alive-timeout>
            <registry-retry-interval>registry-retry-interval</registry-retry-interval>
            <reply-timeout>reply-timeout</reply-timeout>
            <sequential-message-timeout>sequential-message-timeout</sequential-message-timeout>
            <thread-pool-size>thread-pool-size</thread-pool-size>
            <thread-idle-timeout>thread-idle-timeout</thread-idle-timeout>
          </junos-ise>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SAE to manage ISE devices.

Contents

<sae-community-manager>— Name of the community manager that manages ISE device communities. Active SAEs are selected from this community.

Value— Community name

Default— ISECommunityManager

<cached-driver-expiration>— Minimum amount of time to keep the state of a router driver after its Diameter connection is closed. You might want to change this value because the SAE can resynchronize more quickly if most of the state is still in memory and it does not need to be reread from the disk.

Value— Number of seconds in the range 0–2147483647

Default— 600

<enable-disconnect-ontimeout>—(Optional) Specifies whether the user session needs to be removed from Router/SRC

Value— true or false

Default— false

`<delay-service-policy-provisioning>`—(Optional) Amount of time by which the scheduler tasks would be delayed after user login is completed. This parameter is added to delay the activation of services done via PPRs..

Value— Number of milliseconds in the range 0-9223372036854775807. The recommended range is 0-1000 milliseconds

Default— 0

`<keep-alive-timeout>`—(Optional) Time to wait before expiring the registry to a Diameter server.

Value— Number of seconds

Default— 60

`<registry-retry-interval>`—(Optional) Time to wait before retrying a failed registry to a Diameter server.

Value— Number of seconds

Default— 30

`<reply-timeout>`—(Optional) Time to wait before expiring a request sent to a Diameter server.

Value— Number of seconds

Default— 25

`<sequential-message-timeout>`—(Optional) Time to wait before expiring an expected message.

Value— Number of seconds

Default— 20

`<thread-pool-size>`—(Optional) Number of working threads that process requests.

Value— Thread pool size

Default— 50

`<thread-idle-timeout>`—(Optional) Time to wait before stopping working threads after they become idle.

Value— Number of seconds

Default— 60

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/junos-ise)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-ise>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </junos-ise>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the session store for the device driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{<size of maximum session size field>} - 2147483647$
Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647
Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds
Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds
Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647
Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number
Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< junos-ptsp >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-ptsp>
            <sae-community-manager>sae-community-manager</sae-community-manager>
            <sync-from-sessionstore/>
            <cached-driver-expiration>cached-driver-expiration</cached-driver-expiration>
            <enable-disconnect-ontimeout/>
            <keep-alive-timeout>keep-alive-timeout</keep-alive-timeout>
            <registry-retry-interval>registry-retry-interval</registry-retry-interval>
            <reply-timeout>reply-timeout</reply-timeout>
            <sequential-message-timeout>sequential-message-timeout</sequential-message-timeout>
            <thread-pool-size>thread-pool-size</thread-pool-size>
            <thread-idle-timeout>thread-idle-timeout</thread-idle-timeout>
          </junos-ptsp>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the SAE to manage PTSP devices.

Contents

<sae-community-manager>— Name of the community manager that manages PTSP device communities. Active SAEs are selected from this community.

Value— Community name

Default— PTSPCommunityManager

<sync-from-sessionstore>—(Optional) Synchronization mode which indicates whether to sync from router or from session-store. If set to "true" synchronization will be done giving precedence to data in session-store and not at the router. By default SAE will sync from the router

Default— Disabled

<cached-driver-expiration>— Minimum amount of time to keep the state of a router driver after its Diameter connection is closed. You might want to change this value because the SAE can resynchronize more quickly if most of the state is still in memory and it does not need to be reread from the disk.

Value— Number of seconds in the range 0-2147483647

Default— 600

`<enable-disconnect-ontimeout>`—(Optional) Specifies whether the user session needs to be removed from Router/SRC

Value— true or false

Default— false

`<keep-alive-timeout>`—(Optional) Time to wait before expiring the registry to a Diameter server.

Value— Number of seconds

Default— 60

`<registry-retry-interval>`—(Optional) Time to wait before retrying a failed registry to a Diameter server.

Value— Number of seconds

Default— 30

`<reply-timeout>`—(Optional) Time to wait before expiring a request sent to a Diameter server.

Value— Number of seconds

Default— 25

`<sequential-message-timeout>`—(Optional) Time to wait before expiring an expected message.

Value— Number of seconds

Default— 20

`<thread-pool-size>`—(Optional) Number of working threads that process requests.

Value— Thread pool size

Default— 50

`<thread-idle-timeout>`—(Optional) Time to wait before stopping working threads after they become idle.

Value— Number of seconds

Default— 60

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/junos-ptsp)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junos-ptsp>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </junos-ptsp>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the session store for the device driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{<size of maximum session size field>} - 2147483647$
Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647
Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds
Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds
Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647
Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number
Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

<junose>

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junose>
            <cops-server-port>cops-server-port</cops-server-port>
            <backlog>backlog</backlog>
            <keepalive-interval>keepalive-interval</keepalive-interval>
            <message-timeout>message-timeout</message-timeout>
            <replication-message-timeout>replication-message-timeout</replication-message-timeout>
            <cops-message-maximum-length>cops-message-maximum-length</cops-message-maximum-length>
            <cops-message-read-buffer-size>cops-message-read-buffer-size</cops-message-read-
buffer-size>
            <cops-message-write-buffer-size>cops-message-write-buffer-size</cops-message-write-
buffer-size>
            <pending-address-timeout>pending-address-timeout</pending-address-timeout>
            <cops-handler-threads>cops-handler-threads</cops-handler-threads>
            <sync-from-sessionstore/>
            <cached-driver-expiration>cached-driver-expiration</cached-driver-expiration>
            <drop-unmanaged-interfaces-xdr-driver/>
            <track-unmanaged-interfaces-xdr-driver/>
            <prefer-second-ip-address/>
            <dual-stack-delay>dual-stack-delay</dual-stack-delay>
            <accounting-per-attachment/>
          </junose>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE to manage JUNOSe routers. The router driver specifies the COPS connection between the SAE COPS server and the COPS client in the JUNOSe router.

Contents

<cops-server-port>— TCP port number of the COPS server used to communicate with the JUNOSe routers.

Value— Port number that matches the configuration of the SRC client in the JUNOSe router.

Default— 3288

<backlog>— Maximum number of outstanding connection attempts before connections are dropped.

Value— Integer

Default— 50

<keepalive-interval>— Interval between keepalive messages sent from the COPS client (the JUNOSe

router). The COPS client monitors the COPS connection by sending keepalive messages at random intervals between one-fourth and three-fourths of the specified interval. If the client does not receive the expected keepalive answer within the specified timeout, the client terminates the connection.

A short interval results in a high load on the COPS interface.

A long interval results in a long time before a COPS failure is detected.

Value— Number of seconds in the range 0-32768. A value of 0 means that timeout is disabled.

Default— 45

`<message-timeout>`— Timeout interval in which the COPS server waits for a response to COPS requests. Under a high load the router may not be able to respond fast enough to COPS requests. Change this value only if a high number of COPS timeout events appear in the error log.

Value— Number of milliseconds

Default— 120000

`<replication-message-timeout>`— Timeout interval in which the active SAE waits for a response to synchronization requests. Under a high load the router may not be able to respond fast enough to COPS requests. Change this value if Reliable Replication Mode can't be triggered.

Value— Number of milliseconds

Default— 5000

`<cops-message-maximum-length>`— Maximum length of a COPS message. We recommend that you use the default setting.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 200000

`<cops-message-read-buffer-size>`— Buffer size for receiving COPS messages from the JUNOS client. We recommend that you use the default setting unless you are instructed to change it by Juniper Networks engineers.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 30000

`<cops-message-write-buffer-size>`— Buffer size for sending COPS messages to the JUNOS client. We recommend that you use the default setting unless you are instructed to change it by Juniper Networks engineers.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 30000

`<pending-address-timeout>`— Maximum time that a DHCP address request remains pending.

Value— Number of milliseconds. Typical values are in the range 1000-15000 (1 second to 15 seconds).

Default— 5000

`<cops-handler-threads>`—(Optional) Size of the thread pool for handling unsolicited messages. These threads are shared among all JUNOS router drivers. You may want to set this value higher than the default if you wish to create greater throughput on platforms with multiple processing cores, and you are not achieving full processor resource utilization. Increasing the number of threads increases the ability to use multiple processing cores in parallel.

Value— Number of threads

Default— No value

`<sync-from-sessionstore>`—(Optional) Synchronization mode which indicates whether to sync from router or from session-store. If set to "true" synchronization will be done giving precedence to data in session-store and not at the router. By default SAE will sync from the router

Default— Disabled

`<cached-driver-expiration>`— Minimum amount of time to keep the state of a router driver after its COPS connection is closed. You might want to change this value because the SAE can resynchronize more quickly if most of the state is still in memory and it does not need to be reread from the disk.

Value— Number of seconds in the range 0-2147483647

Default— 600

`<drop-unmanaged-interfaces-xdr-driver>`—(Optional) For JUNOS COPS-XDR drivers, enables or disables the driver to keep a record of unmanaged interfaces. You must enable this option if you have unmanaged dynamic interfaces in a virtual router that is managed by COPS-XDR. If the driver does not keep a record of unmanaged interfaces, next-interface actions in policies may not work properly in certain cases. To use RAM more efficiently, enable this option if you have a large number of unmanaged interfaces that are not the target of next-hop policies.

Default— Disabled

`<track-unmanaged-interfaces-xdr-driver>`—(Optional) Enables sending of interface tracking events for unmanaged interfaces of the XDR router driver. Because the COPS-XDR protocol does not include notifications (DRQs) when unmanaged interfaces are disabled, plug-ins will not receive an unmanaged interface's stop events.

Default— Disabled

`<prefer-second-ip-address>`—(Optional) When this option is set, a request for a second session will cause an existing session to be terminated.

Default— Disabled

`<dual-stack-delay>`—(Optional) If configured SAE will wait after receiving a REQ for a new interface before sending the interface plug-in event and attempting to login a UserSession.

NOTE: configuring this attribute to a value different than 0 will lower the login rate for single-stack interfaces.

Value—Integer in the range 0-10000 ms

Default— 0

`<accounting-per-attachment>`—(Optional) This flag is used for JUNOS devices only. If the attribute `accounting-per-attachment` is set then attachment accounting will be calculated. If the attribute `no-accounting-per-attachment` is set then attachment accounting will be always set to false. If both the attributes `accounting-per-attachment` and `no-accounting-per-attachment` are not set then attachment accounting will be always set to true.

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/junose)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <junose>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </junose>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the session store for the JUNOS driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0–2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0–2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1–100. We recommend a range of 30–50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0–2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0–2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0–2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ –

2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647**Default**— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647**Default**— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number**Default**— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active

session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0-2147483647

Default— 5000000

Required Privilege Level

system

< pcmm >

(configuration/shared/sae/configuration/driver)

Usage

```

<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <pcmm>
            <keepalive-interval>keepalive-interval</keepalive-interval>
            <tcp-connection-timeout>tcp-connection-timeout</tcp-connection-timeout>
            <application-manager-id>application-manager-id</application-manager-id>
            <message-timeout>message-timeout</message-timeout>
            <cops-message-maximum-length>cops-message-maximum-length</cops-message-maximum-length>
            <cops-message-read-buffer-size>cops-message-read-buffer-size</cops-message-read-
buffer-size>
            <cops-message-write-buffer-size>cops-message-write-buffer-size</cops-message-write-
buffer-size>
            <sae-community-manager>sae-community-manager</sae-community-manager>
            <disable-full-sync/>
            <disable-pcmm-i03-policy/>
            <session-recovery-retry-interval>session-recovery-retry-interval</session-recovery-
retry-interval>
            <element-id>element-id</element-id>
            <default-rks-plugin-in>default-rks-plugin-in</default-rks-plugin-in>
          </pcmm>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE to manage PCMM devices. The SAE connects to the PCMM device by using a COPS-over-TCP connection. The PCMM device driver controls this connection.

Contents

<keepalive-interval>— Interval between keepalive messages sent from the COPS client (the PCMM device) to the COPS server (the SAE). The COPS client monitors the COPS connection by sending keepalive messages at random intervals between one-fourth and three-fourths of the specified interval. If the client or the server does not receive the expected keepalive answer within the specified timeout, the client closes the connection.

Value— Number of seconds in the range 0-2147483647. A value of 0 means that the timeout is disabled.

Default— 45

<tcp-connection-timeout>— Timeout for opening a TCP connection to the PCMM device.

Value— Number of seconds in the range 0-2147483647.

Default— 5

`<application-manager-id>`— Identifier of the application manager when this SAE is configured as the application manager. The application manager includes this identifier in all messages that it sends to the policy server. The policy server passes this ID to the CMTS device in Gate Control messages. The CMTS device returns the ID associated with the gate to the policy server. The policy server uses this information to associate gate messages with a particular application manager.

Value— 4-byte unsigned integer that is unique in a service provider network.

Default— 1

`<message-timeout>`— Amount of time that the COPS server (the SAE) waits for a response to COPS requests from the COPS client (the PCMM device). Under a high load the PCMM device may not be able to respond fast enough to COPS requests. Change this value only if a high number of COPS timeout events appear in the error log.

Value— Number of milliseconds in the range 0–2147483647

Default— 120000

`<cops-message-maximum-length>`— Maximum length of a COPS message. We recommend that you use the default setting.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 204800

`<cops-message-read-buffer-size>`— Buffer size for receiving COPS messages from the PCMM client. We recommend that you use the default setting unless you are instructed to change it by Juniper Networks engineers.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 30000

`<cops-message-write-buffer-size>`— Buffer size for sending COPS messages to the PCMM client. We recommend that you use the default setting unless you are instructed to change it by Juniper Networks engineers.

Value— Number of bytes in the range 4 bytes to 2 GB

Default— 30000

`<sae-community-manager>`— Name of the community manager that manages PCMM driver communities. Active SAEs are selected from this community.

Value— Community name

Default— PCMMCommunityManager

`<disable-full-sync>`—(Optional) Disables state synchronization with PCMM policy servers. State synchronization is achieved when the SAE is required to communicate with the policy server over the

COPS connection.

Default—false

`<disable-pcmm-i03-policy>`—(Optional) Disables the SAE to send classifiers to the router that comply with PCMM I03. Use this option if your network deployment has CMTS devices that do not support PCMM I03.

Default—true

`<session-recovery-retry-interval>`— Time interval between attempts by the SAE to restore service sessions that are still being recovered in the background when state synchronization is completed with a state-data-incomplete error. The SAE attempts to restore a service session if it receives a service modification or deactivation request for an unrecovered service session before the next interval.

We recommend setting this value to 3600000 (1 hour) or longer.

Value— Number of milliseconds in the range 0–2147483647

Default— 3600000

`<element-id>`—(Optional) Unique identifier that the SAE uses to identify itself when it originates RKS events.

Value— 8-byte unsigned integer in the range 0–99999; must be unique within a PCMM network

Default— 1

`<default-rks-plug-in>`—(Optional) RKS plug-in to which the SAE sends event messages if you do not configure a CMTS-specific plug-in.

Value— Name of an RKS plug-in

Default— No value

Required Privilege Level

system

< cmts-specific-rks-plug-ins > (configuration/shared/sae/configuration/driver/pcmm)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <pcmm>
            <cmts-specific-rks-plug-ins>
              <name>name</name> <!-- identifier -->
              <rks-plug-in>rks-plug-in</rks-plug-in>
            </cmts-specific-rks-plug-ins>
          </pcmm>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a CMTS-specific RKS plug-in.

Contents

<name>— Name of the RKS plug-in.

Value—Text

<rks-plug-in>—(Optional) Name of the plug-in to which the SAE sends events for this CMTS device.

Value— Name of an RKS plug-in

Default— No value

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/pcmm)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <pcmm>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </pcmm>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the session store for the PCMM driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ -

2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647**Default**— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds**Default**— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647**Default**— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number**Default**— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active

session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< scripts >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <scripts>
            <extension-path>extension-path</extension-path>
            <general>general</general>
            <junos>junos</junos>
            <junos-dmi>junos-dmi</junos-dmi>
            <junose>junose</junose>
            <junose-xdr>junose-xdr</junose-xdr>
            <pcmm>pcmm</pcmm>
            <third-party>third-party</third-party>
            <junos-ise>junos-ise</junos-ise>
            <junos-ptsp>junos-ptsp</junos-ptsp>
          </scripts>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure device scripts. When the SAE establishes a connection with a router, PCMM device, or other network device, it can run a script to customize the setup of the connection. These scripts are run when the connection is established and again when the connection is dropped.

Contents

<extension-path>—(Optional) Path to scripts that are not in the default location, */opt/UMC/sae/lib* .

Value— List of paths separated by semicolons (;)

Default— No value

<general>—(Optional) Script that can be used for all types of routers, PCMM devices, and other network devices that the SRC software supports. The script is run when the connection between a router or other network device and the SAE is established and again when the connection is dropped.

Value— Name of a script

Default— No value

<junos>—(Optional) Initialization script for JUNOS routing platforms. The script is run when the connection between a router and the SAE is established and again when the connection is dropped.

Value— Name of a script

Default— No value

`<junos-dmi>`—(Optional) Initialization script for JUNOS routing platforms using DMI. The script is run when the connection between a router and the SAE is established and again when the connection is dropped.

Value— Name of a script

Default— No value

`<junose>`—(Optional) Initialization script for JUNOSE routers when the JUNOSE driver uses COPS-PR mode when connecting to the SAE. The script is run when the connection between a router and the SAE is established and again when the connection is dropped.

Value— Name of the file that contains the script without including the .py extension.

Default— No value

`<junose-xdr>`—(Optional) Initialization script for JUNOSE routers when the JUNOSE driver uses XDR mode when connecting to the SAE. The script is run when the connection between a router and the SAE is established and again when the connection is dropped.

In COPS XDR mode, the router does not send the network access server (NAS) IP address to the SAE. If your configuration requires this value, add the following line to a JUNOSE script:

```
import ERXnasip
```

When you add the `import ERXnasip` entry, the script obtains the NAS-IP address from the router through SNMP. This mechanism can affect performance, especially when the SAE manages a large number of virtual routers.

Value— Name of a script. For example, `iorPublisher`, `poolPublisher`.

Default— No value

`<pcmm>`—(Optional) Initialization script for the Juniper Policy Server in a PCMM environment. The script is run when the connection between a policy server and the SAE is established and again when the connection is dropped.

Value— Name of a script

Default— No value

`<third-party>`—(Optional) Initialization script for third-party device drivers. The script is run when the third-party device driver is activated or deactivated.

Value— Name of a script. For example, `iorPublisher`.

Default— No value

`<junos-ise>`—(Optional) Initialization script for intelligent-service-edge device drivers. The script is run when the intelligent-service-edge device driver is activated or deactivated.

Value— Name of a script. For example, iorPublisher.

Default— No value

`<junos-ptsp>`—(Optional) Initialization script for junos-ptsp device drivers. The script is run when the junos-ptsp device driver is activated or deactivated.

Value— Name of a script. For example, iorPublisher.

Default— No value

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <session-store>
            <ip-address>ip-address</ip-address>
            <port>port</port>
            <root-directory>root-directory</root-directory>
            <file-expiry-age>file-expiry-age</file-expiry-age>
            <file-expiry-check-interval>file-expiry-check-interval</file-expiry-check-interval>
          </session-store>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure global session store parameters that are shared by all session store instances (active or passive) on the SAE. You can also configure session store parameters within a router or other device driver configuration.

Contents

<ip-address>—(Optional) IP address that the session store infrastructure on this SAE uses to listen for incoming TCP connections from active session stores.

Value— IP address. The address must be an IP address configured for the SAE host. If you do not enter an address or if you disable this field, active session stores cannot create passive session stores on this SAE. We recommend that you enter an address that is configured in a list of connected SAEs.

Default— No value

<port>—(Optional) TCP port number on which the session store infrastructure on this SAE listens for incoming connections from active session stores. This option has no effect if you have not configured a session store IP address.

Value— Port number in the range 1027–65535

Default— No value

<root-directory>—(Optional) Root directory in which the session store creates files. This option has no effect if you have not configured a session store IP address.

Value— Directory name

Default— No value

`<file-expiry-age>`—(Optional) Maximum age of the dormant session store file in milli seconds. The file will be deleted if it is not modified for the configured period.

Value— Integer in the range 0–2147483647. The value given is in milli seconds.

Default— 604800000

`<file-expiry-check-interval>`—(Optional) Interval in which the age of session store file is monitored to check if it exceeds the fileExpiryAge.

Value— Integer in the range 0–2147483647. The value given is in milli seconds.

Default— 3600000

Required Privilege Level

system

< simulated >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <simulated>
            <name>name</name> <!-- identifier -->
            <driver-type>driver-type-choice</driver-type>
            <router-version>router-version</router-version>
            <router-address>router-address</router-address>
            <transport-router>transport-router</transport-router>
          </simulated>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure simulated router drivers. Simulated router drivers allow you to create subscriber sessions without connecting to a router. You can then use the simulated subscriber sessions to test SAE applications.

Contents

<name>— Name of the simulated router driver.

Value—Text

<driver-type>— Type of device that the simulated driver simulates

Value— One of the following:

- junos
- junose
- pcmm

Default— JUNOS

<router-version>—(Optional) Version of the device software to simulate.

Value— Valid software version for the device that is being simulated.

Default— No value

`<router-address>`— Address of the router that is available for router initialization scripts.

Value— IP address

Default— 10.0.0.1

`<transport-router>`—(Optional) Name of a virtual router that is used to connect to the SAE. This value is passed to the router initialization script. It is not supported on JUNOS routing platforms.

Value— Name of a virtual router

Default— No value

Required Privilege Level

system

< session-store >

(configuration/shared/sae/configuration/driver/simulated)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <simulated>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </simulated>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the session store for the simulated driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

<maximum-queue-size>—(Optional) Maximum size that a queue of buffered store operations can reach before

the queue is written to a session store file.

Value— Number of bytes in the range 0–2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0–2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1–100. We recommend a range of 30–50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0–2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0–2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0–2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >}$ – 2147483647

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647

Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647

Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number

Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< snmp >

(configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <snmp>
            <read-only-community-string>read-only-community-string</read-only-community-string>
            <read-write-community-string>read-write-community-string</read-write-community-string>
          </snmp>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure global default SNMP communities for use with JUNOS routers and JUNOS routing platforms. Global default SNMP communities are used if a virtual router does not exist on the router or the community strings have not been configured for the VR.

Contents

<read-only-community-string>— Default SNMP community string used for read access to the router.

Value— SNMP community string that matches a read-only community string configured on the router.

Default— public

<read-write-community-string>— Default SNMP community string used for write access to the router.

Value— SNMP community string that matches a read-write community string configured on the router.

Default— private

Required Privilege Level

system

< third-party > (configuration/shared/sae/configuration/driver)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <third-party>
            <sae-community-manager>sae-community-manager</sae-community-manager>
          </third-party>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the community manager for third-party devices that the SAE manages.

Contents

<sae-community-manager>— Name of the community manager that manages network device communities. Active SAEs are selected from this community.

Value— Community name

Default— PROXYCommunityManager

Required Privilege Level

system

< session-store > (configuration/shared/sae/configuration/driver/third-party)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <driver>
          <third-party>
            <session-store>
              <maximum-queue-age>maximum-queue-age</maximum-queue-age>
              <maximum-queued-operations>maximum-queued-operations</maximum-queued-operations>
              <maximum-queue-size>maximum-queue-size</maximum-queue-size>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <minimum-disk-space-usage>minimum-disk-space-usage</minimum-disk-space-usage>
              <rotation-batch-size>rotation-batch-size</rotation-batch-size>
              <maximum-session-size>maximum-session-size</maximum-session-size>
              <disk-load-buffer-size>disk-load-buffer-size</disk-load-buffer-size>
              <network-buffer-size>network-buffer-size</network-buffer-size>
              <retry-interval>retry-interval</retry-interval>
              <communications-timeout>communications-timeout</communications-timeout>
              <load-timeout>load-timeout</load-timeout>
              <idle-timeout>idle-timeout</idle-timeout>
              <maximum-backlog-ratio>maximum-backlog-ratio</maximum-backlog-ratio>
              <minimum-backlog>minimum-backlog</minimum-backlog>
            </session-store>
          </third-party>
        </driver>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the session store for the third-party device driver.

Contents

<maximum-queue-age>—(Optional) Maximum age that a queue of buffered store operations (such as adding a session to the store or removing a session from the store) can reach before the queue is written to a session store file.

Value— Number of milliseconds in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 5000

<maximum-queued-operations>—(Optional) Number of buffered store operations that are queued before the queue is written to a session store file.

Value— Integer in the range 0–2147483647. A value of -1 indicates that there is no limit. A value of zero causes the session store to write each store operation to a session store file immediately.

Default— 50

`<maximum-queue-size>`—(Optional) Maximum size that a queue of buffered store operations can reach before the queue is written to a session store file.

Value— Number of bytes in the range 0-2147483647

Default— 51050

`<maximum-file-size>`—(Optional) Maximum size of session store files. When a file reaches this size, a new file is created.

Value— Number of bytes in the range 0-2147483647

Default— 25000000

`<minimum-disk-space-usage>`—(Optional) Percentage of space in all session store files that is used by live sessions. When the percentage of space in the session store files that is used by live sessions decreases to this percentage, the oldest session store file is compacted and appended to the newest session store file, and then the oldest session store file is deleted.

Value— Percentage of disk space in the range 1-100. We recommend a range of 30-50

Default— 25

`<rotation-batch-size>`—(Optional) When the oldest session store file is rotated, specifies the number of sessions that are rotated from the oldest file to the newest file at the same time. While a set of sessions is rotated, no other session store activity can take place.

Value— Integer in the range 0-2147483647

Default— 50

`<maximum-session-size>`—(Optional) Maximum size of a single subscriber or service session. Use this parameter to reserve memory for an internal buffer.

Value— Number of bytes in the range 0-2147483647

Default— 10000

`<disk-load-buffer-size>`—(Optional) Size of the buffer that is used to load all of a session store's files from disk at startup.

Value— Number of bytes in the range 0-2147483647

Default— 1000000

`<network-buffer-size>`—(Optional) Size of the buffer that holds messages or message segments that are waiting to be sent to passive session stores

Value— Number of bytes in the range $21 + \text{< size of maximum session size field >} - 2147483647$

Default— 51050

`<retry-interval>`—(Optional) Time interval between attempts by the active session store to connect to missing passive session stores.

Value— Number of milliseconds in the range 0–2147483647

Default— 5000

`<communications-timeout>`—(Optional) Amount of time in milliseconds that a session store waits before closing when it is blocked from reading or writing a message. This timeout does not apply when a session store is waiting for a remote session store to load its state from disk. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 60000

`<load-timeout>`—(Optional) Amount of time in milliseconds that an active session store waits for a passive session store or a passive session store waits for an active session store to load its data from disk before it closes the connection to the session store. (A non-positive number means wait forever. This is not recommended.)

Value— Number of milliseconds

Default— 420000

`<idle-timeout>`—(Optional) Amount of time that a passive session store waits for activity from the active session store before it closes the connection to the active session store. This timeout applies after the session store startup and initial update processes are complete.

Value— Number of milliseconds in the range 0–2147483647

Default— 3600000

`<maximum-backlog-ratio>`—(Optional) Along with the minimum backlog size, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the backlog of unsent operations (in bytes) divided by the total size (in bytes) of all live store operations is greater than this number, the connection is closed.

Value— Floating point number

Default— 1.5

`<minimum-backlog>`—(Optional) Along with the maximum backlog ratio, specifies when the active session store closes the connection to a passive session store because of a backlog of messages waiting to be sent to the passive session store. After the startup and initial update processes are complete, if the backlog becomes too large, the connection to the passive session store is closed. After the retry interval ends, a new connection is opened.

If the maximum backlog ratio is met, the active session store does not close the connection unless the backlog of messages (in bytes) is greater than this number.

Value— Number of bytes in the range 0–2147483647

Default— 5000000

Required Privilege Level

system

< dynamic-radius-server > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <dynamic-radius-server>
          <maximum-cached-peer>maximum-cached-peer</maximum-cached-peer>
        </dynamic-radius-server>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the number of peers that the dynamic RADIUS server can maintain.

Contents

<maximum-cached-peer> — Maximum number of peers maintained by the dynamic RADIUS server.

Value — Integer

Default — 100

Required Privilege Level

system

< external-interface-features > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <name>name</name> <!-- identifier -->
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Create an external interface configuration.

Contents

<name>— Name of the external interface configuration.

Value—Text

Required Privilege Level

system

< CommunityManager > (configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <CommunityManager>
            <keepalive-interval>keepalive-interval</keepalive-interval>
            <threads>threads</threads>
            <acquire-timeout>acquire-timeout</acquire-timeout>
            <blackout-time>blackout-time</blackout-time>
          </CommunityManager>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE community manager that manages PCMM and third-party device communities.

Contents

<keepalive-interval>— Interval between keepalive messages sent from the active SAE to the passive members of the community.

Value— Number of seconds in the range 0–2147483647

Default— 30

<threads>— Number of threads that are allocated to manage the community. You generally do not need to change this property.

Value— Integer in the range 1–50

Default— 5

<acquire-timeout>— Amount of time an SAE waits for a remote member of the community when it is acquiring a distributed lock. To avoid race conditions when the SAE community is determining which SAE is the active SAE, the community manager has a distributed lock. When an SAE attempts to become the active SAE, it needs to acquire the distributed lock. You generally do not need to change this property.

Value— Number of seconds in the range 0–2147483647

Default— 15

`<blackout-time>`— Amount of time that an active SAE must wait after it shuts down before it can try to become the active SAE of the community again.

Value— Number of seconds in the range 0–2147483647

Default— 30

Required Privilege Level

system

< EventAPI >

(configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <EventAPI>
            <retry-time>retry-time</retry-time>
            <retry-limit>retry-limit</retry-limit>
            <threads>threads</threads>
          </EventAPI>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for the Event Notification API.

Contents

<retry-time>— Amount of time between attempts to send router events that could not be delivered.

Value— Number of seconds in the range 0-2147483647

Default— 300

<retry-limit>— Maximum number of times an event fails to be delivered before it is discarded.

Value— Integer in the range 0-2147483647

Default— 5

<threads>— Number of threads allocated to process events.

Value— Integer in the range 0-2147483647

Default— 5

Required Privilege Level

system

< JavaScriptProcessor > (configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <JavaScriptProcessor>
            <script-directory>script-directory</script-directory>
            <scan-interval>scan-interval</scan-interval>
            <compiler-classpath>compiler-classpath</compiler-classpath>
            <character-encoding>character-encoding</character-encoding>
            <compiler-debug/>
            <java-compiler>java-compiler</java-compiler>
          </JavaScriptProcessor>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE properties that activate and configure the Java script interface module.

Contents

<script-directory>—(Optional) Storage location for Java scripts; defined relative to the SAE installation directory. If you store the scripts in the /opt/UMC/sae/var/javaScripts directory on the SRC system, you do not need to specify this property.

Do not specify a directory that is part of the class path of the JVM running the SAE. If you do so, unloading of Java scripts will fail.

Value— Path that can be read by a URL class loader, in one of the following formats:

- file: // < path > < filename >
- http: // < hostName > . < portNumber > < path > < filename >
- path—List of directories separated by forward slashes
- filename—Name of the JAR file
- hostName—Name of the host on which the script is stored
- portNumber—Number of the TCP/IP port

Default— *var/javaScripts*

<scan-interval>— Time interval between scans in the script directory for new or modified .java source files. At each scan, the interface module compiles new and modified files. If the scripts conform

to Java script requirements, the interface module installs them on the SAE as Java scripts. It also removes deleted scripts from the SAE.

Value— Number of seconds in the range 0–2147483647; 0 (zero) means that the interface module does not scan the directories.

Default— 0

`<compiler-classpath>`— Class path that the compiler uses to load source files.

Value— Path that can be read by a URL class loader, in one of the following formats:

- file: // < path > < filename >
- http:// < hostName > . < portNumber > < path > < filename >
- path—List of directories separated by forward slashes
- filename—Name of the JAR file
- hostName—Name of the host on which the script is stored
- portNumber—Number of the TCP/IP port

If you clear this value, the value defaults to the Java script directory specified by the script-directory option.

Default— *var/javaScripts/lib/sae.jar*

`<character-encoding>`—(Optional) Character encoding that the compiler uses when it loads Java source files.

Value— See <http://java.sun.com/j2se/1.4/docs/guide/intl/encoding.doc.html>

Default— Default encoding for the platform on which you are working

`<compiler-debug>`—(Optional) Enables or disables whether the compiler places debug information into .class files

Default— Disabled

`<java-compiler>`—(Optional)

If you do not specify an external compiler, the interface module compiles the scripts-in-process with the com.sun.tools.javac.Main compiler from Sun Microsystem's tools.jar. The information specified in the Character Encoding, Compiler Classpath, and Compiler Debug fields is passed to the compiler.

If you specify an external compiler, an external process is created to perform the compilation using the specified command, and the information specified in the Character Encoding, Compiler Classpath, and Compiler Debug fields is ignored. Assumptions:

- The specified shell command will invoke an appropriate Java compiler without error.
- The specified shell command uses a class path that includes both the Java script directory specified in the Script Directory field and the SAE's public APIs.
- The compiler outputs its .class files to the directory specified in the Script Directory field.

Value— Command string with the class path that identifies both the Java script directory and the public APIs for the SAE.

Default— `javac -classpath var/javaScripts:lib/sae.jar -d var/javaScripts`

Required Privilege Level

system

< PythonScriptProcessor > (configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <PythonScriptProcessor>
          </PythonScriptProcessor>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Create an instance of the Python script processor.

Contents

Required Privilege Level

system

< SAEAccess >

(configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <SAEAccess>
            <cache-size>cache-size</cache-size>
            <cache-timeout>cache-timeout</cache-timeout>
            <cache-clean>cache-clean</cache-clean>
          </SAEAccess>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for the SAE access interface module.

Contents

<cache-size>— Maximum number of subscriber objects kept in the cache.

Value— Integer in the range 0–2147483647

Default— 1024

<cache-timeout>— Maximum time that idle subscriber objects are kept in the cache.

Value— Number of seconds in the range 0–2147483647

Default— 30

<cache-clean>— Number of subscriber objects removed from the cache when the maximum number is reached.

Value— Integer in the range 1–< cache size >

Default— 1

Required Privilege Level

system

< SAEFeature >

(configuration/shared/sae/configuration/external-interface-features)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <SAEFeature>
            <java-class>java-class</java-class>
            <additional-classpath>additional-classpath</additional-classpath>
          </SAEFeature>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SAE properties for customized interface modules.

Contents

<java-class>— Name of the Java class that implements the interface module.

Value— Fully qualified Java class name. For example, net.juniper.smgmt.sae.saeimpl.SAEAccessImpl.

Default— No value

<additional-classpath>—(Optional) Path to the location where libraries are stored. If you store the libraries in the /opt/UMC/sae/lib directory on the host where you installed the SAE software, you do not need to specify a class path.

Value— Comma-separated list of URLs that can be read by a URL class loader in one of the following formats:

- file:// < path > < filename >
- http:// < hostName > < portNumber > < path > < filename >

where

- path is a list of directories separated by backslashes
- filename is the name of the JAR file
- hostName is the name of the host on which the script is stored
- portNumber is the number of the TCP/IP port

Default— No value

Required Privilege Level

system

< properties > (configuration/shared/sae/configuration/external-interface-features/SAEFeature)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <external-interface-features>
          <SAEFeature>
            <properties>
              <name>name</name> <!-- identifier -->
              <value>value</value>
            </properties>
          </SAEFeature>
        </external-interface-features>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define properties for an SAE customized interface module.

Contents

<name>— Name of the property for which you want to define a value.

Value—Text

<value>— Value for the property.

Value— Value for the property.

Default— No value

Required Privilege Level

system

< file-accounting-template > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <file-accounting-template>
          <name>name</name> <!-- identifier -->
        </file-accounting-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a template that defines header names for attributes listed in accounting files. When the SAE writes data to a flat file, it writes into the first line the headers that identify the attributes in the file. For example, in the following accounting file, the first line lists headers for all attribute fields in the file, and the following lines list the actual data in each field:

Accounting Status,NAS ID,SAE Host,Router Name,Interface Name,Interface Alias

start,SSP.uelmo,uelmo,default@erx7_ssp57,FastEthernet1/1.1.

You can assign your own names to the headers that appear in the file. To do so, you define the header names in a template and then set up file accounting plug-ins to use the template. The default template, FileAccounting.std, defines header names for all possible attributes. You can use the default template or create your own templates.

Contents

<name>— Name of the file-accounting template.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/file-accounting-template)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <file-accounting-template>
          <attributes>
            <name>name-choice</name> <!-- identifier -->
            <value>value</value>
          </attributes>
        </file-accounting-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure the values for the attribute headers that will appear in accounting files.

Contents

Name of the accounting attribute for which you want to define a header.

Value

- status—
- nas-id—
- host—
- router-name—
- interface-name—
- interface-alias—
- interface-descr—
- port-id—
- user-ip-address—
- login-name—
- accounting-id—
- auth-user-id—
- if-radius-class—
- if-session-id—
- service-name—
- radius-class—
- event-time—
- session-id—
- terminate-cause—
- session-time—
- in-octets—
- out-octets—
- in-packets—
- out-packets—

```

    nas-ip—
    • user-mac-address—
    • service-session-name—
    • service-session-tag—
    • user-type—
    • user-radius-class—
    • user-session-id—
    • primary-user-name—
    • subscription-name—
    • login-id—
    • if-index—
    • event-time-millisecond—
    • nas-port—
    • operational—
    • user-inet-address—
    • nas-inet-address—
    • router-type—
    • interface-speed—
    • service-bundle—
    • user-dn—
    • uid—
    • domain—
    • retailer-dn—
    • password—
    • service-scope—
    • session-timeout—
    • downstream-bandwidth—
    • upstream-bandwidth—
    • dhcp-packet—
    • aggr-session-id—
    • aggr-login-name—
    • aggr-user-dn—
    • aggr-user-inet-address—
    • aggr-accounting-id—
    • aggr-auth-user-id—
    • user-session-handle—
    • calling-station-id—
    • remote-tunnel-inet-address—
    • local-tunnel-inet-address—
    • vpn-id—

```

<value>— Header text that appears in the accounting file.

Value— Text that you want to appear as the header in the property file. If the header contains spaces, enclose the header in quotation marks.

Default— No value

Required Privilege Level

system

< global-radius-udp-port >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <global-radius-udp-port>
          <udp-port>udp-port</udp-port>
        </global-radius-udp-port>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a global source UDP port or a pool of ports that RADIUS plug-ins use to communicate with RADIUS servers.

In RADIUS packets that RADIUS plug-ins send to a RADIUS server, the plug-in uses an identifier field to match requests to replies. This field provides for a maximum of 256 identifiers. Once all identifiers are used, the plug-in cannot send any more requests until it receives replies that match the requests already sent. In high-load systems, this limit can slow performance.

To overcome this limitation, you can configure a pool of UDP ports for RADIUS plug-ins. Having a pool of ports allows RADIUS plug-ins to create one queue per port to wait for RADIUS replies. Each queue can wait for 256 RADIUS packets. The RADIUS plug-ins send RADIUS packets through the pool of ports in a round-robin mode.

Contents

<udp-port> — Global source UDP port or a pool of ports that RADIUS plug-ins use to communicate with RADIUS servers. You can also configure UDP ports for each plug-in instance. If you do not configure a UDP port for a plug-in instance, the plug-in uses the global UDP port.

Value — You can enter a single port number, a pool of port numbers, or a list of port numbers and port ranges:

- Port number in the range 1–65535
- A range of ports in the format port-port; for example, 7000-7003

Default — 18130

Required Privilege Level

system

< idle-timeout >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <idle-timeout>
          <adjust-session-time/>
        </idle-timeout>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify whether or not the SAE reduces the session time reported in the accounting stop message by the idle time. This way the session time is accurately reported to avoid overcharges for the session.

Contents

<adjust-session-time>—(Optional) If enabled, when an idle timeout terminates a session, the session time reported in the accounting stop message is reduced by the idle time.

Default— No value

Required Privilege Level

system

< interim-accounting >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <interim-accounting>
          <service-interim-accounting/>
          <service-interim-interval>service-interim-interval</service-interim-interval>
          <service-interim-mode>service-interim-mode-choice</service-interim-mode>
          <subscriber-interim-accounting/>
          <subscriber-interim-interval>subscriber-interim-interval</subscriber-interim-interval>
          <user-interim-mode>user-interim-mode-choice</user-interim-mode>
        </interim-accounting>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Enable interim accounting and set intervals between interim accounting messages for services and subscribers. These settings apply to all subscriber sessions and service sessions. You can override these settings for specific services by configuring an accounting interim interval in the service configuration.

Contents

<service-interim-accounting>—(Optional) Enable interim accounting for services. You can override this setting for specific services by configuring an accounting interim interval in the service configuration.

Default— Enabled

<service-interim-interval>— Interval between service interim accounting messages. A short interval causes the SAE to send many messages to the router and to the RADIUS servers. A long interval can result in a large loss of accounting information in the event of a system failure.

Value— Number of seconds in the range 900–86400

Default— 86400

<service-interim-mode>—(Optional)

Value

- not-supported—
- polling—
- pushing—
- polling-or-pushing—

- `user-polling-service-pushing—`

`<subscriber-interim-accounting>`—(Optional) Enable interim accounting for subscribers. If enabled, the SAE continually generates Interim-Update accounting requests for all active subscribers at the interval specified with the **`subscriber-interim-interval`** option.

Default— Enabled

`<subscriber-interim-interval>`— Interval between subscriber interim accounting messages. A short interval causes the SAE to send many messages to any configured accounting servers. A long interval can result in a large loss of accounting information in the event of a system failure.

Value— Number of seconds in the range 900–86400

Default— 86400

`<user-interim-mode>`—(Optional)

Value

- `not-supported—`
- `polling—`
- `pushing—`
- `polling-or-pushing—`
- `user-polling-service-pushing—`

Required Privilege Level

system

< interim-session-job-manager > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <interim-session-job-manager>
          <number-of-threads>number-of-threads</number-of-threads>
        </interim-session-job-manager>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure the number of threads used for interim-session-related activity; for example, subscriber and service session interim accounting.

Contents

<number-of-threads>— Number of threads used for interim-session-related activity.

Value— Integer in the range 1–1000

Default— 32

Required Privilege Level

system

< ldap > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <network-dn>network-dn</network-dn>
          <enable-directory-eventing/>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure the LDAP connection from the SAE to the directory in which network device data is stored.

Contents

<network-dn>— Subtree in the directory in which network device data is stored.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— *o = Network, <base>*

<enable-directory-eventing>—(Optional) Enables or disables automatic discovery of changes in the SAE configuration data.

Default— Enabled

Required Privilege Level

system

< directory-eventing >

(configuration/shared/sae/configuration/ldap)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <directory-eventing>
            <timeout>timeout</timeout>
            <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
          </directory-eventing>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a timeout for SAE directory eventing, and specify the number of events that the SAE can receive from the directory simultaneously.

Contents

`<timeout>` — Maximum time that the directory eventing system waits for the directory to respond.

Value — Number of seconds in the range 1-2147483647

Default — No value

`<dispatcher-pool-size>` — Number of events that the SAE can receive from the directory simultaneously.

Value — Integer in the range 1-2147483647

Default — No value

Required Privilege Level

system

< persistent-login-cache >

(configuration/shared/sae/configuration/ldap)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <persistent-login-cache>
            <dn>dn</dn>
            <server-address>server-address</server-address>
            <port-number>port-number</port-number>
            <authentication-dn>authentication-dn</authentication-dn>
            <password>password</password>
            <directory-eventing/>
            <polling-interval>polling-interval</polling-interval>
            <blacklist/>
          </persistent-login-cache>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the LDAP connection from the SAE to the directory in which persistent login cache data is stored.

Contents

<dn>— Subtree in the directory in which persistent login cache data is stored.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— o = authCache, <base>

<server-address>—(Optional) (Multivalue) Directory server that stores information.

Value— IP address or hostname. For multiple directory servers, enclose the addresses or hostnames in quotes and separate addresses or names with a space. For example:
"127.153.27.1 192.168.0.1".

Default— No value

<port-number>—(Optional) Directory port number

Value—Integer in the range -2147483648–2147483647

Default— 389

<authentication-dn>

—(Optional) DN that the SAE uses to authenticate access to the directory server. The specified directory entry must exist and have read access to all attributes.

For subscriber data, the entry must have write access if subscribers are allowed to customize their subscription profiles.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— No value

`<password>`—(Optional) Password used to authenticate access to the directory server. You must configure the password in the directory to authenticate read access to the directory.

Value— Text string or base64 string.

For authentication to access subscriber data, the password must match the value of the `userPassword` attribute of the authentication DN.

Default— No value

`<directory-eventing>`—(Optional) Enables or disables automatic discovery of changes to directory data.

For subscriber data:

- If enabled, changes in the subscriber profile or subscriptions take effect automatically while the subscriber is logged in.
- If disabled, changes in the subscriber profile or subscriptions do not take effect until the next time the subscriber logs in.

For service data:

- If enabled, changes in service definitions take effect automatically. If a changed service is in use, all service instances are deactivated and then reactivated with the modified settings. Consequently, service may be affected for subscribers who are logged in at the time of the modification.
- If disabled, changes in service definitions do not take effect until you restart the SAE.

Default— Disabled

`<polling-interval>`— Frequency for checking the directory for changes.

Value— Number of seconds in the range 15–86400

Default— 30

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Value— true or false

Default— true

`ldaps`—Enables LDAPS as the secure protocol for connections to the directory server.

Value— `ldaps`—Enable LDAPS

Default— Disabled

Required Privilege Level

system

< policy-data >

(configuration/shared/sae/configuration/ldap)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <policy-data>
            <policy-dn>policy-dn</policy-dn>
            <parameter-dn>parameter-dn</parameter-dn>
            <external-parent-group-dn>external-parent-group-dn</external-parent-group-dn>
            <directory-eventing/>
            <polling-interval>polling-interval</polling-interval>
          </policy-data>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the LDAP connection from the SAE to the directory in which service data is stored.

Contents

<policy-dn>— Subtree in the directory in which policy data is stored.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— *o = Policies, <base>*

<parameter-dn>— Subtree in the directory in which policy parameter data is stored.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— *o = Parameters, <base>*

<external-parent-group-dn>— Subtree in the directory in which external parent groups are stored.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— *o = ExternalParentGroups, <base>*

<directory-eventing>—(Optional) Enables or disables automatic discovery of changes to directory data.

- If enabled, changes in policy definitions take effect automatically. If a changed policy is in use, all policy instances are deactivated and then reactivated with the modified settings. Consequently, service may be affected for subscribers who are logged in when the change is made.
- If disabled, changes in policy definitions do not take effect until you restart the SAE.

Default— Disabled

`<polling-interval>`— Frequency for checking the directory for changes.

Value— Number of seconds in the range 15–86400

Default— 30

Required Privilege Level

system

< service-data >

(configuration/shared/sae/configuration/ldap)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <service-data>
            <dn>dn</dn>
            <server-address>server-address</server-address>
            <port-number>port-number</port-number>
            <authentication-dn>authentication-dn</authentication-dn>
            <password>password</password>
            <directory-eventing/>
            <polling-interval>polling-interval</polling-interval>
            <blacklist/>
            <ldaps/>
          </service-data>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the LDAP connection from the SAE to the directory in which service data is stored.

Contents

<dn>— Subtree in the directory in which service data is stored.

The SAE loads service definitions on startup and when service reloading is requested.

Value— <DN> . You can use the special value <base> to refer to the globally configured base DN. The string <base> is replaced with the directory base DN.

Default— < base >

<server-address>—(Optional) (Multivalue) Directory server that stores information.

Value— IP address or hostname. For multiple directory servers, enclose the addresses or hostnames in quotes and separate addresses or names with a space. For example:

"127.153.27.1 192.168.0.1".

Default— No value

<port-number>—(Optional) Directory port number

Value—Integer in the range -2147483648-2147483647

Default— 389

`<authentication-dn>`—(Optional) DN that the SAE uses to authenticate access to the directory server. The specified directory entry must exist and have read access to all attributes.

For subscriber data, the entry must have write access if subscribers are allowed to customize their subscription profiles.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— No value

`<password>`—(Optional) Password used to authenticate access to the directory server. You must configure the password in the directory to authenticate read access to the directory.

Value— Text string or base64 string.

For authentication to access subscriber data, the password must match the value of the `userPassword` attribute of the authentication DN.

Default— No value

`<directory-eventing>`—(Optional) Enables or disables automatic discovery of changes to directory data.

For subscriber data:

- If enabled, changes in the subscriber profile or subscriptions take effect automatically while the subscriber is logged in.
- If disabled, changes in the subscriber profile or subscriptions do not take effect until the next time the subscriber logs in.

For service data:

- If enabled, changes in service definitions take effect automatically. If a changed service is in use, all service instances are deactivated and then reactivated with the modified settings. Consequently, service may be affected for subscribers who are logged in at the time of the modification.
- If disabled, changes in service definitions do not take effect until you restart the SAE.

Default— Disabled

`<polling-interval>`— Frequency for checking the directory for changes.

Value— Number of seconds in the range 15–86400

Default— 30

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a

directory if the directory fails to respond during 10 polling intervals.

Value— true or false

Default— true

ldaps—Enables LDAPS as the secure protocol for connections to the directory server.

Value— ldaps—Enable LDAPS

Default— Disabled

Required Privilege Level

system

< subscriber-data >

(configuration/shared/sae/configuration/ldap)

Usage

```

<configuration>
  <shared>
    <sae>
      <configuration>
        <ldap>
          <subscriber-data>
            <subscription-loading-filter>subscription-loading-filter-choice</subscription-loading-
filter>
              <load-subscriber-schedules/>
              <persistent-sessions/>
              <login-cache-dn>login-cache-dn</login-cache-dn>
              <session-cache-dn>session-cache-dn</session-cache-dn>
              <dn>dn</dn>
              <server-address>server-address</server-address>
              <port-number>port-number</port-number>
              <authentication-dn>authentication-dn</authentication-dn>
              <password>password</password>
              <directory-eventing/>
              <polling-interval>polling-interval</polling-interval>
              <blacklist/>
            </ldaps/>
          </subscriber-data>
        </ldap>
      </configuration>
    </sae>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the LDAP connection from the SAE to the directory in which subscriber data is stored.

Contents

<subscription-loading-filter>— Filter that the SAE uses to search for subscriptions in the directory when the SAE loads a subscription.

Value— One of the following:

- subscriberRefFilter—Subscriber reference filter. The SAE runs a search based on the subscriberRef attribute in the umcServiceProfile object, which is the base object class of the service profile hierarchy. The subscriberRef attribute contains a DN that points to the parent of the subscriber object.
- objectClassFilter—Subscription Objectclass filter. The SAE performs a one-level search with the directory entry, which represents the subscriber folder as the base DN. The search filter is (objectClass = sspServiceProfile). This method can be slow if you have a large number of subscription entries within the subscriber folder subtree.

Default— objectClassFilter

`<load-subscriber-schedules>`—(Optional) Enable or disable loading of subscriber schedules.

Default— Enabled

`<persistent-sessions>`—(Optional) Load existing persistent sessions and schedules when starting or recovering a user session.

Default—false

`<login-cache-dn>`— Subtree in the directory where subscriber login information is cached. When a subscriber logs in to a residential portal, the SAE searches subscriber profiles by mapping the realm of the login name to a retailer object found below the search base.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— `o = userProfileCache, <base>`

`<session-cache-dn>`— Subtree in the directory where persistent session data is cached.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— `o = PersistentSessions, <base>`

`<dn>`— Subtree in the directory in which subscriber data is stored.

When a subscriber logs in to a residential portal, the SAE searches subscriber profiles by mapping the realm of the login name to a retailer object found below the DN.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— `o = Users, <base>`

`<server-address>`—(Optional) (Multivalue) Directory server that stores information.

Value— IP address or hostname. For multiple directory servers, enclose the addresses or hostnames in quotes and separate addresses or names with a space. For example:

"127.153.27.1 192.168.0.1".

Default— No value

`<port-number>`—(Optional) Directory port number

Value—Integer in the range -2147483648–2147483647

Default— 389

`<authentication-dn>`—(Optional) DN that the SAE uses to authenticate access to the directory server. The specified directory entry must exist and have read access to all attributes.

For subscriber data, the entry must have write access if subscribers are allowed to customize their subscription profiles.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— No value

`<password>`—(Optional) Password used to authenticate access to the directory server. You must configure the password in the directory to authenticate read access to the directory.

Value— Text string or base64 string.

For authentication to access subscriber data, the password must match the value of the `userPassword` attribute of the authentication DN.

Default— No value

`<directory-eventing>`—(Optional) Enables or disables automatic discovery of changes to directory data.

For subscriber data:

- If enabled, changes in the subscriber profile or subscriptions take effect automatically while the subscriber is logged in.
- If disabled, changes in the subscriber profile or subscriptions do not take effect until the next time the subscriber logs in.

For service data:

- If enabled, changes in service definitions take effect automatically. If a changed service is in use, all service instances are deactivated and then reactivated with the modified settings. Consequently, service may be affected for subscribers who are logged in at the time of the modification.
- If disabled, changes in service definitions do not take effect until you restart the SAE.

Default— Disabled

`<polling-interval>`— Frequency for checking the directory for changes.

Value— Number of seconds in the range 15–86400

Default— 30

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Value— true or false

Default— true

`ldaps`—Enables LDAPS as the secure protocol for connections to the directory server.

Value— `ldaps`—Enable LDAPS

Default— Disabled

Required Privilege Level

system

< client >

(configuration/shared/sae/configuration/license-manager)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <license-manager>
          <client>
            <type>type</type>
            <cache>cache</cache>
          </client>
        </license-manager>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the license manager client.

Contents

<type>— Type of the license client.

Value— SDX is currently the only valid value

Default— SDX

<cache>— Path to a cache file.

Value— Valid path

Default— var/run/lic_cache

Required Privilege Level

system

< directory-access >

(configuration/shared/sae/configuration/license-manager)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <license-manager>
          <directory-access>
            <server-address>server-address</server-address>
            <server-port>server-port</server-port>
            <license-dn>license-dn</license-dn>
            <authentication-dn>authentication-dn</authentication-dn>
            <password>password</password>
            <ldaps/>
            <connection-manager-id>connection-manager-id</connection-manager-id>
            <event-base-dn>event-base-dn</event-base-dn>
            <signature-dn>signature-dn</signature-dn>
            <snmp-agent/>
          </directory-access>
        </license-manager>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure directory access to the license manager.

Contents

<server-address>—(Optional) IP addresses or hostnames of the directory server that stores licensing data.

Value— IP address or hostname. For multiple directory servers, enclose the addresses or hostnames in quotes and separate addresses or names with a space.

Default— No value

<server-port>—(Optional) Port number of the LDAP connection to the directory server that stores licensing data.

Value— Port number in the range 0–65535

Default— 389

<license-dn>—(Optional) Subtree in the directory where licensing information is stored. The SAE searches for the license key below this path.

Value— <DN>. The string <base> is replaced with the directory base DN

Default— ou = Licenses, o = Management, < base >

<authentication-dn>—(Optional) DN the SAE uses to authenticate access to the directory server.

Value— <DN> . The string < base > is replaced with the directory base DN

Default— No value

<password>—(Optional) Password used to authenticate access to the directory.

Value— Text string or Base64 string

Default— No value

Enables or disables LDAPS as the secure protocol for connections to the directory server that stores license data.

Value

- ldaps—

Default— Disabled

<connection-manager-id>— DES connection manager within the Java Naming and Directory Interface (JNDI) framework.

Value— Text

Default— LICENSE_MANAGER

<event-base-dn>—(Optional) Directory eventing base DN for the license manager data.

Value— <DN> . The string < base > is replaced with the directory base DN

Default— No value

<signature-dn>—(Optional) DN of the entry that specifies the LDAP schema attribute usedDirectory. This attribute identifies the type of directory, such as openLDAP or DirX, on which the license data is stored.

Value— <DN> . The string < base > is replaced with the directory base DN

Default— No value

<snmp-agent>—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default— Disabled

Required Privilege Level

system

< logger >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <logger>
          <name>name</name> <!-- identifier -->
        </logger>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Create a logging configuration for the SAE.

Contents

<name>— Name of the logging configuration.

Value—Text

Required Privilege Level

system

< file >

(configuration/shared/sae/configuration/logger)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <logger>
          <file>
            <filter>filter</filter>
            <filename>filename</filename>
            <rollover-filename>rollover-filename</rollover-filename>
            <maximum-file-size>maximum-file-size</maximum-file-size>
          </file>
        </logger>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

<maximum-file-size>—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

system

< syslog >

(configuration/shared/sae/configuration/logger)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <logger>
          <syslog>
            <filter>filter</filter>
            <host>host</host>
            <port>port</port>
            <facility>facility</facility>
            <format>format</format>
          </syslog>
        </logger>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system

< login-registration > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <login-registration>
          <registration-authentication/>
        </login-registration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Enable the authentication of registered username/password pairs.

Contents

<registration-authentication>—(Optional) Enables the authentication of registered username/password pairs. Enable this option if your authentication server does not allow authentication while a session for the authenticated username is active.

Default—

Required Privilege Level

system

< nic-proxy-configuration > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <name>name</name> <!-- identifier -->
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a NIC proxy.

Contents

<name>— Name of the NIC proxy configuration.

Value—Text

Required Privilege Level

system

< cache >

(configuration/shared/sae/configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <cache>
            <cache-size>cache-size</cache-size>
            <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
            <cache-entry-age>cache-entry-age</cache-entry-age>
          </cache>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

< nic-host-selection > (configuration/shared/sae/configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <nic-host-selection>
            <groups>groups</groups>
            <selection-criteria>selection-criteria-choice</selection-criteria>
          </nic-host-selection>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- **roundRobin**—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- **randomPick**—NIC proxy selects NIC hosts randomly from the list.
- **priorityList**—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

< blacklisting >

(configuration/shared/sae/configuration/nic-proxy-configuration/nic-host-selection)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <nic-host-selection>
            <blacklisting>
              <try-next-system-on-error/>
              <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
              <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
            </blacklisting>
          </nic-host-selection>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

`<try-next-system-on-error>`—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

`<number-of-retries-before-blacklisting>`— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

`<blacklist-retry-interval>`— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

system

< resolution >

(configuration/shared/sae/configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <resolution>
            <resolver-name>resolver-name</resolver-name>
            <key-type>key-type</key-type>
            <value-type>value-type</value-type>
            <expect-multiple-values/>
            <constraints>constraints</constraints>
          </resolution>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip—Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<value-type>`— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<expect-multiple-values>`—(Optional) Specifies whether or not the key can have multiple corresponding values.

`<constraints>`—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< test-nic-bindings > (configuration/shared/sae/configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <test-nic-bindings>
            <use-test-bindings/>
          </test-nic-bindings>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

`<use-test-bindings>`—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

< key-values >

(configuration/shared/sae/configuration/nic-proxy-configuration/test-nic-bindings)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <nic-proxy-configuration>
          <test-nic-bindings>
            <key-values>
              <name>name</name> <!-- identifier -->
              <value>value</value>
            </key-values>
          </test-nic-bindings>
        </nic-proxy-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>— Name of the key.

Value—Text

<value>— Value of the key.

Value—Text

Required Privilege Level

system

< plug-ins >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <plugin-publisher-auth-queue>plugin-publisher-auth-queue</plugin-publisher-auth-queue>
          <plugin-publisher-tracking-queue>plugin-publisher-tracking-queue</plugin-publisher-
tracking-queue>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<plugin-publisher-auth-queue>—

Value—Integer in the range -2147483648–2147483647

Default—20

<plugin-publisher-tracking-queue>—

Value—Integer in the range -2147483648–2147483647

Default—20

Required Privilege Level

system

< event-publishers >

(configuration/shared/sae/configuration/plugin-ins)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plugin-ins>
          <event-publishers>
            <subscriber-authorization>subscriber-authorization</subscriber-authorization>
            <default-retailer-authentication>default-retailer-authentication</default-retailer-authentication>
            <default-vr-authentication>default-vr-authentication</default-vr-authentication>
            <default-retailer-dhcp-authentication>default-retailer-dhcp-authentication</default-retailer-dhcp-authentication>
            <dhcp-authorization>dhcp-authorization</dhcp-authorization>
            <service-authorization>service-authorization</service-authorization>
            <subscription-authorization>subscription-authorization</subscription-authorization>
            <subscriber-tracking>subscriber-tracking</subscriber-tracking>
            <service-tracking>service-tracking</service-tracking>
            <interface-tracking>interface-tracking</interface-tracking>
          </event-publishers>
        </plugin-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure event publishers. Event publishers tell the SAE which events to send to which plug-in.

Contents

<subscriber-authorization>—(Optional) (Multivalue) Authorize all subscriber sessions. These plug-in instances are called after a subscriber profile is loaded but before a subscriber session is started. The SAE calls these plug-ins for each subscriber who logs in to a portal.

These plug-in instances cannot perform authentication because passwords are not available at this point in the login process. Therefore if you specify plug-ins that perform authentication, the login process will fail.

Value— List of plug-ins

Default— No value

Introduced in—1.0.0

<default-retailer-authentication>—(Optional) (Multivalue) Authenticate subscribers who are assigned to retailer objects that do not specify an authentication plug-in. These plug-ins are called when the subscriber logs in to a domain. The authentication process for portal logins maps the supplied domain name to a retailer object.

If you do not specify default retailer authentication plug-ins or retailer-specific plug-ins, subscribers are admitted without authentication.

Value— List of plug-ins

Default— No value

`<default-vr-authentication>`—(Optional) (Multivalued) Authenticate subscribers who are assigned to a VR that do not specify an authentication plug-in. These plug-ins are called when the subscriber logs in to a domain.

If you do not specify default vr authentication plug-ins or retailer-specific plug-ins, subscribers are admitted without authentication.

Value— List of plug-ins

Default— No value

`<default-retailer-dhcp-authentication>`—(Optional) (Multivalued) Authenticate DHCP address requests for subscribers who are assigned to retailer objects that do not specify a DHCP authentication plug-in. These plug-ins are called when the SAE receives a DHCP discover request from a client that has its username and password cached in the SAE. The username and password can either be cached persistently in the directory or temporarily in memory during a switch from an unauthenticated to an authenticated address.

Value— List of plug-ins

Default— No value

`<dhcp-authorization>`—(Optional) (Multivalued) Authorize all DHCP address requests for all DHCP subscribers who log in to a portal. These plug-ins are called for both authenticated and unauthenticated address requests.

Value— List of plug-ins

Default— No value

`<service-authorization>`—(Optional) (Multivalued) Authorize all service sessions. These plug-ins are called before a service session is started, and are called for every service session started by any subscriber.

Value— List of plug-ins

Default— No value

`<subscription-authorization>`—(Optional) (Multivalued) Authorize subscribers to change their subscriptions. These plug-ins are called when a subscriber tries to modify, subscribe to, or unsubscribe from a subscription.

Value— List of plug-ins

Default— No value

`<subscriber-tracking>`—(Optional) (Multivalued) Collect accounting data for all subscriber sessions.

These plug-ins are called for every subscriber session that is started and stopped. They are called after a subscriber session has started and when the session is stopped.

Value— List of plug-ins

Default— No value

`<service-tracking>`—(Optional) (Multivalue) Collect accounting data for all service sessions. These plug-ins are called for every service session that is started and stopped. They are called after a service session starts, when the service session stops, and during interim updates.

Value— List of plug-ins

Default— No value

`<interface-tracking>`—(Optional) (Multivalue) Collect accounting data for all interfaces that the SAE manages. These plug-ins are called for every managed interface that is started and stopped. They are called after an interface comes up, when new policies are installed on the interface, and when the interface goes down. You can include NIC SAE plug-ins, which cause the SAE to send interface tracking events to the NIC SAE plug-in agent.

Value— List of plug-ins

Default— No value

Required Privilege Level

system

< device-type-authentication > (configuration/shared/sae/configuration/plugins/event-publishers)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <event-publishers>
            <device-type-authentication>
              <junos>junos</junos>
              <junos-dmi>junos-dmi</junos-dmi>
              <junos-ptsp>junos-ptsp</junos-ptsp>
              <junos-ise>junos-ise</junos-ise>
              <junose>junose</junose>
              <pcmm>pcmm</pcmm>
              <third-party>third-party</third-party>
            </device-type-authentication>
          </event-publishers>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<junos>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS(BEEP) device.

Value—Text

<junos-dmi>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS(DMI) device.

Value—Text

<junos-ptsp>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS-PTSP device.

Value—Text

<junos-ise>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS-JSRC device.

Value—Text

<junose>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS (COPS-PR) device.

Value—Text

<pcmm>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a PCMM device.

Value—Text

<third-party>—(Optional) (Multivalue) Authenticate subscriber sessions logging in through a JUNOS(BEEP) device.

Value—Text

Required Privilege Level

system

< manager > (configuration/shared/sae/configuration/plugin-ins)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plugin-ins>
          <manager>
            <threads>threads</threads>
          </manager>
        </plugin-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the number of threads used for plug-in synchronization.

Contents

<threads>— Number of threads that the SAE maintains for plug-in synchronization.

Value— Integer in the range 0–100

Default— 5

Required Privilege Level

system

< name >

(configuration/shared/sae/configuration/plugin-ins)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <name>name</name> <!-- identifier -->
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a plug-in. A plug-in configuration describes a particular plug-in that can handle events that it receives from the SAE.

- An authorization plug-in configuration might perform RADIUS authentication when it receives a subscriber login event.
- A tracking plug-in might write accounting information to a file when it receives service session events.

For each type of plug-in you can create multiple instances that contain different configurations of the plug-in.

Contents

<name>— Name of the plug-in configuration.

Value—Text

Required Privilege Level

system

< acp-interface-listener >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <acp-interface-listener>
              <ldap-server>ldap-server</ldap-server>
              <bind-dn>bind-dn</bind-dn>
              <bind-password>bind-password</bind-password>
              <ldaps/>
              <congestion-points-base-dn>congestion-points-base-dn</congestion-points-base-dn>
              <admission-control-base-dn>admission-control-base-dn</admission-control-base-dn>
              <timeout>timeout</timeout>
              <acp-remote-corba-ior>acp-remote-corba-ior</acp-remote-corba-ior>
            </acp-interface-listener>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a hosted internal plug-in for SRC-ACP that the SAE uses to monitor the state of interfaces on a VR for backbone congestion points.

Contents

<ldap-server>— IP address or name of the host that supports the directory that contains backbone service definitions and network interfaces.

Value— IP address or name of the host optionally followed by a port number. Use the format < host > : < port number > . For example, 10.227.0.0:389

Default— No value

<bind-dn>— DN of the directory entry that defines the username with which the plug-in accesses the directory.

Value— < DN > . You can use the special value < base > to refer to the globally configured base DN. The string < base > is replaced with the directory base DN.

Default— No value

<bind-password>— Password with which the plug-in accesses the directory.

Value— Text string

Default— No value

`ldaps`—Enables LDAPS as the secure protocol for connections to the directory server.

Value— `ldaps`—Enable LDAPS

Default— Disabled

`<congestion-points-base-dn>`— DN at which SRC-ACP stores backbone congestion points.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— No value

`<admission-control-base-dn>`— DN at which SRC-ACP stores edge congestion points.

Value— `<DN>`. You can use the special value `<base>` to refer to the globally configured base DN. The string `<base>` is replaced with the directory base DN.

Default— No value

`<timeout>`—(Optional) Maximum time that the plug-in waits for the router to respond.

Value— Number of milliseconds in the range 0–2147483647. A zero means there is no timeout.

Default— 5000

`<acp-remote-corba-ior>`— Object reference for the ACP plug-in.

Value— ACP CORBA reference that is defined with the **edit shared acp configuration corba acp-ior** statement.

Default— No value

Required Privilege Level

system

< custom-radius-accounting > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <custom-radius-accounting>
              <enable-radius-account-onoff/>
              <java-class-radius-packet-handler>java-class-radius-packet-handler</java-class-
radius-packet-handler>
              <class-path-radius-packet-handler>class-path-radius-packet-handler</class-path-
radius-packet-handler>
              <append-acct-status-type-attribute/>
              <require-mandatory-attributes/>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <fallback-timer>fallback-timer</fallback-timer>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <default-peer>default-peer</default-peer>
            </custom-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a custom RADIUS accounting plug-in.

Contents

<enable-radius-account-onoff>—(Optional) Specifies whether or not RADIUS Accounting On/off messages should be sent to the downstream Radius servers

Value— true or false

Default— true

<java-class-radius-packet-handler>— Name of the Java class that implements the RadiusPacketHandler interface in the RADIUS client library.

Value— Java class name. For example,
net.juniper.smgmt.radius.RadiusPacketHandlerImpl

Default— No value

`<class-path-radius-packet-handler>`—(Optional) List of URLs that identify a location from which Java classes are loaded when the plug-in is initialized.

Value— Comma-separated list of URLs

Default— No value

`<append-acct-status-type-attribute>`—(Optional) Enable or disable whether or not the plug-in includes the Acct-Status-Type attribute in a RADIUS accounting request packet.

Default— Enabled

`<require-mandatory-attributes>`—(Optional) Enable or disable whether or not a RADIUS authentication or accounting request must contain all mandatory RADIUS attributes before sending the request packet.

Default— Enabled

`<load-balancing-mode>`— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default— Failover

`<failback-timer>`— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the retry-interval attribute to make sure the fail-

over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1-9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the timeout attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0-9223372036854775807.

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0-2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port used for communication with the RADIUS server. If not specified, the global default is used.

Value— One of the following:

- Port number in the range 1-65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool name custom-radius-accounting peer-group** command.

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugin/name/custom-radius-accounting)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <custom-radius-accounting>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </custom-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

<secret>— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< custom-radius-authentication > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <custom-radius-authentication>
              <java-class-radius-packet-handler>java-class-radius-packet-handler</java-class-radius-packet-handler>
              <class-path-radius-packet-handler>class-path-radius-packet-handler</class-path-radius-packet-handler>
              <require-mandatory-attributes/>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <fallback-timer>fallback-timer</fallback-timer>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <default-peer>default-peer</default-peer>
            </custom-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a custom RADIUS authentication plug-in.

Contents

<java-class-radius-packet-handler>— Name of the Java class that implements the RadiusPacketHandler interface in the RADIUS client library.

Value— Java class name. For example,
net.juniper.smgt.radius.RadiusPacketHandlerImpl

Default— No value

<class-path-radius-packet-handler>—(Optional) List of URLs that identify a location from which Java classes are loaded when the plug-in is initialized.

Value— Comma-separated list of URLs

Default— No value

<require-mandatory-attributes>—(Optional) Specifies whether or not a RADIUS authentication or

accounting request must contain all mandatory RADIUS attributes before sending the request packet.

Value— true or false

Default— true

`<load-balancing-mode>`— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default— Failover

`<failback-timer>`— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the `retry-interval` attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the timeout attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0-2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1-65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, 7000-7003, 7006, 7007-7009

Default— No value

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool name custom-radius-authentication peer-group** command.

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugin-name/custom-radius-authentication)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <custom-radius-authentication>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </custom-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

`<secret>`— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< ejb-adaptor > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <ejb-adaptor>
              <application-server-url>application-server-url</application-server-url>
              <jndi-sae-event-listener>jndi-sae-event-listener</jndi-sae-event-listener>
              <event-admitter>event-admitter</event-admitter>
              <use-primary-vta-if-available/>
              <attributes>attributes</attributes>
            </ejb-adaptor>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Note that the EJB adapter plug-in works only with the SRC-VTA, which is not yet supported on the C-series platform.

Configure an EJB adapter plug-in that the SRC-VTA uses to communicate with the SAE. The plug-in performs the following functions:

- Filters SAE plug-in events for the SRC-VTA.
- Adapts internal SAE events to EJB-compatible methods.
- Sends SAE tracking events to the SRC-VTA.

Contents

<application-server-url>— Comma separated list of VTA IP addresses or hostnames. The prefix "jnp://" and the suffix ":1099" are allowed, but unnecessary. When use-primary-vta-if-available is enabled, then as per the Primary/ backup algorithm, the first VTA in the comma separated list is the primary VTA. All the other VTAs are secondary VTAs.

Value— URLs with an optional prefix "jnp://" and an optional suffix ":1099".

Default— 127.0.0.1

<jndi-sae-event-listener>— JNDI name of SAEEventListener EJB of the peer SRC-VTA.

Value— JNDI name. For example, Quota/SAEEventListenerBean.

Default— No value

`<event-admitter>`—(Optional) LDAP filter that determines the subscriber and service events that the EJB adapter plug-in sends to the SRC-VTA.

Value— See *Installing and Initially Configuring the SRC-VTA* in the *SRC Application Library Guide*.

Default— No value

`<use-primary-vta-if-available>`—(Optional) When this attribute is set to true, EJB adapter plugin uses Primary/ backup algorithm ; when set to false, it uses Round-robin algorithm

Value— Enabled, to use Primary/backup algorithm. Disabled, to use Round-robin algorithm

Default— Disabled

`<attributes>`—(Optional) (Multivalue) Attributes that are sent to the plug-in. We recommend that you configure only the required attributes. If you do not specify attributes, all attributes are sent. Specifying fewer attributes improves the performance of the SRC network.

Value—Text

Default— All attributes

Required Privilege Level

system

< external >

(configuration/shared/sae/configuration/plugin/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <external>
              <corba-object-reference>corba-object-reference</corba-object-reference>
              <state-synchronization/>
              <attributes>attributes</attributes>
            </external>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SAE external plug-ins. You need to configure external plug-ins for SAE plug-in agents for the NIC, for Admission Control Plug-Ins, and for custom plug-ins developed in Common Object Request Broker Architecture (CORBA).

Contents

<corba-object-reference>— Object reference of the external plug-in that is exported to the SAE. When the SAE sends the first event to a registered plug-in, it resolves the object reference.

Value— Object reference in one of the following formats:

- The absolute path to the interoperable object reference (IOR) file in the format:
"file:// < absolute path > "
- The corbaloc URL in the format corbaloc:: < host > : < portNumber > / < path >
where:
 - host is the name or IP address of the host that supports the plug-in
 - portNumber is the port number of the host
 - path is the absolute path to the plug-in
- Common Object Services (COS) in the format
corbaname:: < host > [: < port >][/serviceName]# < key > where the key is provided by the publisher of the IOR to the COS naming service.
- The actual IOR in the form IOR: < objectReference >

Default— No value

`<state-synchronization>`—(Optional) Plug-in implements state synchronization interface

`<attributes>`—(Optional) (Multivalue) Attributes that are sent to the plug-in. We recommend that you configure only the required attributes. If you do not specify attributes, all attributes are sent. Specifying fewer attributes improves the performance of the SRC network.

Value—Text

Default— All attributes

Required Privilege Level

system

< file-accounting >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <file-accounting>
              <filename>filename</filename>
              <template>template</template>
              <interval>interval</interval>
              <fields>fields-choice</fields>
            </file-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a file accounting plug-in, which writes information to a file in a comma-separated format.

Contents

<filename> — Name and location of the file to which the SAE writes accounting information. The SAE names accounting files by appending the timestamp for the start of the accounting period.

Value — Path and name of file

Default — /var/acct/log

<template> — Name of the template that defines header names for the attributes written to the accounting file.

Value — Template name

Default — std

<interval> — Number of hours of information stored in each accounting file. When the interval expires, the SAE closes the file, renames it to the archive name, and creates a new file.

Accounting files are aligned with midnight of the day the SAE process starts. If the interval is 24 hours, the SAE starts a new file at midnight every day beginning on the day the SAE process starts.

- If the interval is a divisor of 24 hours (for example, 15 minutes, 30 minutes, 1 hour), there is a repeatable pattern of file starts. For example, if the interval is set to 6 hours, the SAE creates a

new file at midnight, 6 am, 12 pm, and 6 pm every day.

- If the interval is not a divisor of 24 hours, then the file start times shift each day to different times of the day.

If the SAE is restarted, the schedule for creating accounting files is reset to start at midnight.

Value— Interval in the format hour:minutes

Default— 24

<fields>—(Optional) (Multivalue) List of accounting attributes that are written to the accounting file.

Value

- **status**—Accounting status
- **nas-id**—NAS identifier
- **host**—Hostname of the SAE
- **router-name**—Router name
- **interface-name**—Interface name
- **interface-alias**—Interface alias
- **interface-descr**—Interface description
- **port-id**—NAS port ID
- **user-ip-address**—Subscriber IP address
- **login-name**—Login name
- **accounting-id**—Accounting ID
- **auth-user-id**—User authentication ID
- **if-radius-class**—Interface RADIUS class
- **if-session-id**—Interface session ID
- **service-name**—Service name
- **radius-class**—RADIUS class
- **event-time**—Event time (s)
- **session-id**—Session ID
- **terminate-cause**—Terminate cause
- **session-time**—Session time
- **in-octets**—Number of input octets
- **out-octets**—Number of output octets
- **in-packets**—Number of input packets
- **out-packets**—Number of output packets
- **nas-ip**—NAS IP address
- **user-mac-address**—Subscriber MAC address
- **service-session-name**—Service session name
- **service-session-tag**—Service session tag
- **user-type**—Subscriber session type
- **user-radius-class**—Subscriber session RADIUS class
- **user-session-id**—Subscriber session ID
- **primary-user-name**—Primary subscriber name
- **subscription-name**—Subscription name
- **login-id**—Login ID
- **if-index**—Interface index
- **event-time-millisecond**—Event time (ms)
- **nas-port**—NAS port
- **operational**—Operational flag

- `user-inet-address`—Subscriber INET address
- `nas-inet-address`—NAS INET address
- `router-type`—Router type
- `interface-speed`—Interface speed
- `calling-station-id`—Calling Station ID
- `remote-tunnel-inet-address`—Remote Tunnel Address
- `local-tunnel-inet-address`—Local Tunnel Address
- `vpn-id`—VPN ID

Default— `status,nas-id,host,router-name,interface-name,interface-alias,interface-descr,port-id,user-ip-address,login-name,accounting-id,auth-user-id,if-radius-class,if-session-id,service-name,radius-class,event-time,session-id,terminate-cause,session-time,in-octets,out-octets,in-packets,out-packets,nas-ip,user-mac-address,service-session-name,service-session-tag,user-type,user-radius-class,user-session-id,user-session-handle,calling-station-id,remote-tunnel-inet-address,local-tunnel-inet-address`

Required Privilege Level

system

< flex-radius-accounting >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <enable-radius-account-onoff/>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <failback-timer>failback-timer</failback-timer>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <error-handling>error-handling-choice</error-handling>
              <default-peer>default-peer</default-peer>
              <template>template</template>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a flexible RADIUS accounting plug-in.

Contents

<enable-radius-account-onoff>—(Optional) Specifies whether or not RADIUS Accounting On/off messages should be sent to the downstream Radius servers

Value— true or false

Default— true

<load-balancing-mode>— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default— Failover

`<failback-timer>`— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the retry-interval attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the timeout attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0–2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1–65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<error-handling>`— Configures the way the SAE handles errors.

Value— One of the following:

- 0—Ignores incorrect definitions and logs them for debugging purposes
- 1—Logs errors and discards the affected RADIUS packet

Default— 0 (Ignore)

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool name flex-radius-accounting peer-group** command.

Default— No value

`<template>`— Name of RADIUS packet template.

Value— Name of template

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugins/name/flex-radius-accounting)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

`<secret>`— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< radius-packet-definition > (configuration/shared/sae/configuration/plugin/name/flex-radius-accounting)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <name>name</name> <!-- identifier -->
                </radius-packet-definition>
              </flex-radius-accounting>
            </name>
          </plug-ins>
        </configuration>
      </sae>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS packet definition for the plug-in.

Contents

<name>— Name of the RADIUS attribute instance.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <attributes>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </attributes>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< attributes-with-type > (configuration/shared/sae/configuration/plugin- ins/name/flex-radius-accounting/radius-packet- definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <attributes-with-type>
                  <name>name</name> <!-- identifier -->
                </attributes-with-type>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

Required Privilege Level

system

< type >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/attributes-with-type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <attributes-with-type>
                  <type>
                    <type>type-choice</type> <!-- identifier -->
                    <value>value</value>
                  </type>
                </attributes-with-type>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

Type of the RADIUS attribute.

Value

- address—
- hex—
- integer—
- string—
- text—

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< vendor-specific > (configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific>
                  <name>name</name> <!-- identifier -->
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific>
                  <attributes>
                    <name>name</name> <!-- identifier -->
                    <value>value</value>
                  </attributes>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type > (configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific>
                  <type>
                    <name>name</name> <!-- identifier -->
                  </type>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— Data type of the attribute value.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific>
                  <type>
                    <attributes>
                      <name>name</name> <!-- identifier -->
                      <value>value</value>
                    </attributes>
                  </type>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< vendor-specific-26 > (configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific-26>
                  <name>name</name> <!-- identifier -->
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific-26>
                  <attributes>
                    <name>name</name> <!-- identifier -->
                    <value>value</value>
                  </attributes>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type > (configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific-26>
                  <type>
                    <name>name</name> <!-- identifier -->
                  </type>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-accounting/radius-packet-definition/vendor-specific-26/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-accounting>
              <radius-packet-definition>
                <vendor-specific-26>
                  <type>
                    <attributes>
                      <name>name</name> <!-- identifier -->
                      <value>value</value>
                    </attributes>
                  </type>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< flex-radius-authentication > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <failback-timer>failback-timer</failback-timer>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <error-handling>error-handling-choice</error-handling>
              <default-peer>default-peer</default-peer>
              <template>template</template>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a flexible RADIUS authentication plug-in.

Contents

<load-balancing-mode>— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default— Failover

<failback-timer>— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

<timeout>— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the **retry-interval** attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

<retry-interval>— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the timeout attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

<maximum-queue-length>— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0–2147483647

Default— 10000

<bind-address>—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

<udp-port>—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1–65535

- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<error-handling>`— Configure the way the SAE handles errors.

Value— One of the following:

- 0—Ignores incorrect definitions and logs them for debugging purposes
- 1—Logs errors and discards the affected RADIUS packet

Default— 0 (Ignore)

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool name flex-radius-authentication peer-group** command.

Default— No value

`<template>`— Name of RADIUS packet template.

Value— Name of template

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

<secret>— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< radius-packet-definition > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <name>name</name> <!-- identifier -->
                </radius-packet-definition>
              </flex-radius-authentication>
            </name>
          </plug-ins>
        </configuration>
      </sae>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS packet definition for the plug-in.

Contents

<name>— Name of the RADIUS attribute instance.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <attributes>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </attributes>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< attributes-with-type > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <attributes-with-type>
                  <name>name</name> <!-- identifier -->
                </attributes-with-type>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

Required Privilege Level

system

< type >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/attributes-with-type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <attributes-with-type>
                  <type>
                    <type>type-choice</type> <!-- identifier -->
                    <value>value</value>
                  </type>
                </attributes-with-type>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

Type of the RADIUS attribute.

Value

- address—
- hex—
- integer—
- string—
- text—

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< vendor-specific > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific>
                  <name>name</name> <!-- identifier -->
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific>
                  <attributes>
                    <name>name</name> <!-- identifier -->
                    <value>value</value>
                  </attributes>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific>
                  <type>
                    <name>name</name> <!-- identifier -->
                  </type>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— Data type of the attribute value.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific>
                  <type>
                    <attributes>
                      <name>name</name> <!-- identifier -->
                      <value>value</value>
                    </attributes>
                  </type>
                </vendor-specific>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< vendor-specific-26 > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific-26>
                  <name>name</name> <!-- identifier -->
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific-26>
                  <attributes>
                    <name>name</name> <!-- identifier -->
                    <value>value</value>
                  </attributes>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type > (configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific-26>
                  <type>
                    <name>name</name> <!-- identifier -->
                  </type>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/plugins/name/flex-radius-authentication/radius-packet-definition/vendor-specific-26/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <flex-radius-authentication>
              <radius-packet-definition>
                <vendor-specific-26>
                  <type>
                    <attributes>
                      <name>name</name> <!-- identifier -->
                      <value>value</value>
                    </attributes>
                  </type>
                </vendor-specific-26>
              </radius-packet-definition>
            </flex-radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< interface-subscriber-limit > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <interface-subscriber-limit>
              <concurrent-subscribers>concurrent-subscribers</concurrent-subscribers>
            </interface-subscriber-limit>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a plug-in that limits the number of authenticated subscribers who connect to an IP interface on the router.

Contents

<concurrent-subscribers>— Number of authenticated subscribers who can connect to an IP interface on the router simultaneously.

Value— Integer in the range 0-2147483647

Default— 1

Required Privilege Level

system

< internal > (configuration/shared/sae/configuration/plugin/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <internal>
              <plug-in-class>plug-in-class</plug-in-class>
            </internal>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an internal plug-in.

Contents

<plug-in-class>— Class name of the plug-in.

Value— Fully qualified name of the Java class

Default— No value

Required Privilege Level

system

< properties >

(configuration/shared/sae/configuration/plugins/name/internal)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <internal>
              <properties>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </properties>
            </internal>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure the property name and value pairs that make up the plug-in.

Contents

<name>— Name of the property for which you want to define a value.

Value—Text

<value>— Value for the property.

Value— Value for the property.

Default— No value

Required Privilege Level

system

<jms-adaptor> (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <jms-adaptor>
              <shared-dsa-configuration>shared-dsa-configuration</shared-dsa-configuration>
              <subject-id-attribute-name>subject-id-attribute-name</subject-id-attribute-name>
              <fail-queue-resend-interval>fail-queue-resend-interval</fail-queue-resend-interval>
              <fail-queues-max-size>fail-queues-max-size</fail-queues-max-size>
              <jms-blacklist-time>jms-blacklist-time</jms-blacklist-time>
              <jms-time-to-live>jms-time-to-live</jms-time-to-live>
              <jms-connection-factory>jms-connection-factory</jms-connection-factory>
              <dsa-application-server-urls>dsa-application-server-urls</dsa-application-server-
urls>
              <timeout>timeout</timeout>
              <socket-timeout>socket-timeout</socket-timeout>
              <factory-initial>factory-initial</factory-initial>
              <factory-packages>factory-packages</factory-packages>
              <principal>principal</principal>
              <credentials>credentials</credentials>
              <protocol>protocol</protocol>
              <authentication>authentication</authentication>
            </jms-adaptor>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the SAE plug-in to send events to Dynamic Service Activator through the Java Message Service (JMS). Dynamic Service Activator then publishes the events to listening external SOAP applications.

Contents

<shared-dsa-configuration>— Grouped configuration used by all Dynamic Service Activator instances to which this plug-in forwards SAE events.

Value—

Default—

<subject-id-attribute-name>—(Optional) (Multivalue) SAE plug-in event attributes whose values are used to find SOAP event subscriptions. The values from these attributes are the event's subject ID, which specifies a user or interface. The value can be set by the SAE's subscriber classification script. If the values match any subject ID configured in a Dynamic Service Activator event subscription, then the plug-in forwards the event to Dynamic Service Activator, which in turn publishes it to the external SOAP application that owns the event subscription. Note that this attribute is multivalued. If any of the

event attributes contains a value that matches an event subscription's subject-id configuration attribute, then the event is forwarded as specified in that event subscription.

Value—

Default— PA_ACCOUNTING_ID

`<fail-queue-resend-interval>`—(Optional) Time between attempts to resend the events in the fail queue for each configured external SOAP application. When an event cannot be sent to any Dynamic Service Activator instance, it is stored in a fail queue.

Value—Integer in the range 1-2147483647

Default— 10 seconds

`<fail-queues-max-size>`—(Optional) Maximum size of all the fail queues combined. When an event cannot be sent to any Dynamic Service Activator instance, it is stored in a fail queue. Zero means all undeliverable events are discarded immediately, instead of being placed in a fail queue.

Value—Integer in the range 0-9223372036854775807

Default— 200 MB

`<jms-blacklist-time>`—(Optional) Time between connection attempts after a failure to establish a connection to a JMS queue on Dynamic Service Activator.

Value—

Default— 60 seconds

`<jms-time-to-live>`—(Optional) Time before undelivered JMS messages can be silently discarded. Zero means forever.

Value—Integer in the range 0-2147483647

Default— 60 seconds

`<jms-connection-factory>`—(Optional) JNDI name used to find JMS on the application server.

Value—

Default— ConnectionFactory

`<dsa-application-server-urls>`—(Multivalue) Dynamic Service Activator application servers to which SAE plug-in events are published. Dynamic Service Activator forwards the events as SOAP calls to external SOAP applications. The URLs point at the JNDI name servers on the Dynamic Service Activator application servers.

Value— The URLs are of the form `jnp://127.0.0.1:1099/`. The protocol and port sections of the URL are optional. An IP address or DNS name alone may be sufficient, assuming default application server configuration.

Default— jnp://127.0.0.1:1099

`<timeout>`—(Optional) Connection timeout, in milliseconds, used when attempting to contact the JNDI name servers on application servers. Zero means the connection attempt will block until the TCP/IP layer times out.

Value—

Default— 3000

`<socket-timeout>`—(Optional) Connected socket read timeout, in milliseconds, used when reading from sockets connected to the JNDI name servers on application servers. Zero means reading will block.

Value—

Default— 0

`<factory-initial>`—(Optional) Fully qualified class name of the factory class that creates the JNDI initial context.

Value—

Default— org.jnp.interfaces.NamingContextFactory

`<factory-packages>`—(Optional) List of Java package prefixes for the class name of the factory class that creates a URL context factory.

Value— Colon-separated list of Java package prefixes

Default— org.jboss.naming:org.jnp.interfaces

`<principal>`—(Optional) Security principal used for authentication. This option may be relevant if you use a non-default value for the factory-initial option.

Value—

Default— Undefined.

`<credentials>`—(Optional) Security credentials. This option may be relevant if you use a non-default value for the factory-initial option.

Value—

Default— Undefined.

`<protocol>`—(Optional) Security protocol. This option may be relevant if you use a non-default value for the factory-initial option.

Value—

Default— Undefined.

`<authentication>`—(Optional) Security authentication. This option may be relevant if you use a non-default value for the factory-initial option.

Value—

Default— Undefined.

Required Privilege Level

system

< ldap-authentication > (configuration/shared/sae/configuration/plugin/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <ldap-authentication>
              <method>method-choice</method>
              <server>server</server>
              <bind-dn>bind-dn</bind-dn>
              <bind-password>bind-password</bind-password>
              <search-filter>search-filter</search-filter>
              <ldaps/>
              <search-base-dn>search-base-dn</search-base-dn>
              <user-id-method>user-id-method-choice</user-id-method>
              <name-attribute>name-attribute</name-attribute>
              <password-attribute>password-attribute</password-attribute>
              <service-bundle-attribute>service-bundle-attribute</service-bundle-attribute>
              <session-volume-quota>session-volume-quota</session-volume-quota>
              <timeout>timeout</timeout>
              <signature-dn>signature-dn</signature-dn>
              <blacklist/>
            </ldap-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an LDAP authentication plug-in. This plug-in performs authentication against different directories using different authentication methods.

Contents

<method>— LDAP authentication method that the SAE uses. Both search and bind have different implications for system security and performance. When you design the system, consider:

- **Search**—Because the SAE retrieves passwords from the directory, the directory must allow read access to the password. Allowing read access can be a security risk because an attacker may be able to read passwords in subscriber profiles. However, to lower the risk of password exposure, you can store passwords in encrypted (hashed) form.
- **Bind**—The SAE sends the password to the directory for authentication. The advantage is that passwords never need to be read from the directory. However, passwords are sent in clear text, and an attacker could intercept them. Bind is a relatively expensive operation that can affect system performance.

Value— One of the following:

- **Search**—The SAE searches the directory for the username that the subscriber enters, retrieves the found object, and compares the password stored in the object

with the provided password. You can store passwords in clear text or encrypted (hashed) format by using the crypt (UNIX */etc/passwd*), SHA, or MD5 algorithms. The format for a hashed password is: *{crypt} hashed password*, *{sha} base64 SHA password*, or *{md5} base64 MD5 password*.

- **Bind**—The SAE performs a directory search, retrieves the DN of the found object, and tries to bind this DN and the password that the subscriber provides. If you specify the bind method, the plug-in uses the provided username and password to authenticate the directory (bind). You can store passwords in clear text or encrypted (hashed) format by using the crypt (UNIX */etc/passwd*), SHA, or MD5 algorithms. You must use an encryption method that the directory supports.

Default— Search

<server>—(Optional) List of IP addresses of the LDAP authentication server(s).

Value— Comma-separated list of IP addresses

Default— 127.0.0.1

<bind-dn>—(Optional) DN used to authenticate access to the directory.

Value— DN

Default— cn = ssp, ou = Components, o = Operators, < base >

<bind-password>—(Optional) Password that the SAE uses to authenticate its access to the directory to search for the subscriber profile. If you do not specify a bind DN or bind password, the SAE uses anonymous access.

Value— Characters that make up the password. The SRC software encodes the secret using base64.

Default— ssp

<search-filter>—(Optional) Additional LDAP search filter that the SAE uses to search the directory for the subscriber profile. The initial search uses a search filter in the form (&(nameAttribute = userName) filter). The search is successful when the username and the filter match.

Value— Search filter syntax defined in RFC 2254—The String Representation of LDAP Search Filters (December 1997)

Default— (objectClass = umcSubscriber)

ldaps—Enables LDAPS as the secure protocol used for LDAP connections with the directory. Enabling LDAPS causes communication with the directory to be encrypted with Secure Sockets Layer (SSL).

Value— ldaps—Enable LDAPS

Default— Disabled

`<search-base-dn>`—(Optional) Base DN for searching entries in the directory. If you do not specify a base DN, the SAE uses the DN of the associated retailer object.

Also, if you do not specify the base DN, the SAE takes a username in the form `subscriber@domain` and maps domain to a retailer object by comparing domain with the domain names stored in the retailer object. There are two special cases:

- If domain is empty, first the virtual router name and then the name default are tried.
- If a retailer defines * (asterisk) as a domain name, it is used to map all domains that cannot be mapped directly.

Value— DN

Default— No value

`<user-id-method>`—(Optional) User identification from auth event.

Value— One of the following:

- user-name First part of "user@domain"
- login-name Complete "user@domain"

Default— user-name

`<name-attribute>`—(Optional) Name of the directory attribute that holds the username.

Value— Attribute name

Default— uniqueID

`<password-attribute>`—(Optional) Name of the directory attribute that stores the password.

Value— Directory attribute name

Default— userPassword

`<service-bundle-attribute>`—(Optional) Name of the directory attribute that contains the name of the service bundle that is used for subscriber authentication. This value is made available to the subscriber classification process and can be used to select the subscriber profile to load.

Value— Directory attribute name

Default— No value

`<session-volume-quota>`—(Optional) Name of the LDAP attribute that contains the value of the session volume quota. The LDAP plug-in sets the session volume quota to this value.

Value— Name of LDAP attribute

Default— No value

`<timeout>`—(Optional) Maximum time the SAE waits for a response from a directory server. If the directory server does not respond to the request, the request fails and the SAE logs an error message.

Value— Number of milliseconds in the range 0–2147483647

Default— 5000

`<signature-dn>`—DES Signature DN

Value—Text

Default— `< base >`

`<blacklist>`—(Optional) Directory blacklisting

Default—true

Required Privilege Level

system

< pcmm-rks >

(configuration/shared/sae/configuration/plugin/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <pcmm-rks>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <failback-timer>failback-timer</failback-timer>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <feid-mso-data>feid-mso-data</feid-mso-data>
              <feid-mso-domain-name>feid-mso-domain-name</feid-mso-domain-name>
              <trusted-element/>
              <default-peer>default-peer</default-peer>
            </pcmm-rks>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a PCMM record-keeping server plug-in.

Contents

<load-balancing-mode> — Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value — One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default — Failover

<failback-timer> — Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the `retry-interval` attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the `timeout` attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0–2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1–65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<feid-mso-data>`—(Optional) MSO-defined data in the financial entity ID (FEID) attribute, which is included in event messages.

Value— First eight bytes of the FEID attribute

Default— The first eight bytes are filled with zeros.

`<feid-mso-domain-name>`— The MSO domain name that uniquely identifies the MSO for billing and settlement purposes.

Value— Domain name up to 239 bytes; begins at the ninth byte of the FEID attribute

Default— No value

`<trusted-element>`—(Optional) When the SAE is running as a policy server—which means that the SAE sends event messages directly to the RKS—enables the SAE as a trusted network element.

Default— Enabled

`<default-peer>`— Configure an RKS peer, which is an instance of an RKS. You must configure at least one RKS peer.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool PccmRKSPugin peer-group** command.

Default— No value

Required Privilege Level

system

< peer-group >

(configuration/shared/sae/configuration/plugins/name/pcmm-rks)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <pcmm-rks>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
              </peer-group>
            </pcmm-rks>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RKS server to which the SAE sends accounting data

Value— IP address

Default— No value

<server-port>— Port used for sending accounting packets.

Value— Port number in the range 0–65535

Default— 1813

Required Privilege Level

system

< qos-profile-tracking >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <qos-profile-tracking>
              <threads>threads</threads>
              <default-qos-profile>default-qos-profile</default-qos-profile>
              <separator>separator</separator>
              <qos-profile-prefix>qos-profile-prefix</qos-profile-prefix>
              <service-selection-attribute>service-selection-attribute</service-selection-
attribute>
              <search-filter>search-filter</search-filter>
              <invisible-qos-service>invisible-qos-service</invisible-qos-service>
              <qos-profile-parameter-name>qos-profile-parameter-name</qos-profile-parameter-name>
            </qos-profile-tracking>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a QoS-tracking plug-in that you can use to ensure that, as a subscriber activates and deactivates services, the required QoS profile is attached to the subscriber interface.

Contents

<threads>— Number of working threads that all QTP instances share when they process QTP events.

Value— Integer in the range 1–100.

Default— 1

<default-qos-profile>—(Optional) Name of the QoS profile that is attached to the interface when QoS services have been deactivated.

Value— Name of QoS profile

Default— No value

<separator>— Character that is placed between QoS profile input values when the system concatenates the values during the process of creating QoS profile names.

Value— Any character that is valid in QoS profile names on the router.

Default— A single hyphen (-)

`<qos-profile-prefix>`— Prefix added to the QoS service name as part of the process to determine the name of the QoS profile that needs to be attached to an interface for a particular service.

Value— Prefix that, when combined with QoS profile input values, matches a QoS profile on the router.

Default— qos-profile

`<service-selection-attribute>`— Name of the attribute in the service definition that you want the QTP to use as QoS profile input values. The QTP uses these values to determine the name of the QoS profile that needs to be attached to an interface for a group of QoS services.

Value— Name of any attribute in the service object; for example, serviceCategory, sspDesignAndGraphics. For a list of attribute names for the sspService object class, see the documentation for the LDAP schema in the SRC software distribution in the folder *SDK/doc/ldap* or on the Juniper Networks Web site at

<http://www.juniper.net/techpubs/software/management/sdx>

Default— serviceName

`<search-filter>`— Search filter that the SAE uses to search service objects in the directory to find QoS services. You can set up the filter to search the values of any attribute in the service object, such as service name, category, or tracking plug-in. The search is successful when a value matches the filter.

Value— Search filter in a format similar to the LDAP search filter. See *Managing Tiered and Premium Services with QoS on JUNOSe Routers* in the *SRC Solutions Guide* for a list of the values that you can use for filters.

Default— (attribute.trackPlugin =) Note that you must add a search value after the equal sign.

`<invisible-qos-service>`— Name of the hidden QoS profile attachment service that the QTP uses to attach QoS profiles to and remove QoS profiles from a router interface.

Value— Name of the configured service

Default— svc-qos-attach

`<qos-profile-parameter-name>`— Name of the variable parameter used in the QoS profile name field in the QoS profile attachment action of the policy group that is assigned to the hidden QoS service. When the QTP obtains the name of the required QoS profile, it substitutes that value for the variable parameter.

Value— Valid parameter name

Default— qpName

Required Privilege Level

system

< radius-accounting >

(configuration/shared/sae/configuration/plugin/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <radius-accounting>
              <enable-radius-account-onoff/>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <fallback-timer>fallback-timer</fallback-timer>
              <nas-ip>nas-ip-choice</nas-ip>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <username>username-choice</username>
              <calling-station-id>calling-station-id-choice</calling-station-id>
              <default-peer>default-peer</default-peer>
            </radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a basic RADIUS accounting plug-in. This plug-in sends accounting information to an external RADIUS accounting server or a group of accounting servers.

Contents

<enable-radius-account-onoff>—(Optional) Specifies whether or not RADIUS Accounting On/off messages should be sent to the downstream Radius servers

Value— true or false

Default— true

<load-balancing-mode>— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- **Failover**—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- **Round-robin**—The SAE alternates requests between all RADIUS servers

configured in the peer group.

Default— Failover

`<failback-timer>`— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<nas-ip>`—(Optional) Value of the NAS-Ip attribute.

Value— One of the following:

- SSP local IP—IP address of the SAE
- RADIUS client IP—IP address of the virtual router

Default— No value

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the retry-interval attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the timeout attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0–2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1–65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<username>`— Value of the User-Name attribute (RADIUS attribute [1]).

Value— One of the following:

- login-name—Name used for login
- accounting-id—Value stored in the subscriber profile
- auth-user-name—Name used to authenticate a service
- manager-id—Value of the manager ID in the service subscription; use this setting to identify subscribers to enterprise services. Manager ID is the value of modifiersName (DN of the administrator who last modified the entry in the directory) in the subscription. If modifiersName does not exist, manager ID is the value of creatorsName (DN of the administrator who created the entry in the directory).

Default— login-name

`<calling-station-id>`— Specifies whether the SAE sends the MAC address of the subscriber in the Calling-Station-Id attribute.

Value— One of the following:

- mac—Sends the MAC address in the Calling-Station-Id attribute
- no—Does not send the MAC address in the Calling-Station-Id attribute

Default— no

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool RadiusAcctPlugin peer-group** command.

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugin-name/radius-accounting)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <radius-accounting>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </radius-accounting>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

`<secret>`— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< radius-authentication >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <radius-authentication>
              <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
              <failback-timer>failback-timer</failback-timer>
              <nas-ip>nas-ip-choice</nas-ip>
              <timeout>timeout</timeout>
              <retry-interval>retry-interval</retry-interval>
              <maximum-queue-length>maximum-queue-length</maximum-queue-length>
              <bind-address>bind-address</bind-address>
              <udp-port>udp-port</udp-port>
              <default-peer>default-peer</default-peer>
            </radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a basic RADIUS accounting plug-in. This plug-in sends authentication information to an external RADIUS authentication server or a group of redundant servers.

Contents

<load-balancing-mode>— Mode for load-balancing RADIUS servers. You can set up the plug-in to switch between RADIUS servers in case of failure or to load-balance every request.

Value— One of the following:

- Failover—The SAE sends requests to the RADIUS server that is configured as the default peer. If the default peer fails, the SAE uses the next server configured in the peer group. The SAE cycles through the configured RADIUS servers as needed.
- Round-robin—The SAE alternates requests between all RADIUS servers configured in the peer group.

Default— Failover

<failback-timer>— Controls if and when the SAE attempts to fail back to the default peer.

Value— One of the following:

- Number of seconds after a failover that the SAE attempts to fail back; range is -1–2147483647
- 0—SAE always attempts to fail back
- -1—SAE never attempts to fail back

Default— -1

`<nas-ip>`—(Optional) Value of the NAS-Ip attribute.

Value— One of the following:

- SSP local IP—IP address of the SAE
- RADIUS client IP—IP address of the virtual router

Default— No value

`<timeout>`— Maximum time the SAE waits for a response from a RADIUS server. If the RADIUS server does not respond to the request, the request fails and the SAE logs an error message. Note: configure this attribute to be five times (or more) greater than the `retry-interval` attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range -1–9223372036854775807. -1 means that there is no timeout.

Default— 15000

`<retry-interval>`— Time the SAE waits for a response from a RADIUS server before it resends the RADIUS packet. The SAE keeps sending RADIUS packets until either the server acknowledges the packet or the maximum timeout is reached. Note: configure the `timeout` attribute to be five times (or more) greater than this attribute to make sure the fail-over mechanism works without losing any packet.

Value— Number of milliseconds in the range 0–9223372036854775807

Default— 3000

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages that the plug-in receives from the RADIUS server before it discards new messages.

Value— Integer in the range 0–2147483647

Default— 10000

`<bind-address>`—(Optional) Source IP address that the plug-in uses to communicate with the RADIUS server. If you do not specify an address, the global default address is used. You configure the global default address with the **slot number sae radius local-address** command.

Value— IP address

Default— No value

`<udp-port>`—(Optional) Source UDP port or a range of source UDP ports used for communication with the RADIUS server. If you do not specify a UDP port, the global UDP port is used. You configure the global UDP port with the **shared sae configuration global-radius-udp-port** command.

Value— One of the following:

- Port number in the range 1–65535
- A range of ports in the format port-port; for example, 7000-7003
- A comma-separated list of port numbers and port ranges enclosed in double quotation marks. For example, "7000-7003, 7006, 7007-7009".

Default— No value

`<default-peer>`— Name of the RADIUS server to which the SAE sends packets for this plug-in.

Value— Name of the server as defined with the **shared sae configuration plug-ins pool RadiusAuthPlugin peer-group** command.

Default— No value

Required Privilege Level

system

< peer-group > (configuration/shared/sae/configuration/plugin-name/radius-authentication)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <radius-authentication>
              <peer-group>
                <name>name</name> <!-- identifier -->
                <server-address>server-address</server-address>
                <server-port>server-port</server-port>
                <secret>secret</secret>
              </peer-group>
            </radius-authentication>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS peer, which is an instance of a RADIUS server. If you define multiple servers, the SAE uses them in cases of failover or as alternate servers for load-balancing purposes.

Note that if you configure more than one RADIUS peer in a plug-in instance that has the same properties, the SNMP counters for the plug-in will not update correctly. The reason is that the software does not know which RADIUS peer to send updates to.

Contents

<name>— Name of the RADIUS peer.

Value—Text

<server-address>— IP address of the RADIUS server to which the SAE sends accounting data or that the SAE uses for authentication and authorization.

Value— IP address

Default— No value

<server-port>— Port used for RADIUS packets.

Value— Port number in the range 0–65535.

- RADIUS accounting servers typically use ports 1813 or 1646.
- RADIUS authentication servers typically use ports 1812 or 1645.

Default—1812

<secret>— Password that is shared with the RADIUS server. You must configure the same secret on the RADIUS server.

Value— Shared secret; the software encodes the secret using BASE-64.

Default— No value

Required Privilege Level

system

< schedule-authorization > **(configuration/shared/sae/configuration/plugin- ins/name)**

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <schedule-authorization>
            </schedule-authorization>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Create an authorization plug-in that authorizes a scheduled service.

Contents

Required Privilege Level

system

< ssr-reader > (configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <ssr-reader>
              <read-attributes>read-attributes</read-attributes>
            </ssr-reader>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an SSR reader plug-in.

Contents

<read-attributes>—(Optional) (Multivalue) Plug-in attribute to set based on the values read from the SSR subscriber session table.

Value—Text

Required Privilege Level

system

< ssr-writer >

(configuration/shared/sae/configuration/plugins/name)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <ssr-writer>
            </ssr-writer>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an SSR writer plug-in. This plug-in exports user session information to the SSR.

Contents

Required Privilege Level

system

< plugin-attributes > (configuration/shared/sae/configuration/plugins/name/ssr-writer)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plug-ins>
          <name>
            <ssr-writer>
              <plugin-attributes>
                <id>id</id> <!-- identifier -->
                <access-plugin-attribute>access-plugin-attribute</access-plugin-attribute>
                <literal>literal</literal>
              </plugin-attributes>
            </ssr-writer>
          </name>
        </plug-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the mapping between access subscriber session attributes and the SAE plug-in attributes used to identify service node subscriber session. The SAE plug-in attributes must also be mapped to the columns in the subscriber sessions table in the SSR database. This mapping must be configured to store accounting events in the SSR database. This mapping is combined with the mapping defined between SSR subscriber sessions table fields (columns) and SAE plug-in attributes.

Contents

<id>— Name of the service node SAE plug-in attribute to be mapped to the access session v attribute, or literal.

Value—Text

<access-plugin-attribute>—(Optional) Name of SAE plug-in attribute identifying access session to be mapped to the SAE plug-in attribute used in service node subscriber session.

Value—Text

<literal>—(Optional) Name of literal to be mapped to the SAE plug-in attribute.

Value—Text

Required Privilege Level

system

< state-synchronization >

(configuration/shared/sae/configuration/plugin-ins)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <plugin-ins>
          <state-synchronization>
            <fail-queue-size>fail-queue-size</fail-queue-size>
            <fail-queue-age>fail-queue-age</fail-queue-age>
            <batch-time>batch-time</batch-time>
            <keepalive-time>keepalive-time</keepalive-time>
          </state-synchronization>
        </plugin-ins>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a state synchronization plug-in. Some plug-ins, such as the ACP plug-in and the SAE plug-in agent for the NIC, support state synchronization with the SAE. The state synchronization plug-in allows external plug-ins to maintain the state of active subscriber, service, and interface sessions without having to store intermediate versions of the state locally.

Contents

<fail-queue-size>— Maximum number of plug-in events that are stored while the communication with a state synchronization plug-in is interrupted.

Value— Integer in the range -1-2147483647. -1 means unlimited.

Default— 5000

<fail-queue-age>— Mximum time for which plug-in events are stored while the communication with a state synchronization plug-in is interrupted.

Value— Integer in the range -1-2147483647. -1 means unlimited.

Default— -1

<batch-time>— Time the SAE waits for other plug-ins to become ready before starting a synchronization sequence.

Value— Number of seconds in the range 0-2147483647

Default— 60

`<keepalive-time>` — Time the SAE waits after an event before sending a ping to the remote plug-in.

Value — Number of seconds in the range 0–2147483647

Default — 60

Required Privilege Level

system

< policy-management-configuration > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <policy-management-configuration>
          <enable-junose-classifier-expansion/>
        </policy-management-configuration>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify whether or not the SAE expands the JUNOSe classify-traffic conditions into multiple classifiers before it installs the policy on the router.

Contents

`<enable-junose-classifier-expansion>`—(Optional) Enables or disables the expansion of JUNOSe classify-traffic conditions into multiple classifiers before it installs the policy on the router.

You would use this feature in policies that are used in IP multimedia subsystem (IMS) environments. You can also use it to simplify the configuration of JUNOSe policies.

Because classifier expansion uses processing resources when the policy is created, you should set this property to true only if you are going to use the feature.

Default— Disabled

Required Privilege Level

system

< radius-packet-template > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <name>name</name> <!-- identifier -->
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a RADIUS packet template that contains the definition of RADIUS packets. You can use the template to define the content of RADIUS packets that the SAE sends to RADIUS servers. You can then apply the template to flexible RADIUS plug-ins.

Contents

<name>— Name of the RADIUS packet template.

Value—Text

Required Privilege Level

system

< radius-attributes >

(configuration/shared/sae/configuration/radius-packet-template)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <name>name</name> <!-- identifier -->
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Create a RADIUS attribute instance.

Contents

<name>— Name of the file-accounting template. RADIUS attribute instance. The name you assign to the RADIUS attribute instance must match a RADIUS attribute instance name listed in *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <attributes>
              <name>name</name> <!-- identifier -->
              <value>value</value>
            </attributes>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< attributes-with-type > (configuration/shared/sae/configuration/radius- packet-template/radius-attributes)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <attributes-with-type>
              <name>name</name> <!-- identifier -->
            </attributes-with-type>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure RADIUS attributes within a plug-in.

Contents

<name>— Name of the RADIUS attribute.

Value—Text

Required Privilege Level

system

< type >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes/attributes-with-type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <attributes-with-type>
              <type>
                <type>type-choice</type> <!-- identifier -->
                <value>value</value>
              </type>
            </attributes-with-type>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

Type of the RADIUS attribute.

Value

- address—
- hex—
- integer—
- string—
- text—

<value>— Value of the RADIUS attribute.

Value— Value can be a standard value or an expression. For a list of standard values, see *Configuring Accounting and Authentication Plug-Ins (SRC CLI)* in the *SRC PE Subscribers and Subscriptions Guide*.

Default— No value

Required Privilege Level

system

< vendor-specific > (configuration/shared/sae/configuration/radius- packet-template/radius-attributes)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific>
              <name>name</name> <!-- identifier -->
            </vendor-specific>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes/vendor-specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific>
              <attributes>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </attributes>
            </vendor-specific>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type > (configuration/shared/sae/configuration/radius- packet-template/radius-attributes/vendor- specific)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific>
              <type>
                <name>name</name> <!-- identifier -->
              </type>
            </vendor-specific>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— Data type of the attribute value.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes/vendor-specific/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific>
              <type>
                <attributes>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </attributes>
              </type>
            </vendor-specific>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< vendor-specific-26 > (configuration/shared/sae/configuration/radius- packet-template/radius-attributes)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific-26>
              <name>name</name> <!-- identifier -->
            </vendor-specific-26>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Description

Configure Juniper Networks vendor-specific attributes (VSAs).

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes/vendor-specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific-26>
              <attributes>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </attributes>
            </vendor-specific-26>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< type > (configuration/shared/sae/configuration/radius- packet-template/radius-attributes/vendor- specific-26)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific-26>
              <type>
                <name>name</name> <!-- identifier -->
              </type>
            </vendor-specific-26>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>—

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/sae/configuration/radius-packet-template/radius-attributes/vendor-specific-26/type)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <radius-packet-template>
          <radius-attributes>
            <vendor-specific-26>
              <type>
                <attributes>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </attributes>
              </type>
            </vendor-specific-26>
          </radius-attributes>
        </radius-packet-template>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Contents

<name>— RADIUS attribute definition.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< script-extension > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <script-extension>
          <flexible-radius-script>flexible-radius-script</flexible-radius-script>
          <dynamic-radius-script>dynamic-radius-script</dynamic-radius-script>
        </script-extension>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<flexible-radius-script>— Python script name of flexible radius plug-in

Value—

Default— flexRadius

<dynamic-radius-script>— Python script name of local dynamic radius server

Value—

Default— dynRadius

Required Privilege Level

system

< service-activation > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <service-activation>
          <retry-time>retry-time</retry-time>
          <retry-limit>retry-limit</retry-limit>
          <activate-on-modification/>
        </service-activation>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure session reactivation behavior. If a service session fails unexpectedly, the SAE tries to start the session again in the background. You can change how many times the SAE tries to activate the session and the interval between these attempts. In most instances, the default values do not need to be changed.

Contents

<retry-time>— Time between attempts to activate a service session if activation fails or to deactivate a service session if deactivation fails. This process takes place in the background.

Value— Number of seconds in the range -1-9223372036854775807; -1 indicates no limit

Default— 60

<retry-limit>— Number of times the SAE tries to activate a service session if activation fails or to deactivate a service session if deactivation fails. This process takes place in the background. Limit number of times to retry service failed background activation.

Value— Integer in the range -1-2147483647; -1 indicates no limit

Default— -1

<activate-on-modification>—(Optional) When a service subscription is modified, normally only services that are currently active are updated. If this flag is set, any activate-on-login service that is currently not active is automatically activated. This flag can be used to force service activations that failed e.g. due to an invalid definition at activation time.

Required Privilege Level

system

< service-schedule >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <service-schedule>
          <years-in-future>years-in-future</years-in-future>
          <years-in-past>years-in-past</years-in-past>
        </service-schedule>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure parameters related to service schedules.

Contents

<years-in-future>—(Optional) Amount of time in the future from the year that the SRC system is started, that the scheduler can see.

Value— Integer in the range 1–100

Default— No value

<years-in-past>—(Optional) Amount of time in the past, from the year that the SRC system is started, that the scheduler can see.

Value— Integer in the range 1–100

Default— No value

Required Privilege Level

system

< session-job-manager > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <session-job-manager>
          <number-of-threads>number-of-threads</number-of-threads>
        </session-job-manager>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the number of threads used for session-related activity; for example, aggregate service keepalives, and remote session monitoring.

Contents

<number-of-threads>— Number of threads used for session-related activity.

Value— Integer in the range 1–1000

Default— 16

Required Privilege Level

system

< subscriber-sessions >

(configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <subscriber-sessions>
          <assigned-ip-idle-timeout>assigned-ip-idle-timeout</assigned-ip-idle-timeout>
          <allow-same-ip-login/>
        </subscriber-sessions>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an idle timeout for sessions of assigned IP subscribers, and specify whether or not the SAE allows multiple logins from the same IP address.

Contents

`<assigned-ip-idle-timeout>`— Interval after which assigned IP subscriber sessions are deactivated if no service session is active.

Value— Number of seconds in the range 0–2147483647

Default— 900

`<allow-same-ip-login>`—(Optional) Enables or disables whether the SAE allows a login from the same IP address requiring that the previous session logs out first.

- If enabled, the SAE logs in the new subscriber session and automatically logs out the previous session.
- If disabled, the SAE denies login requests if a subscriber session for an IP address is active.

Default— Disabled

Required Privilege Level

system

< time-based-policies > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <time-based-policies>
          <action-threshold>action-threshold</action-threshold>
          <preparation-time>preparation-time</preparation-time>
          <max-worker-threads>max-worker-threads</max-worker-threads>
        </time-based-policies>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the action threshold and preparation time for all schedules. You cannot set these values for individual schedules.

Contents

<action-threshold>— Maximum delay that the service allows for a time-related change to occur.

Value— Number of milliseconds in the range 0-9223372036854775807. The recommended range is 60000-300000 milliseconds

Default— 300000 (5 minutes)

<preparation-time>— Preparation time allowed for a state transition. When you set the preparation time, take into consideration system load and performance. Factors such as the number of subscribers, the number of active services, the number of schedule services, the speed of the processor on the system, as well as other conditions might affect the amount of time to process all the scheduled actions at a specified scheduled time.

Value— Number of milliseconds in the range 0-9223372036854775807

Default— 300000 (5 minutes)

<max-worker-threads>—(Optional) The maximum number of worker threads for service scheduling.

Value— Integer in the range 0-2147483647

Default—

Required Privilege Level

system

< timeout-session-job-manager > (configuration/shared/sae/configuration)

Usage

```
<configuration>
  <shared>
    <sae>
      <configuration>
        <timeout-session-job-manager>
          <number-of-threads>number-of-threads</number-of-threads>
        </timeout-session-job-manager>
      </configuration>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure the number of threads used for timeout-session-related activity; for example, subscriber and service session timeout, idle timeouts.

Contents

<number-of-threads>— Number of threads used for timeout-session-related activity.

Value— Integer in the range 1–1000

Default— 16

Required Privilege Level

system

< rule > (configuration/shared/sae/dhcp-classifier)

Usage

```
<configuration>
  <shared>
    <sae>
      <dhcp-classifier>
        <rule>
          <name>name</name> <!-- identifier -->
          <target>target</target>
        </rule>
      </dhcp-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a rule in a classifier script.

Contents

<name>— Name of a classification script.

Value—Text

<target>—(Optional) Result of the classification script that is returned to the SAE.

Value— The result depends on the type of classification script:

- Subscriber classification script—An LDAP query that uniquely identifies a subscriber entry in the directory.
- DHCP classification script—DHCP profile.

Default— Not applicable

Required Privilege Level

system

< condition > (configuration/shared/sae/dhcp-classifier/rule)

Usage

```
<configuration>
  <shared>
    <sae>
      <dhcp-classifier>
        <rule>
          <condition>
            <name>name</name> <!-- identifier -->
          </condition>
        </rule>
      </dhcp-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/sae/dhcp-classifier/rule)

Usage

```
<configuration>
  <shared>
    <sae>
      <dhcp-classifier>
        <rule>
          <script>
            <script-value>script-value</script-value>
            <include>include</include>
          </script>
        </rule>
      </dhcp-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber classifier. For more information about subscriber classifiers, see the *SRC PE Subscribers and Subscriptions Guide*.

Contents

<script-value>—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

<include>—(Optional) Name of an existing script to include in the script you are configuring.

Value— *script-name*

Default— No value

Required Privilege Level

system

< group > (configuration/shared/sae)

Usage

```
<configuration>
  <shared>
    <sae>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a group of SAE configuration properties.

Contents

<name>— Name of a shared SAE configuration.

Value— Text

Required Privilege Level

system

< rule > (configuration/shared/sae/subscriber-classifier)

Usage

```
<configuration>
  <shared>
    <sae>
      <subscriber-classifier>
        <rule>
          <name>name</name> <!-- identifier -->
          <target>target</target>
        </rule>
      </subscriber-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a rule in a classifier script.

Contents

<name>— Name of a classification script.

Value—Text

<target>—(Optional) Result of the classification script that is returned to the SAE.

Value— The result depends on the type of classification script:

- Subscriber classification script—An LDAP query that uniquely identifies a subscriber entry in the directory.
- DHCP classification script—DHCP profile.

Default— Not applicable

Required Privilege Level

system

< condition >

(configuration/shared/sae/subscriber-classifier/rule)

Usage

```
<configuration>
  <shared>
    <sae>
      <subscriber-classifier>
        <rule>
          <condition>
            <name>name</name> <!-- identifier -->
          </condition>
        </rule>
      </subscriber-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/sae/subscriber-classifier/rule)

Usage

```
<configuration>
  <shared>
    <sae>
      <subscriber-classifier>
        <rule>
          <script>
            <script-value>script-value</script-value>
            <include>include</include>
          </script>
        </rule>
      </subscriber-classifier>
    </sae>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber classifier. For more information about subscriber classifiers, see the *SRC PE Subscribers and Subscriptions Guide*.

Contents

<script-value>—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

<include>—(Optional) Name of an existing script to include in the script you are configuring.

Value— *script-name*

Default— No value

Required Privilege Level

system

< sae > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <sae>
      <base-dn>base-dn</base-dn>
      <real-portal-address>real-portal-address</real-portal-address>
      <java-runtime-environment>java-runtime-environment</java-runtime-environment>
      <java-min-heap-size>java-min-heap-size</java-min-heap-size>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-min-new-size>java-min-new-size</java-min-new-size>
      <java-new-size>java-new-size</java-new-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-garbage-collection-
options>
      <port-offset>port-offset</port-offset>
      <snmp-agent/>
      <shared>shared</shared>
    </sae>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local properties for the SAE, including the base DN, interface the SAE uses to communicate with the router, path to the JRE, Java heap size, Java garbage collection options, and port offset. The statement also specifies the shared configuration object that holds the shared SAE configuration, and it enables or disables SNMP.

Contents

<base-dn>— Distinguished name (DN) of the root directory for the SAE. You must set this attribute if you use a directory-naming scheme different from the default.

Value— DN of the root directory for the SAE.

Default— *o = umc*

<real-portal-address>— Interface on the SAE that the SAE uses for communication with the router. If you clear this field, the interface is assumed to be the interface that was used to connect the router driver to the SAE. If the SAE has multiple network interfaces, you must specify the interfaces that are used to communicate with the router.

Value— IP address of the interface

Default— One of the IP addresses configured on the host (except 127.0.0.1)

<java-runtime-environment>— Path to the Java runtime environment (JRE) The SRC software requires a JRE that conforms to the Java 2 specification. The SRC software has been tested with Sun's JRE. See the SRC Release Notes for information about which version of the Sun JRE is distributed with the SRC software. We expect other JREs to work, but have not verified whether they do.

Value— Absolute or relative directory path. This path is the default installation path for the JRE that is distributed with the SRC software and installed with the other SRC components.

Default— *../jre/bin/java*

`<java-min-heap-size>`— Minimum Java heap (memory) size available to the JRE.

Value— Number of bytes or add k for kilobytes, m for megabytes, or g for gigabytes. For example, 896m. The value must be less or equal java-heap-size.

Default— The default is set to 2g for C2000 and 4g for C4000.

`<java-heap-size>`— Maximum Java heap (memory) size available to the JRE.

Value— Number of bytes or add k for kilobytes, m for megabytes, or g for gigabytes. For example, 896m. Change this value if you experience problems caused by lack of memory. Set the value lower than the available physical memory to avoid low performance caused by disk swapping. See the documentation for the JRE for valid values.

Default— The value is calculated dynamically to 70% of the available real memory.

`<java-min-new-size>`— Minimum Java new generation heap (memory) size available to the JRE when the SAE starts.

Value— Integer in the range 0–`<Java new size>`. Specify the value in bytes or add m for megabytes, k for kilobytes, or g for gigabytes. For example, 24m. See the documentation for the JRE for valid values.

Default— 256m

`<java-new-size>`— Maximum Java new generation heap (memory) size available to the JRE when the SAE starts.

Value— Integer in the range 0–`<Java heap size>`. Specify the value in bytes or add m for megabytes, k for kilobytes, or g for gigabytes. For example, 24m. See the documentation for the JRE for valid values.

Default— 1000m

`<java-garbage-collection-options>`— Garbage collection functionality of the Java Virtual Machine.

Value— Options defined by the JVM

Default— `-Xbatch -XX: + UseConcMarkSweepGC -`

`XX:CMSInitiatingOccupancyFraction = 80 -XX: + UseParNewGC -XX:SurvivorRatio = 1 -`

`XX:InitialTenuringThreshold = 8 -XX:MaxTenuringThreshold = 10 -`

`XX:TargetSurvivorRatio = 90 -XX: + UseCMSCompactAtFullCollection -`

`XX:CMSFullGCsBeforeCompaction = 0 -XX: + CMSClassUnloadingEnabled -`

`XX: + CMSParallelRemarkEnabled`

`<port-offset>`— Port offset for SAE instances. The offset is added to the OA port, RADIUS socket, and

administration HTTPS server ports.

Value— Integer in the range 0–65535. Set to 0 if you install multiple SAE instances on the same host.

Default— 0

`<snmp-agent>`—(Optional) Enables the SAE to communicate with the SNMP agent.

`<shared>`— Shared configuration object that holds most of the SAE specific configuration.

Value— Name of the object in the format `"/SAE/< path > "`. The `< path >` is separated by `/` and can contain multiple levels. The effective configuration is combined by all configuration objects in the path, with more specific configuration in the lower levels of the path.

Default— `/SAE/POP-ID;`

Required Privilege Level

system

< initial > (configuration/slot/sae)

Usage

```
<configuration>
  <slot>
    <sae>
      <initial>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </sae>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for SRC components.

Contents

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—ou = staticConfiguration,ou = Configuration,o = Management,o = umc

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration,ou = Configuration,o = Management,o = umc

Required Privilege Level

system

< directory-connection >

(configuration/slot/sae/initial)

Usage

```
<configuration>
  <slot>
    <sae>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </sae>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

system

< directory-eventing >

(configuration/slot/sae/initial)

Usage

```
<configuration>
  <slot>
    <sae>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </sae>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

system

< object-adapter > (configuration/slot/sae/java-orb)

Usage

```
<configuration>
  <slot>
    <sae>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </sae>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

system

< radius > (configuration/slot/sae)

Usage

```
<configuration>
  <slot>
    <sae>
      <radius>
        <local-address>local-address</local-address>
        <local-nas-id>local-nas-id</local-nas-id>
      </radius>
    </sae>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the local address that the SAE uses to communicate with RADIUS servers, the network access server (NAS) ID that identifies the SAE when it sends RADIUS messages, and the real portal address that the SAE uses to communicate with the router.

Contents

<local-address>— Local IP address on the SAE host used for communication with RADIUS servers.

Value— IP address; should be a unique NAS IP address.

In an installation in which the SAE is equipped with multiple network interfaces, you must specify the interface that communicates with external RADIUS servers. Typically, you must configure the RADIUS server to accept requests from a client; use this IP address for the RADIUS client configuration. Even if the RADIUS server is running on the same server as the SAE, do not use 127.0.0.1 as the local address, because this address is typically the loopback address for a server.

<local-nas-id>— String that identifies the SAE when it sends RADIUS authentication and accounting messages.

Value— Text string that identifies the SAE. Typically, the string is the name of the SAE host.

Required Privilege Level

system

Network Information Collector (NIC)

Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Network Information Collector (NIC). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared nic scenario	<u>< scenario ></u>
shared nic scenario agents agent	<u>< agent ></u>
shared nic scenario agents agent configuration consolidator	<u>< consolidator ></u>
shared nic scenario agents agent configuration directory	<u>< directory ></u>
shared nic scenario agents agent configuration properties	<u>< properties ></u>
shared nic scenario agents agent configuration sae-client	<u>< sae-client ></u>
shared nic scenario agents agent configuration sae-plug-in	<u>< sae-plug-in ></u>
shared nic scenario agents agent configuration ssr-client	<u>< ssr-client ></u>
shared nic scenario agents agent configuration xml	<u>< xml ></u>
shared nic scenario hosts host	<u>< host ></u>
shared nic scenario hosts host configuration	<u>< configuration ></u>
shared nic scenario hosts host configuration logger	<u>< logger ></u>
shared nic scenario hosts host configuration logger file	<u>< file ></u>
shared nic scenario hosts host configuration logger syslog	<u>< syslog ></u>
shared nic scenario hosts logger	<u>< logger ></u>
shared nic scenario hosts logger file	<u>< file ></u>
shared nic scenario hosts logger syslog	<u>< syslog ></u>
shared nic scenario nic-locators nic-locator-configuration	<u>< nic-locator-configuration ></u>
shared nic scenario nic-locators nic-locator-configuration resolution	<u>< resolution ></u>
shared nic scenario realms realm	<u>< realm ></u>

shared nic scenario realms realm configuration custom-resolvers	<u>< custom-resolvers ></u>
shared nic scenario realms realm configuration transitions	<u>< transitions ></u>
shared nic scenario realms realm resolvers	<u>< resolvers ></u>
shared nic scenario realms realm resolvers configuration	<u>< configuration ></u>
slot network-publisher directory-connection	<u>< directory-connection ></u>
slot network-publisher logger	<u>< logger ></u>
slot network-publisher logger file	<u>< file ></u>
slot network-publisher logger syslog	<u>< syslog ></u>
slot network-publisher routers	<u>< routers ></u>
slot network-publisher routers authentication	<u>< authentication ></u>
slot network-publisher routers router	<u>< router ></u>
slot network-publisher routers router authentication	<u>< authentication ></u>
slot network-publisher routers router test-mode	<u>< test-mode ></u>
slot network-publisher routers test-mode	<u>< test-mode ></u>
slot network-publisher select	<u>< select ></u>
slot nic	<u>< nic ></u>
slot nic initial	<u>< initial ></u>
slot nic initial directory-connection	<u>< directory-connection ></u>
slot nic initial directory-eventing	<u>< directory-eventing ></u>
slot nic java-orb object-adapter	<u>< object-adapter ></u>
slot.1	<u>< slot ></u>

< scenario > (configuration/shared/nic)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <name>name</name> <!-- identifier -->
      </scenario>
    </nic>
  </shared>
</configuration>
```

Description

Configure a NIC configuration scenario to use. A configuration scenario defines the type of resolution to be performed.

Contents

<name>— Name of a NIC configuration scenario.

Value— Name of a configuration scenario that has been established for the NIC.

Required Privilege Level

system

< agent > (configuration/shared/nic/scenario)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <name>name</name> <!-- identifier -->
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a NIC agent in a NIC configuration scenario.

Contents

<name>— Name of a NIC agent in a configuration scenario.

Value—Text

Required Privilege Level

system

< consolidator > (configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <consolidator>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <source-agent>source-agent</source-agent>
                <agent-processor>agent-processor</agent-processor>
                <network-data-types>network-data-types</network-data-types>
                <publishingInterval>publishingInterval</publishingInterval>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
              </consolidator>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for consolidator agents. When you use a configuration scenario, you typically change the source-agent option.

Before you change the value of this statement or the value of any of the options for this statement, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Contents

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of NIC resolvers, you must define a list of roles.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events.

If you do not define the names of the NIC roles, you must define a list of resolvers.

Value— Names of NIC roles in the format *realmName : roleName* . Use commas to separate one role from another in the list.

Default— No value

<source-agent>— Path to the agent for which this consolidator agent publishes data.

Value— Text

Example—/agents/InterfaceIdInterface

Default— No value

`<agent-processor>`— Name of the Java class that the NIC agent uses to generate the data value object.

Value— Path to Java class

Default— No value

`<network-data-types>`— Data types that the agent publishes.

For more information, see the documentation for the NIC resolution process.

If the agent publishes mappings, specify two data types in the format *key* , *value* . Use commas to separate entries.

Value— Data type in the format *key* or *key* , *value* , where

- *key* —Name of data key
- *value* — Name of data value

Example—IpPool, InterfaceId

Default— No value

`<publishingInterval>`—(Optional) Interval at which the NIC agent sends updates to the NIC resolvers.

Value— Number of seconds in the range 0–2147483647

Default—60

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default—0

Required Privilege Level

system

< directory > (configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <directory>
                <principal>principal</principal>
                <credentials>credentials</credentials>
                <key-attribute-processor>key-attribute-processor</key-attribute-processor>
                <value-attribute-processor>value-attribute-processor</value-attribute-processor>
                <mapping-attribute-processor>mapping-attribute-processor</mapping-attribute-processor>
                <publishing-interval>publishing-interval</publishing-interval>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <search-base>search-base</search-base>
                <search-filter>search-filter</search-filter>
                <search-scope>search-scope-choice</search-scope>
                <server-url>server-url</server-url>
                <directory-backup-urls>directory-backup-urls</directory-backup-urls>
                <key-attribute-name>key-attribute-name</key-attribute-name>
                <value-attribute-name>value-attribute-name</value-attribute-name>
                <network-data-types>network-data-types</network-data-types>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
                <enable-directory-eventing/>
                <directory-connection-id>directory-connection-id</directory-connection-id>
                <snmp-agent/>
                <share-directory-connection/>
                <polling-interval>polling-interval</polling-interval>
                <retry-interval>retry-interval</retry-interval>
              </directory>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for directory agents. When you use a configuration scenario provided in the SRC software, you typically change only the following options:

- search-base
- search-filter
- search-scope
- server-url
- authentication-dn
- password

Contents

<principal>— DN that the NIC agent uses for authentication to access the directory.

Value— *DN, base*

Example— *cn = nic,ou = Components,o = Operators, base*

Default— *cn = nic, ou = Components, o = Operators, < base >*

<credentials>— Password with which the NIC agent accesses the directory.

password

Value—**Default**— nic

`<key-attribute-processor>`—(Optional) Java class that the NIC agent uses to generate the network data object named key.

The object includes a list of attributes from the directory. If no class is specified, there can be only one key attribute (in the `key.attrNames` property).

This value is ignored if a mapping processor is specified.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java classExample—`net.juniper.smgmt.gateway.nic.agent.dir. DnAttributeProcessor`**Default**— No value

`<value-attribute-processor>`—(Optional) Name of the Java class that the NIC agent uses to generate the data value object. Specify only if the agent publishes mappings.

If no class is specified, there can be only one value attribute (in the `value.attrNames` property).

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class**Default**— No value

`<mapping-attribute-processor>`—(Optional) Name of the Java class that the NIC agent uses to process the key object and the value object, and to produce the mapping object `DataPair`. If no class is specified, NIC uses the key and value attribute processors.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class**Default**— No value

`<publishing-interval>`—(Optional) Interval at which the NIC agent sends updates to the NIC resolvers.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Number of seconds in the range 0–2147483647**Default**— 60

`<resolvers-list>`—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Example—/realms/ip/B1, /realms/sharedIp/B1,/realms/login/D1

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events. If you do not define the names of the NIC roles, you must define a list of resolvers.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Names of NIC roles in the format *realmName:roleName*. Use commas to separate one role from another in the list.

Default— No value

<search-base>— DN of the location in the directory from which the agent should read information.

Value— *DN, base*

Default— No value

<search-filter>—(Optional) Directory search filter that the agent should use.

Value— LDAP search filter

Default— No value

<search-scope>—(Optional) Location in the directory relative to the base DN from which the NIC agent can retrieve information.

Value— One of the following options:

- 0—Object; entry specified in the Search Base field only
- 1—One level; entry specified in the Search Base field and objects that are subordinate by one level
- 2—Subtree of entry specified in the Search Base field

Default— sub-tree

<server-url>— URL that identifies the location of the primary directory server to which this NIC agent connects.

Value— Location of the directory that stores configuration information in URL string format *protocol://host:portNumber* where:

- *protocol* —ldap or ldaps
- *host* —IP address or name of directory host
- *portNumber* —Number of TCP/IP port

Example—ldap://127.0.0.1:389/

Default— No value

`<directory-backup-urls>`—(Optional) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— URLs of redundant directories separated by semicolons.

Example—`ldap://127.0.0.1:389/`

Default— No value

`<key-attribute-name>`— Name of the directory attribute that the NIC agent uses for the network data object called key. You can define these attribute names if you use a customized key attribute processor.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of one or more attributes in the directory. Use commas to separate attribute names.

Example—`virtualRouterName`

Default— No value

`<value-attribute-name>`—(Optional) Directory attribute that the NIC agent uses for the network data object called value. Specify only if the agent publishes mappings.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of an attribute in the directory.

Example—`SaeId`

Default— No value

`<network-data-types>`— Names of the data types that this NIC agent publishes.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Data type in the form *key*, *value*. If there is more than one data type, separate entries with commas.

Example

- Agent to publish IP pools—`networkDataTypes = IpPool`
- Agent is to publish mappings between IP pools and VRs—`networkDataTypes = IpPool, Vr`

Default— No value

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default— 0

`<enable-directory-eventing>`—(Optional) Specifies whether NIC polls the directory for changes.

Value— One of the following:

- true—Enable polling.
- false—Disable polling

Default—true

`<directory-connection-id>`— Name for directory connection in SNMP agent view.

Value— ID for connection manager.

Example—DIRAGENT_POOL_VR

Default— No value

`<snmp-agent>`—(Optional) Enable the SDX SNMP agent to export MIBs for this directory connection.

`<share-directory-connection>`—(Optional) Enable DES listeners of NIC agents to share a connection to the directory.

Do not change this value unless instructed to do so by Juniper Networks.

`<polling-interval>`— Time interval at which the SRC component polls the directory.

Value—Integer in the range 30–2147483647

Default— 30

`<retry-interval>`— Length of time that the directory monitoring system waits to initiate a directory connection after an unsuccessful attempt to connect to the directory.

Value—Integer in the range -2147483648–2147483647 s

Default— No value

Required Privilege Level

system

< properties >

(configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <properties>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <data-sources>data-sources</data-sources>
                <network-data-types>network-data-types</network-data-types>
                <publishing-interval>publishing-interval</publishing-interval>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
                <reverse-values/>
              </properties>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties agents. A properties agent retrieves information from one or more specified property files and makes event information based on the information in the file available to the NIC.

Although a properties agent may be used by an SRC application, typically you do not need to configure it. Before you change the value of this statement or the value of any of the options for this statement, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Contents

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events.

If you do not define the names of the NIC roles, you must define a list of resolvers.

Value— Names of NIC roles in the format *realmName : roleName* . Use commas to separate one role from another in the list.

Default— No value

<data-sources>— List of URIs or filenames of property files that provides information about NIC events to the NIC system. You must provide at least one URI or filename.

At this time, the only supported format for the data source is a property file.

Value— URIs or filenames separated by commas

Default— No value

`<network-data-types>`— Data types that the agent publishes.

For more information, see the documentation for the NIC resolution process.

If the agent publishes mappings, specify two data types in the format `key , value` . Use commas to separate entries.

Value— Data type in the format `key` or `key , value` , where

- `key` —Name of data key
- `value` — Name of data value

Example—IpPool, InterfaceId

Default— No value

`<publishing-interval>`—(Optional) Interval at which the NIC agent sends updates to the NIC resolvers.

Value— Number of seconds in the range 0–2147483647

Default—60

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default—0

`<reverse-values>`—(Optional) Specifies whether a property name is made available as a NIC key or a NIC value. If enabled, properties are published as keys.

Required Privilege Level

system

< sae-client >

(configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <sae-client>
                <principal>principal</principal>
                <credentials>credentials</credentials>
                <subscriber-id>subscriber-id-choice</subscriber-id>
                <sae-connection-threads>sae-connection-threads</sae-connection-threads>
                <sae-retry-interval>sae-retry-interval</sae-retry-interval>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <search-base>search-base</search-base>
                <search-filter>search-filter</search-filter>
                <search-scope>search-scope-choice</search-scope>
                <server-url>server-url</server-url>
                <directory-backup-urls>directory-backup-urls</directory-backup-urls>
                <key-attribute-name>key-attribute-name</key-attribute-name>
                <value-attribute-name>value-attribute-name</value-attribute-name>
                <network-data-types>network-data-types</network-data-types>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
                <enable-directory-eventing/>
                <directory-connection-id>directory-connection-id</directory-connection-id>
                <snmp-agent/>
                <share-directory-connection/>
                <polling-interval>polling-interval</polling-interval>
                <retry-interval>retry-interval</retry-interval>
              </sae-client>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for SAE client agents. When you use a configuration scenario provided in the SRC software, you typically change only the following options:

- search-base
- search-filter
- search-scope
- server-url
- backup-servers-url
- principal
- credentials

Contents

<principal>— DN that the NIC agent uses for authentication to access the directory.

Value— *DN, base*

Example— *cn = umcadmin, base*

Default— *cn = umcadmin, < base >*

<credentials>— Password with which the NIC agent accesses the directory.

Value— *password*
Default—admin123

<subscriber-id>— The SAE subscriber type. The NIC passes subscriber ID of the specified type to the SAE external interface of active SAEs to determine which SAE has a user session for the subscriber.

Value— One of the following options:

- *user-ip-address* —Subscriber's IP address
- *dn* —DN that identifies the subscriber in the directory
- *login-name* —Login name that identifies the subscriber
- *interface-name* —Name of the interface through which the subscriber traffic passes
- *primary-user-name* —User name that identifies the subscriber

Default— No value

<sae-connection-threads>—(Optional) Size of the thread pool for contacting SAEs during resolution. These threads are shared among all resolution requests and are spanned in parallel one thread per SAE per resolution request. You may want to set this value higher than the default if you have multiple SAEs in your network and a high resolution rate.

Value— Number of threads
Default— 5

<sae-retry-interval>—(Optional) Min. length of time that the agent waits before it sends a resolution request to a particular SAE after an unsuccessful attempt to contact it.

Value— Retry interval in seconds
Default— 30

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Example—/realms/ip/B1, /realms/sharedIp/B1,/realms/login/D1

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events. If you do not define the names of the NIC roles, you must define a list of resolvers.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Names of NIC roles in the format *realmName:roleName*. Use commas to separate one role from another in the list.
Default— No value

`<search-base>`— DN of the location in the directory from which the agent should read information.

Value— *DN, base*

Default— No value

`<search-filter>`—(Optional) Directory search filter that the agent should use.

Value— LDAP search filter

Default— No value

`<search-scope>`—(Optional) Location in the directory relative to the base DN from which the NIC agent can retrieve information.

Value— One of the following options:

- 0—Object; entry specified in the Search Base field only
- 1—One level; entry specified in the Search Base field and objects that are subordinate by one level
- 2—Subtree of entry specified in the Search Base field

Default— sub-tree

`<server-url>`— URL that identifies the location of the primary directory server to which this NIC agent connects.

Value— Location of the directory that stores configuration information in URL string format `protocol://`

`host:portNumber` where:

- *protocol* —ldap or ldaps
- *host* —IP address or name of directory host
- *portNumber* —Number of TCP/IP port

Example—`ldap://127.0.0.1:389/`

Default— No value

`<directory-backup-urls>`—(Optional) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— URLs of redundant directories separated by semicolons.

Example—`ldap://127.0.0.1:389/`

Default— No value

`<key-attribute-name>`— Name of the directory attribute that the NIC agent uses for the network data object called key. You can define these attribute names if you use a customized key attribute processor.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of one or more attributes in the directory. Use commas to separate attribute names.

Example—`virtualRouterName`

Default— No value

`<value-attribute-name>`—(Optional) Directory attribute that the NIC agent uses for the network data object called value. Specify only if the agent publishes mappings.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of an attribute in the directory.

Example—SaeId

Default— No value

`<network-data-types>`— Names of the data types that this NIC agent publishes.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Data type in the form *key, value*. If there is more than one data type, separate entries with commas.

Example

- Agent to publish IP pools—`networkDataTypes = IpPool`
- Agent is to publish mappings between IP pools and VRs—`networkDataTypes = IpPool, Vr`

Default— No value

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default— 0

`<enable-directory-eventing>`—(Optional) Specifies whether NIC polls the directory for changes.

Value— One of the following:

- `true`—Enable polling.
- `false`—Disable polling

Default—`true`

`<directory-connection-id>`— Name for directory connection in SNMP agent view.

Value— ID for connection manager.

Example—DIRAGENT_POOL_VR

Default— No value

`<snmp-agent>`—(Optional) Enable the SDX SNMP agent to export MIBs for this directory connection.

`<share-directory-connection>`—(Optional) Enable DES listeners of NIC agents to share a connection to the directory.

Do not change this value unless instructed to do so by Juniper Networks.

`<polling-interval>`— Time interval at which the SRC component polls the directory.

Value—Integer in the range 30–2147483647

Default— 30

`<retry-interval>`— Length of time that the directory monitoring system waits to initiate a directory connection after an unsuccessful attempt to connect to the directory.

Value—Integer in the range -2147483648–2147483647 s

Default— No value

Required Privilege Level

system

< sae-plug-in > (configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <sae-plug-in>
                <resolvers-list>resolvers-list</resolvers-list>
                <plug-in-event-type>plug-in-event-type-choice</plug-in-event-type>
                <key-attribute-name>key-attribute-name</key-attribute-name>
                <key-attribute-processor>key-attribute-processor</key-attribute-processor>
                <value-attribute-name>value-attribute-name</value-attribute-name>
                <value-attribute-processor>value-attribute-processor</value-attribute-processor>
                <naming-context>naming-context</naming-context>
                <event-filter>event-filter</event-filter>
                <share-the-event-system/>
                <number-of-events>number-of-events</number-of-events>
                <network-data-types>network-data-types</network-data-types>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
              </sae-plug-in>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for SAE plug-in agents. When you use a configuration scenario provided in the SRC software, you typically change only the following options:

- event-filter
- number-of-events

Contents

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Example—/realms/dB/E1

Default— No value

<plug-in-event-type>—(Optional) Types of plug-in events that the agent supports.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— One of the following:

- User—Agent supports user-tracking plug-in events.

Interface—Agent supports interface-tracking plug-in events.

Default—User

`<key-attribute-name>`— Names of the plug-in attributes that provide information for the data key. You can define these attribute names if you use a customized key attribute processor.

The list can contain one or more plug-in attributes. If the format of the single plug-in attribute is not a string or you specify multiple plug-in attributes, the agent passes the data to the key processor to construct the data value in string format. In this case, you must specify the processor in the Key Attribute Processor field.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of one or more attributes in the directory. Use commas to separate attribute names.

Example—PA_USER_DN,PA_ROUTER_NAME

Default— No value

`<key-attribute-processor>`—(Optional) Name of the Java class that the agent uses to generate the data key object. If no class is specified, there can be only one key event attribute.

Configure a key attribute processor if the agent acquires for the key value either a single plug-in attribute that is not in string format or multiple plug-in attributes.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class

Example—net.juniper.smgmt.gateway.nic.agent.saeplugin.InterfaceIdProcessor

Default— No value

`<value-attribute-name>`— List of plug-in attributes that provide information for the data value.

The list can contain one or more plug-in attributes. If the format of the single plug-in attribute is not a string or you specify multiple plug-in attributes, the agent passes the data to the value processor to construct the data value in string format. In this case, you must specify the processor for the value attribute processor option.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— List of comma-separated plug-in attributes.

Example—PA_USER_DN, PA_ROUTER_NAME

Default— No value

`<value-attribute-processor>`—(Optional) Name of the Java class that the agent uses to generate the data value object. If no class is specified, there can be only one value event attribute.

Configure a value attribute processor if the agent acquires for the data value either a single plug-in attribute that is not in

string format or multiple plug-in attributes.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class

Example—`net.juniper.smgt.gateway.nic.agent.saeplugin.InterfaceProcessor`

Default— No value

`<naming-context>`— CORBA naming context in which the agent publishes references.

If you configure event sharing for multiple SAE plug-in agents, this setting must be identical for all those agents.

The incoming interface is bound under the specified context with the name `saePort`. The mirror interface has the name `mirrorPort`.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— String that must match the context name in the objectref property for this SAE plug-in. For more information, see the documentation for the NIC resolution process.

Example—`nicstestDNottawa`

This example matches the context name of the following objectref property:

`corbaname::10.10.10.10:900/NameService#nicstestDNottawa/saePort`

In this property:

- `10.10.10.10`—Address of the machine running the CORBA naming server
- `900`—TCP/IP port
- `saePort`—Name of plug-in (in this case, the agent eventing system)

Default— No value

`<event-filter>`— LDAP filter that restricts the events that the agent collects.

Value— `pluginAttribute = attributeValue`

where

- `pluginAttribute` — Plug-in attribute name
- `attributeValue` — Value of filter

Example—`PA_USER_TYPE = INTF`

Default— No value

`<share-the-event-system>`—(Optional) Enable an agent to share the event system with other agents in the same host. If you configure event sharing for multiple SAE plug-in agents, this setting must be identical for all those agents.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

`<number-of-events>`—(Optional) Number of events that the SAE sends to the agent at one time during state synchronization. This value is used if state synchronization is enabled.

Value— Integer in the range 1–2147483647

Default—50

`<network-data-types>`— Data types that the agent publishes.

For more information, see the documentation for the NIC resolution process.

If the agent publishes mappings, specify two data types in the format `key, value` . Use commas to separate entries.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Data type in the format `key` or `key, value` , where

- `key` —Name of data key
- `value` — Name of data value

Example—Dn, Vr

Default— No value

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default— 0

Required Privilege Level

system

< ssr-client >

(configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <ssr-client>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <key-attribute-name>key-attribute-name</key-attribute-name>
                <value-attribute-name>value-attribute-name</value-attribute-name>
                <network-data-types>network-data-types</network-data-types>
                <key-attribute-processor>key-attribute-processor</key-attribute-processor>
                <value-attribute-processor>value-attribute-processor</value-attribute-processor>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
              </ssr-client>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SSR client agents. An SSR agent retrieves information from an SSR server and makes event information based on the read information available to the NIC.

Although a properties agent may be used by an SRC application, typically you do not need to configure it. Before you change the value of this statement or the value of any of the options for this statement, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Contents

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events.

If you do not define the names of the NIC roles, you must define a list of resolvers.

Value— Names of NIC roles in the format *realmName* : *roleName* . Use commas to separate one role from another in the list.

Default— No value

<key-attribute-name>— Name of the SSR attribute that the NIC agent uses for the network data object called key. You can define these attribute names if you use a customized key attribute processor.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of one or more attributes in the directory. Use commas to separate attribute names.

Example—virtualRouterName

Default— No value

`<value-attribute-name>`—(Optional) Directory attribute that the NIC agent uses for the network data object called value. Specify only if the agent publishes mappings.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Name of an attribute in the directory.

Example—SaeId

Default— No value

`<network-data-types>`— Names of the data types that this NIC agent publishes.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Data type in the form *key, value*. If there is more than one data type, separate entries with commas.

Example

- Agent to publish IP pools—`networkDataTypes = IpPool`
- Agent is to publish mappings between IP pools and VRs—`networkDataTypes = IpPool, Vr`

Default— No value

`<key-attribute-processor>`—(Optional) Java class that the NIC agent uses to generate the network data object named key.

The object includes a list of attributes from the directory. If no class is specified, there can be only one key attribute (in the `key.attrNames` property).

This value is ignored if a mapping processor is specified.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class

Example—`net.juniper.smgmt.gateway.nic.agent.dir. DnAttributeProcessor`

Default— No value

`<value-attribute-processor>`—(Optional) Name of the Java class that the NIC agent uses to generate the data value object. Specify only if the agent publishes mappings.

If no class is specified, there can be only one value attribute (in the `value.attrNames` property).

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Path to Java class

Default— No value

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Before you change the value of this option, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default— 0

Required Privilege Level

system

< xml >

(configuration/shared/nic/scenario/agents/agent/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <agents>
          <agent>
            <configuration>
              <xml>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
                <data-source>data-source</data-source>
                <search-base>search-base</search-base>
                <search-filter>search-filter</search-filter>
                <search-scope>search-scope-choice</search-scope>
                <mapping-file>mapping-file</mapping-file>
                <root-tag-name>root-tag-name</root-tag-name>
                <key-attribute-name>key-attribute-name</key-attribute-name>
                <key-attribute-processor>key-attribute-processor</key-attribute-processor>
                <value-attribute-name>value-attribute-name</value-attribute-name>
                <value-attribute-processor>value-attribute-processor</value-attribute-processor>
                <network-data-types>network-data-types</network-data-types>
                <publishing-interval>publishing-interval</publishing-interval>
                <event-life-expectancy>event-life-expectancy</event-life-expectancy>
                <enable-eventing/>
              </xml>
            </configuration>
          </agent>
        </agents>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an XML agent. An XML agent retrieves information from a specified XML document and makes information available to the NIC based on specified tags in the file. An XML agent provides information about one type of data or mappings.

Although an XML agent may be used by an SRC application, typically you do not need to configure it. Before you change the value of this statement or the value of any of the options for this statement, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Contents

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events.

If you do not define the names of the NIC roles, you must define a list of resolvers.

Value— Names of NIC roles in the format *realmName : roleName* . Use commas to separate one role from another in the list.

Default— No value

<data-source>— URI of the XML document that provides information about NIC events to the NIC system. You must

provide a URI for the XML document.

At this time, the only supported schema is a file.

Value— URI
Default— No value

`<search-base>`—(Optional) Root XML element in the specified XML document at which the agent starts to search the XML document. If you do not specify an element for the search base, the agent starts searching at the top of the file.

Value— XML element
Default— No value

`<search-filter>`—(Optional) Search filter that the agent uses to read entries in an XML document.

Value— Search filter syntax defined in RFC 2254— The String Representation of LDAP Search Filters (December 1997)
Default— No value

`<search-scope>`—(Optional) Level at which the agent searches the XML document.

Value— Search level:

- Object—Searches the object defined by the search base entry.
- One level—Specifies objects at the same level as the object defined by the search base entry.
- Subtree—Searches objects subordinate to the object defined by the search base entry.

Default— No value

`<mapping-file>`—(Optional) Name of the property file that maps XML tag names to corresponding Java class names. Enter a value if the XML document does not conform to the SDX XML schema.

Value— Filename
Default— No value

`<root-tag-name>`—(Optional) Tag name of the root XML element in the data source. Enter a value if the XML document does not follow the SDX XML schema.

Value— Tag name
Default— No value

`<key-attribute-name>`— List of XML attribute names to be used in constructing the key network data object for a custom processor.

Value—Text

`<key-attribute-processor>`—(Optional) The name of the Java class for processing the key object.

If specified, it will be used to produce the key network data object by using the list of attributes read from the directory. If no class is specified, there must be only one key LDAP attribute (in the `key.attrNames` property), and the attribute value must be in the proper format expected by the data type.

Value—Text

`<value-attribute-name>`—(Optional) List of LDAP attribute names to be used in constructing a value for the network data object. Specified attribute names if the agent publishes mappings or if you use a custom processor.

Value— List of attribute names. Use commas to separate entries.

`<value-attribute-processor>`—(Optional) The name of the Java class for processing the value object.

If specified, it will be used to produce the value network data object by using the list of attributes read from the directory. If no class is specified, there must be only one value attribute (in the `value.attrNames` property), and the attribute value must be in the proper format expected by the data type.

Value—Text

`<network-data-types>`— Data types that the agent publishes.

For more information, see the documentation for the NIC resolution process.

If the agent publishes mappings, specify two data types in the format `key , value` . Use commas to separate entries.

Value— Data type in the format `key` or `key , value` , where

- `key` —Name of data key
- `value` — Name of data value

Example—IpPool, InterfaceId

Default— No value

`<publishing-interval>`—(Optional) Interval at which the NIC agent sends updates to the NIC resolvers.

Value— Number of seconds in the range 0–2147483647

Default—60

`<event-life-expectancy>`—(Optional) Length of time that data is valid after the NIC proxy receives data associated with events published by this agent.

Value— Number of seconds in the range 0–4294967295

- 0—Data does not expire
- Other values—Actual life expectancy of data

Default—0

`<enable-eventing>`—(Optional) Enable Eventing

Default—true

Required Privilege Level

system

< host > (configuration/shared/nic/scenario)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <host>
            <name>name</name> <!-- identifier -->
          </host>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Description

Configure a NIC host for a specified NIC configuration scenario.

Contents

<name>— Name of the NIC host.

Value—Text

Required Privilege Level

system

< configuration >

(configuration/shared/nic/scenario/hosts/host)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <host>
            <configuration>
              <hosted-resolvers>hosted-resolvers</hosted-resolvers>
              <hosted-agents>hosted-agents</hosted-agents>
            </configuration>
          </host>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure NIC hosts.

Contents

<hosted-resolvers> — List of resolvers that should run on this host.

Value— Names of NIC resolvers which include the path of the locations of the NIC resolvers relative to the static configuration object. A forward slash (/) separates components in a path.

Example—/realms/sharedIp/A1,/realms/sharedIp/B1,
/realms/sharedIp/C1,/realms/ip/A1,/realms/ip/B1,
/realms/ip/C1,/realms/dn/A1,/realms/dn/B1,/realms/dn/C1,
/realms/login/A1,/realms/login/B1,/realms/login/C1, /realms/login/D1

Default— No value

<hosted-agents> — List of paths to NIC agents that this host supports.

Value— Names of NIC agents that include the path of the locations of the NIC agents relative to the static configuration object. A forward slash (/) separates components in a path.

Example—/agents/VrSaeId,/agents/Router,
/agents/PoolInterfaceId,/agents/InterfaceIdInterface

Default— No value

Required Privilege Level

system

< logger >

(configuration/shared/nic/scenario/hosts/host/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <host>
            <configuration>
              <logger>
                <name>name</name> <!-- identifier -->
              </logger>
            </configuration>
          </host>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a logging component for NIC hosts. Logging can be to a file or to the system logging utility.

Contents

<name>— Name of the logging component.

Value—Text

Required Privilege Level

system

< file >

(configuration/shared/nic/scenario/hosts/host/configuration/logger)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <host>
            <configuration>
              <logger>
                <file>
                  <filter>filter</filter>
                  <filename>filename</filename>
                  <rollover-filename>rollover-filename</rollover-filename>
                  <maximum-file-size>maximum-file-size</maximum-file-size>
                </file>
              </logger>
            </configuration>
          </host>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

<maximum-file-size>—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes
Default— 1000000

Required Privilege Level

system

< syslog >

(configuration/shared/nic/scenario/hosts/host/configuration/logger)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <host>
            <configuration>
              <logger>
                <syslog>
                  <filter>filter</filter>
                  <host>host</host>
                  <port>port</port>
                  <facility>facility</facility>
                  <format>format</format>
                </syslog>
              </logger>
            </configuration>
          </host>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default— loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

<format>—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in <http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system

< logger >

(configuration/shared/nic/scenario/hosts)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <logger>
            <name>name</name> <!-- identifier -->
          </logger>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a logging component for NIC. Logging can be to a file or to the system logging utility.

Contents

<name>— Name of a NIC logging component.

Value—Text

Required Privilege Level

system

< file >

(configuration/shared/nic/scenario/hosts/logger)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <logger>
            <file>
              <filter>filter</filter>
              <filename>filename</filename>
              <rollover-filename>rollover-filename</rollover-filename>
              <maximum-file-size>maximum-file-size</maximum-file-size>
            </file>
          </logger>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

system

< syslog >

(configuration/shared/nic/scenario/hosts/logger)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <hosts>
          <logger>
            <syslog>
              <filter>filter</filter>
              <host>host</host>
              <port>port</port>
              <facility>facility</facility>
              <format>format</format>
            </syslog>
          </logger>
        </hosts>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings `{#}` are replaced with the log information [...]).

Value— MessageFormat string as specified in

<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system

< nic-locator-configuration > (configuration/shared/nic/scenario/nic-locators)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <nic-locators>
          <nic-locator-configuration>
            <name>name</name> <!-- identifier -->
          </nic-locator-configuration>
        </nic-locators>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a NIC locator or NIC proxy, a NIC component that requests data resolution.

Contents

<name>— Name of the NIC locator.

Value—Text

Required Privilege Level

system

< resolution >

(configuration/shared/nic/scenario/nic-locators/nic-locator-configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <nic-locators>
          <nic-locator-configuration>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-locator-configuration>
        </nic-locators>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip —Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

<value-type>— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

<expect-multiple-values>—(Optional) Specifies whether or not the key can have multiple corresponding values.

<constraints>—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< realm > (configuration/shared/nic/scenario)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <realms>
          <realm>
            <name>name</name> <!-- identifier -->
          </realm>
        </realms>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Description

Configure a NIC realm, the NIC component that consists of a group of resolvers that perform a series of resolution tasks to provide a mapping from a specified key to a specified data type.

Typically, you use the default realm configuration for the NIC configuration scenarios in the SRC software.

Contents

<name>— Name of the NIC realm.

Value—Text

Required Privilege Level

system

< custom-resolvers > (configuration/shared/nic/scenario/realms/realn/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <realms>
          <realn>
            <configuration>
              <custom-resolvers>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </custom-resolvers>
            </configuration>
          </realn>
        </realms>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an identifier to distinguish between different instances of the same data type in a resolution sequence. For the value enter the name of the data type.

Contents

<name>— Identifier to append to data type.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< transitions >

(configuration/shared/nic/scenario/realms/real/configuration)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <realms>
          <realm>
            <configuration>
              <transitions>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </transitions>
            </configuration>
          </realm>
        </realms>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a set of resolution sequences that map a property to a value.

Contents

<name>— Identifier for a resolution that represents one transition, or step, in the resolution process. Use ? to view the list of transitions for this realm, a group of resolvers that perform a series of resolution tasks to provide a mapping from a specified key to a specified data type.

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< resolvers >

(configuration/shared/nic/scenario/realms/realm)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <realms>
          <realm>
            <resolvers>
              <name>name</name> <!-- identifier -->
            </resolvers>
          </realm>
        </realms>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure NIC resolvers— the components that process NIC resolution requests.

Before you change the value of this statement or the value of any of the options for this statement, contact Juniper Networks Professional Services or Juniper Networks Customer Support.

Contents

<name>— Name of the NIC resolver.

Value—Text

Required Privilege Level

system

< configuration >

(configuration/shared/nic/scenario/realms/realms/resolvers)

Usage

```
<configuration>
  <shared>
    <nic>
      <scenario>
        <realms>
          <realm>
            <resolvers>
              <configuration>
                <resolver-role>resolver-role</resolver-role>
                <resolvers-list>resolvers-list</resolvers-list>
                <roles-list>roles-list</roles-list>
              </configuration>
            </resolvers>
          </realm>
        </realms>
      </scenario>
    </nic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure resolution from a NIC key to a NIC value.

Contents

<resolver-role>— Configure a transition that defines a key to value mapping.

Value—Text

<resolvers-list>—(Optional) Names of NIC resolvers to which this agent sends events. If you do not define a list of the NIC resolvers, you must define a list of roles.

Value— List of paths to NIC resolvers; paths are relative to the static configuration object. Separate resolvers with commas.

Example—/realms/ip/A1, /realms/ip/B1

Default— No value

<roles-list>—(Optional) Names of NIC roles to which this agent sends events. All resolvers that participate in a role receive events.

If you do not define the names of the NIC roles, you must define a list of resolvers.

Value— Names of NIC roles in the format *realmName* : *roleName* . Use commas to separate one role from another in the list.

Default— No value

Required Privilege Level

system

< directory-connection >

(configuration/slot/network-publisher)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <directory-connection>
        <url>url</url>
        <base-dn>base-dn</base-dn>
        <principal>principal</principal>
        <credentials>credentials</credentials>
      </directory-connection>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure directory connection properties that the network publisher uses to connect to the Juniper Networks database.

Contents

<url>—(Optional) URL that the network publisher uses to connect to the Juniper Networks database.

Value— URL

Default—ldap://127.0.0.1:389

<base-dn>—(Optional) Specify the distinguished name (DN) of the subtree in the Juniper Networks database that stores data collected from routers running Junos OS.

Value— DN

Default—o = Network, < base >

<principal>—(Optional) Specify the DN that defines the username with which the network publisher accesses the Juniper Networks database.

Value— DN

Default—cn = cli,ou = Components,o = Operators, < base >

<credentials>—(Optional) Specify the password with which the network publisher accesses the Juniper Networks database.

Value— *password*

Default—cli

Required Privilege Level

No specific privilege required.

< logger > (configuration/slot/network-publisher)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging to a file or to a system log server.

Contents

<name>— Name of logging destination.

Value—Text

Required Privilege Level

No specific privilege required.

< file > (configuration/slot/network-publisher/logger)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging to save messages in a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

No specific privilege required.

< syslog > (configuration/slot/network-publisher/logger)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging to send messages to the system log server.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

No specific privilege required.

< routers > (configuration/slot/network-publisher)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <router-release-number>router-release-number</router-release-number>
        <router-script-version>router-script-version</router-script-version>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure connections between routers running Junos OS and the network publisher. The network publisher connects to the Junos XML management protocol server on a router running Junos OS. Properties defined at this hierarchy level are applied by all the configured routers running Junos OS unless you specify different properties for a particular device.

<router-release-number>—(Optional) Release number of the Junos OS running on the routers.

Value—Text

Default— No value

<router-script-version>—(Optional) Version of Junos XML management protocol running on the routers running Junos OS.

Value—Text

Default— 1.0

Required Privilege Level

No specific privilege required.

< authentication > (configuration/slot/network-publisher/routers)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <authentication>
          <login-name>login-name</login-name>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
        </authentication>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure authentication properties for the routers running Junos OS to which the network publisher connects. Properties defined at this hierarchy level are applied to all the configured routers running Junos OS unless you specify different properties for a particular device.

Contents

<login-name>—(Optional) Username to log in to the Junos OS.

Value—Text

Default— No value

<credentials>—(Optional) Password to log in to the Junos OS.

Value— *password*

Default— No value

<protocol>—(Optional) Authentication protocol that network publisher uses to access a router running Junos OS.

Value

- *telnet*— Use Junos XML management protocol over a Telnet connection.
- *ssh*— (Recommended) Use Junos XML management protocol over an SSH connection.

Default— *ssh*

Required Privilege Level

No specific privilege required.

< router > (configuration/slot/network-publisher)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <router>
          <router-name>router-name</router-name> <!-- identifier -->
          <address>address</address>
          <router-release-number>router-release-number</router-release-number>
          <router-script-version>router-script-version</router-script-version>
        </router>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure connections between a particular router running Junos OS and the network publisher. The network publisher connects to the Junos XML management protocol server on a router running Junos OS. Properties defined at this hierarchy level take precedence over those defined at the `slot 0 network-publisher routers` hierarchy level.

Contents

`<router-name>`— Name of a specific router running Junos OS.

Value—Text

`<address>`— IP address of a router running Junos OS.

Value—IP address

`<router-release-number>`—(Optional) Release number of the Junos OS running on the routers.

Value—Text

Default— No value

`<router-script-version>`—(Optional) Version of Junos XML management protocol running on the routers running Junos OS.

Value—Text

Default—1.0

Required Privilege Level

No specific privilege required.

< authentication > (configuration/slot/network-publisher/routers/router)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <router>
          <authentication>
            <login-name>login-name</login-name>
            <credentials>credentials</credentials>
            <protocol>protocol-choice</protocol>
          </authentication>
        </router>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure authentication properties for the routers running Junos OS to which the network publisher connects. Properties defined at this hierarchy level are applied to all the configured routers running Junos OS unless you specify different properties for a particular device.

Contents

<login-name>—(Optional) Username to log in to the Junos OS.

Value—Text

Default— No value

<credentials>—(Optional) Password to log in to the Junos OS.

Value— *password*

Default— No value

<protocol>—(Optional) Authentication protocol that network publisher uses to access a router running Junos OS.

Value

- *telnet*— Use Junos XML management protocol over a Telnet connection.
- *ssh*— (Recommended) Use Junos XML management protocol over an SSH connection.

Default—*ssh*

Required Privilege Level

No specific privilege required.

< test-mode > (configuration/slot/network-publisher/routers/router)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <router>
          <test-mode>
            <enable-file-input/>
            <enable-file-output/>
            <input-location>input-location</input-location>
            <output-location>output-location</output-location>
          </test-mode>
        </router>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure information to test the network publisher.

Use an input file to test a configuration before routes to the NIC are available or before VPNs are configured. You can also use an input file to set up a test configuration for demonstration purposes.

Use an output file to review the information that the network publisher has gathered.

Contents

<enable-file-input>—(Optional) Configure the network publisher to use data in a file, rather than in the directory, when you run the network publisher.

<enable-file-output>—(Optional) Configure the network publisher to collect data from routers running Junos OS and store that information in a file, rather than in the directory.

<input-location>—(Optional) Location in the directory where input files are located. In most cases, you do not need to change the value of this option.

Note: Input filenames should be in the format router_name_1.xml, where router_name is the hostname of the router running Junos OS.

Value—Text

Default—sample/junos/rt

<output-location>—(Optional) Location in the directory where output files are located. In most cases, you do not need to change the value of this option.

Note: Output filenames should be in the format router_name_1.xml where router_name is the hostname of the router running Junos OS.

Value—Text

Default—var/junos/rt

Required Privilege Level

No specific privilege required.

< test-mode > (configuration/slot/network-publisher/routers)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <routers>
        <test-mode>
          <enable-file-input/>
          <enable-file-output/>
          <input-location>input-location</input-location>
          <output-location>output-location</output-location>
        </test-mode>
      </routers>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure information to test the network publisher.

Use an input file to test a configuration before routes to the NIC are available or before VPNs are configured. You can also use an input file to set up a test configuration for demonstration purposes.

Use an output file to review the information that the network publisher has gathered.

Contents

<enable-file-input>—(Optional) Configure the network publisher to use data in a file, rather than in the directory, when you run the network publisher.

<enable-file-output>—(Optional) Configure the network publisher to collect data from routers running Junos OS and store that information in a file, rather than in the directory.

<input-location>—(Optional) Location in the directory where input files are located. In most cases, you do not need to change the value of this option.

Note: Input filenames should be in the format router_name_1.xml. where router_name is the hostname of the router running Junos OS.

Value—Text

Default—sample/junos/rt

<output-location>—(Optional) Location in the directory where output files are located. In most cases, you do not need to change the value of this option.

Note: Output filenames should be in the format router_name_1.xml where router_name is the hostname of the router running Junos OS.

Value—Text

Default—var/junos/rt

Required Privilege Level

No specific privilege required.

< select > (configuration/slot/network-publisher)

Usage

```
<configuration>
  <slot>
    <network-publisher>
      <select>
        <route-table-filter>route-table-filter</route-table-filter>
        <route-entry-filter>route-entry-filter</route-entry-filter>
      </select>
    </network-publisher>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Specify the routing tables and the entries in the routing tables from which the network publisher collects routing information.

The network publisher can collect information from Junos IPv4 and IPv6 routing tables. By default, it collects information from all IPv4 routing tables, including tables for VPNs, and entries for all protocols. Based on your network configuration, consider which protocols to exclude from the configuration for network publisher.

The network publisher saves the information collected in the Juniper Networks database.

Contents

<route-table-filter>—(Optional) Routing table from which the network publisher collects information.

Value— Routing table name

<route-entry-filter>—(Optional) Routing table entry from which the network publisher collects information.

Value— Name of routing table entry

Required Privilege Level

No specific privilege required.

< nic > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <nic>
      <base-dn>base-dn</base-dn>
      <java-runtime-environment>java-runtime-environment</java-runtime-environment>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-new-size>java-new-size</java-new-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-garbage-collection-
options>
      <java-64bit/>
      <snmp-agent/>
      <hostname>hostname</hostname>
      <scenario-name>scenario-name</scenario-name>
      <runtime-group>runtime-group</runtime-group>
    </nic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure NIC local operating properties.

Contents

<base-dn>— Distinguished name (DN) of the root directory for the NIC.

Value— DN

Default— o = umc

<java-runtime-environment>— Path to the Java runtime environment (JRE).

Value— Directory path

Default— ../jre/bin/java

<java-heap-size>— Maximum Java heap (memory) size available to the JRE. The value is inserted when the JRE starts. See documentation for the Java runtime environment for valid values.

Value— Number of megabytes in the format ###m

Default— 128m

<java-new-size>— Maximum Java new generation heap (memory) size available to the JRE when the NIC starts.

Value— Integer in the range 0–<Java heap size>. Specify the value in bytes or add m for megabytes, k for kilobytes, or g for gigabytes. For example, 64m. See the documentation for the JRE for valid values.

Default— 24m

`<java-garbage-collection-options>`— Garbage collection functionality of the Java Virtual Machine.

Value— Options defined by the JVM

Default— `-Xbatch -XX:CMSInitiatingOccupancyFraction = 80 -XX: + UseParNewGC -
XX:SurvivorRatio = 1 -XX:InitialTenuringThreshold = 8 -XX:MaxTenuringThreshold = 10 -
XX: + UseCMSCompactAtFullCollection -XX:CMSFullGCsBeforeCompaction = 0 -
XX: + CMSClassUnloadingEnabled -XX: + CMSParallelRemarkEnabled -
XX: + UseConcMarkSweepGC`

`<java-64bit>`—(Optional) Start the java virtual machine in 64 bit mode

`<snmp-agent>`—(Optional) Enable the NIC to communicate with the SNMP agent. By using SNMP, you can view SNMP counters with an SNMP browser.

`<hostname>`— Name of the NIC host. In most cases, use the name DemoHost because this is the hostname used in most NIC configuration scenarios. Refer to the documentation to verify that the NIC configuration scenario you use includes DemoHost as the NIC host.

Value— NIC hostname

Default— DemoHost for most configuration scenarios

`<scenario-name>`— Name of the NIC scenario under the static configuration namespace.

Value— NIC hostname

Default— DemoHost for most configuration scenarios

`<runtime-group>`—(Optional) Group to which this NIC host belongs for use with NIC replication. NIC hosts that run in the same system must specify the same runtime group. If you do not specify a value for the group, the NIC host creates the configuration.

Value— Group name

Default— No value

Required Privilege Level

No specific privilege required.

< initial > (configuration/slot/nic)

Usage

```
<configuration>
  <slot>
    <nic>
      <initial>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </nic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for the NIC.

Contents

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—l = NIC, ou = staticConfiguration, ou = Configuration, o = Management, o = umc

<dynamic-dn>—(Optional) Location of programmatically defined configuration data in the directory.

Value— DN

Default— ou = dynamicConfiguration, ou = Configuration, o = Management, < base >

Required Privilege Level

No specific privilege required.

< directory-connection >

(configuration/slot/nic/initial)

Usage

```
<configuration>
  <slot>
    <nic>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </nic>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`— LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

No specific privilege required.

< directory-eventing >

(configuration/slot/nic/initial)

Usage

```
<configuration>
  <slot>
    <nic>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </nic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

No specific privilege required.

< object-adapter > (configuration/slot/nic/java-orb)

Usage

```
<configuration>
  <slot>
    <nic>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </nic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

No specific privilege required.

< slot > (configuration)

Usage

```
<configuration>  
  <slot>  
    <number>number</number> <!-- identifier -->  
  </slot>  
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure slot number for component.

Contents

<number>— Number of the slot for which you want to configure values.

Value— Currently the chassis has only one slot. The valid value is 0.

Default—0

Required Privilege Level

No specific privilege required.

Session State Register (SSR) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Session State Register (SSR). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared database cluster	<u>< cluster ></u>
shared database cluster configuration attribute-associations entity	<u>< entity ></u>
shared database cluster configuration attribute-associations entity field	<u>< field ></u>
shared database cluster configuration nodes	<u>< nodes ></u>
shared database cluster configuration nodes database-size	<u>< database-size ></u>
shared database cluster configuration nodes node	<u>< node ></u>
shared database cluster configuration nodes node client-node	<u>< client-node ></u>
shared database cluster configuration schema	<u>< schema ></u>
shared database cluster configuration schema entity	<u>< entity ></u>
shared database cluster configuration schema entity field	<u>< field ></u>

< cluster > (configuration/shared/database)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <cluster-id>cluster-id-choice</cluster-id> <!-- identifier -->
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the database cluster.

Contents

Name of an SSR database cluster. Only one cluster (primary) is supported.

Value

- **primary**— Name of database cluster. Only one cluster is supported. The name is fixed to primary.

Default—primary

Required Privilege Level

system

< entity > (configuration/shared/database/cluster/configuration/attribute-associations)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <attribute-associations>
            <entity>
              <name>name</name> <!-- identifier -->
            </entity>
          </attribute-associations>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the SSR database entity to which the attribute association is to be made. The only database entity that is configurable is the subscriber sessions table.

Contents

<name>— Name of the database entity to which the attribute association is to be made. The only database entity supported is the subscriber sessions table.

Value—Text

Required Privilege Level

system

< field >

(configuration/shared/database/cluster/configuration/attribute-associations/entity)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <attribute-associations>
            <entity>
              <field>
                <name>name</name> <!-- identifier -->
                <sae-plugin-attribute>sae-plugin-attribute</sae-plugin-attribute>
              </field>
            </entity>
          </attribute-associations>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the field (attribute) in the subscriber sessions table. SSR client components such as the SAE, NIC, DSA and SIC, need to read and write information to the subscriber sessions table. They do this using SAE plugin attributes. You need to specify how these attributes are translated to subscriber sessions table attributes by defining the mapping between the two attributes. You need to define the mapping between the field in the subscriber sessions table and the SAE plugin attribute.

Contents

<name>— Name of the field (attribute) in the subscriber sessions table you want mapped to the SAE plugin attribute.

Value—Text

<sae-plugin-attribute>—(Optional) Name of an SAE plugin attribute you want mapped to the subscriber sessions table field (attribute).

Value—Text

Required Privilege Level

system

< nodes >

(configuration/shared/database/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <nodes>
            <geometry>geometry-choice</geometry>
          </nodes>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Define the SSR database cluster topology. The topology of all SSR clusters begins with four C Series Controllers. Two C Series Controllers configured as client nodes, each hosting a management server and SSR client components, and two C Series Controllers each hosting a data node. The cluster topology may be expanded to include up to twenty-four client nodes and a maximum of four data nodes.

All data nodes must have equal processor power, memory space, and available bandwidth because they are tightly coupled and share data. If the overall throughput of the data nodes varies from node to node, performance degrades. Therefore, all data nodes must be of the same C Series Controller model, either all C2000, all C3000, all C4000, or all C5000.

Contents

<geometry> — Database geometry type attribute.

Value

- **all-in-one** — Database cluster is a single C Series Controller acting as an entire cluster. If this value is selected, a single machine runs all node types (one data node and one client node hosting a management server). This configuration does not meet redundancy requirements and supports limited entries only and should only be used for demonstration purposes.

This option requires the node type to be configured as a data-client-node.

- **two-data-node** — Database cluster contains two data nodes. This is the minimum number of data nodes supported in a cluster.
- **two-shared-data-node** — Database cluster contains two data-client nodes. The data-client node has one data node process. Optionally, it can have management server and other client processes running in the C Series Controller.
- **four-data-node** — Database cluster contains four data nodes. This is the maximum number of data nodes allowed in a cluster.

Required Privilege Level

system

< database-size >

(configuration/shared/database/cluster/configuration/nodes)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <nodes>
            <database-size>
              <data-memory>data-memory</data-memory>
              <index-memory>index-memory</index-memory>
            </database-size>
          </nodes>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Specify database memory size. This is necessary only under two-shared-data-node geometry. In two-data-node and four-data-node, all available memory are allocated to data node process. CLI command [show database memory-requirement] can help estimating the memory size based on the current schema and the maximum number of rows that each table may have.

Contents

<data-memory>— Specify data-memory size for each data node.

Value—Integer in the range 1-2147483647 MB

Default— 1024

<index-memory>— Specify index-memory size for each data node.

Value—Integer in the range 1-2147483647 MB

Default— 100

Required Privilege Level

system

< node >

(configuration/shared/database/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <nodes>
            <node>
              <address>address</address> <!-- identifier -->
              <platform>platform-choice</platform>
              <type>type-choice</type>
            </node>
          </nodes>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the node properties and platform type (C Series Controller model) hosting the node. The node configuration is a list of all nodes in the cluster. Each entry in the list declares either a data node or a client node. For client nodes, an optional keyword specifies that a management server is enabled on the node.

The database cluster contains a node collection. Each node is identified its IP address. The type of node can be either data-node, client-node or data-client-node, which can only be used in all-in-one geometry. If the node type is set to client-node or data-client-node, a client-node object appears under the node for setting the client node related configurations. You can configure up to four data nodes and a maximum of twenty-four client nodes.

Contents

<address>— IP address of the node.

Value—IP address

<platform>— Platform type (model) of C Series Controller hosting the node.

Value

- c2000 — Platform hosting node is a C2000.
- c3000 — Platform hosting node is a C3000.
- c4000 — Platform hosting node is a C4000.
- c5000 — Platform hosting node is a C5000.

<type>— Type of database cluster node.

Value

- `data-node`— Node is a data node. Data nodes are always configured in pairs and your cluster can contain either two or four data nodes. All data nodes must be of the same C Series Controller model, either all C2000, all C3000, all C4000 or all C5000.
- `client-node`— Node is a client node. Up to twenty-four client nodes can be configured. Client nodes can optionally host a management server.
- `data-client-node`— Node is a data-client-node. For demonstration purposes only. Configures the C Series Controller to host all node types (one data node, one client node and one management server). This setting is only used when the cluster geometry is set to all-in-one.

Required Privilege Level

system

< client-node > (configuration/shared/database/cluster/configuration/nodes/node)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <nodes>
            <node>
              <client-node>
                <management-server/>
              </client-node>
            </node>
          </nodes>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the client node to host a management server.

Contents

<management-server>—(Optional) Client node is hosting a management server. The optimum number of management servers for the cluster is two (for redundancy), each running on a separate client node.

Default—false

Required Privilege Level

system

< schema > (configuration/shared/database/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <schema>
            </schema>
          </configuration>
        </cluster>
      </database>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the SSR database schema. The SSR database schema includes multiple tables for storing subscriber identity information for session and service activation requests.

Required Privilege Level

system

< entity > (configuration/shared/database/cluster/configuration/schema)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <schema>
            <entity>
              <name>name-choice</name> <!-- identifier -->
            </entity>
          </schema>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Specify the entity in the SSR database schema you want to configure.

Contents

Value

- `subscriber-sessions`— Name of the database entity you want to configure. The subscriber sessions table is the only configurable entity. The format of subscriber identity information stored for each session is managed by the subscriber sessions table.

Required Privilege Level

system

< field > (configuration/shared/database/cluster/configuration/schema/entity)

Usage

```
<configuration>
  <shared>
    <database>
      <cluster>
        <configuration>
          <schema>
            <entity>
              <field>
                <name>name</name> <!-- identifier -->
                <type>type-choice</type>
                <size>size</size>
                <require-value/>
                <indexed/>
                <default>default</default>
                <variable-length/>
              </field>
            </entity>
          </schema>
        </configuration>
      </cluster>
    </database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Add a field to the subscriber sessions table. The subscriber sessions table controls the format of subscriber identity information stored for each session in the database. Configure the name and properties of the field.

The primary keys of the subscriber sessions table are the UserIpAddress and VpnID fields. The UserIpAddress field stores the subscribers IP address in binary format. The default schema uses 4 bytes, which is sufficient for IPv4 addresses. You can modify the length of the UserIpAddress field to 16 if you are using IPv6 addresses. The VpnID field stores the address realm where the user IP address is unique. For non-VPN sessions, the VpnID must be set to its default value, which is an empty string.

The subscriber sessions table is configurable with some restrictions. You can add new columns, remove existing columns, or modify column length, type or index. You cannot remove the UserIpAddress, VpnID, SessionStartTime or SessionState columns, however you can modify the length of the UserIpAddress and VpnID fields.

MySQL does allow most of characters to name a column; for better practice, we enforce the following rules to name identifiers to create a column:

- any alphanumeric characters, "_", or "\$"
- May start with any character specified above
- Cannot be made up entirely of digits
- Cannot be in a form of MeN where both M and N are integers
- Cannot be from MYSQL's reserved words list

Contents

<name>— Name of field in subscriber sessions table to be added or modified.

Value—Text

<type>— Database field type

Value

- int— Signed integer data
- string— String data
- binary— Raw binary data

<size>— Database field storage size. For integer data type, the size can only be 1, 2, 3, 4 and 8.

Value—Integer in the range 1–65535

`<require-value>`—(Optional) Value required for the database field. NULL is not allowed.

Default—false

`<indexed>`—(Optional) If true, the field will be indexed.

Default—false

`<default>`—(Optional) Database field default value

Value—Text

`<variable-length>`—(Optional) Database field is variable-length

Default—false

Required Privilege Level

system

Subscriber Information Collector (SIC)

Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Subscriber Information Collector (SIC). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared sic group	<u><group></u>
shared sic group configuration accounting-method	<u><accounting-method></u>
shared sic group configuration accounting-method database	<u><database></u>
shared sic group configuration accounting-method database attributes	<u><attributes></u>
shared sic group configuration accounting-method database attributes plug-in-attribute	<u><plug-in-attribute></u>
shared sic group configuration accounting-method proxy radius	<u><radius></u>
shared sic group configuration device-templates device-template	<u><device-template></u>
shared sic group configuration device-templates device-template capabilities capability	<u><capability></u>
shared sic group configuration device-templates device-template service-templates global-template	<u><global-template></u>
shared sic group configuration device-templates device-template service-templates global-template mode	<u><mode></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes	<u><attributes></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute	<u><attribute></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute default	<u><default></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute normal	<u><normal></u>

shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute override	<u>< override ></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute parameterized	<u>< parameterized ></u>
shared sic group configuration device-templates device-template service-templates global-template mode attributes attribute required	<u>< required ></u>
shared sic group configuration device-templates device-template service-templates global-template mode variables variable	<u>< variable ></u>
shared sic group configuration device-templates device-template service-templates service-template	<u>< service-template ></u>
shared sic group configuration device-templates device-template service-templates service-template mode	<u>< mode ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes	<u>< attributes ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute	<u>< attribute ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute default	<u>< default ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute normal	<u>< normal ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute override	<u>< override ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute parameterized	<u>< parameterized ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes attribute required	<u>< required ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group	<u>< tagged-group ></u>

shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute	<u>< attribute ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute default	<u>< default ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute normal	<u>< normal ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute override	<u>< override ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute parameterized	<u>< parameterized ></u>
shared sic group configuration device-templates device-template service-templates service-template mode attributes tagged-group attribute required	<u>< required ></u>
shared sic group configuration device-templates device-template service-templates service-template mode variables variable	<u>< variable ></u>
shared sic group configuration diameter network-element	<u>< network-element ></u>
shared sic group configuration diameter network-element peers peer	<u>< peer ></u>
shared sic group configuration diameter network-element peers peer addresses address	<u>< address ></u>
shared sic group configuration diameter network-element peers peer remote origin hosts	<u>< remote origin hosts ></u>
shared sic group configuration diameter network-element peers peer remote origin hosts origin-host	<u>< origin-host ></u>
shared sic group configuration dictionary	<u>< dictionary ></u>
shared sic group configuration dictionary attribute	<u>< attribute ></u>
shared sic group configuration dictionary attribute radius	<u>< radius ></u>
shared sic group configuration dictionary attribute radius constant	<u>< constant ></u>
shared sic group configuration editing	<u>< editing ></u>

shared sic group configuration editing default	<u>< default ></u>
shared sic group configuration editing source literal	<u>< literal ></u>
shared sic group configuration editing source literal condition request	<u>< request ></u>
shared sic group configuration editing source literal condition request attribute	<u>< attribute ></u>
shared sic group configuration editing source literal condition request attribute does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source literal condition request attribute equals	<u>< equals ></u>
shared sic group configuration editing source literal condition request attribute has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source literal condition request attribute has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source literal condition request attribute range	<u>< range ></u>
shared sic group configuration editing source literal condition transactionVariables realm	<u>< realm ></u>
shared sic group configuration editing source literal condition transactionVariables realm does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source literal condition transactionVariables realm equals	<u>< equals ></u>
shared sic group configuration editing source literal condition transactionVariables realm has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source literal condition transactionVariables realm has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source literal condition transactionVariables realm range	<u>< range ></u>
shared sic group configuration editing source literal condition transactionVariables user-identity	<u>< user-identity ></u>
shared sic group configuration editing source literal condition transactionVariables user-identity does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source literal condition transactionVariables user-identity equals	<u>< equals ></u>

shared sic group configuration editing source literal condition transactionVariables user-identity has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source literal condition transactionVariables user-identity has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source literal condition transactionVariables user-identity range	<u>< range ></u>
shared sic group configuration editing source request-attribute	<u>< request-attribute ></u>
shared sic group configuration editing source request-attribute condition request	<u>< request ></u>
shared sic group configuration editing source request-attribute condition request attribute	<u>< attribute ></u>
shared sic group configuration editing source request-attribute condition request attribute does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source request-attribute condition request attribute equals	<u>< equals ></u>
shared sic group configuration editing source request-attribute condition request attribute has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source request-attribute condition request attribute has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source request-attribute condition request attribute range	<u>< range ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm	<u>< realm ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm equals	<u>< equals ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source request-attribute condition transactionVariables realm range	<u>< range ></u>
shared sic group configuration editing source request-attribute	<u>< user-identity ></u>

condition transactionVariables user-identity	
shared sic group configuration editing source request-attribute condition transactionVariables user-identity does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source request-attribute condition transactionVariables user-identity equals	<u>< equals ></u>
shared sic group configuration editing source request-attribute condition transactionVariables user-identity has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source request-attribute condition transactionVariables user-identity has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source request-attribute condition transactionVariables user-identity range	<u>< range ></u>
shared sic group configuration editing source variable	<u>< variable ></u>
shared sic group configuration editing source variable condition request	<u>< request ></u>
shared sic group configuration editing source variable condition request attribute	<u>< attribute ></u>
shared sic group configuration editing source variable condition request attribute does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source variable condition request attribute equals	<u>< equals ></u>
shared sic group configuration editing source variable condition request attribute has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source variable condition request attribute has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source variable condition request attribute range	<u>< range ></u>
shared sic group configuration editing source variable condition transactionVariables realm	<u>< realm ></u>
shared sic group configuration editing source variable condition transactionVariables realm does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source variable condition transactionVariables realm equals	<u>< equals ></u>
shared sic group configuration editing source variable condition transactionVariables realm has-prefix	<u>< has-prefix ></u>

shared sic group configuration editing source variable condition transactionVariables realm has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source variable condition transactionVariables realm range	<u>< range ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity	<u>< user-identity ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity does-not-equal	<u>< does-not-equal ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity equals	<u>< equals ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity has-prefix	<u>< has-prefix ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity has-suffix	<u>< has-suffix ></u>
shared sic group configuration editing source variable condition transactionVariables user-identity range	<u>< range ></u>
shared sic group configuration editing target	<u>< target ></u>
shared sic group configuration local-realm	<u>< local-realm ></u>
shared sic group configuration model	<u>< model ></u>
shared sic group configuration radius accounting-listener limit	<u>< limit ></u>
shared sic group configuration radius accounting-listener transport	<u>< transport ></u>
shared sic group configuration radius accounting-listener transport config	<u>< config ></u>
shared sic group configuration radius authentication-listener limit	<u>< limit ></u>
shared sic group configuration radius authentication-listener transport	<u>< transport ></u>
shared sic group configuration radius authentication-listener transport config	<u>< config ></u>
shared sic group configuration radius network-element	<u>< network-element ></u>
shared sic group configuration radius network-element downstream	<u>< downstream ></u>
shared sic group configuration radius network-element	<u>< domain ></u>

downstream domain	
shared sic group configuration radius network-element downstream domain failover-policy	<u>< failover-policy ></u>
shared sic group configuration radius network-element downstream domain failover-policy fast-fail	<u>< fast-fail ></u>
shared sic group configuration radius network-element downstream domain failover-policy retry	<u>< retry ></u>
shared sic group configuration radius network-element downstream domain targets accounting-target	<u>< accounting-target ></u>
shared sic group configuration radius network-element downstream domain targets accounting-target connection	<u>< connection ></u>
shared sic group configuration radius network-element downstream domain targets authentication-target	<u>< authentication-target ></u>
shared sic group configuration radius network-element downstream domain targets authentication-target connection	<u>< connection ></u>
shared sic group configuration radius network-element functions proxy	<u>< proxy ></u>
shared sic group configuration radius network-element functions proxy realmRoutingRules	<u>< realmRoutingRules ></u>
shared sic group configuration radius network-element functions proxy realmRoutingRules realm	<u>< realm ></u>
shared sic group configuration radius network-element upstream	<u>< upstream ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target	<u>< dynamic-authorization-target ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target failover-policy	<u>< failover-policy ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target failover-policy fast-fail	<u>< fast-fail ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target failover-policy retry	<u>< retry ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target targets target	<u>< target ></u>
shared sic group configuration radius network-element upstream dynamic-authorization-target targets target connection	<u>< connection ></u>

shared sic group configuration radius network-element upstream nas clients radius-client	<u>< radius-client ></u>
shared sic group configuration radius outbound-transport	<u>< outbound-transport ></u>
shared sic group configuration radius outbound-transport config	<u>< config ></u>
shared sic group configuration snmp event	<u>< event ></u>
shared sic group configuration transaction-manager	<u>< transaction- manager ></u>
shared sic group server	<u>< server ></u>
shared sic group server accounting-route	<u>< accounting-route ></u>
shared sic group server accounting-route condition request	<u>< request ></u>
shared sic group server accounting-route condition request attribute	<u>< attribute ></u>
shared sic group server accounting-route condition request attribute does-not-equal	<u>< does-not-equal ></u>
shared sic group server accounting-route condition request attribute equals	<u>< equals ></u>
shared sic group server accounting-route condition request attribute has-prefix	<u>< has-prefix ></u>
shared sic group server accounting-route condition request attribute has-suffix	<u>< has-suffix ></u>
shared sic group server accounting-route condition request attribute range	<u>< range ></u>
shared sic group server accounting-route condition transactionVariables realm	<u>< realm ></u>
shared sic group server accounting-route condition transactionVariables realm does-not-equal	<u>< does-not-equal ></u>
shared sic group server accounting-route condition transactionVariables realm equals	<u>< equals ></u>
shared sic group server accounting-route condition transactionVariables realm has-prefix	<u>< has-prefix ></u>
shared sic group server accounting-route condition transactionVariables realm has-suffix	<u>< has-suffix ></u>
shared sic group server accounting-route condition	<u>< range ></u>

transactionVariables realm range	
shared sic group server accounting-route condition transactionVariables user-identity	<u>< user-identity ></u>
shared sic group server accounting-route condition transactionVariables user-identity does-not-equal	<u>< does-not-equal ></u>
shared sic group server accounting-route condition transactionVariables user-identity equals	<u>< equals ></u>
shared sic group server accounting-route condition transactionVariables user-identity has-prefix	<u>< has-prefix ></u>
shared sic group server accounting-route condition transactionVariables user-identity has-suffix	<u>< has-suffix ></u>
shared sic group server accounting-route condition transactionVariables user-identity range	<u>< range ></u>
shared sic group server accounting-route editing	<u>< editing ></u>
shared sic group server accounting-route target	<u>< target ></u>
shared sic group server authentication-route	<u>< authentication- route ></u>
shared sic group server authentication-route condition request	<u>< request ></u>
shared sic group server authentication-route condition request attribute	<u>< attribute ></u>
shared sic group server authentication-route condition request attribute does-not-equal	<u>< does-not-equal ></u>
shared sic group server authentication-route condition request attribute equals	<u>< equals ></u>
shared sic group server authentication-route condition request attribute has-prefix	<u>< has-prefix ></u>
shared sic group server authentication-route condition request attribute has-suffix	<u>< has-suffix ></u>
shared sic group server authentication-route condition request attribute range	<u>< range ></u>
shared sic group server authentication-route condition transactionVariables realm	<u>< realm ></u>
shared sic group server authentication-route condition transactionVariables realm does-not-equal	<u>< does-not-equal ></u>

shared sic group server authentication-route condition transactionVariables realm equals	<u>< equals ></u>
shared sic group server authentication-route condition transactionVariables realm has-prefix	<u>< has-prefix ></u>
shared sic group server authentication-route condition transactionVariables realm has-suffix	<u>< has-suffix ></u>
shared sic group server authentication-route condition transactionVariables realm range	<u>< range ></u>
shared sic group server authentication-route condition transactionVariables user-identity	<u>< user-identity ></u>
shared sic group server authentication-route condition transactionVariables user-identity does-not-equal	<u>< does-not-equal ></u>
shared sic group server authentication-route condition transactionVariables user-identity equals	<u>< equals ></u>
shared sic group server authentication-route condition transactionVariables user-identity has-prefix	<u>< has-prefix ></u>
shared sic group server authentication-route condition transactionVariables user-identity has-suffix	<u>< has-suffix ></u>
shared sic group server authentication-route condition transactionVariables user-identity range	<u>< range ></u>
shared sic group server authentication-route target	<u>< target ></u>
shared sic group server diameter identity	<u>< identity ></u>
shared sic group server diameter transport	<u>< transport ></u>
shared sic group server logger	<u>< logger ></u>
shared sic group server logger file	<u>< file ></u>
shared sic group server logger groups group	<u>< group ></u>
shared sic group server outbound-transport	<u>< outbound-transport ></u>
shared sic group server outbound-transport config	<u>< config ></u>
shared sic group server transports	<u>< transports ></u>
shared sic group server transports config	<u>< config ></u>
slot sic initial directory-connection	<u>< directory-connection ></u>

slot sic server

[< server >](#)

< group > (configuration/shared/sic)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <identifier>identifier</identifier> <!-- identifier -->
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the shared SIC group properties. The SIC shared group configuration contains the configuration used by a group of servers. Each SIC server must belong to a group. The SIC group configuration contains the configuration properties for accounting methods, dictionaries, editing rules, and RADIUS options for the group. The identifier associated with the group is the name of the shared configuration. If you want a specific server to use a shared group configuration, you create a correlation between the server instance and the shared group configuration. Specify the name of the server you want to use the shared group configuration by using the "shared sic group identifier server" statement. The identifier associated with the server must match the name that you specified with the "slot number sic server" statement.

In addition, certain configuration options applicable to the individual server instances belonging to the group are also stored in the shared group configuration under the individual server name. These include the accounting route rules, the event logging configuration, and the inbound and outbound RADIUS transport configuration specific to the server instance.

Contents

<identifier>— Name of a shared SIC configuration.

Value— Text

Required Privilege Level

system system

< accounting-method > (configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <accounting-method>
            <accounting-method-name>accounting-method-name</accounting-method-name> <!--
identifier -->
          </accounting-method>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the type of accounting method used by the SIC group. An accounting method is an accounting target that is used for routing accounting requests. The types of accounting methods available for the SIC include storing accounting events in the session state registrar (SSR) database or proxy RADIUS, which forwards accounting events to a downstream authentication, authorization, and accounting (AAA) server. The proxy function must be assigned to the downstream network element.

Contents

<accounting-method-name> — Name of the accounting method. An accounting method is a named accounting target that can then be assigned to an accounting route.

Value—Text

Required Privilege Level

system system

< database > (configuration/shared/sic/group/configuration/accounting- method)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <accounting-method>
            <database>
            </database>
          </accounting-method>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Use the SSR database as the accounting method. Accounting records are stored in the SSR database. When you use the SSR database as the accounting method, you must also define the mapping between the SIC request attribute, variable, or literal, and the SAE plug-in attribute. The SAE plug-in attributes must also be mapped to the columns in the subscriber sessions table in the SSR database.

Required Privilege Level

system system

< attributes >

(configuration/shared/sic/group/configuration/accounting-method/database)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <accounting-method>
            <database>
              <attributes>
                <remove-stopped-sessions/>
              </attributes>
            </database>
          </accounting-method>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Contents

`<remove-stopped-sessions>`—(Optional) Delete User Session and corresponding Service Session entry/entries when an Accounting-Stop Message is recieved

Default—false

Required Privilege Level

system system

< plug-in-attribute > (configuration/shared/sic/group/configuration/accounting-method/database/attributes)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <accounting-method>
            <database>
              <attributes>
                <plug-in-attribute>
                  <id>id</id> <!-- identifier -->
                  <request-attribute>request-attribute</request-attribute>
                  <variable>variable</variable>
                  <literal>literal</literal>
                </plug-in-attribute>
              </attributes>
            </database>
          </accounting-method>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the mapping between SIC variables or RADIUS attributes and the SAE plug-in attributes. When you use the SSR database as the accounting method, you must also define the mapping between SIC request attributes, variables, or literals, and the SAE plug-in attributes. The SAE plug-in attributes must also be mapped to the columns in the subscriber sessions table in the SSR database. This mapping must be configured to store accounting events in the SSR database. This mapping is combined with the mapping defined between SSR subscriber sessions table fields (columns) and SAE plug-in attributes. In addition, SIC uses internal variables to store intermediate results of transaction processing, such as request editing results. A variable from an editing rule can be used in the mapping to store the value of the internal variable (the result of the editing process) in the subscriber sessions table field.

Contents

<id>— Name of the SAE plug-in attribute to be mapped to the SIC request attribute, variable, or literal.

Value—Text

<request-attribute>—(Optional) Name of the RADIUS request attribute to be mapped to the SAE plug-in attribute.

Value—Text

<variable>—(Optional) Name of the transactional variable to be mapped to the SAE plug-in attribute.

Value—Text

<literal>—(Optional) Name of literal to be mapped to the SAE plug-in attribute.

Value—Text

Required Privilege Level

system system

< radius >

(configuration/shared/sic/group/configuration/accounting-method/proxy)

Usage

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <accounting-method>
            <proxy>
              <radius>
                <network-element>network-element</network-element>
              </radius>
            </proxy>
          </accounting-method>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Use a downstream RADIUS network element (AAA server) as the accounting target. The network element must be configured as a proxy server.

Contents

<network-element>— Name of a configured downstream RADIUS network element to which you want to forward (proxy) accounting requests. The network element must be configured as a RADIUS proxy server.

Value—Text

Required Privilege Level

system system

< device-template >

(configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <id>id</id> <!-- identifier -->
              <vendor>vendor</vendor>
              <model>model</model>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a device template. Device templates specify the make (vendor), model, and capability of the router.

Contents

<id>— Name of the device template.

Value—Text

<vendor>—(Optional) Vendor (brand) name of this device.

Value—Text

<model>— Model name of this device.

Value—Text

Required Privilege Level

system system

< capability >

(configuration/shared/sic/group/configuration/device-templates/device-template/capabilities)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <capabilities>
                <capability>
                  <name>name-choice</name> <!-- identifier -->
                  <value>value</value>
                </capability>
              </capabilities>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the service capability type supported by the template. The capability specifies activation behavior of services and how the router handles multiple requests in a single COA.

Contents

Value

- **activation**— Capability includes service access and activation behavior
- **modification**— Capability is service modification behavior
- **bundle**— Capability allows for multiple services to be bundled in a single COA request

<value>— Value of the service capability

Value— The available values depend on the selected service capability type.

If the selected capability is "Activation," then the value can be:

- **None**—Indicates that the router is not capable of activating services during initial authorization or activation.
- **Access-Accept**—Indicates that the router supports activating services in RADIUS Access-Accept messages only.

CoA—Indicates that the router supports activating services only in COA requests.

- Both—Enables support for both Access-Accept and COA requests.

If the selected capability is "Modification," then the value can be:

- false—The value is always false.

If the selected capability is "Bundle," it indicates whether and how the router handles multiple service activations or deactivations in a single COA request. Then the value can be:

- None—Indicates no bundling.
- Single—Indicates that the router accepts multiple requests.

Required Privilege Level

system system

< global-template >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <description>description</description>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a global service template. Global templates specify rendering used as part of any mode of any service template. Global templates are used to control rendering of service-independent requests, such as Abort-Session. A global template is unique in that its modes, attributes, and variables are available to all services that you define. Global templates are therefore a mandatory part of any SIC COA configuration.

Contents

<description>—(Optional) Description of this service.

Value—Text

Required Privilege Level

system system

< mode >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <name>name-choice</name> <!-- identifier -->
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the modes supported in the global service template.

Contents

Name of the mode.

Value—

- Authentication—Authentication mode.
- Accounting—Accounting mode.
- AbortSession—AbortSession mode.

Required Privilege Level

system system

< attributes >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Define RADIUS attributes to be generated as a result of the rendering process. All attributes create data that appears in the RADIUS attributes generated by the rendering process.

Contents

Required Privilege Level

system system

< attribute >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <id>id</id> <!-- identifier -->
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure attributes to include in the rendered result.

Contents

<id>— Attribute identifier.

Value—Text

Required Privilege Level

system system

< default >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <default>
                          <name>name</name>
                          <value>value</value>
                          <copy-from>copy-from</copy-from>
                        </default>
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a default attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

`<copy-from>`—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< normal >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <normal>
                          <name>name</name>
                          <copy-from>copy-from</copy-from>
                        </normal>
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a normal attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, no action occurs. The rendering process does not fail in this case.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< override >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <override>
                          <name>name</name>
                          <value>value</value>
                        </override>
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure an override attribute to include in the rendered result. Regardless of whether or not the rendering process finds the attribute in the downstream AAA server response, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

Required Privilege Level

system system

< parameterized >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <parameterized>
                          <format>format</format>
                          <name>name</name>
                        </parameterized>
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a parameterized attribute to include in the rendered result. This attribute is the most powerful and flexible type of attribute. It generates attribute values by using a format specification, which makes it the most flexible of the attributes.

Contents

<format>— Specify the format of this attribute. The syntax of the format is \$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]; \$(name) is used to define a parameter; you can intersperse literal text in between parameter definitions. Parameters inside [] are optional. If the optional parameter is absent, it, and any literal text included in the square brackets, is ignored. All parameters come from the SRC as input to the rendering process. If you need to use restricted characters in your strings, use the backslash convention: \\$, \', \", \[, \], \{, \}.

Value— In a form of "\$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]"; in case of restricted characters used, use the backslash to escape.

<name>— Name of an attribute.

Value—Text

Required Privilege Level

system system

< required > (configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <required>
                          <name>name</name>
                          <copy-from>copy-from</copy-from>
                        </required>
                      </attribute>
                    </attributes>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure required attributes to include in the rendered result. If the renderer finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, the rendering fails.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< variable >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/global-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <global-template>
                  <mode>
                    <variables>
                      <variable>
                        <name>name</name> <!-- identifier -->
                        <value>value</value>
                        <type>type-choice</type>
                      </variable>
                    </variables>
                  </mode>
                </global-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure variables to control the rendering process behavior. Use variables to render information that is not part of RADIUS attributes. Variables provide inner logic for the rendering process. Nothing defined by variables appears in the VSAs sent to the NAS.

Contents

<name>— Name of the variable.

Value—Text

<value>— Value of the variable, usually an integer.

Value—Integer in the range -2147483648–2147483647

<type>— Data type of variable.

Value

- integer—
- string—

Required Privilege Level

system system

< service-template >

(configuration/shared/sic/group/configuration/device-templates/device-template)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <name>name</name> <!-- identifier -->
                  <description>description</description>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a service template. Service templates specify any services that you want to enable for your router. What services are available vary from router to router, so it is important that you understand the properties of your router to successfully implement custom services.

Contents

<name>— Name of the service.

Value—Text

<description>—(Optional) Description of the service.

Value—Text

Required Privilege Level

system system

< mode >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <name>name-choice</name> <!-- identifier -->
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the mode of the service template.

Contents

Name of the mode specified in service template.

Value—

- Activation—Service template supports activation mode. Services are activated on request from the SAE.
- Deactivation—Service template supports deactivation mode. Services are deactivated on request from the SAE.
- InitialAuthorization—Service template supports initial authorization mode for initial activation of services in the Access-Accept message.
- ServiceCorrelationId—Service template supports service-correlation-id mode. Assigns an ID number when any other mode is initiated. The SRC software uses this number for internal identification purposes.
- ServiceProfileDownload—Service template supports the service-profile-download mode. Used only for Cisco router templates.

Required Privilege Level

system system

< attributes >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure attributes in the service template to control rendering process behavior.

Contents

Required Privilege Level

system system

< attribute >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <id>id</id> <!-- identifier -->
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure attributes to include in the rendered result.

Contents

<id>— Attribute identifier.

Value—Text

Required Privilege Level

system system

< default >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <default>
                          <name>name</name>
                          <value>value</value>
                          <copy-from>copy-from</copy-from>
                        </default>
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a default attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

`<copy-from>`—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< normal >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <normal>
                          <name>name</name>
                          <copy-from>copy-from</copy-from>
                        </normal>
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a normal attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, no action occurs. The rendering process does not fail in this case.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< override >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <override>
                          <name>name</name>
                          <value>value</value>
                        </override>
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure an override attribute to include in the rendered result. Regardless of whether or not the rendering process finds the attribute in the downstream AAA server response, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

Required Privilege Level

system system

< parameterized >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <parameterized>
                          <format>format</format>
                          <name>name</name>
                        </parameterized>
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a parameterized attribute to include in the rendered result. This attribute is the most powerful and flexible type of attribute. It generates attribute values by using a format specification, which makes it the most flexible of the attributes.

Contents

<format>— Specify the format of this attribute. The syntax of the format is \$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]; \$(name) is used to define a parameter; you can intersperse literal text in between parameter definitions. Parameters inside [] are optional. If the optional parameter is absent, it, and any literal text included in the square brackets, is ignored. All parameters come from the SRC as input to the rendering process. If you need to use restricted characters in your strings, use the backslash convention: \\$, \', \", \[, \], \(\, \).

Value— In a form of "\$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]"; in case of restricted characters used, use the backslash to escape.

<name>— Name of an attribute.

Value—Text

Required Privilege Level

system system

< required >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <attribute>
                        <required>
                          <name>name</name>
                          <copy-from>copy-from</copy-from>
                        </required>
                      </attribute>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure required attributes to include in the rendered result. If the renderer finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, the rendering fails.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< tagged-group >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                    </tagged-group>
                  </attributes>
                </mode>
              </service-template>
            </service-templates>
          </device-template>
        </device-templates>
      </configuration>
    </group>
  </sic>
</shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure increment tagged attributes for the template.

Required Privilege Level

system system

< attribute >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <id>id</id> <!-- identifier -->
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure attributes to include in the rendered result.

Contents

<id>— Attribute identifier.

Value—Text

Required Privilege Level

system system

< default >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/tagged-group/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <default>
                            <name>name</name>
                            <value>value</value>
                            <copy-from>copy-from</copy-from>
                          </default>
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a default attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

`<copy-from>` —(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< normal >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/tagged-group/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <normal>
                            <name>name</name>
                            <copy-from>copy-from</copy-from>
                          </normal>
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a normal attribute to include in the rendered result. If the rendering process finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, no action occurs. The rendering process does not fail in this case.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< override >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/tagged-group/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <override>
                            <name>name</name>
                            <value>value</value>
                          </override>
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure an override attribute to include in the rendered result. Regardless of whether or not the rendering process finds the attribute in the downstream AAA server response, it creates the attribute name with the specified value.

Contents

<name>— Name of an attribute.

Value—Text

<value>— Value of the attribute.

Value—Text

Required Privilege Level

system system

< parameterized >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/tagged-group/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <parameterized>
                            <format>format</format>
                            <name>name</name>
                          </parameterized>
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a parameterized attribute to include in the rendered result. This attribute is the most powerful and flexible type of attribute. It generates attribute values by using a format specification, which makes it the most flexible of the attributes.

Contents

<format>— Specify the format of this attribute. The syntax of the format is \$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]; \$(name) is used to define a parameter; you can intersperse literal text in between parameter definitions. Parameters inside [] are optional. If the optional parameter is absent, it, and any literal text included in the square brackets, is ignored. All parameters come from the SRC as input to the rendering process. If you need to use restricted characters in your strings, use the backslash convention: \\$, \', \", \[, \], \(), \.

Value— In a form of "\$(p1) \$(p2) ... \$(pn) [\$p(n + 1)]"; in case of restricted characters used, use the backslash to escape.

<name>— Name of an attribute.

Value—Text

Required Privilege Level

system system

< required > (configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode/attributes/tagged-group/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <attributes>
                      <tagged-group>
                        <attribute>
                          <required>
                            <name>name</name>
                            <copy-from>copy-from</copy-from>
                          </required>
                        </attribute>
                      </tagged-group>
                    </attributes>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure required attributes to include in the rendered result. If the renderer finds the attribute in the downstream AAA server response, it copies the value into the RADIUS message. Otherwise, the rendering fails.

Contents

<name>— Name of an attribute.

Value—Text

<copy-from>—(Optional) Specify the name of the attribute to copy the value from. If the copy-from option is specified, the renderer looks up the attribute specified by the copy-from option in the downstream AAA server response. In the absence of the copy-from option, the renderer looks up the attribute specified by the name option.

Value—Text

Required Privilege Level

system system

< variable >

(configuration/shared/sic/group/configuration/device-templates/device-template/service-templates/service-template/mode)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <device-templates>
            <device-template>
              <service-templates>
                <service-template>
                  <mode>
                    <variables>
                      <variable>
                        <name>name</name> <!-- identifier -->
                        <value>value</value>
                        <type>type-choice</type>
                      </variable>
                    </variables>
                  </mode>
                </service-template>
              </service-templates>
            </device-template>
          </device-templates>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure variables to control the rendering process behavior. Use variables to render information that is not part of RADIUS attributes. Variables provide inner logic for the rendering process. Nothing defined by variables appears in the VSAs sent to the NAS.

Contents

<name>— Name of the variable.

Value—Text

<value>— Value of the variable, usually an integer.

Value—Integer in the range -2147483648–2147483647

<type>— Data type of variable.

Value

- integer—
- string—

Required Privilege Level

system system

< network-element >

(configuration/shared/sic/group/configuration/diameter)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <diameter>
            <network-element>
              <id>id</id> <!-- identifier -->
              <description>description</description>
              <failover-policy>failover-policy-choice</failover-policy>
            </network-element>
          </diameter>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a Diameter network element name and failover policy. A Diameter network element is a logical network entity. Each Diameter network element consists of a group of peers that connect to the SIC using the Diameter protocol.

Contents

<id>— Name of Diameter network element. Each network element must have a unique name.

Value—Text

<description>—(Optional) Description of the network element.

Value—Text

<failover-policy>—(Optional) Diameter failover policy.

Value

- round-robin— Use the round-robin failover policy.
- primary-backup— Use the primary-backup failover policy.

Default— primaryBackup

Required Privilege Level

system system system

< peer > (configuration/shared/sic/group/configuration/diameter/network-element)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <diameter>
            <network-element>
              <peers>
                <peer>
                  <name>name</name> <!-- identifier -->
                  <description>description</description>
                  <address>address</address>
                  <protocol>protocol-choice</protocol>
                  <port>port</port>
                  <active-peer/>
                  <priority>priority</priority>
                </peer>
              </peers>
            </network-element>
          </diameter>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the Diameter peer of the SIC Diameter server. For the SIC Diameter server, the peer is always the SRC Diameter server.

Contents

<name>— Name of the Diameter peer. For SIC, the peer is always the SRC Diameter server. Each Diameter peer must have a unique name among all peers. This name is used to include the peer in a Diameter network element.

Value—Text

<description>—(Optional) Description of the remote Diameter peer.

Value—Text

<address>— Address of the Diameter peer. Specify the address of the SRC Diameter server that is a peer to this SIC Diameter server.

Value—IP address

<protocol>—(Optional) Protocol used to transport Diameter messages. Diameter messages are carried over TCP or SCTP. The SIC Diameter server establishes Diameter connections with a peer only over the configured protocol.

Value

- **tcp**— Send Diameter messages to this peer by using TCP.
- **sctp**— Send Diameter messages to this peer by using the Stream Control Transport Protocol. Multiple IP addresses may be used for this peer connection. The SIC Diameter server accepts Diameter messages from any of the peer's IP addresses.

Default— tcp

<port>—(Optional) TCP or SCTP port number. The SIC Diameter server periodically sends Capabilities Exchange requests to the remote peer's listening port over the configured transport protocol.

Value—Integer in the range 0–65535

Default— 3868

<active-peer>—(Optional) Connect to this peer actively. If the peer is configured to connect actively, the server periodically attempts to connect (or reconnect after a connection has failed) to the remote peer. If this option is not selected, a connection is established only after the remote peer attempts to connect to this server.

Default— false

<priority>—(Optional) Priority of failover policy. Peers with lower priority values are the preferred routing targets for Diameter requests. Requests are split equally among peers with the same priority level.

Value—Integer in the range 0–2147483647

Default— 1

Required Privilege Level

system system system

< address >

(configuration/shared/sic/group/configuration/diameter/network-element/peers/peer)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <diameter>
            <network-element>
              <peers>
                <peer>
                  <addresses>
                    <address>
                      <address>address</address> <!-- identifier -->
                    </address>
                  </addresses>
                </peer>
              </peers>
            </network-element>
          </diameter>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the Diameter peer addresses for SCTP. An IP address of the remote peer is necessary to establish a Diameter connection with the remote peer. For a Diameter connection over TCP, only one configured address is used. Over SCTP, the connection may be established over multiple addresses.

Contents

<address>— IP address used for the Diameter connection.

Value—IP address

Required Privilege Level

system system system

< remote_origin_hosts > (configuration/shared/sic/group/configuration/diameter/network- element/peers/peer)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <diameter>
            <network-element>
              <peers>
                <peer>
                  <remote_origin_hosts>
                    <enforce-source-address/>
                  </remote_origin_hosts>
                </peer>
              </peers>
            </network-element>
          </diameter>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Contents

<enforce-source-address>—(Optional) Enforce source address.

Default— false

Required Privilege Level

system system system

< origin-host > (configuration/shared/sic/group/configuration/diameter/network- element/peers/peer/remote_origin_hosts)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <diameter>
            <network-element>
              <peers>
                <peer>
                  <remote_origin_hosts>
                    <origin-host>
                      <origin-host>origin-host</origin-host>
                    </origin-host>
                  </remote_origin_hosts>
                </peer>
              </peers>
            </network-element>
          </diameter>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the origin-host name of the remote Diameter peer. The remote Diameter peer is the SRC Diameter server.

Contents

<origin-host>— Origin-host name of the remote peer.

Value—Text

Required Privilege Level

system system system

< dictionary >

(configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <dictionary>
            <id>id</id> <!-- identifier -->
          </dictionary>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a dictionary used by the SIC group. The dictionary is a collection of related RADIUS attributes.

Contents

<id>— Name of the dictionary. Each dictionary must have a unique name.

Value—Text

Required Privilege Level

system system

< attribute > (configuration/shared/sic/group/configuration/dictionary)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <dictionary>
            <attribute>
              <id>id</id> <!-- identifier -->
            </attribute>
          </dictionary>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the attribute you want to include in the dictionary.

Contents

<id>— Name of the attribute you want to define in the dictionary. Each attribute must have a unique name.

Value—Text

Required Privilege Level

system system

< radius >

(configuration/shared/sic/group/configuration/dictionary/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <dictionary>
            <attribute>
              <radius>
                <type>type</type>
                <format>format-choice</format>
                <vendor-id>vendor-id</vendor-id>
                <encrypt/>
                <salt-encrypt/>
                <tagged/>
                <sensitive/>
              </radius>
            </attribute>
          </dictionary>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS attribute you want included in the dictionary.

Contents

<type>— Type of RADIUS attribute specified as an integer value.

Value—Integer in the range 0–255

<format>— Format of the RADIUS attribute.

Value

- one-byte-integer— Attribute value is an 8-bit unsigned integer
- integer— Attribute value is a 32-bit unsigned integer
- eight-byte-integer— Attribute value is a 64-bit unsigned integer
- string— Attribute value is a string
- ipv4-address— Attribute value is an IPv4 address
- ipv6-address— Attribute value is an IPv6 address
- time— Attribute value is a 32-bit unsigned value, with the most significant octet appearing first. The value is equal to the number of seconds since 00:00:00 UTC, January 1, 1970
- octets— Attribute value consists of raw bytes

<vendor-id>—(Optional) Attribute is vendor specific and this is the vendor ID.

Value—Integer in the range 0–2147483647

<encrypt>—(Optional) Attribute should be encrypted without a salt.

Default— false

<salt-encrypt>—(Optional) Attribute should be encrypted with a salt.

Default— false

<tagged>—(Optional) RADIUS attribute is tagged.

Default— false

<sensitive>—(Optional) RADIUS attribute carries sensitive data, so its value is not logged.

Default— false

Required Privilege Level

system system

< constant >**(configuration/shared/sic/group/configuration/dictionary/attribute/radius)****Usage**

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <dictionary>
            <attribute>
              <radius>
                <constant>
                  <constant-name>constant-name</constant-name> <!-- identifier -->
                  <constant-value>constant-value</constant-value>
                </constant>
              </radius>
            </attribute>
          </dictionary>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Define a constant you want to associate with the data contained in the RADIUS attribute. You must define a unique name and a value for the constant.

Contents

<constant-name>— Name of the constant. Each constant must have a unique name.

Value—Text

<constant-value>—(Optional) Value mapped to the constant name.

Value—Integer in the range -2147483648–2147483647

Required Privilege Level

system system

< editing >

(configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <editing-rule>editing-rule</editing-rule> <!-- identifier -->
            <mode>mode-choice</mode>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the SIC editing rules. Editing rules allow you to modify values of RADIUS attributes or transaction variables based on an optional condition. Before the SIC sends the request to the specified accounting target, the request can optionally be edited based on the editing rules associated with the selected accounting routing rule. Editing rules are similar to accounting routing rules in that the request is examined for a matching condition and if one is found, the request is edited and then sent to the accounting target.

Editing rules provide power and flexibility to adapt request and response processing in different conditions to provide a standardized result. An example is the extraction of VPN-ID from a RADIUS request, which may be specified differently in incoming RADIUS requests depending on the device and the use case.

In addition to editing RADIUS attributes, the SIC can edit transactional variables. Editing rules can define new transactional variables in addition to certain built-in variables, such as the result of username parsing, NAS client lookup, and so on. Transactional variables are also referenced in the columns of the subscriber sessions table in the SSR database, which allows you to store the results of request processing and editing in the subscriber sessions table. There is a limit on the number of transactional variables; the default value is 255. Changing the limit requires restarting the SIC.

You configure editing rules by defining the source and its associated match conditions, the editing conditions applied to the source value, and the target in which to place the edited result. First, the request is examined for the specified source (RValue) based on match conditions. The value of the source is read and then edited based on the defined editing rule. The result is then placed in the defined target. The edited request sent to the accounting target includes both the original source and the new target value.

Each editing rule is a simple assignment of a source (RValue) and a target (LValue). In any assignment the target can be a transactional variable, a RADIUS attribute in the request, or a RADIUS attribute in the response.

The source can be a literal, a transactional variable, or a RADIUS attribute in the request.

The match conditions that you can test for in the source include whether a specific realm, user identity, or request attribute is present, not present, equals, does not equal, has a certain suffix, has a certain prefix, or is within a specific range.

If a match condition is found in the source, you can append or replace the value of the source and put it in the target. Additionally, if the source is a request attribute, you can remove the prefix, suffix, or the attribute before or after the @ and place the result in the target. Wildcards are supported for the remove-before and remove-after options.

Contents

`<editing-rule>`— Name of the editing rule.

Value—Text

`<mode>`—(Optional) Target (LValue) control mode. This setting controls how the target (LValue) is assigned. If a match condition is found on the source, you can append or replace the value of the source and put it in the target.

Value

- `replace`— Target (LValue) is replaced with the new value from the editing process
- `append`— Current target (LValue) value is concatenated with the new target value from the editing process

Default—`replace`

Required Privilege Level

system system

< default >

(configuration/shared/sic/group/configuration/editing)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <default>
              <literal>literal</literal>
              <request-attribute>request-attribute</request-attribute>
              <variable>variable</variable>
            </default>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the default RValue to use when no source is selected during the editing process. This default value is used only if none of the defined editing rule conditions are matched.

Contents

<literal>—(Optional) String literal used by default when no source is selected during the editing process.

Value—Text

<request-attribute>—(Optional) RADIUS request attribute used by default when no source is selected during the editing process.

Value—Text

<variable>—(Optional) Transactional variable used by default when no source is selected during the editing process.

Value—Text

Required Privilege Level

system system

< literal >

(configuration/shared/sic/group/configuration/editing/source)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <identifier>identifier</identifier> <!-- identifier -->
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a string literal as the source of the editing rule.

Contents

<identifier>— String literal in the editing rule.

Value—Text

Required Privilege Level

system system

< request > **(configuration/shared/sic/group/configuration/editing/source/literal/condition)**

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    </request>
                  </condition>
                </literal>
              </source>
            </editing>
          </configuration>
        </group>
      </sic>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the request attribute in the match condition and specify the presence option of the condition.

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/request)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <attribute-name>attribute-name</attribute-name> <!-- identifier -->
                      <present/>
                      <not-present/>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the request attribute match condition. If the request attribute condition is matched in the request, the route is selected.

Contents

<attribute-name>— Name of the request attribute.

Value—Text

Check for the presence of this value in the request.

Value

- present— Value must be present in the request
- not-present— Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

< **has-prefix** >**(configuration/shared/sic/group/configuration/editing/source/literal/condition/request/attribute)****Usage**

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/request/attribute)**Usage**

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <request>
                    <attribute>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </attribute>
                  </request>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the attribute must be within this range.

Contents

<low> — Low range in text format.

Value — Text

<high> — High range in text format.

Value — Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables)

Usage

```
<configuration>
<shared>
  <sic>
    <group>
      <configuration>
        <editing>
          <source>
            <literal>
              <condition>
                <transactionVariables>
                  <realm>
                    <present/>
                    <not-present/>
                  </realm>
                </transactionVariables>
              </condition>
            </literal>
          </source>
        </editing>
      </configuration>
    </group>
  </sic>
</shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a realm match condition. If the condition is matched in the request, the route is selected.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <realm>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </realm>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals>

XML API Configuration Reference

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <realm>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </realm>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix >
(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/realm)

Usage

```
<configuration>  
  <shared>  
    <sic>  
      <group>  
        <configuration>  
          <editing>  
            <source>  
              <literal>  
                <condition>  
                  <transactionVariables>  
                    <realm>  
                      <has-prefix>  
                        <value>value</value> <!-- identifier -->  
                      </has-prefix>  
                    </realm>  
                  </transactionVariables>  
                </condition>  
              </literal>  
            </source>  
          </editing>  
        </configuration>  
      </group>  
    </sic>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

<has-suffix> Configuration Reference

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <realm>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </realm>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >
(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/realm)

Usage

```
<configuration>  
  <shared>  
    <sic>  
      <group>  
        <configuration>  
          <editing>  
            <source>  
              <literal>  
                <condition>  
                  <transactionVariables>  
                    <realm>  
                      <range>  
                        <low>low</low>  
                        <high>high</high>  
                      </range>  
                    </realm>  
                  </transactionVariables>  
                </condition>  
              </literal>  
            </source>  
          </editing>  
        </configuration>  
      </group>  
    </sic>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the realm must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <present/>
                      <not-present/>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a user identity match condition. If the user identity condition is matched in the request, the route is selected. Possible match conditions are present, not present, does not equal, equals, has prefix, has suffix, or range.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value> — Value of the match condition.

Value —Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value> — Value of the match condition.

Value — Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/configuration/editing/source/literal/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <literal>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </literal>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. Tested condition value in the user identity must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< request-attribute > (configuration/shared/sic/group/configuration/editing/source)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <identifier>identifier</identifier> <!-- identifier -->
                <remove-prefix>remove-prefix</remove-prefix>
                <remove-suffix>remove-suffix</remove-suffix>
                <remove-before>remove-before</remove-before>
                <remove-after>remove-after</remove-after>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a RADIUS attribute from the request to be the source of the editing rule. In addition, specify whether you want to remove the prefix, suffix, or attribute before or after the @ in the request.

Contents

<identifier>— RADIUS attribute from request to be used as the source in the editing rule.

Value—Text

<remove-prefix>—(Optional) Remove the specified prefix from the request.

Value—Text

<remove-suffix>—(Optional) Remove the specified suffix from the request.

Value—Text

<remove-before>—(Optional) Remove everything before the specified prefix from the request.

Value—Text

<remove-after>—(Optional) Remove everything after the specified suffix from the request.

Value—Text

Required Privilege Level

system system

< request > (configuration/shared/sic/group/configuration/editing/source)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    </request>
                  </condition>
                </request-attribute>
              </source>
            </editing>
          </configuration>
        </group>
      </sic>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the request attribute in the match condition and specify the presence option of the condition.

Required Privilege Level

system system

< attribute > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <attribute-name>attribute-name</attribute-name> <!-- identifier -->
                      <present/>
                      <not-present/>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the request attribute match condition. If the request attribute condition is matched in the request, the route is selected.

Contents

<attribute-name>— Name of the request attribute.

Value—Text

Check for the presence of this value in the request.

Value

- present— Value must be present in the request
- not-present— Value must not be present in the request

Required Privilege Level

system system

< does-not-equal > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <request>
                    <attribute>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </attribute>
                  </request>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the attribute must be within this range.

Contents

<low>— Low range in text format.

Value—Text

<high>— High range in text format.

Value—Text

Required Privilege Level

system system

< realm >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <present/>
                      <not-present/>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a realm match condition. If the condition is matched in the request, the route is selected.

Check for the presence of this value in the request.

Value

- `present` — Value must be present in the request
- `not-present` — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <realm>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </realm>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the realm must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< user-identity > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <present/>
                      <not-present/>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a user identity match condition. If the user identity condition is matched in the request, the route is selected. Possible match conditions are present, not present, does not equal, equals, has prefix, has suffix, or range.

Check for the presence of this value in the request.

Value

- `present` — Value must be present in the request
- `not-present` — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix >

(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >**(configuration/shared/sic/group/configuration/editing/source/request-attribute/condition/transactionVariables/user-identity)****Usage**

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <request-attribute>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </request-attribute>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. Tested condition value in the user identity must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< variable > (configuration/shared/sic/group/configuration/editing/source)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <identifier>identifier-choice</identifier> <!-- identifier -->
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a transactional variable as the source of the editing rule.

Contents

Transactional variable used as source of editing rule.

Value

- `user-name`—User-Name transaction variable
- `realm`—Realm transaction variable

Required Privilege Level

system system

<request> (configuration/shared/sic/group/configuration/editing/source/variable/condition)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the request attribute in the match condition and specify the presence option of the condition.

Required Privilege Level

system system

< attribute >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/request)

Usage

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <attribute-name>attribute-name</attribute-name> <!-- identifier -->
                      <present/>
                      <not-present/>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the request attribute match condition. If the request attribute condition is matched in the request, the route is selected.

Contents

<attribute-name>— Name of the request attribute.

Value—Text

Check for the presence of this value in the request.

Value

- present— Value must be present in the request
- not-present— Value must not be present in the request

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix >**(configuration/shared/sic/group/configuration/editing/source/variable/condition/request/attribute)****Usage**

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <request>
                    <attribute>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </attribute>
                  </request>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the attribute must be within this range.

Contents

<low>— Low range in text format.

Value—Text

<high>— High range in text format.

Value—Text

Required Privilege Level

system system

< realm >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <realm>
                      <present />
                      <not-present />
                    </realm>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a realm match condition. If the condition is matched in the request, the route is selected.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <realm>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </realm>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <realm>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </realm>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

<has-prefix> Configuration Reference

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <realm>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </realm>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix >
(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/realm)

Usage

```
<configuration>  
  <shared>  
    <sic>  
      <group>  
        <configuration>  
          <editing>  
            <source>  
              <variable>  
                <condition>  
                  <transactionVariables>  
                    <realm>  
                      <has-suffix>  
                        <value>value</value> <!-- identifier -->  
                      </has-suffix>  
                    </realm>  
                  </transactionVariables>  
                </condition>  
              </variable>  
            </source>  
          </editing>  
        </configuration>  
      </group>  
    </sic>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range> XML API Configuration Reference
(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <realm>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </realm>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the realm must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< user-identity >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <present />
                      <not-present />
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a user identity match condition. If the user identity condition is matched in the request, the route is selected. Possible match conditions are present, not present, does not equal, equals, has prefix, has suffix, or range.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <does-not-equal>
                        <value>value</value> <!-- identifier -->
                      </does-not-equal>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <equals>
                        <value>value</value> <!-- identifier -->
                      </equals>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-prefix>
                        <value>value</value> <!-- identifier -->
                      </has-prefix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix >

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <has-suffix>
                        <value>value</value> <!-- identifier -->
                      </has-suffix>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

(configuration/shared/sic/group/configuration/editing/source/variable/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <source>
              <variable>
                <condition>
                  <transactionVariables>
                    <user-identity>
                      <range>
                        <low>low</low>
                        <high>high</high>
                      </range>
                    </user-identity>
                  </transactionVariables>
                </condition>
              </variable>
            </source>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. Tested condition value in the user identity must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< target > (configuration/shared/sic/group/configuration/editing)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <editing>
            <target>
              <request-attribute>request-attribute</request-attribute>
              <response-attribute>response-attribute</response-attribute>
              <variable>variable-choice</variable>
            </target>
          </editing>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the target (LValue) in which to place the result of the editing process. The target can be a RADIUS request or response attribute or a transaction variable.

Contents

<request-attribute>—(Optional) Target of the editing rule is a RADIUS request attribute.

Value—Text

<response-attribute>—(Optional) Target of the editing rule is a RADIUS response attribute.

Value—Text

<variable>—(Optional) Target of the editing rule is a transactional variable.

Value

- user-name—User-Name transaction variable
- realm—Realm transaction variable

Required Privilege Level

system system

< local-realm > (configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <local-realm>
            <name>name</name> <!-- identifier -->
          </local-realm>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Specify realms that are local to this server, meaning that any requests sent for these realms are treated as if there is no realm in the request.

For servers, the network access identifier (NAI) in the request identifies the intended realm. To properly interpret requests received from intermediate servers, the SIC server must know which realms it is responsible for servicing locally.

When a request is received, the server examines the NAI to determine the realm to which the request should be routed. If the realm name is specified here, the request is handled by this local SIC server. If no realm is present in the NAI, the request is considered to be local.

Contents

<name>— Name of a local realm. If the realm to which the request is to be routed is listed in this field, the realm is ignored and the request is processed by this local server. If no realm is present in the network access identifier (NAI), the request is considered to be local.

Value—Text

Required Privilege Level

system system

< model >

(configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <model>
            <id>id</id> <!-- identifier -->
            <dictionary>dictionary</dictionary>
          </model>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the device models supported by the group and their associated dictionaries.

Contents

<id>— Device model name. Each device must have an associated model name.

Value—Text

<dictionary>— Name of the dictionary used by the device model.

Value—Text

Required Privilege Level

system system

< limit > (configuration/shared/sic/group/configuration/radius/accounting-listener)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <accounting-listener>
              <limit>
                <incoming-queue>incoming-queue</incoming-queue>
                <transaction-queue>transaction-queue</transaction-queue>
              </limit>
            </accounting-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the accounting listener queue limits.

Contents

<incoming-queue>—(Optional) Limit of the incoming queue for the accounting listener. When the number of unprocessed received messages surpasses the incoming queue limit, the SIC server stops reading from the transport. Reading from the transport resumes as soon as the number of unprocessed received messages falls below this limit.

Value—Integer in the range 0–2147483647

Default— 1000

<transaction-queue>—(Optional) Limit of the transaction queue for the accounting listener. When the number of unscheduled transactions surpasses the transaction queue limit, the SIC server stops reading from the transport. Reading from the transport resumes as soon as the number of unscheduled transactions falls below this limit.

Value—Integer in the range 0–2147483647

Default— 1000

Required Privilege Level

system system

< transport > (configuration/shared/sic/group/configuration/radius/accounting-listener)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <accounting-listener>
              <transport>
                <id>id</id> <!-- identifier -->
              </transport>
            </accounting-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the RADIUS accounting listener transport. The accounting listener transport is used to listen for accounting requests from RADIUS clients over UDP.

Contents

<id>— Name of the RADIUS accounting listener transport. Each RADIUS accounting transport must have a unique name.

Value—Text

Required Privilege Level

system system

< config > (configuration/shared/sic/group)

Usage

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <accounting-listener>
              <transport>
                <config>
                  <port>port</port>
                  <connections-per-thread>connections-per-thread</connections-per-thread>
                  <connect-timeout>connect-timeout</connect-timeout>
                  <disconnect-timeout>disconnect-timeout</disconnect-timeout>
                </config>
              </transport>
            </accounting-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS transport used by the accounting listener.

<port>— Number of the UDP port on which the SIC listens for RADIUS requests.

Value—Integer in the range 0-2147483647

<connections-per-thread>—(Optional) Number of UDP connections per thread. A single thread handles this number of connections.

Value—Integer in the range 0-15

Default— 15

<connect-timeout>—(Optional) UDP connection timeout in milliseconds. The server waits for this amount of time for a connection.

Value—Integer in the range 0-2147483647 ms

Default— 1000

<disconnect-timeout>—(Optional) UDP disconnection timeout in milliseconds. The server waits for this amount of time before disconnecting.

Value—Integer in the range 0-2147483647 ms

Default— 1000

Required Privilege Level

system system

< limit >

(configuration/shared/sic/group/configuration/radius/authentication-listener)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <authentication-listener>
              <limit>
                <incoming-queue>incoming-queue</incoming-queue>
                <transaction-queue>transaction-queue</transaction-queue>
              </limit>
            </authentication-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the authentication listener queue limits.

Contents

<incoming-queue>—(Optional) Limit of the incoming queue for the authentication listener. When the number of unprocessed received messages surpasses the incoming queue limit, the SIC server stops reading from the transport. Reading from the transport resumes as soon as the number of unprocessed received messages falls below this limit.

Value—Integer in the range 0–2147483647

Default— 1000

<transaction-queue>—(Optional) Limit of the transaction queue for the authentication listener. When the number of unscheduled transactions surpasses the transaction queue limit, the SIC server stops reading from the transport. Reading from the transport resumes as soon as the number of unscheduled transactions falls below this limit.

Value—Integer in the range 0–2147483647

Default— 1000

Required Privilege Level

system system

< transport > (configuration/shared/sic/group/configuration/radius/authentication-listener)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <authentication-listener>
              <transport>
                <id>id</id> <!-- identifier -->
              </transport>
            </authentication-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the RADIUS authentication listener transport used by the SIC group. The authentication listener transport is used to listen for authentication requests from RADIUS clients over UDP. Specify a unique name.

Contents

<id>— Name of the RADIUS authentication listener transport. Each RADIUS accounting transport must have a unique name.

Value—Text

Required Privilege Level

system system

< config > (configuration/shared/sic/group)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <authentication-listener>
              <transport>
                <config>
                  <port>port</port>
                  <connections-per-thread>connections-per-thread</connections-per-thread>
                  <connect-timeout>connect-timeout</connect-timeout>
                  <disconnect-timeout>disconnect-timeout</disconnect-timeout>
                </config>
              </transport>
            </authentication-listener>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS transport used by the authentication listener.

<port>— Number of the UDP port on which the SIC listens for RADIUS requests.

Value—Integer in the range 0–2147483647

<connections-per-thread>—(Optional) Number of UDP connections per thread. A single thread handles this number of connections.

Value—Integer in the range 0–15

Default— 15

<connect-timeout>—(Optional) UDP connection timeout in milliseconds. The server waits for this amount of time for a connection.

Value—Integer in the range 0–2147483647 ms

Default— 1000

<disconnect-timeout>—(Optional) UDP disconnection timeout in milliseconds. The server waits for this amount of time before disconnecting.

Value—Integer in the range 0–2147483647 ms

Default— 1000

Required Privilege Level

system system

< network-element >

(configuration/shared/sic/group/configuration/radius)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <id>id</id> <!-- identifier -->
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a RADIUS network element. A network element is a logical network entity that hosts any number of SIC functions. Each RADIUS network element consists of a group of clients and targets that the SIC server may exchange messages with using the RADIUS protocol. An upstream network element is an accounting and authentication client, or a dynamic authorization target. A downstream network element is an authentication and accounting target.

Contents

<id>— Name of the RADIUS network element. Each network element must have a unique name.

Value—Text

Required Privilege Level

system system

< downstream > (configuration/shared/sic/group/configuration/radius/network- element)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <model>model</model>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the downstream RADIUS network element. A downstream RADIUS network element is an authentication and accounting target to which this server may send RADIUS requests. The downstream target is an AAA server.

Contents

<model>— Device model of the RADIUS network element target. Only device models that have previously been configured for the group may be specified.

Value—Text

Required Privilege Level

system system

< domain >

(configuration/shared/sic/group/configuration/radius/network-element/downstream)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <name>name-choice</name> <!-- identifier -->
                  <failover-mode>failover-mode-choice</failover-mode>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the failover mode for the downstream network element. The failover mode manages how messages are sent over multiple paths to the network element.

Contents

Name of the RADIUS network element. Each network element must have a unique name.

Value

- `authentication`— Configure the downstream authentication targets and failover properties.
- `accounting`— Configure the downstream accounting targets and failover properties.

Default—acct

`<failover-mode>`—(Optional) Failover mode used by the SIC for this network element.

Value

- `round-robin`— Failover mode used by the server is the round-robin method. When this failover mode is used, the server alternates the path it uses to send messages to the RADIUS network element target.
- `primary-backup`— Failover mode used by the server is the primary backup method. When this failover mode is used, the server sends requests to the primary target unless it is unavailable, in which case it sends requests to the backup target.

Default—primary-backup

Required Privilege Level

system system

< failover-policy >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <failover-policy>
                  </failover-policy>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the failover policy for the downstream RADIUS network element.

Required Privilege Level

system system

< fast-fail >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/failover-policy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <failover-policy>
                    <fast-fail>
                      <minimum-number>minimum-number</minimum-number>
                      <timeout>timeout</timeout>
                      <reset-delay>reset-delay</reset-delay>
                    </fast-fail>
                  </failover-policy>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the fast fail options of the failover policy. The fast fail options control how the server handles unreachable targets. When the server sends a message to a target, it expects to receive a reply. If the server does not receive the reply within the timeframe specified by the fast fail policy, it goes into fast fail mode for that target and rejects the request.

Contents

<minimum-number>—(Optional) Minimum number of attempts for the failover policy. This number specifies the minimum number of times the server retransmits a message if an acknowledgment from the target is not received; if the minimum number is exhausted, the server places the target in fast fail.

Value—Integer in the range 0–2147483647

Default— 3

<timeout>—(Optional) Time in seconds before the server goes into fast fail mode for that target.

Value—Integer in the range 0–2147483647 s

Default— 3

<reset-delay>—(Optional) Time in seconds after which the server comes out of fast fail mode for that target.

Value—Integer in the range 0–2147483647 s

Default— 30

Required Privilege Level

system system

< retry >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/failover-policy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <failover-policy>
                    <retry>
                      <number>number</number>
                      <timeout>timeout</timeout>
                    </retry>
                  </failover-policy>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the retry options for the target. The retry options control how the server retries failed requests.

Contents

<number>—(Optional) Maximum number of attempts. This number specifies the maximum number of times a message is retransmitted if an acknowledgment from the target is not received; if the maximum number is exhausted, the original request is rejected.

Value—Integer in the range 0-2147483647

Default— 3

<timeout>—(Optional) Number of seconds between retry attempts.

Value—Integer in the range 0-2147483647 s

Default— 4

Required Privilege Level

system system

< accounting-target >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/targets)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <targets>
                    <accounting-target>
                      <name>name</name> <!-- identifier -->
                      <address>address</address>
                      <priority>priority</priority>
                    </accounting-target>
                  </targets>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the identity of the RADIUS accounting target in the downstream network element including the name, IP address, and failover priority. The accounting target is a downstream AAA server to which the SIC forwards accounting requests.

Contents

<name>— Name of the RADIUS accounting target. The accounting target must have a unique name so that it can be identified easily.

Value—Text

<address>— IP address of the RADIUS accounting target.

Value—IP address

<priority>—(Optional) Priority of the accounting target. The lowest priority targets are selected first in a failover policy.

Value—Integer in the range 0–2147483647

Default— 1

Required Privilege Level

system system

< connection >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/targets/accounting-target)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <targets>
                    <accounting-target>
                      <connection>
                        <secret>secret</secret>
                        <outbound-transport>outbound-transport</outbound-transport>
                        <port>port</port>
                      </connection>
                    </accounting-target>
                  </targets>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS accounting target in the downstream network element including the port, shared secret, and the transport being used for RADIUS messages.

Contents

<secret>— Shared secret used by the RADIUS accounting target. A RADIUS shared secret is a case-sensitive password (text string) used to validate communications between two RADIUS devices, such as a RADIUS-based server and a RADIUS client or target. The shared secret must be configured to match on both devices. Configure shared secrets that are long enough and random enough to resist attack, and avoid using the same shared secret throughout your network.

Value—Text

<outbound-transport>—(Optional) Name of the local transport on the SIC server sending outbound requests to the downstream accounting target.

Value—Text

<port>—(Optional) UDP port number on which the RADIUS accounting target listens for accounting requests.

Value—Integer in the range 0–2147483647

Default— 1813

Required Privilege Level

system system

< authentication-target > (configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/targets)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <targets>
                    <authentication-target>
                      <name>name</name> <!-- identifier -->
                      <address>address</address>
                      <priority>priority</priority>
                    </authentication-target>
                  </targets>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the identity of the RADIUS authentication target in the downstream network element including the name, IP address, and failover priority. The authentication target is a downstream AAA server to which the SIC forwards authentication requests.

Contents

<name>— Name of the RADIUS authentication target. The authentication target must have a unique name so that it can be identified easily.

Value—Text

<address>— IP address of the RADIUS authentication target.

Value—IP address

<priority>—(Optional) Priority of the authentication target. The lowest priority targets are selected first in a failover policy.

Value—Integer in the range 0–2147483647

Default— 1

Required Privilege Level

system system

< connection >

(configuration/shared/sic/group/configuration/radius/network-element/downstream/domain/targets/authentication-target)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <downstream>
                <domain>
                  <targets>
                    <authentication-target>
                      <connection>
                        <secret>secret</secret>
                        <outbound-transport>outbound-transport</outbound-transport>
                        <port>port</port>
                      </connection>
                    </authentication-target>
                  </targets>
                </domain>
              </downstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS authentication target in the downstream network element including the port, shared secret, and the transport being used for RADIUS messages.

Contents

<secret>—Shared secret used by the RADIUS authentication target. A RADIUS shared secret is a case-sensitive password (text string) used to validate communications between two RADIUS devices, such as a RADIUS-based server and a RADIUS client or target. The shared secret must be configured to match on both devices. Configure shared secrets that are long enough and random enough to resist attack, and avoid using the same shared secret throughout your network.

Value—Text

<outbound-transport>—(Optional) Name of the local transport on the SIC server sending outbound requests to the downstream authentication target.

Value—Text

<port>—(Optional) UDP port number on which the RADIUS authentication target listens for authentication requests.

Value—Integer in the range 0-2147483647

Default— 1812

Required Privilege Level

system system

< proxy >

(configuration/shared/sic/group/configuration/radius/network-element/functions)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <functions>
                <proxy>
                </proxy>
              </functions>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Assign the proxy function to this downstream network element. This option is used to set implicit routing options. The proxy function instructs the SIC server to forward (proxy) accounting requests to this downstream network element (AAA server).

Required Privilege Level

system system

< realmRoutingRules > (configuration/shared/sic/group/configuration/radius/network- element/functions/proxy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <functions>
                <proxy>
                  <realmRoutingRules>
                    <default-route-for-all-realms/>
                  </realmRoutingRules>
                </proxy>
              </functions>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Description

Configure the default route for all realms. If this option is enabled, this is the default route for messages received for all realms.

Contents

<default-route-for-all-realms>—(Optional) Default route for all realms.

Default— false

Required Privilege Level

system system

< realm >

(configuration/shared/sic/group/configuration/radius/network-element/functions/proxy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <functions>
                <proxy>
                  <realmRoutingRules>
                    <realm>
                      <realmValue>realmValue</realmValue> <!-- identifier -->
                      <condition>condition-choice</condition>
                    </realm>
                  </realmRoutingRules>
                </proxy>
              </functions>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the realm names and match conditions for the network element. Any accounting requests received by the SIC server destined for these realms is routed to this network element if there is a match on these realm conditions.

Contents

<realmValue>— Realm name. Each realm name must be unique.

Value—Text

<condition>— Realm match condition. Route the request to this network element if this condition is matched.

Value

- **exact**— realmValue must exactly match the realm string in the request.
- **prefix**— realmValue must match the beginning of the realm string in the request.

Required Privilege Level

system system

< upstream > (configuration/shared/sic/group/configuration/radius/network- element)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <model>model</model>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Assign the upstream function to this network element and configure the device model of the client device. The upstream function is assigned to RADIUS clients that send RADIUS requests to this server or receive dynamic authorization requests from this server.

Contents

<model>— Device model of the RADIUS client. This device model must have been previously configured for the SIC group.

Value—Text

Required Privilege Level

system system

< dynamic-authorization-target > (configuration/shared/sic/group/configuration/radius/network- element/upstream)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <failover-mode>failover-mode-choice</failover-mode>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the failover mode for the RADIUS dynamic authorization target.

Contents

<failover-mode> — Failover mode used by the SIC for this network element.

Value

- **round-robin** — Failover mode used by the server is the round-robin method. When this failover mode is used, the server alternates the path it uses to send messages to the downstream RADIUS network element target.
- **primary-backup** — Failover mode used by the server is the primary backup method. When this failover mode is used, the server sends requests to the primary target unless it is unavailable, in which case it sends requests to the backup target.

Default—primaryBackup

Required Privilege Level

system system

< failover-policy > (configuration/shared/sic/group/configuration/radius/network- element/upstream/dynamic-authorization-target)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <failover-policy>
                  </failover-policy>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the failover policy for the dynamic authorization target in the upstream network element.

Required Privilege Level

system system

< fast-fail >

(configuration/shared/sic/group/configuration/radius/network-element/upstream/dynamic-authorization-target/failover-policy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <failover-policy>
                    <fast-fail>
                      <minimum-number>minimum-number</minimum-number>
                      <timeout>timeout</timeout>
                      <reset-delay>reset-delay</reset-delay>
                    </fast-fail>
                  </failover-policy>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the fast fail options of the failover policy. The fast fail options control how the server handles unreachable targets. When the server sends a message to a target, it expects to receive a reply. If the server does not receive the reply within the timeframe specified by the fast fail policy, it goes into fast fail mode for that target and rejects the request.

Contents

<minimum-number>— Minimum number of attempts for the failover policy. This number specifies the minimum number of times the server retransmits a message if an acknowledgment from the target is not received; if the minimum number is exhausted, the server places the target in fast fail.

Value—Integer in the range 0–2147483647

Default— 3

<timeout>— Time in seconds before the server goes into fast fail mode for that target.

Value—Integer in the range 0–2147483647 s

Default— 3

<reset-delay>— Time in seconds after which the server comes out of fast fail mode for that target.

Value—Integer in the range 0–2147483647 s

Default— 30

Required Privilege Level

system system

< retry > (configuration/shared/sic/group/configuration/radius/network-element/upstream/dynamic-authorization-target/failover-policy)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <failover-policy>
                    <retry>
                      <number>number</number>
                      <timeout>timeout</timeout>
                    </retry>
                  </failover-policy>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the retry options for the target. The retry options control how the server retries failed requests.

Contents

<number>— Maximum number of attempts. This number specifies the maximum number of times a message is retransmitted if an acknowledgment from the target is not received; if the maximum number is exhausted, the original request is rejected.

Value—Integer in the range 0–2147483647

Default— 3

<timeout>— Number of seconds between retry attempts.

Value—Integer in the range 0–2147483647 s

Default— 4

Required Privilege Level

system system

< target >

(configuration/shared/sic/group/configuration/radius/network-element/upstream/dynamic-authorization-target)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <targets>
                    <target>
                      <name>name</name> <!-- identifier -->
                      <address>address</address>
                      <priority>priority</priority>
                    </target>
                  </targets>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the identity of the RADIUS dynamic authorization target in the upstream network element including the name, IP address, and failover priority. The dynamic authorization target is an NAS to which the SIC server forwards dynamic authorization requests.

Contents

<name>— Name of the RADIUS dynamic authorization target. The dynamic authorization target must have a unique name so that it can be identified easily.

Value—Text

<address>— IP address of the RADIUS dynamic authorization target.

Value—IP address

<priority>—(Optional) Priority of the dynamic authorization target. The lowest priority targets are selected first in a failover policy.

Value—Integer in the range 0–2147483647

Default— 1

Required Privilege Level

system system

< connection >

(configuration/shared/sic/group/configuration/radius/network-element/upstream/dynamic-authorization-target/targets/target)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <dynamic-authorization-target>
                  <targets>
                    <target>
                      <connection>
                        <secret>secret</secret>
                        <port>port</port>
                      </connection>
                    </target>
                  </targets>
                </dynamic-authorization-target>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS dynamic authorization target in the upstream network element including the port, shared secret, and the transport being used for RADIUS messages.

Contents

<secret>— Shared secret used by the RADIUS dynamic authorization target. A RADIUS shared secret is a case-sensitive password (text string) used to validate communications between two RADIUS devices, such as a RADIUS-based server and a RADIUS client or target. The shared secret must be configured to match on both devices. Configure shared secrets that are long enough and random enough to resist attack, and avoid using the same shared secret throughout your network.

Value—Text

<port>—(Optional) UDP port number on which the RADIUS dynamic authorization target listens for COA/DM requests.

Value—Integer in the range 0–2147483647

Default— 3799

Required Privilege Level

system system

< radius-client >

(configuration/shared/sic/group/configuration/radius/network-element/upstream/nas_clients)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <network-element>
              <upstream>
                <nas_clients>
                  <radius-client>
                    <id>id</id> <!-- identifier -->
                    <address>address</address>
                    <accounting-secret>accounting-secret</accounting-secret>
                    <authentication-secret>authentication-secret</authentication-secret>
                  </radius-client>
                </nas_clients>
              </upstream>
            </network-element>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the settings for the RADIUS authentication and accounting clients sending requests to the SIC server.

Contents

<id>— Name of the RADIUS authentication and accounting client. Each client must have a unique name among all clients.

Value—Text

<address>— IP address of the RADIUS client sending authentication and accounting requests to the SIC server.

Value—IP address

<accounting-secret>—(Optional) Shared secret used by the accounting client. If unspecified, no shared secret is used.

Value—Text

<authentication-secret>—(Optional) Shared secret used by the authentication client. If unspecified, no shared secret is used.

Value—Text

Required Privilege Level

system system

< outbound-transport > (configuration/shared/sic/group/configuration/radius)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <outbound-transport>
              <transport-name>transport-name</transport-name> <!-- identifier -->
            </outbound-transport>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the RADIUS transport used to send outbound requests to RADIUS targets over UDP.

Contents

`<transport-name>` — Name of the RADIUS outbound transport. Each RADIUS outbound transport must have a unique name.

Value—Text

Required Privilege Level

system system

< config > (configuration/shared/sic/group)

Usage

```

<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <radius>
            <outbound-transport>
              <config>
                <connections-per-thread>connections-per-thread</connections-per-thread>
                <connect-timeout>connect-timeout</connect-timeout>
                <disconnect-timeout>disconnect-timeout</disconnect-timeout>
                <port>port</port>
                <port-range-size>port-range-size</port-range-size>
              </config>
            </outbound-transport>
          </radius>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the RADIUS transport used to send outbound requests to RADIUS targets over UDP.

<connections-per-thread>—(Optional) Number of UDP connections per thread. A single thread handles this number of UDP connections.

Value—Integer in the range 0–15

Default— 15

<connect-timeout>—(Optional) UDP connection timeout in milliseconds. The server waits for this amount of time for a connection.

Value—Integer in the range 0–2147483647 ms

Default— 1000

<disconnect-timeout>—(Optional) UDP disconnection timeout in milliseconds. The server waits for this amount of time before disconnecting.

Value—Integer in the range 0–2147483647 ms

Default— 1000

<port>— Outbound starting UDP port number. This server sends RADIUS packets from a port range starting with this UDP port number.

Value—Integer in the range 0–2147483647

Default—0

`<port-range-size>`—(Optional) UDP source port range size. This value specifies the range of UDP ports that is used to send RADIUS packets.

Value—Integer in the range 0–2147483647

Required Privilege Level

system system

< event >

(configuration/shared/sic/group/configuration/snmp)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <snmp>
            <event>
              <identifier>identifier-choice</identifier> <!-- identifier -->
              <dilution-factor>dilution-factor</dilution-factor>
            </event>
          </snmp>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure SNMP events for which a trap is sent when the event occurs and configure the dilution factor.

Contents

Name of the SNMP trap for which you want to configure the dilution factor.

Value

- sic-server-startup— SNMP trap on server startup
- sic-server-shutdown— SNMP trap on server shutdown
- sic-server-unauthorized-administration-request— SNMP trap on unauthorized administration request
- sic-server-internal-error— SNMP trap on server internal error
- sic-server-resource-failure— SNMP trap on server resource failure
- sic-server-log-file-failure— SNMP trap on server log file failure
- diameter-base-protocol-error— Diameter base protocol error
- diameter-transient-failure— Diameter transient failure
- diameter-permanent-failure— Diameter permanent failure
- diameter-peer-connection-down— Diameter peer connection down

<dilution-factor>—(Optional) Dilution factor. Alert event dilution means that a particular alert is sent to the SNMP network management station once for every "n" occurrences of the condition that generated the alert. Dilution allows for a fine degree of control with respect to alert generation for certain warning and error conditions.

Value—Integer in the range 0–2147483647

Default— 1

Required Privilege Level

system system

< transaction-manager > (configuration/shared/sic/group/configuration)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <configuration>
          <transaction-manager>
            <maximum-number-of-variables>maximum-number-of-variables</maximum-number-of-variables>
          </transaction-manager>
        </configuration>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the number of transaction variables supported by the SIC group.

Contents

<maximum-number-of-variables>—(Optional) Maximum number of transactional variables supported by the SIC group.

Value—Integer in the range 0-2147483647

Default—255

Required Privilege Level

system system

< server > (configuration/shared/sic/group)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <identifier>identifier</identifier> <!-- identifier -->
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the server belonging to the SIC group.

Contents

<identifier>— Name of the SIC server using this group configuration. The server name must have previously been configured with the configuration statement-slot number sic server. This server name must match the name specified with the statement-slot number sic server.

Value— Text

Required Privilege Level

system system

< accounting-route > (configuration/shared/sic/group/server)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <id>id</id> <!-- identifier -->
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure an explicit accounting route and the criteria used by the server to select the accounting routing target. Multiple accounting routes are evaluated in the order they are displayed by the show command. A newly created accounting route is displayed last among the route and therefore is evaluated last. Use the SRC CLI insert command to move an accounting route before or after another route to change its evaluation order.

Contents

<id>— Name of the explicit accounting route. An accounting route must have a unique name.

Value—Text

Required Privilege Level

system system

< request >

(configuration/shared/sic/group/server/accounting-route/condition)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the request attribute in the match condition and specify the presence option of the condition.

Required Privilege Level

system system

< attribute > (configuration/shared/sic/group/server/accounting- route/condition/request)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <attribute-name>attribute-name</attribute-name> <!-- identifier -->
                  <present/>
                  <not-present/>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the request attribute match condition. If the request attribute condition is matched in the request, the route is selected.

Contents

<attribute-name>— Name of the request attribute.

Value—Text

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/server/accounting-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals > (configuration/shared/sic/group/server/accounting- route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix >

(configuration/shared/sic/group/server/accounting-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/server/accounting-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/accounting-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <request>
                <attribute>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </attribute>
              </request>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the attribute must be within this range.

Contents

<low> — Low range in text format.

Value—Text

<high> — High range in text format.

Value—Text

Required Privilege Level

system system

< realm >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <present/>
                  <not-present/>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a realm match condition. If the condition is matched in the request, the route is selected.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <realm>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </realm>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the realm must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< user-identity > (configuration/shared/sic/group/server/accounting- route/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <present/>
                  <not-present/>
                </user-identity>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a user identity match condition. If the user identity condition is matched in the request, the route is selected. Possible match conditions are present, not present, does not equal, equals, has prefix, has suffix, or range.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal > (configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </user-identity>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals > **(configuration/shared/sic/group/server/accounting- route/condition/transactionVariables/user- identity)**

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </user-identity>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/server/accounting- route/condition/transactionVariables/user- identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </user-identity>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/server/accounting- route/condition/transactionVariables/user- identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </user-identity>
              </transactionVariables>
            </condition>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/accounting-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </transactionVariables>
              </condition>
            </accounting-route>
          </server>
        </group>
      </sic>
    </shared>
  </configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. Tested condition value in the user identity must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< editing > (configuration/shared/sic/group/server/accounting- route)

Usage

```
<configuration>  
  <shared>  
    <sic>  
      <group>  
        <server>  
          <accounting-route>  
            <editing>  
              <editing-rule>editing-rule</editing-rule> <!-- identifier -->  
            </editing>  
          </accounting-route>  
        </server>  
      </group>  
    </sic>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Specify an editing rule you want applied to the request before the server sends it to the accounting target. If the route is selected, the request is edited according to this editing rule before the request is sent to the accounting target.

Contents

<editing-rule> — Name of the editing rule to be applied to the request if this route is selected.

Value—Text

Required Privilege Level

system system

< target > (configuration/shared/sic/group/server/accounting- route)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <accounting-route>
            <target>
              <accounting-method>accounting-method</accounting-method>
            </target>
          </accounting-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the target of the accounting route. If this route is selected, packets are routed to this target.

Contents

<accounting-method> — Accounting method (accounting target) used if the route is selected. If all match conditions are met and this route is selected, packets are routed to this accounting target.

Value—Text

Required Privilege Level

system system

< authentication-route >

(configuration/shared/sic/group/server)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <id>id</id> <!-- identifier -->
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure an explicit authentication route. An authentication route is a collection of criteria used to select a particular authentication routing target. Multiple authentication routes are evaluated in the order they are displayed by the show command. A newly created authentication route is displayed last among the routes and has the lowest priority, so it is evaluated last. You can use the SRC CLI insert command to move an authentication route before or after another route to change its evaluation order. The higher a route is displayed on the list, the sooner it is evaluated.

Contents

<id>— Name of the explicit authentication route. An authentication route must have a unique name.

Value—Text

Required Privilege Level

system system

< request >

(configuration/shared/sic/group/server/authentication-route/condition)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the name of the request attribute in the match condition and specify the presence option of the condition.

Required Privilege Level

system system

< attribute >

(configuration/shared/sic/group/server/authentication-route/condition/request)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <attribute-name>attribute-name</attribute-name> <!-- identifier -->
                  <present/>
                  <not-present/>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the request attribute match condition. If the request attribute condition is matched in the request, the route is selected.

Contents

<attribute-name>— Name of the request attribute.

Value—Text

Check for the presence of this value in the request.

Value

- present— Value must be present in the request
- not-present— Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/server/authentication-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/server/authentication-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix >

(configuration/shared/sic/group/server/authentication-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/server/authentication- route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/authentication-route/condition/request/attribute)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <request>
                <attribute>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </attribute>
              </request>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the attribute must be within this range.

Contents

<low> — Low range in text format.

Value — Text

<high> — High range in text format.

Value — Text

Required Privilege Level

system system

< realm >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <present/>
                  <not-present/>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a realm match condition. If the condition is matched in the request, the route is selected.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/realm)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <realm>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </realm>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. The tested condition value in the realm must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< user-identity > (configuration/shared/sic/group/server/authentication- route/condition/transactionVariables)

Usage

```
<configuration>  
  <shared>  
    <sic>  
      <group>  
        <server>  
          <authentication-route>  
            <condition>  
              <transactionVariables>  
                <user-identity>  
                  <present/>  
                  <not-present/>  
                </user-identity>  
              </transactionVariables>  
            </condition>  
          </authentication-route>  
        </server>  
      </group>  
    </sic>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure a user identity match condition. If the user identity condition is matched in the request, the route is selected. Possible match conditions are present, not present, does not equal, equals, has prefix, has suffix, or range.

Check for the presence of this value in the request.

Value

- present — Value must be present in the request
- not-present — Value must not be present in the request

Required Privilege Level

system system

< does-not-equal >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <does-not-equal>
                    <value>value</value> <!-- identifier -->
                  </does-not-equal>
                </user-identity>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must not match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< equals >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <equals>
                    <value>value</value> <!-- identifier -->
                  </equals>
                </user-identity>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must match this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-prefix > (configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <has-prefix>
                    <value>value</value> <!-- identifier -->
                  </has-prefix>
                </user-identity>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a prefix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< has-suffix > (configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <has-suffix>
                    <value>value</value> <!-- identifier -->
                  </has-suffix>
                </user-identity>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the match condition. The value in the request must have a suffix that matches this value exactly.

Contents

<value>— Value of the match condition.

Value—Text

Required Privilege Level

system system

< range >

(configuration/shared/sic/group/server/authentication-route/condition/transactionVariables/user-identity)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <condition>
              <transactionVariables>
                <user-identity>
                  <range>
                    <low>low</low>
                    <high>high</high>
                  </range>
                </user-identity>
              </transactionVariables>
            </condition>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the range of the match condition. Tested condition value in the user identity must be within this range.

Contents

<low>—(Optional) Low range in text format.

Value—Text

<high>—(Optional) High range in text format.

Value—Text

Required Privilege Level

system system

< target >

(configuration/shared/sic/group/server/authentication-route)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <authentication-route>
            <target>
              <network-element>network-element</network-element>
            </target>
          </authentication-route>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the target of the authentication route. The target is a network element. If this route is selected, packets are routed to this target.

Contents

<network-element>— Name of the downstream network element you want to use as the authentication target. If this route is selected, packets are routed to this downstream authentication network element.

Value—Text

Required Privilege Level

system system

< identity >

(configuration/shared/sic/group/server/diameter)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <diameter>
            <identity>
              <origin-host>origin-host</origin-host>
              <origin-realm>origin-realm</origin-realm>
            </identity>
          </diameter>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the identity of the SIC Diameter server. The SIC includes a Diameter server. The SIC Diameter server communicates with the SRC Diameter server. These servers are peers. The SIC Diameter server provides the translation between the SAE and SIC by translating COA/DM requests into VSAs so that they can be understood by the NAS. The SRC Diameter server also passes the NAS routing information from the SAE to the SIC Diameter server.

Contents

<origin-host>— The Origin-Host makes up a portion of the SIC Diameter server identity. This value is sent in all Diameter requests originating on this server. The identity of the SIC Diameter server is preconfigured with the Origin-Host = "your-host.your-realm.net" and the Origin-Realm = "your-realm.net". You must reconfigure these settings for your network environment.

Value—Text

<origin-realm>— The Origin-Realm makes up a portion of the SIC Diameter server identity. This value is sent in all Diameter requests originating on this server. The identity of the SIC Diameter server is pre-configured with the Origin-Host = "your-host.your-realm.net" and the Origin-Realm = "your-realm.net". You must reconfigure these settings for your network environment.

Value—Text

Required Privilege Level

system system

< transport > (configuration/shared/sic/group/server/diameter)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <diameter>
            <transport>
              <id>id</id> <!-- identifier -->
              <protocol>protocol-choice</protocol>
              <port>port</port>
            </transport>
          </diameter>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the transport of the local Diameter server

Contents

<id>— Transport name. Each transport must have a unique name.

Value—Text

<protocol>—(Optional) Diameter messages are transported over TCP or SCTP.

Value

- tcp— Transport Control Protocol is used for the connection.
- sctp— Stream Control Transport Protocol is used for the connection.

Default— tcp

<port>—(Optional) TCP or SCTP port number the SIC Diameter server listens on. Default value is set to 3870 as SRC Diameter uses 3868 and SRC IMS uses 3869 by default.

Value—Integer in the range 0-65535

Default— 3868

Required Privilege Level

system system

< logger > (configuration/shared/sic/group/server)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <logger>
            <id>id</id> <!-- identifier -->
          </logger>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the destination (log stream) for storing logging events. The SIC server uses log streams to store events. A log stream captures different groups of server-related events at various levels of granularity. You may configure the SIC server to capture any number of log streams. Each log stream saves events in a separate text file. Each text file is date stamped and can be assigned a prefix for easy identification. The log group specifies the type of server-related events to be captured. You configure the level of granularity to be captured for the log group by setting the event level for the group.

Contents

<id>— Name used by the server to identify the log stream. If you configure multiple log streams, make sure to use unique names.

Value—Text

Required Privilege Level

system system

< file >

(configuration/shared/sic/group/server/logger)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <logger>
            <file>
              <filter>filter-choice</filter>
              <filename>filename</filename>
              <maximum-file-size>maximum-file-size</maximum-file-size>
              <rollover-interval>rollover-interval</rollover-interval>
              <rollover-on-startup/>
              <flush-after-writes/>
              <high-resolution-timestamps/>
              <header>header</header>
              <footer>footer</footer>
              <prepend-message-header/>
              <work-id-label>work-id-label</work-id-label>
              <work-id-padding>work-id-padding</work-id-padding>
              <utc/>
            </file>
          </logger>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the properties of the log stream file. Each log stream saves events in a separate text file. Each text file is date stamped and can be assigned a prefix for easy identification.

Contents

<filter>—(Optional) Filter to define which event messages are logged or ignored. The filter specifies the logging level, such as debug.

Value

- /error— Error events are captured for every log group
- /debug-error— Debug events are captured for every log group

<filename>— Prefix added to the log file name. This string is prepended to each log file name.

Value—Text

<maximum-file-size>—(Optional) New log file created after this number of bytes. When a log file reaches this size, a new log file begins.

Value—Integer in the range 0–2147483647 bytes

Default— 0 (no limit)

`<rollover-interval>`—(Optional) New log file is created after this amount of time elapses. This interval is specified in seconds.

Value—Integer in the range 0–2147483647 s

Default— 86400

`<rollover-on-startup>`—(Optional) New log file is created every time the server starts.

Default— false

`<flush-after-writes>`—(Optional) Flush log after every write. This setting is set to true for real-time logging and can be set to false for performance optimization when real-time logging is not needed.

Default— true

`<high-resolution-timestamps>`—(Optional) High-resolution time-reporting system functions are used.

Default— false

`<header>`—(Optional) Header message added to the beginning of each log file.

Value—Text

`<footer>`—(Optional) Footer message added to the end of each log file.

Value—Text

`<prepend-message-header>`—(Optional) Prepend each log message with additional information. Add time, thread, and transaction information to each log message. You can achieve additional fine tuning by using the work-id-label, work-id-padding, and utc options.

Default— true

`<work-id-label>`—(Optional) Work data ID prefix added to each log message.

Value—Text

`<work-id-padding>`—(Optional) String added to each log message if work data is not available.

Value—Text

`<utc>`—(Optional) Time and date values reflect Universal Time Coordinates (UTC), formerly known as Greenwich Mean Time or (GMT). Otherwise, values reflect local time.

Default— false

Required Privilege Level

system system

< group > (configuration/shared/sic)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <logger>
            <groups>
              <group>
                <name>name-choice</name> <!-- identifier -->
                <events>events-choice</events>
              </group>
            </groups>
          </logger>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the event level for the log group. The log group specifies the type of server-related events captured in the log stream. The event level specifies the level of detail captured for the log group. First specify the name of the log group and then specify the event level for it. Repeat for each log group.

Contents

Log group for which to specify the event level. Log messages are divided into several log groups according to the subject of the log information. You may configure a log stream to display only log messages from particular log groups. The log group specifies the type of server-related events to be captured. You configure the level of granularity captured for the log group by setting the event level for the group.

Value

- **administration**— Log group reports events related to server administration, such as changes made to the server configuration, including identity of the administrator. Use the Detail event level to capture these events
- **audit**— Log group reports SSR operations such as Insert, Update and Delete
- **configuration**— Log group reports events related to server configuration
- **system**— Log group reports events related to the system, such as system start and system stop
- **packet**— Log group reports events related to transaction processing, such as incoming and outgoing packets
- **packet-trace**— Log group displays contents of a packet. The format is attribute name:attribute value
- **packet-trace-raw**— Log group displays raw data (octets) of the incoming and outgoing packets

`<events>`—(Optional) Highest event level for the log group. You may configure the log stream to display log items from levels at and below a particular event level. This is the highest event level displayed for this log group.

Be careful when using event logging because it consumes server resources while capturing events and consumes disk space to store the log files. We recommend that event logging be used primarily for troubleshooting purposes. We recommend that you limit the amount of information captured in a log stream to control the consumption of server resources and disk space. This also makes it easier to interpret the information in the log files. For example, you might configure one log stream to capture only configuration-related events by setting the Configuration log group event level to Detail and setting all other log group event levels to Error.

Value

- `error`— Log displays messages at the "error" event-level. An error is defined as an event that may cause the system to operate incorrectly. Examples include exceptions being thrown, an inability to continue processing a transaction, or configuration errors that cause a component to fail to start
- `warning`— Log displays messages at the "error" and "warning" event-levels. Warnings are less severe than errors, in that a warning should be logged when the system is able to handle an unexpected input or condition without any threat to the operation of the server. Examples of warnings include invalid packet contents or failures in contacting remote servers
- `standard`— Log displays messages at the "error", "warning", and "standard event-levels. Standard logging messages show events as a result of normal operation
- `detail`— Log displays messages at the "error", "warning", "standard", and "detail" event-levels. Detail logging is intended to inform why and how the particular result indicated by standard logging is reached. Server components that perform significant processing on the transaction, such as determining the validity of the packet contents or log details about decisions they made. All server components that route the transaction through different processing based on the nature of the transaction log their routing activity at this level. The detail log also refers to the contents of messages logged at the standard level.
- `debug`— Log displays messages at the "error", "warning", "standard", "detail", and "debug" event-levels. Debug logging is provided for the benefit of engineering only

Default— standard

Required Privilege Level

system system

< outbound-transport > (configuration/shared/sic/group/server)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <outbound-transport>
            <transport-name>transport-name</transport-name> <!-- identifier -->
          </outbound-transport>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the RADIUS outbound transport properties used by the server to send outbound requests to RADIUS targets over UDP.

Contents

<transport-name> — Name of the RADIUS outbound transport used by the server. Each RADIUS outbound transport must have a unique name.

Value—Text

Required Privilege Level

system system

< config >

(configuration/shared/sic/group/server/outbound-transport)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <outbound-transport>
            <config>
              <address>address</address>
            </config>
          </outbound-transport>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the RADIUS outbound transport properties used by the server to send outbound requests to RADIUS targets over UDP.

Contents

<address>—(Optional) IP address used by the server when sending outbound requests

Value—IP address

Required Privilege Level

system system

< transports > (configuration/shared/sic/group/server)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <transports>
            <transport-name>transport-name</transport-name> <!-- identifier -->
          </transports>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the RADIUS accounting transport for this server. RADIUS accounting transport is used to listen for accounting requests from RADIUS clients over UDP.

Contents

<transport-name> — Name of the RADIUS accounting transport for this server. Each RADIUS accounting transport must have a unique name.

Value—Text

Required Privilege Level

system system

< config >

(configuration/shared/sic/group/server/transport)

Usage

```
<configuration>
  <shared>
    <sic>
      <group>
        <server>
          <transport>
            <config>
              <address>address</address>
            </config>
          </transport>
        </server>
      </group>
    </sic>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the RADIUS accounting transport for this server. RADIUS accounting transport is used to listen for accounting requests from RADIUS clients over UDP.

Contents

<address>—(Optional) IP address used by the server for receiving UDP packets. The server listens for UDP RADIUS packets on this IP address.

Value—IP address

Required Privilege Level

system system

< directory-connection >

(configuration/slot/sic/initial)

Usage

```
<configuration>
  <slot>
    <sic>
      <initial>
        <directory-connection>
          <url>url</url>
          <port>port</port>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <entry-dn>entry-dn</entry-dn>
          <filter>filter</filter>
        </directory-connection>
      </initial>
    </sic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the directory connection properties that the SIC uses to connect to the Juniper Networks database.

Contents

<url>— URL that identifies the location of the primary directory server.

Value—IP address

Default—127.0.0.1

<port>—(Optional) Port on which the the directory server listens.

Value—Integer in the range 0-2147483647

Default—389

<principal>—(Optional) DN the SRC component uses for authentication to access the directory.

Value—Text

Default—cn = umcadmin,o = umc

<credentials>— Password with which the SRC component accesses the directory.

Value—Secret text

<entry-dn>—(Optional) Location of the SIC configuration in the directory.

Value—Text

Default—1 = SIC,ou = staticConfiguration,ou = Configuration,o = Management,o = umc

<filter>—(Optional) Filter the SIC uses to query the directory for recent configuration changes. Do not change this setting.

Value—Text

Default—(objectClass = *)

Required Privilege Level

admin

< server > (configuration/slot/sic)

Usage

```
<configuration>
  <slot>
    <sic>
      <server>
        <name>name</name>
      </server>
    </sic>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure an instance of the SIC server.

Contents

<name>—(Optional) Name of the SIC server referenced in the SIC shared configuration.

The value is expected to be in the form of /group-name/server-name, where: "group-name" is the name of the shared group name in the Juniper Networks database and "server-name" is the server name specified under the shared group "group-name." If the supplied shared "group-name" does exist in the Juniper Networks database, a shared group is created and populated with sample data. If the supplied "server-name" does not exist under the supplied "group-name," a server with that "server-name" is created under supplied shared group and populated with sample data.

Value— /group-name/server-name

Required Privilege Level

No specific privilege required.

SNMP Agent Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the SNMP Agent. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
snmp	<u>< snmp ></u>
snmp agent	<u>< agent ></u>
snmp agent initial	<u>< initial ></u>
snmp agent initial directory-connection	<u>< directory-connection ></u>
snmp agent initial directory-eventing	<u>< directory-eventing ></u>
snmp agent java	<u>< java ></u>
snmp agent logger	<u>< logger ></u>
snmp agent logger file	<u>< file ></u>
snmp agent logger syslog	<u>< syslog ></u>
snmp community	<u>< community ></u>
snmp monitor	<u>< monitor ></u>
snmp monitor alarm	<u>< alarm ></u>
snmp monitor alarm boolean-test	<u>< boolean-test ></u>
snmp monitor alarm delta-discontinuity-check	<u>< delta-discontinuity-check ></u>
snmp monitor alarm existence-test	<u>< existence-test ></u>
snmp monitor alarm threshold-test	<u>< threshold-test ></u>
snmp monitor chassis-alarm	<u>< chassis-alarm ></u>
snmp monitor chassis-alarm cpu-temperature	<u>< cpu-temperature ></u>
snmp monitor chassis-alarm fan-speed	<u>< fan-speed ></u>
snmp monitor chassis-alarm system-temperature	<u>< system-temperature ></u>
snmp monitor chassis-alarm voltage-1.8v	<u>< voltage-1.8v ></u>

snmp monitor chassis-alarm voltage-12v	<u>< voltage-12v ></u>
snmp monitor chassis-alarm voltage-3.3v	<u>< voltage-3.3v ></u>
snmp monitor chassis-alarm voltage-5v	<u>< voltage-5v ></u>
snmp monitor chassis-alarm voltage-battery	<u>< voltage-battery ></u>
snmp monitor chassis-alarm voltage-cpu-core	<u>< voltage-cpu-core ></u>
snmp monitor chassis-alarm voltage-cpu-dimm	<u>< voltage-cpu-dimm ></u>
snmp monitor chassis-alarm voltage-negative12v	<u>< voltage-negative12v ></u>
snmp monitor event	<u>< event ></u>
snmp monitor event notification	<u>< notification ></u>
snmp monitor event snmp-set	<u>< snmp-set ></u>
snmp notify alarm category	<u>< category ></u>
snmp notify alarm category alarm	<u>< alarm ></u>
snmp notify event category	<u>< category ></u>
snmp notify event category event	<u>< event ></u>
snmp notify target	<u>< target ></u>
snmp v3 snmp-community	<u>< snmp-community ></u>
snmp v3 usm local-engine user	<u>< user ></u>
snmp v3 usm local-engine user access	<u>< access ></u>
snmp v3 usm local-engine user authentication-md5	<u>< authentication-md5 ></u>
snmp v3 usm local-engine user authentication-sha	<u>< authentication-sha ></u>
snmp v3 usm local-engine user privacy-aes	<u>< privacy-aes ></u>
snmp v3 usm local-engine user privacy-des	<u>< privacy-des ></u>
snmp v3 vacm access group	<u>< group ></u>
snmp v3 vacm access group default-context-prefix	<u>< default-context-prefix ></u>
snmp v3 vacm access group default-context-prefix security-model	<u>< security-model ></u>
snmp v3 vacm access group default-context-prefix security-model security-level	<u>< security-level ></u>
snmp v3 vacm security-to-group security-model	<u>< security-model ></u>

snmp v3 vacm security-to-group security-model security-name	<u>< security-name ></u>
snmp view	<u>< view ></u>
snmp view oid	<u>< oid ></u>

< snmp > (configuration)

Usage

```
<configuration>
  <snmp>
    <contact>contact</contact>
    <name>name</name>
    <location>location</location>
    <description>description</description>
    <address>address</address>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SNMP system information.

Contents

<contact>—(Optional) Administrative contact for the system being managed by SNMP.

Value—Text

<name>—(Optional) Name of the system being managed by SNMP.

Value—Text

<location>—(Optional) Location of the system being managed by SNMP.

Value—Text

<description>—(Optional) Description of the system being managed by SNMP.

Value—Text

<address>—(Optional) (Multivalue) Listening address on which to receive incoming SNMP requests.

Value— IP address; list of addresses.

Default— The SNMP agent listens on all IPv4 interfaces.

Required Privilege Level

snmp

< agent > (configuration/snmp)

Usage

```
<configuration>
  <snmp>
    <agent>
      <trap-history-limit>trap-history-limit</trap-history-limit>
      <component-polling-interval>component-polling-interval</component-polling-interval>
      <protocol-log-level>protocol-log-level</protocol-log-level>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SNMP agent.

Contents

<trap-history-limit>—(Optional) Maximum number of elements stored in the SNMP trap history table.

Value—Integer in the range 1–2147483647

Default—800

<component-polling-interval>—(Optional) Interval at which the SRC component is polled to determine whether it is running and to generate up and down event traps.

Value—Integer in the range 10–2147483647 seconds

Default—60

<protocol-log-level>—(Optional) The log level for SNMP requests received from the master agent and responses to the requests. To enable packet-level logging, set it to 9 or less.

Value—Integer in the range 0–100

Default—20

Required Privilege Level

snmp

< initial > (configuration/snmp/agent)

Usage

```
<configuration>
  <snmp>
    <agent>
      <initial>
        <base-dn>base-dn</base-dn>
        <host-id>host-id</host-id>
      </initial>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for the SNMP agent.

Contents

<base-dn>— DN of the directory used for the SNMP agent configuration data.

Value— DN

Default—\${system ldap client base-dn}

<host-id>— Identifier of the system management configuration in the directory server that provides the remaining configuration for the SNMP agent. If the entry does not exist, the entry and the subentries for the components and traps is automatically created in the system management configuration.

Value— DN

Default—ou = POP-ID,ou = System

Management,ou = Configuration,o = Management,o = umc

Required Privilege Level

snmp

< directory-connection >

(configuration/snmp/agent/initial)

Usage

```
<configuration>
  <snmp>
    <agent>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </agent>
  </snmp>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

snmp

< directory-eventing >

(configuration/snmp/agent/initial)

Usage

```
<configuration>
  <snmp>
    <agent>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

snmp

<java> (configuration/snmp/agent)

Usage

```
<configuration>
  <snmp>
    <agent>
      <java>
        <heap-size>heap-size</heap-size>
      </java>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local Java Runtime Environment (JRE) properties for the SNMP agent.

Contents

<heap-size>—(Optional) Maximum amount of Java heap (memory) available to the JRE. Do not change this value unless instructed to do so by Juniper Networks.

Value— Number of megabytes in the format *integerm*

Default—160m

Required Privilege Level

snmp

< logger > (configuration/snmp/agent)

Usage

```
<configuration>
  <snmp>
    <agent>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value—Text

Required Privilege Level

snmp

< file > (configuration/snmp/agent/logger)

Usage

```
<configuration>
  <snmp>
    <agent>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination for file-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

snmp

< syslog > (configuration/snmp/agent/logger)

Usage

```
<configuration>
  <snmp>
    <agent>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </agent>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination for syslog-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings `{#}` are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

snmp

< community > (configuration/snmp)

Usage

```
<configuration>
  <snmp>
    <community>
      <community>community</community> <!-- identifier -->
      <authorization>authorization-choice</authorization>
      <clients>clients</clients>
      <oid>oid</oid>
    </community>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a community string, which defines the access control for client systems.

Contents

<community>— Community name.

Value—Text

<authorization>—(Optional) Authorization type.

Value

- read-only— Allow read-only access
- read-write— Allow read and write access

Default—read-only

<clients>— IP address or subnet of the SNMP client hosts that are authorized to use this community.
By default, all clients are allowed.

Value—Text

Default—0.0.0.0/0

<oid>—(Optional) Object identifier (OID) used to represent a subtree of MIB objects to which access is allowed.

Value—Text

Default— Access to the full OID tree

Required Privilege Level

snmp

< monitor > (configuration/snmp)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <security-name>security-name</security-name>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Provide active monitoring of SRC MIB objects as configured. The software generates associated notification events when specified criteria are met.

Contents

<security-name> — SNMPv3 username to access a monitored MIB object. SNMPv3 provides security by controlling access to the objects.

Value— *username*

Default— No value

Required Privilege Level

snmp

< alarm > (configuration/snmp/monitor)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <alarm>
        <name>name</name> <!-- identifier -->
        <interval>interval</interval>
        <sample-type>sample-type-choice</sample-type>
        <ignore-startup-alarm/>
        <event>event</event>
        <variable>variable</variable>
        <strict-oid/>
      </alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Monitor the value of a MIB object. You can configure how often to sample a value, the type of sampling to perform, the type of alarm or trigger to use the sampled value, and the event to generate in response to a specified condition.

Note: Configure one alarm condition at a time.

Contents

<name>— Name of the alarm (also referred to as a trigger).

Value—Text

<interval>— Interval between monitoring samples.

Value—Integer in the range seconds

Default—600

<sample-type>— Method of sampling to use for the specified variable.

Note: Existence tests disregard the sample type when set to delta-value.

Value

- absolute-value— Use actual value of the trigger to compare to the threshold value.
- delta-value— Use the delta (difference between two samples) to compare to the value.

Default— No value

`<ignore-startup-alarm>`—(Optional) Whether the alarm can be sent when it is first activated. If this option is set, the monitor expression is not evaluated when the alarm activates the first time. If not set, the first evaluation is done after the alarm is activated.

Default—false

`<event>`—(Optional) The name of the event to be generated in response to the alarm condition. If you do not specify an event, the software uses one of the following DISMAN notification events: `mteTriggerFired` in existence or boolean tests, and `mteTriggerRising` or `mteTriggerFalling` in threshold tests.

Value— *event name*

Default— None

`<variable>`— Object identifier (OID) of the MIB variable to be monitored. The OID can be an identifier in dotted decimal notation or the name of a MIB object.

Value— *OID or name*

Default— No value

`<strict-oid>`—(Optional) Monitor the SNMP object instance specified by the variable attribute. If you do not set this option, the software monitors all objects in the MIB branch specified by the variable option.

Default—false

Required Privilege Level

snmp

< boolean-test >

(configuration/snmp/monitor/alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <alarm>
        <boolean-test>
          <comparison>comparison-choice</comparison>
          <value>value</value>
        </boolean-test>
      </alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a monitor test to compare a sample value to a specified value or range of values. If the condition specified for the test is met, the software generates the event. The software generates the event again after the status of the condition changes to false then to true again.

Note: Configure only one monitor test at a time.

Contents

<comparison>— Type of boolean comparison to perform.

Value

- equal — True if the sample value equals object value.
- unequal — True if the sample value does not equal the object value.
- less — True if the sample is less than the object value.
- less-or-equal — True if the sample value is less than or equal to the object value.
- greater — True if the sample value is greater than the object value.
- greater-or-equal — True if the sample value is greater than or equal to the object value.

Default— No value

<value>— Value against which to compare the sample value.

Value—Integer in the range -2147483648–2147483647

Default— No Value

Required Privilege Level

snmp

< delta-discontinuity-check > (configuration/snmp/monitor/alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <alarm>
        <delta-discontinuity-check>
          <variable>variable</variable>
          <strict-oid/>
        </delta-discontinuity-check>
      </alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SNMP to detect a discontinuity in values to prevent false alarms caused by the value of a MIB object being reset. Use this statement when the sample type is delta-value (a change in the value of a monitored MIB object is compared to a threshold value). You define a variable, called a discontinuity marker, which is a MIB object to use to validate the delta, or difference, between values. The marker object should be of type TimeTicks, DateAndTime, or Timestamp.

Before the SNMP agent calculates a delta, it checks the discontinuity marker for the trigger condition at the end of a polling interval. A change in the value of the discontinuity marker indicates that a discontinuity occurs. As a result, the agent does not perform the test for the associated trigger condition until the next polling interval.

Contents

<variable>— Object identifier (OID) or name of a discontinuity marker.

Value— Marker object of type TimeTicks, DateAndTime or Timestamp

Default— No value

<strict-oid>—(Optional) Monitor the discontinuity marker instance specified by the variable attribute. If you do not set this option, the software monitors all discontinuity objects subordinate to the value set by the variable option.

Default—false

Required Privilege Level

snmp

< existence-test >

(configuration/snmp/monitor/alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <alarm>
        <existence-test>
          <type>type-choice</type>
        </existence-test>
      </alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a monitor test to identify when an object appears, disappears, or changes value. If the test criteria are met, the test is successful.

Note: Configure only one monitor test at a time.

Contents

<type>— Type of monitor test to perform.

Value

- present — Test for appearance of object.
- absent — Test for disappearance of object.
- changed — Test for change in value of object.

Default— No value

Required Privilege Level

snmp

< threshold-test >

(configuration/snmp/monitor/alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <alarm>
        <threshold-test>
          <rising-threshold>rising-threshold</rising-threshold>
          <falling-threshold>falling-threshold</falling-threshold>
        </threshold-test>
      </alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a threshold monitor test. A threshold test compares the sample value to a configured upper and lower threshold. The monitor generates a corresponding event when the value of the monitored object falls below the lower threshold or rises above the upper threshold.

After a rising threshold event is generated, it is generated again only after the sample value falls below the lower threshold. Similarly, a subsequent falling threshold event is generated when the sample value rises above the upper threshold.

Note: Configure only one monitor test at a time.

Contents

<rising-threshold>— Upper threshold for the sample value. The software generates an event when the sample value is greater than or equal to the rising threshold, and the value at the last sampling interval is less than this threshold.

Value—Integer in the range -2147483648–2147483647

Default— No value

<falling-threshold>— Lower threshold for the sample value. The software generates an event when the sample value is less than or equal to the falling threshold, and the value at the last sampling interval is greater than this threshold.

Value—Integer in the range -2147483648–2147483647

Default— No value

Required Privilege Level

snmp

< chassis-alarm > (configuration/snmp/monitor)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <disable/>
        <interval>interval</interval>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure built-in chassis alarms that monitor the sensors on C Series Controllers.

Contents

<disable>—(Optional) Disables all chassis alarms.

Default—true

<interval>—(Optional) Time interval during which SNMP samples the value of an object.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

No specific privilege required.

< cpu-temperature > (configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <cpu-temperature>
          <minor>minor</minor>
          <major>major</major>
          <critical>critical</critical>
        </cpu-temperature>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for CPU temperature sensors.

Contents

<minor>—(Optional) Minor alarm upper threshold for CPU temperature.

Value—Integer in the range -2147483648–2147483647 degree C

<major>—(Optional) Major alarm upper threshold for CPU temperature.

Value—Integer in the range -2147483648–2147483647 degree C

<critical>—(Optional) Critical alarm upper threshold for CPU temperature.

Value—Integer in the range -2147483648–2147483647 degree C

Required Privilege Level

No specific privilege required.

< fan-speed >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <fan-speed>
          <minor>minor</minor>
          <major>major</major>
          <critical>critical</critical>
        </fan-speed>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for fan speed sensors.

Contents

<minor>—(Optional) Minor alarm lower threshold for fan speed (in RPM).

Value—Integer in the range -2147483648–2147483647 RPM

<major>—(Optional) Major alarm lower threshold for fan speed (in RPM).

Value—Integer in the range -2147483648–2147483647 RPM

<critical>—(Optional) Critical alarm lower threshold for fan speed (in RPM).

Value—Integer in the range -2147483648–2147483647 RPM

Required Privilege Level

No specific privilege required.

< system-temperature > (configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <system-temperature>
          <minor>minor</minor>
          <major>major</major>
          <critical>critical</critical>
        </system-temperature>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for system temperature sensors.

Contents

<minor>—(Optional) Minor alarm upper threshold for system temperature.

Value—Integer in the range -2147483648–2147483647 degree C

<major>—(Optional) Major alarm upper threshold for system temperature.

Value—Integer in the range -2147483648–2147483647 degree C

<critical>—(Optional) Critical alarm upper threshold for system temperature.

Value—Integer in the range -2147483648–2147483647 degree C

Required Privilege Level

No specific privilege required.

< voltage-1.8v >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-1.8v>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-1.8v>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for 1.8V sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for 1.8V voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< voltage-12v >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-12v>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-12v>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for 12V sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for 12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< voltage-3.3v > (configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-3.3v>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-3.3v>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for 3.3V sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for 3.3V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for 3.3V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for 3.3V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for 3.3V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for 3.3V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-critical>—(Optional) Critical alarm upper threshold for 3.3V voltage.

Value—Integer in the range mV

Required Privilege Level

No specific privilege required.

< voltage-5v >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-5v>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-5v>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for 5V sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for 5V voltage.

Value—Integer in the range mV

<below-major>—(Optional) Major alarm lower threshold for 5V voltage.

Value—Integer in the range mV

<below-critical>—(Optional) Critical alarm lower threshold for 5V voltage.

Value—Integer in the range mV

<over-minor>—(Optional) Minor alarm upper threshold for 5V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for 5V voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for 5V voltage.

Value—Integer in the range -2147483648–2147483647

Required Privilege Level

No specific privilege required.

< voltage-battery >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-battery>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-battery>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for battery voltage sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for battery voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< voltage-cpu-core >

(configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-cpu-core>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-cpu-core>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for CPU core voltage sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for CPU core voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< voltage-cpu-dimm > (configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-cpu-dimm>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-cpu-dimm>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for CPU DIMM voltage sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for CPU DIMM voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< voltage-negative12v > (configuration/snmp/monitor/chassis-alarm)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <chassis-alarm>
        <voltage-negative12v>
          <below-minor>below-minor</below-minor>
          <below-major>below-major</below-major>
          <below-critical>below-critical</below-critical>
          <over-minor>over-minor</over-minor>
          <over-major>over-major</over-major>
          <over-critical>over-critical</over-critical>
        </voltage-negative12v>
      </chassis-alarm>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.2.0

Description

Configure the SNMP alarm thresholds for -12V sensors.

Contents

<below-minor>—(Optional) Minor alarm lower threshold for -12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-major>—(Optional) Major alarm lower threshold for -12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<below-critical>—(Optional) Critical alarm lower threshold for -12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-minor>—(Optional) Minor alarm upper threshold for -12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

<over-major>—(Optional) Major alarm upper threshold for -12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

`<over-critical>`—(Optional) Critical alarm upper threshold for –12V voltage.

Value—Integer in the range -2147483648–2147483647 mV

Required Privilege Level

No specific privilege required.

< event > (configuration/snmp/monitor)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <event>
        <name>name</name> <!-- identifier -->
      </event>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<name>— The name of the event to be invoked in response to a trigger or an alarm. When the event is invoked, SNMP sends a notification or an snmp-set.

Value—Text

Required Privilege Level

snmp

< notification >

(configuration/snmp/monitor/event)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <event>
        <notification>
          <oid>oid</oid>
          <strict-object>strict-object</strict-object>
          <wildcarded-object>wildcarded-object</wildcarded-object>
        </notification>
      </event>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define an event for which SNMP sends a notification.

Note: Do not define an event notification and an snmp-set for the same event.

Contents

<oid> — Notification Object identifier (OID).

Value — *OID*

Default — No value

<strict-object> — (Optional) (Multivalue) OIDs of VARBIND objects to be used as specified

Value — *OID*

Default — No value

<wildcarded-object> — (Optional) (Multivalue) OIDs of VARBIND objects include subidentifiers from the corresponding monitored object appended to the object.

Value — *OID*

Default — No value

Required Privilege Level

snmp

< snmp-set > (configuration/snmp/monitor/event)

Usage

```
<configuration>
  <snmp>
    <monitor>
      <event>
        <snmp-set>
          <variable>variable</variable>
          <value>value</value>
          <strict-oid/>
        </snmp-set>
      </event>
    </monitor>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define an event that sets a MIB variable. Do not define an event notification and an snmp-set for the same event.

Contents

<variable>— Object identifier (OID) of MIB variable to be set

Value— *OID*

Default— No value

<value>— Object value to set

Value—Integer in the range -2147483648–2147483647

Default— No value

<strict-oid>—(Optional) Monitor the OID exactly as specified by the variable option. If not set, the software adds any suffixes to any OID matches.

Default—false

Required Privilege Level

snmp

< category > (configuration/snmp/notify/alarm)

Usage

```
<configuration>
  <snmp>
    <notify>
      <alarm>
        <category>
          <category-name>category-name</category-name> <!-- identifier -->
        </category>
      </alarm>
    </notify>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure alarm category.

Contents

<category-name> — Category name for alarm.

Value — Category name from list of possible completions, including:

- acp
- jps
- nic-host
- policy-decision-point
- policy-engine
- radius-accounting-peer
- radius-authentication-peer
- sae
- sae-router-driver
- sdx-redirector
- system-management

Required Privilege Level

snmp

< alarm > (configuration/snmp/notify)

Usage

```
<configuration>
  <snmp>
    <notify>
      <alarm>
        <category>
          <alarm>
            <alarm-name>alarm-name</alarm-name> <!-- identifier -->
            <interval>interval</interval>
            <critical>critical</critical>
            <major>major</major>
            <minor>minor</minor>
          </alarm>
        </category>
      </alarm>
    </notify>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure alarm.

Contents

<alarm-name>— Alarm name.

Value— Alarm name from list of possible completions, depending on the specified alarm category

<interval>—(Optional) Interval at which the variable associated with the trap is polled.

Value—Integer in the range 1-2147483647

Default—60

<critical>— Threshold above which a critical alarm is generated.

Value—Integer in the range 0-2147483647

<major>— Threshold above which a major alarm is generated.

Value—Integer in the range 0-2147483647

<minor>— Threshold above which a minor alarm is generated.

Value—Integer in the range 0-2147483647

Required Privilege Level

snmp

< category > (configuration/snmp/notify/event)

Usage

```
<configuration>
  <snmp>
    <notify>
      <event>
        <category>
          <category-name>category-name</category-name> <!-- identifier -->
        </category>
      </event>
    </notify>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure event category.

Contents

<category-name> — Category name for event trap.

Value — Category name from list of possible completions, including:

- acp
- directory-eventing-system
- jps
- nic-host
- sae
- sae-router-driver
- system-management

Required Privilege Level

snmp

< event > (configuration/snmp/notify)

Usage

```
<configuration>
  <snmp>
    <notify>
      <event>
        <category>
          <event>
            <event-name>event-name</event-name> <!-- identifier -->
          </event>
        </category>
      </event>
    </notify>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Enable event notification.

Contents

<event-name>— Event trap name.

Value— Event name from list of possible completions, depending on the specified event category

Required Privilege Level

snmp

< target > (configuration/snmp/notify)

Usage

```
<configuration>
  <snmp>
    <notify>
      <target>
        <target-name>target-name</target-name> <!-- identifier -->
        <address>address</address>
        <port>port</port>
        <community>community</community>
        <type>type-choice</type>
      </target>
    </notify>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure notification target.

Contents

<target-name>— Notification target name.

Value—Text

<address>— IPv4 or IPv6 address of the system to receive notifications.

Value—IP address

<port>—(Optional) SNMP trap port number.

Value—Integer in the range 0-65535

Default—162

<community>— Community string used when sending traps.

Value—Text

<type>— Type of notifications to receive.

Value

- trapv1—SNMPv1 trap
- trapv2—SNMPv2c trap
- inform—SNMPv2 inform

Required Privilege Level

snmp

< snmp-community > (configuration/snmp/v3)

Usage

```
<configuration>
  <snmp>
    <v3>
      <snmp-community>
        <community-index>community-index</community-index> <!-- identifier -->
        <community-name>community-name</community-name>
        <security-name>security-name</security-name>
        <address>address</address>
      </snmp-community>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Map an SNMPv1 or SNMPv2c community string to a security name. Optionally, you can specify the IPv4 or IPv6 addresses of the SNMP client hosts that are authorized to use this community. By default, all SNMP clients using this community string are authorized to access the agent.

Contents

<community-index>— Unique index that identifies an SNMP community.

Value—Text

<community-name>—(Optional) A community string for an SNMPv1 or SNMPv2c community. If unspecified, the community index is used.

Value—Text

<security-name>— The view-based access control model (VACM) security name to associate with the community string.

Value—Text

<address>— IP address or subnet of the SNMP client hosts that are authorized to use this community.

Value—Text

Default— 0.0.0.0/0

Required Privilege Level

snmp

< user > (configuration/snmp/v3/usm/local-engine)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <username>username</username> <!-- identifier -->
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify a user associated with an SNMPv3 group. By default, no authentication or encryption is specified for the SNMPv3 user.

Contents

<username> — SNMPv3 user-based security model (USM) username

Value—Text

Required Privilege Level

snmp

< access > (configuration/snmp/v3/usm/local-engine/user)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <access>
              <authorization>authorization-choice</authorization>
              <oid>oid</oid>
            </access>
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define access privileges for SNMPv3 user

Note: You cannot assign this security name to SNMP group

Contents

<authorization>— Authorization type.

Value

- read-only— Allow read-only access
- read-write— Allow read and write access

<oid>—(Optional) Object identifier (OID) used to represent a subtree of MIB objects to which access is allowed.

Value—Text

Default— Access to the full OID tree

Required Privilege Level

snmp

< authentication-md5 > (configuration/snmp/v3/usm/local-engine/user)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <authentication-md5>
              <authentication-password>authentication-password</authentication-password>
            </authentication-md5>
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Message Digest 5 (MD5) as the authentication type for the SNMPv3 user.

Contents

<authentication-password>— Password used for authentication.

Value— Password; must be at least eight characters

Required Privilege Level

snmp

< authentication-sha >

(configuration/snmp/v3/usm/local-engine/user)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <authentication-sha>
              <authentication-password>authentication-password</authentication-password>
            </authentication-sha>
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Secure Hash Algorithm (SHA) as the authentication type for the SNMPv3 user.

Contents

<authentication-password>— Password used for authentication.

Value— Password; must be at least eight characters

Required Privilege Level

snmp

< privacy-aes >

(configuration/snmp/v3/usm/local-engine/user)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <privacy-aes>
              <privacy-password>privacy-password</privacy-password>
            </privacy-aes>
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Advanced Encryption Standard (AES) for the SNMPv3 user.

Note: Before you configure encryption, you must configure MD5 or SHA authentication.

Contents

<privacy-password>— Privacy password for the SNMPv3 user.

Value— Password; must be at least eight characters

Required Privilege Level

snmp

< privacy-des >

(configuration/snmp/v3/usm/local-engine/user)

Usage

```
<configuration>
  <snmp>
    <v3>
      <usm>
        <local-engine>
          <user>
            <privacy-des>
              <privacy-password>privacy-password</privacy-password>
            </privacy-des>
          </user>
        </local-engine>
      </usm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure Data Encryption Standard (DES) for the SNMPv3 user.

Note: Before you configure encryption, you must configure MD5 or SHA authentication.

Contents

<privacy-password>— Privacy password for the SNMPv3 user.

Value— Password; must be at least eight characters

Required Privilege Level

snmp

< group > (configuration/snmp/v3/vacm/access)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <access>
          <group>
            <group-name>group-name</group-name> <!-- identifier -->
          </group>
        </access>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define access privileges granted to a group.

Contents

<group-name> — Name for a collection of SNMP security names that belong to the same SNMP access policy.

Value—Text

Required Privilege Level

snmp

< default-context-prefix > (configuration/snmp/v3/vacm/access/group)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <access>
          <group>
            <default-context-prefix>
            </default-context-prefix>
          </group>
        </access>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define how to match the context of the incoming request to the context of this group.

Required Privilege Level

snmp

< security-model > (configuration/snmp/v3/vacm/access/group/default-context-prefix)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <access>
          <group>
            <default-context-prefix>
              <security-model>
                <security-model>security-model-choice</security-model> <!-- identifier -->
              </security-model>
            </default-context-prefix>
          </group>
        </access>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure security model for access privileges.

Contents

Type of security model used for access privileges.

Value

- any—Any security model
- v1—SNMPv1 model
- v2c—SNMPv2c model
- usm—SNMPv3 user-based security model

Required Privilege Level

snmp

< security-level >

(configuration/snmp/v3/vacm/access/group/default-context-prefix/security-model)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <access>
          <group>
            <default-context-prefix>
              <security-model>
                <security-level>
                  <security-level>security-level-choice</security-level> <!-- identifier -->
                  <read-view>read-view</read-view>
                  <write-view>write-view</write-view>
                </security-level>
              </security-model>
            </default-context-prefix>
          </group>
        </access>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure access privileges granted to a particular security model.

Contents

Security level granted to a security model. If you are configuring the SNMPv1 or SNMPv2c security model, use none as the security level.

Value

- authentication— Provides authentication but no encryption
- none— Provides no authentication and no encryption
- privacy— Provides authentication and encryption

<read-view>—(Optional) View used for SNMP Get requests.

Value—Text

Default—none

<write-view>—(Optional) View used for SNMP Set requests.

Value—Text

Default—none

Required Privilege Level

snmp

< security-model >

(configuration/snmp/v3/vacm/security-to-group)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <security-to-group>
          <security-model>
            <security-model>security-model-choice</security-model> <!-- identifier -->
          </security-model>
        </security-to-group>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure security model context for a group.

Contents

Type of security model.

Value

- v1—SNMPv1 model
- v2c—SNMPv2c model
- usm—SNMPv3 user-based security model

Required Privilege Level

snmp

< security-name >

(configuration/snmp/v3/vacm/security-to-group/security-model)

Usage

```
<configuration>
  <snmp>
    <v3>
      <vacm>
        <security-to-group>
          <security-model>
            <security-name>
              <security-name>security-name</security-name> <!-- identifier -->
              <group-name>group-name</group-name>
            </security-name>
          </security-model>
        </security-to-group>
      </vacm>
    </v3>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Map a security name in the specified security model to a named group.

Contents

<security-name> — Security name to assign to group. If the security model is `usm`, the security name is the username configured at the `[edit snmp v3 usm local-engine user]` hierarchy level.

Value—Text

<group-name> — Group to which the security name is assigned.

Value—Text

Required Privilege Level

snmp

< view > (configuration/snmp)

Usage

```
<configuration>
  <snmp>
    <view>
      <view-name>view-name</view-name> <!-- identifier -->
    </view>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a MIB view.

Contents

<view-name> — MIB view name that identifies a group of MIB objects for which to define access. Each MIB object in a view has a common OID prefix. Each object identifier represents a subtree of the MIB object hierarchy.

Value—Text

Required Privilege Level

snmp

< oid > (configuration/snmp/view)

Usage

```
<configuration>
  <snmp>
    <view>
      <oid>
        <oid>oid</oid> <!-- identifier -->
        <include/>
        <exclude/>
      </oid>
    </view>
  </snmp>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify an object identifier (OID) that represents a subtree of MIB objects for the view.

Contents

<oid>— Object identifier (OID) that represents a subtree of MIB objects.

Value—Text

Specifies whether the OID is included in or excluded from the view.

Value

- `include`—Include this OID in the view
- `exclude`—Exclude this OID from the view

Required Privilege Level

snmp

SRC Admission Control Plug-In (SRC ACP) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the SRC Admission Control Plug-In (SRC ACP). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared acp configuration acp-options	<u>< acp-options ></u>
shared acp configuration corba	<u>< corba ></u>
shared acp configuration ldap service-data	<u>< service-data ></u>
shared acp configuration ldap subscriber-data	<u>< subscriber-data ></u>
shared acp configuration logger	<u>< logger ></u>
shared acp configuration logger file	<u>< file ></u>
shared acp configuration logger syslog	<u>< syslog ></u>
shared acp configuration nic-proxy-configuration nic-proxy	<u>< nic-proxy ></u>
shared acp configuration nic-proxy-configuration nic-proxy cache	<u>< cache ></u>
shared acp configuration nic-proxy-configuration nic-proxy nic-host-selection	<u>< nic-host-selection ></u>
shared acp configuration nic-proxy-configuration nic-proxy nic-host-selection blacklisting	<u>< blacklisting ></u>
shared acp configuration nic-proxy-configuration nic-proxy resolution	<u>< resolution ></u>
shared acp configuration nic-proxy-configuration nic-proxy test-nic-bindings	<u>< test-nic-bindings ></u>
shared acp configuration nic-proxy-configuration nic-proxy test-nic-bindings key-values	<u>< key-values ></u>
shared acp configuration redundancy	<u>< redundancy ></u>
shared acp configuration scripts-and-classification	<u>< scripts-and-classification ></u>
shared acp configuration snmp	<u>< snmp ></u>
shared acp congestion-point-classifier rule	<u>< rule ></u>

shared acp congestion-point-classifier rule condition	<u>< condition ></u>
shared acp congestion-point-classifier rule script	<u>< script ></u>
shared acp group	<u>< group ></u>
shared admission-control device	<u>< device ></u>
shared admission-control device interface	<u>< interface ></u>
shared congestion-points congestion-point-profile	<u>< congestion-point-profile ></u>
shared congestion-points profile	<u>< profile ></u>
slot acp	<u>< acp ></u>
slot acp initial	<u>< initial ></u>
slot acp initial directory-connection	<u>< directory-connection ></u>
slot acp initial directory-eventing	<u>< directory-eventing ></u>
slot acp java-orb object-adapter	<u>< object-adapter ></u>

< acp-options > (configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <acp-options>
          <backup-directory>backup-directory</backup-directory>
          <mode>mode-choice</mode>
          <event-cache-size>event-cache-size</event-cache-size>
          <overload-method>overload-method</overload-method>
          <reservation-timeout>reservation-timeout</reservation-timeout>
          <congestion-point-auto-completion/>
          <tuning-factor>tuning-factor</tuning-factor>
          <subscriber-bandwidth-exceed-message>subscriber-bandwidth-exceed-message</subscriber-
bandwidth-exceed-message>
          <network-bandwidth-exceed-message>network-bandwidth-exceed-message</network-bandwidth-
exceed-message>
          <backup-database-maximum-size>backup-database-maximum-size</backup-database-maximum-
size>
          <remote-update-database-index-keys>remote-update-database-index-keys</remote-update-
database-index-keys>
          <interface-tracking-filter>interface-tracking-filter</interface-tracking-filter>
          <state-sync-bulk-size>state-sync-bulk-size</state-sync-bulk-size>
        </acp-options>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SRC-ACP operation.

Contents

<backup-directory>— Folder that stores backup information about subscribers, services, and congestion points.

Value—Text

Default— var/backup

<mode>— Regions of the network that SRC-ACP manages.

Value— One of the following regions:

- edge—SRC-ACP operates in the edge region of network only
- backbone—SRC-ACP operates in the backbone region of the network only
- dual—SRC-ACP operates in both the edge and backbone regions of network

Default— dual

`<event-cache-size>`— Number of plug-in events from the SAE that SRC-ACP can store in its cache. Specifying a large number increases the efficiency of SRC-ACP, and minimizes the use of CPU resources; however, the amount of memory available for the cache will depend on the host's resources.

Value—Integer in the range 0–2147483647

Default— 1000

`<overload-method>`— Specifies how SRC-ACP deals with situations where the components exceed the allocated bandwidth because the service was activated after the authorization was granted.

Value— Integer in the range -1–2147483647

- -1—SRC-ACP ignores overload
- Integer greater than or equal to 0—Bandwidth (in bps) by which the maximum may be exceeded

Default— 0

`<reservation-timeout>`—(Optional) Time to wait until a bandwidth reservation expires. The reserved bandwidth is reclaimed by SRC-ACP when the reservation expires.

Value—Integer in the range 0–2147483647 ms

Default— 10000

`<congestion-point-auto-completion>`—(Optional) Specifies whether SRC-ACP uses the information acquired from the router to determine the congestion points.

`<tuning-factor>`—(Optional) Specifies factors that compensate for actual use of bandwidth, as opposed to allocated bandwidth.

Value— List of tuning factors, separated by commas; each tuning factor is a floating number in the range 0–1

`<subscriber-bandwidth-exceed-message>`— Error message that SRC-ACP sends when the subscriber exceeds the allocated bandwidth.

Value—Text

Default— Subscriber bandwidth exceeded

`<network-bandwidth-exceed-message>`— Error message that SRC-ACP sends when traffic flow exceeds the allocated bandwidth on an interface between the subscriber and the router.

Value—Text

Default— Network bandwidth exceeded

`<backup-database-maximum-size>`— Value by which the sum of the sizes of the files that contain SRC-ACP data can increment before SRC-ACP reorganizes the files. Reorganizing the files reduces their size. Choose a value that is significantly lower than the capacity of the machine's hard disk.

Value— Text string in the format *numberm* or *numberg*

- *numberm*—Size of database in megabytes
- *numberg*—Size of database in gigabytes

Default— 100m

`<remote-update-database-index-keys>`— Values to look for in the configuration data. Specifying index keys can improve performance by filtering the data. For information about the values you can specify, see the documentation that describes how to configure SRC-ACP operation.

Value— List of attributes, separated by commas

Default— interfaceName, routerName, portId

`<interface-tracking-filter>`— A filter specifying the interfaces to be tracked by SRC-ACP. Filtering the interface tracking events can improve performance and can reduce the amount of memory required for keeping the congestion points updated. For information about the values you can specify, see the documentation that describes how to configure SRC-ACP operation.

Value— Filter strings in the format of a list of `< attribute > = < value >` pairs; that can be contained within query operations. For example:
(&(interfaceName = *)(interfaceSpeed = 1000000))

`<state-sync-bulk-size>`—(Optional) Number of events the SAE sends to SRC-ACP in a single method call during state synchronization.

Value—Integer in the range 1-1000

Default— 100

Required Privilege Level

system

< corba >

(configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <corba>
          <acp-ior>acp-ior</acp-ior>
          <remote-update-ior>remote-update-ior</remote-update-ior>
        </corba>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure CORBA interfaces.

Contents

<acp-ior>— Object reference for SRC-ACP that is exported through either a local file or a Common Object Services (COS) naming service.

Value— One of the following references:

- file://*path*—Exports object reference through a local file where *path* is the absolute path to local file
- corbaname::cosNameServer#*KEY*—Exports object reference through COS naming services
 - *cosNameServer*—IP address or Domain Name System (DNS) name of COS naming server
 - *KEY*—Object reference of SRC-ACP
- corbaname:rir#*KEY*—Exports object reference through COS naming service; resolve-initial-references (rir) function finds DNS name of COS naming server

Default— file:///var/acp/acp.ior

<remote-update-ior>—(Optional) Object reference for the SRC-ACP external interface.

Value— One of the following references:

- file://*path*—Exports object reference through a local file where *path* is the absolute path to local file
- corbaname::cosNameServer#*KEY*—Exports object reference through COS naming services
 - *cosNameServer*—IP address or Domain Name System (DNS) name of COS

- naming server
 - *KEY*—Object reference of SRC-ACP
- corbaname:rir#*KEY*—Exports object reference through COS naming service;
resolve-initial-references (rir) function finds DNS name of COS naming server

Default— file:///var/acp/sra.ior

Required Privilege Level

system

< service-data >

(configuration/shared/acp/configuration/ldap)

Usage

```

<configuration>
  <shared>
    <acp>
      <configuration>
        <ldap>
          <service-data>
            <edge-congestion-point-dn>edge-congestion-point-dn</edge-congestion-point-dn>
            <backbone-congestion-point-dn>backbone-congestion-point-dn</backbone-congestion-point-
dn>
            <reload-congestion-points/>
            <congestion-points-eventing/>
            <server-address>server-address</server-address>
            <server-port>server-port</server-port>
            <dn>dn</dn>
            <principal>principal</principal>
            <password>password</password>
            <event-dn>event-dn</event-dn>
            <directory-eventing/>
            <polling-interval>polling-interval</polling-interval>
            <secured-ldap-protocol>secured-ldap-protocol-choice</secured-ldap-protocol>
          </service-data>
        </ldap>
      </configuration>
    </acp>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SRC-ACP connection to the directory that stores information about services.

Contents

<edge-congestion-point-dn>— DN of the directory that contains information about network interfaces for edge congestion points.

Value— DN

Default— o = AdmissionControl, o = umc

<backbone-congestion-point-dn>— DN of the directory that contains information about network interfaces for backbone congestion point objects.

Value— DN

Default— o = CongestionPoints, o = umc

<reload-congestion-points>—(Optional) Specifies whether SRC-ACP detects changes in the backbone congestion point for a service while SRC-ACP is operative.

Enable only when you want to modify a congestion point. Disable when you have modified the congestion point.

<congestion-points-eventing>—(Optional) Enables directory eventing for congestion points.

<server-address>— List of primary and redundant servers that manage data.

Value— List of IP addresses or hostnames separated by spaces

Default— 127.0.0.1

<server-port>— TCP port for the directory.

Value—Integer in the range 0–65535

Default— 389

<dn>— DN of the root of the directory.

Value— List of attribute = value pairs separated by commas

<principal>— DN used to authorize connections to the directory.

Value— List of attribute = value pairs separated by commas

Default— cn = umcadmin, o = umc

<password>— Password used to authorize connections to the directory.

Value—Secret text

Default— admin123

<event-dn>— DN of the directory that contains event information.

Value— DN

<directory-eventing>—(Optional) Enable directory eventing.

<polling-interval>— Time interval at which the SRC component polls the directory.

Value— Number of seconds in the range 15–86400

Default— 30

<secured-ldap-protocol>—(Optional) Secured LDAP protocol

Value

- ldaps —

Required Privilege Level

system

< subscriber-data > (configuration/shared/acp/configuration/ldap)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <ldap>
          <subscriber-data>
            <congestion-points-eventing/>
            <server-address>server-address</server-address>
            <server-port>server-port</server-port>
            <dn>dn</dn>
            <principal>principal</principal>
            <password>password</password>
            <event-dn>event-dn</event-dn>
            <directory-eventing/>
            <polling-interval>polling-interval</polling-interval>
            <secured-ldap-protocol>secured-ldap-protocol-choice</secured-ldap-protocol>
          </subscriber-data>
        </ldap>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SRC-ACP connection to the directory that stores subscriber information.

Contents

<congestion-points-eventing>—(Optional) Enables directory eventing for congestion points.

<server-address>— List of primary and redundant servers that manage data.

Value— List of IP addresses or hostnames separated by spaces

Default— 127.0.0.1

<server-port>— TCP port for the directory.

Value—Integer in the range 0-65535

Default— 389

<dn>— DN of the root of the directory.

Value— List of attribute = value pairs separated by commas

<principal>

— DN used to authorize connections to the directory.

Value— List of attribute = value pairs separated by commas

Default— cn = umcadmin, o = umc

<password>— Password used to authorize connections to the directory.

Value—Secret text

Default— admin123

<event-dn>— DN of the directory that contains event information.

Value— DN

<directory-eventing>—(Optional) Enable directory eventing.

<polling-interval>— Time interval at which the SRC component polls the directory.

Value— Number of seconds in the range 15–86400

Default— 30

<secured-ldap-protocol>—(Optional) Secured LDAP protocol

Value

- ldaps—

Required Privilege Level

system

< logger >

(configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <logger>
          <name>name</name> <!-- identifier -->
        </logger>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination.

Contents

<name>— Name of logging destination.

Value—Text

Required Privilege Level

system

< file >

(configuration/shared/acp/configuration/logger)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <logger>
          <file>
            <filter>filter</filter>
            <filename>filename</filename>
            <rollover-filename>rollover-filename</rollover-filename>
            <maximum-file-size>maximum-file-size</maximum-file-size>
          </file>
        </logger>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

<maximum-file-size>—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

system

< syslog >

(configuration/shared/acp/configuration/logger)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <logger>
          <syslog>
            <filter>filter</filter>
            <host>host</host>
            <port>port</port>
            <facility>facility</facility>
            <format>format</format>
          </syslog>
        </logger>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system

< **nic-proxy** >

(configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <name>name</name> <!-- identifier -->
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Contents

<name>—

Value—Text

Required Privilege Level

system

< cache >

(configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <cache>
              <cache-size>cache-size</cache-size>
              <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
              <cache-entry-age>cache-entry-age</cache-entry-age>
            </cache>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

< nic-host-selection > (configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <nic-host-selection>
              <groups>groups</groups>
              <selection-criteria>selection-criteria-choice</selection-criteria>
            </nic-host-selection>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- roundRobin—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- randomPick—NIC proxy selects NIC hosts randomly from the list.
- priorityList—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

< blacklisting > (configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy/nic-host-selection)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <nic-host-selection>
              <blacklisting>
                <try-next-system-on-error/>
                <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
                <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
              </blacklisting>
            </nic-host-selection>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

system

< resolution >

(configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip —Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<value-type>`— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<expect-multiple-values>`—(Optional) Specifies whether or not the key can have multiple corresponding values.

`<constraints>`—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< test-nic-bindings > (configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <test-nic-bindings>
              <use-test-bindings/>
            </test-nic-bindings>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

`<use-test-bindings>`—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

< key-values >

(configuration/shared/acp/configuration/nic-proxy-configuration/nic-proxy/test-nic-bindings)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <test-nic-bindings>
              <key-values>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </key-values>
            </test-nic-bindings>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>—

Value—Text

<value>—

Value—Text

Required Privilege Level

system

< redundancy > (configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <redundancy>
          <enable-redundancy/>
          <local-ior>local-ior</local-ior>
          <remote-ior>remote-ior</remote-ior>
          <ignore-user-tracking-out-of-sync/>
          <community-heartbeat>community-heartbeat</community-heartbeat>
          <community-acquire-timeout>community-acquire-timeout</community-acquire-timeout>
          <community-blackout-timeout>community-blackout-timeout</community-blackout-timeout>
          <redundant-naming-service>redundant-naming-service</redundant-naming-service>
        </redundancy>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure redundancy and state synchronization for SRC-ACP.

Contents

<enable-redundancy>—(Optional) Enables SRC-ACP redundancy.

<local-ior>— In a redundant SRC-ACP configuration, exports the object reference for this SRC-ACP (local interface) through a Common Object Services (COS) naming service.

Value— One of the following references:

- corbaname::cosNameServer#KEY—Exports object reference through COS naming services
 - *cosNameServer*—IP address or Domain Name System (DNS) name of COS naming server
 - *KEY*—Object reference of SRC-ACP
- corbaname:rir#KEY—Exports object reference through COS naming service; resolve-initial-references (rir) function finds DNS name of COS naming server

For example: corbaname::coshost#acp.redundancy.primary

<remote-ior>— In a redundant SRC-ACP configuration, resolves the object reference for the other SRC-ACP (remote interface) through a Common Object Services (COS) naming service. For redundancy, the remote IOR value of one SRC-ACP must match the local IOR value of the other SRC-ACP.

Value— One of the following references:

- `corbaname::cosNameServer#KEY`—Exports object reference through COS naming services
 - `cosNameServer`—IP address or Domain Name System (DNS) name of COS naming server
 - `KEY`—Object reference of SRC-ACP
- `corbaname:rir#KEY`—Exports object reference through COS naming service; resolve-initial-references (rir) function finds DNS name of COS naming server

For example: `corbaname::coshost#acp.redundancy.backup`

`<ignore-user-tracking-out-of-sync>`—(Optional) Specifies whether user tracking events should be ignored when they raise an OutOfSync exception to the SAE when state synchronization is enabled. SRC-ACP raises an OutOfSync exception when SRC-ACP handles service tracking or authentication events without receiving a user start event first.

Default— false

`<community-heartbeat>`—(Optional) Time interval for community members to check each other's availability when both redundancy and state synchronization are enabled.

Value—Integer in the range 0–2147483647 s

Default— 30

`<community-acquire-timeout>`—(Optional) Time to wait before trying to reacquire the distributed lock when both redundancy and state synchronization are enabled.

Value—Integer in the range 0–2147483647 s

Default— 15

`<community-blackout-timeout>`—(Optional) Time to wait before regaining control when both redundancy and state synchronization are enabled.

Value—Integer in the range 0–2147483647 s

Default— 30

`<redundant-naming-service>`—(Optional) In a redundant SRC-ACP configuration, exports the object reference for the backup naming service through a local file or COS naming service. The primary SRC-ACP registers the IOR and redundancy IOR to both naming services, while the secondary SRC-ACP registers the redundancy IOR to both naming services.

Value— One of the following references:

- `file://path`—Exports object reference through a local file where *path* is the absolute path to local file
- `corbaname::cosNameServer#KEY`—Exports object reference through COS naming

services

- *cosNameServer*—IP address or Domain Name System (DNS) name of COS naming server
- *KEY*—Object reference of SRC-ACP
- *corbaname:rir#KEY*—Exports object reference through COS naming service; resolve-initial-references (rir) function finds DNS name of COS naming server

Default— None

Required Privilege Level

system

< scripts-and-classification > (configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <scripts-and-classification>
          <script-factory-class>script-factory-class</script-factory-class>
          <classification-factory-class>classification-factory-class</classification-factory-class>
          <classification-script>classification-script</classification-script>
          <congestion-point-profile-script>congestion-point-profile-script</congestion-point-profile-script>
          <extension-path>extension-path</extension-path>
        </scripts-and-classification>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure SRC-ACP scripts and classification.

Contents

<script-factory-class>— Script factory class name.

Value—Text

Default— net.juniper.smgmt.acp.classify.ScriptFactory

<classification-factory-class>— Congestion point classifier factory class name.

Value—Text

Default— net.juniper.smgmt.acp.classify.ClassifyCPFactory

<classification-script>— Class name for congestion point classification.

Value—Text

Default— cpClassify

<congestion-point-profile-script>— Class name for generating the congestion point DN by using the congestion point profile.

Value—Text

Default— cpProfile

<extension-path> — Extension class path for classes not located in the /opt/UMC/acp/lib directory.

Value—Text

Required Privilege Level

system

< snmp >

(configuration/shared/acp/configuration)

Usage

```
<configuration>
  <shared>
    <acp>
      <configuration>
        <snmp>
          <selector>selector</selector>
          <minor-threshold>minor-threshold</minor-threshold>
          <major-threshold>major-threshold</major-threshold>
          <critical-threshold>critical-threshold</critical-threshold>
        </snmp>
      </configuration>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.1.0

Description

Configure Congestion Point usage traps for SRC-ACP.

Contents

<selector>—(Optional) (Multivalue) Regular expressions for Congestion Point DNS.

Value—Text

<minor-threshold>—(Optional) Configure minor threshold for congestion point usage trap.

Value—Integer in the range 1–100

Default— 75

<major-threshold>—(Optional) Configure major threshold for congestion point usage trap.

Value—Integer in the range 1–100

Default— 85

<critical-threshold>—(Optional) Configure critical threshold for congestion point usage trap.

Value—Integer in the range 1–100

Default— 95

Required Privilege Level

system

< rule > (configuration/shared/acp/congestion-point-classifier)

Usage

```
<configuration>
  <shared>
    <acp>
      <congestion-point-classifier>
        <rule>
          <name>name</name> <!-- identifier -->
          <target>target</target>
        </rule>
      </congestion-point-classifier>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a congestion point classification script.

Contents

<name>— Name of a congestion point classification script.

Value—Text

<target>—(Optional) Result of the classification script. The result is the DN of a congestion point in the directory or an LDAP query that uniquely identifies a congestion point entry in the directory.

Value—Text

Required Privilege Level

system

< condition > (configuration/shared/acp/congestion-point-classifier/rule)

Usage

```
<configuration>
  <shared>
    <acp>
      <congestion-point-classifier>
        <rule>
          <condition>
            <criteria>criteria</criteria> <!-- identifier -->
          </condition>
        </rule>
      </congestion-point-classifier>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure classification criteria that is used to find a target.

Contents

<criteria>— Classification criteria. For information about configuring classification criteria, see *Classifying Congestion Points* in the *SRC PE Network Guide*.

Value— Classification criteria are organized by putting one criterion per line. A criterion is joined with the previous criterion by:

- OR if the line does not contain a prefix or if it is prefixed with a | (pipe) character. A criterion joined by OR is examined only if the previous conditions have not produced a positive match. If any of the criteria joined by OR matches, the target is selected.
- AND if the line is prefixed with an & (ampersand) character. A criterion joined by AND is examined only if the previous condition matches.

You can use glob or regular expression matching to configure each target's criteria.

Required Privilege Level

system

< script > (configuration/shared/acp/congestion-point-classifier/rule)

Usage

```
<configuration>
  <shared>
    <acp>
      <congestion-point-classifier>
        <rule>
          <script>
            <script-value>script-value</script-value>
            <include>include</include>
          </script>
        </rule>
      </congestion-point-classifier>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<script-value>—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

<include>—(Optional) Script reference

Value—Text

Required Privilege Level

system

< group > (configuration/shared/acp)

Usage

```
<configuration>
  <shared>
    <acp>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </acp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure group of SRC-ACP configuration properties.

Contents

<name>— Name of an SRC-ACP configuration.

Value—Text

Required Privilege Level

system

< device > (configuration/shared/admission-control)

Usage

```
<configuration>
  <shared>
    <admission-control>
      <device>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </device>
    </admission-control>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the locations of congestion points in the directory.

Contents

<name>— Network device name.

Value—Text

<description>—(Optional) Network device description.

Value—Text

Required Privilege Level

system

< interface > (configuration/shared/admission-control/device)

Usage

```
<configuration>
  <shared>
    <admission-control>
      <device>
        <interface>
          <name>name</name> <!-- identifier -->
          <description>description</description>
          <upstream-provisioned-rate>upstream-provisioned-rate</upstream-provisioned-rate>
          <downstream-provisioned-rate>downstream-provisioned-rate</downstream-provisioned-rate>
          <upstream-background-bandwidth>upstream-background-bandwidth</upstream-background-
bandwidth>
          <downstream-background-bandwidth>downstream-background-bandwidth</downstream-background-
bandwidth>
          <action-type>action-type-choice</action-type>
          <action-class-name>action-class-name</action-class-name>
          <action-file-url>action-file-url</action-file-url>
          <action-parameters>action-parameters</action-parameters>
          <action-file-name>action-file-name</action-file-name>
          <detect-link-rate/>
        </interface>
      </device>
    </admission-control>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the network interfaces that represent locations of congestion points in the directory.

Contents

<name>— Interface name.

Value—Text

<description>—(Optional) Network interface description.

Value—Text

<upstream-provisioned-rate>—(Optional) Upstream provisioned rate.

Value—Integer in the range 0–9223372036854775807 bps

<downstream-provisioned-rate>—(Optional) Downstream provisioned rate.

Value—Integer in the range 0–9223372036854775807 bps

`<upstream-background-bandwidth>`—(Optional) (Multivalue) Upstream background bandwidth.

Value—Integer in the range 0–9223372036854775807 bps

`<downstream-background-bandwidth>`—(Optional) (Multivalue) Downstream background bandwidth.

Value—Integer in the range 0–9223372036854775807 bps

`<action-type>`—(Optional) Type of action congestion point. Determines how the contents of the "action-file-url" attribute will be interpreted.

Value

- `url`— The value of attribute "action-file-url" is a URL that specifies where to find a Java archive (.jar file) containing the script service implementation.
- `python`— The value of attribute "action-file-url" is Python code.
- `java-class`— The value of attribute "action-file-url" is the binary contents of a compiled Java class file (.class file).
- `java-archive`— The value of attribute "action-file-url" is the binary contents of a Java archive file (.jar file).

`<action-class-name>`—(Optional) Name of Java or Python class implementing the action congestion point. The ACP instantiates the named class.

Value—Text

`<action-file-url>`—(Optional) If the action type is "URL", this attribute contains the URL of a Java archive (.jar) file containing the action congestion point implementation. Otherwise, this attribute contains the action congestion point implementation itself (i.e. python code, the binary contents of a compiled .class file, or the binary contents of a .jar file).

`<action-parameters>`—(Optional) (Multivalue) Parameters used by the action congestion point.

Value— Text string in the format of a list of `< attribute > = < value >` pairs

`<action-file-name>`—(Optional) Name of the local file to load into the "action-file-url" attribute. The file needs to exist locally. Its content is read and loaded into the "action-file-url" attribute.

Value—Text

`<detect-link-rate>`—(Optional) To identify the possibility of getting the actual link rate information for a congestion point via L2C or other solutions developed later. By default , it is false for the sake of

backward compatibility.

Default—false

Required Privilege Level

system

< congestion-point-profile >

(configuration/shared/congestion-points)

Usage

```
<configuration>
  <shared>
    <congestion-points>
      <congestion-point-profile>
        <name>name</name> <!-- identifier -->
        <expression>expression</expression>
      </congestion-point-profile>
    </congestion-points>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure congestion point profile.

Contents

<name>— Congestion point profile name.

Value—Text

<expression>—(Optional) (Multivalue) Congestion point expression.

Value—Text

Required Privilege Level

system

< profile > (configuration/shared/congestion-points)

Usage

```
<configuration>
  <shared>
    <congestion-points>
      <profile>
        <name>name</name> <!-- identifier -->
        <interface>interface</interface>
      </profile>
    </congestion-points>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure congestion point.

Contents

<name>— Congestion point name.

Value—Text

<interface>—(Optional) (Multivalue) Congestion point reference.

Value—Text

Required Privilege Level

system

< acp > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <acp>
      <java-runtime-environment>java-runtime-environment</java-runtime-environment>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-garbage-collection-
options>
      <base-dn>base-dn</base-dn>
      <snmp-agent/>
      <shared>shared</shared>
    </acp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local properties for SRC-ACP.

Contents

<java-runtime-environment>— Path to the Java Runtime Environment (JRE). The SRC software requires a JRE that conforms to the Java 2 specification.

Value—Text

Default— *../jre/bin/java*

<java-heap-size>— Maximum amount of Java heap (memory) available to the JRE.

Value— Number of megabytes in the format *integerm*

Default— 64m

<java-garbage-collection-options>— Garbage collection functionality of the Java Virtual Machine.

Value—

Default— -Xbatch -XX: + UseConcMarkSweepGC -

XX:CMSInitiatingOccupancyFraction = 80 -XX:NewRatio = 5 -XX: + UseParNewGC -

XX:SurvivorRatio = 1 -XX:InitialTenuringThreshold = 8 -XX:MaxTenuringThreshold = 10 -

XX:TargetSurvivorRatio = 90 -XX: + UseCMSCompactAtFullCollection -

XX:CMSFullGCsBeforeCompaction = 0 -XX: + CMSClassUnloadingEnabled -

XX: + CMSParallelRemarkEnabled

<base-dn>— DN of the root of the SDX data in the directory.

If you are storing non-SDX data in the directory, and that data changes frequently whereas the SDX data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SDX data and the changing non-SDX data.

Value— DN

`<snmp-agent>`—(Optional) Enables SRC-ACP to communicate with the SNMP agent.

`<shared>`— Shared configuration object that holds most of the SRC-ACP specific configuration.

Value— Name of the object in the format `"/<path>"`. If the `<path>` contains multiple levels, the levels are separated by a slash (/). The effective configuration is combined by all configuration objects in the path, with more specific configuration in the lower levels of the path.

Default— `/config`

Required Privilege Level

system

< initial > (configuration/slot/acp)

Usage

```
<configuration>
  <slot>
    <acp>
      <initial>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </acp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for SRC components.

Contents

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—ou = staticConfiguration,ou = Configuration,o = Management,o = umc

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration,ou = Configuration,o = Management,o = umc

Required Privilege Level

system

< directory-connection > (configuration/slot/acp/initial)

Usage

```
<configuration>
  <slot>
    <acp>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </acp>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

system

< directory-eventing > (configuration/slot/acp/initial)

Usage

```
<configuration>
  <slot>
    <acp>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </acp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

system

< object-adapter > (configuration/slot/acp/java-orb)

Usage

```
<configuration>
  <slot>
    <acp>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </acp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

system

Service CLI Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Service CLI. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
services global mutex-group	<u>< mutex-group ></u>
services global schedule	<u>< schedule ></u>
services global schedule event	<u>< event ></u>
services global schedule event action	<u>< action ></u>
services global schedule event action attribute	<u>< attribute ></u>
services global schedule event except	<u>< except ></u>
services global schedule event except from	<u>< from ></u>
services global schedule event except to	<u>< to ></u>
services global schedule event from	<u>< from ></u>
services global schedule event to	<u>< to ></u>
services global service	<u>< service ></u>
services global service admission-control	<u>< admission-control ></u>
services global service admission-control congestion-point-classification	<u>< congestion-point-classification ></u>
services global service aggregate fragment	<u>< fragment ></u>
services global service parameter	<u>< parameter ></u>
services global service script	<u>< script ></u>
services scope	<u>< scope ></u>
services scope mutex-group	<u>< mutex-group ></u>
services scope schedule	<u>< schedule ></u>
services scope schedule event	<u>< event ></u>
services scope schedule event action	<u>< action ></u>
services scope schedule event action attribute	<u>< attribute ></u>

services scope schedule event except	<u>< except ></u>
services scope schedule event except from	<u>< from ></u>
services scope schedule event except to	<u>< to ></u>
services scope schedule event from	<u>< from ></u>
services scope schedule event to	<u>< to ></u>
services scope service	<u>< service ></u>
services scope service admission-control	<u>< admission-control ></u>
services scope service admission-control congestion-point-classification	<u>< congestion-point-classification ></u>
services scope service aggregate fragment	<u>< fragment ></u>
services scope service parameter	<u>< parameter ></u>
services scope service script	<u>< script ></u>

< mutex-group > (configuration/services/global)

Usage

```
<configuration>
  <services>
    <global>
      <mutex-group>
        <name>name</name> <!-- identifier -->
        <auto-deactivate>auto-deactivate-choice</auto-deactivate>
        <description>description</description>
        <services>services</services>
      </mutex-group>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a mutex group. A mutex group is a collection of services that are mutually exclusive—services that the SAE cannot simultaneously activate for a particular subscriber.

Contents

<name>— Name of the mutex group.

Value— Text

<auto-deactivate>— Specify whether to allow activation of a service if another service is already active.

Value

- **yes**— For any one subscriber, the SAE deactivates a service in the group before activating another service in the group.
- **no**— The SAE refuses access to a requested service if the subscriber is already using another service in this group.

Default— Yes

<description>—(Optional) Description of the mutex group.

Value— Text

Default— No value

<services>—(Optional) (Multivalue) List of services in the mutex group.

Value— List of services

Default— No value

Required Privilege Level

service

< schedule > (configuration/services/global)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

service

< event > (configuration/services/global/schedule)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <name>name</name> <!-- identifier -->
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

service

< action >

(configuration/services/global/schedule/event)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <action>
            <name>name</name> <!-- identifier -->
            <type>type-choice</type>
            <service>service</service>
            <substitution>substitution</substitution>
          </action>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Substitutions to be used when activating the service. Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

service

< attribute >

(configuration/services/global/schedule/event/action)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <action>
            <attribute>
              <name>name-choice</name> <!-- identifier -->
              <value>value</value>
            </attribute>
          </action>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

service

< except >

(configuration/services/global/schedule/event)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <except>
            <name>name</name> <!-- identifier -->
          </except>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

service

< from >

(configuration/services/global/schedule/event/except)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <except>
            <from>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </from>
          </except>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>

—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< to >

(configuration/services/global/schedule/event/except)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <except>
            <to>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </to>
          </except>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< from >

(configuration/services/global/schedule/event)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <from>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </from>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< to >

(configuration/services/global/schedule/event)

Usage

```
<configuration>
  <services>
    <global>
      <schedule>
        <event>
          <to>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </to>
        </event>
      </schedule>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23**Default**— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59**Default**— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31**Default**— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

service

< service > (configuration/services/global)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <type>type-choice</type>
        <category>category</category>
        <url>url</url>
        <policy-group>policy-group</policy-group>
        <authentication-required/>
        <authorization-plug-in>authorization-plug-in</authorization-plug-in>
        <tracking-plug-in>tracking-plug-in</tracking-plug-in>
        <session-timeout>session-timeout</session-timeout>
        <idle-timeout>idle-timeout</idle-timeout>
        <idle-timeout-input>idle-timeout-input</idle-timeout-input>
        <idle-timeout-output>idle-timeout-output</idle-timeout-output>
        <accounting-interim-interval>accounting-interim-interval</accounting-interim-interval>
        <radius-class>radius-class</radius-class>
        <status>status-choice</status>
        <activate-only/>
        <permanent/>
        <available/>
        <secret/>
        <shared-service-name>shared-service-name</shared-service-name>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service.

Contents

<name>— Name of the service.

Value— Text

<description>—(Optional) Description of the service.

Value— Text

Default— No value

<type>— Type of service.

Value

- normal— Individual service that a subscriber activates and deactivates. A normal service provisions a set of policies when activated.
- aggregate— Group of services that a subscriber activates and deactivates as a unit. An aggregate service contains other services (called fragments) that are managed by the aggregate service. The aggregate service is responsible for

activating, deactivating, and monitoring the fragments.

- **script**— Service into which you insert or reference a script. You can use the script to manage third-party devices, provision layer 2 devices, such as DSLAMs, or set up network connections such as MPLS tunnels.
- **infrastructure**— Service that can be provisioned only once and then activated a number of times across network devices.

Default— Normal

<category>—(Optional) The service category is not used by SRC directly. You can use it, for example, to group related services in an SRC application such as a portal. For example, in the residential portal, it is the text that appears in the set of tabs that categorize services.

Value— Text

Default— No value

<url>—(Optional) The service URL is not used by SRC directly. You can use it in applications such as a portal to provide a link to a service provider or to the Web page that a subscriber sees after activating a service.

Value— URL

Default— No value

<policy-group>—(Optional) Policy group that is applied when the service is activated. The policy engine does not allow the activation of a normal service without an associated policy group.

Value— Policy group

Default— No value

<authentication-required>—(Optional) Determines whether activation of the service requires authentication with a username and password that are specific to this service. The service authentication-required flag is not used by the SRC software directly. You can use it, for example, to request a name and password when the service is activated by an SRC application such as a portal.

Default— Disabled

<authorization-plug-in>—(Optional) (Multivalue) Name of the plug-ins that authorize this service. The authorization plug-ins are called when the service is activated.

Value— Single authorization plug-in or a list of authorization plug-ins.

Default— No value

<tracking-plug-in>—(Optional) (Multivalue) Name of the plug-ins that track this service. The tracking plug-ins are called when a service is activated and deactivated, as well as for interim updates.

Value— Single tracking plug-in or a list of tracking plug-ins.

Default— No value

`<session-timeout>`—(Optional) Time after which the service session is deactivated.

Changes to the session timeout take effect immediately if the new value is lower than the remaining time for a session or if you specify that no session timeout applies. Other changes apply only to services that are activated after you make the change.

The session timeout can also be controlled dynamically for each service session by a plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout>`—(Optional) Idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The idle timeout can also be dynamically updated per service session by an authorization plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout-input>`—(Optional) Input idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The input idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The input idle timeout can also be dynamically updated per service session by an authorization plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout-output>`—(Optional) Output idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The input idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The output idle timeout can also be dynamically updated per service session by an authorization plug-in.

in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<accounting-interim-interval>`—(Optional) Time between interim accounting messages for this service. The accounting interim interval can also be controlled dynamically for each service session by a plug-in.

Value— Number of seconds in the range 0–2147483647. Setting the value to 0 turns off interim accounting.

Default— No value

`<radius-class>`—(Optional) Default value used in the RADIUS class attribute in RADIUS accounting messages. If RADIUS authenticates the service session, the class attribute received in the RADIUS Access-Accept response from the server overrides this value. You can use this option to set the RADIUS attribute to 25.

The RADIUS class can also be dynamically for each service session by a plug-in.

Value— Text

Default— Name of the service

`<status>`—(Optional) Status of the service.

Value

- `inactive`— Service does not accept new subscriptions.
- `active`— Service accepts new subscriptions.

Default— `active`

`<activate-only>`—(Optional) A service that is marked activate only cannot be directly deactivated. It can be deactivated indirectly through a mutex group or a session timeout.

Default— Disabled

`<permanent>`—(Optional) Specifies whether the SAE maintains permanent activation of this service for a subscriber. A service that is marked as permanent is automatically activated as soon as a subscriber subscribes to it.

Default— Disabled

`<available>`—(Optional) Specifies whether a subscriber can activate a service. To be activated, the

service must be available in the currently selected scope.

Default— Enabled

`<secret>`—(Optional) Secret services are visible only to administrators who have permission to see secret information. You can use this flag to hide services from subscribers and unprivileged administrators.

`<shared-service-name>`—(Optional) For infrastructure services, the name of the service to be shared.

Value— Text

Default— No value

Required Privilege Level

service

< admission-control >

(configuration/services/global/service)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <admission-control>
          <required-downstream-bandwidth>required-downstream-bandwidth</required-downstream-
bandwidth>
          <required-upstream-bandwidth>required-upstream-bandwidth</required-upstream-bandwidth>
          <congestion-points>congestion-points</congestion-points>
        </admission-control>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure upstream and downstream bandwidths for services that ACP manages.

Contents

<required-downstream-bandwidth>—(Optional) Downstream bandwidth to the subscriber required for the service.

Value— Number of bps

Default— No value

<required-upstream-bandwidth>—(Optional) Upstream bandwidth from the subscriber required for the service.

Value— Number of bps

Default— No value

<congestion-points>—(Optional) (Multivalue) Congestion points for this service.

Value— List of expressions

Default— No value

Required Privilege Level

service

< congestion-point-classification > (configuration/services/global/service/admission-control)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <admission-control>
          <congestion-point-classification>
            <script>script</script>
            <expression>expression</expression>
          </congestion-point-classification>
        </admission-control>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Congestion point classification for this service. It overrides expressions defined with congestion-points attribute.

Contents

<script>—(Optional) Congestion point classification script in python. Functions or variables defined in the script can be referred in congestion point classification expressions.

Value—Multi-line text

<expression>—(Multivalue) Congestion point classification expressions for this service.

Value— List of expressions

Default— No value

Required Privilege Level

service

< fragment >

(configuration/services/global/service/aggregate)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <aggregate>
          <fragment>
            <name>name</name> <!-- identifier -->
            <expression>expression</expression>
            <service>service</service>
            <mandatory/>
            <redundancy-group>redundancy-group</redundancy-group>
            <subscription-required/>
            <substitution>substitution</substitution>
          </fragment>
        </aggregate>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure service fragments for an aggregate service.

Contents

<name>— Name for service fragment. The fragment name is not stored and is re-created every time the object is read.

Value— Text

<expression>— Subscriber reference expression that identifies the remote subscriber session that will host the fragment. The remote subscriber session is an assigned IP subscriber. If the remote SAE manages the specified interface, the SAE creates an assigned IP subscriber session if necessary.

Value— Valid expressions are:

- current
- address = "A.B.C.D"
- vr = "vrName", interfaceName = "ifName"
- vr = "vrName", interfaceName = "ifName", address = "A.B.C.D"
- vr = "vrName", ifIndex = "1234"
- vr = "vrName", login_name = "user@domain"
- vr = "vrName", primary_user_name = "user@domain"
- dn = "uniqueId = ..."
- login_name = "user@domain"
- primary_user_name = "user@domain"
- ref = "rdn/rdn"

The `rdn/rdn` identifies the hierarchy of directory objects below the LDAP object `o = aggregateService`. The final object contains the attribute `subscriberRefExpr` to identify the subscriber session. A forward slash (/) separates the objects in the path.

You can also use a substitution or a Python expression that represents any of the literal values listed above. For a substitution or Python expression, type `< -` before the expression and type `- >` after it; for example, `< -ifAlias- >`. For a list and description of the fields that you can use to compose Python expressions, see *Managing Services for the SRC CLI* in the *SRC PE Services and Policies Guide*.

Examples of valid expressions are:

- `current`
- `address = "10.10.10.1"`
- `vr = "< -substitution.serviceVr- > ", interfaceName = "< -substitution.serviceInterface- > "`
- `dn = "uniqueId = < -ifAlias- > , < -userDn- > "`
- `vr = < -["vr1","vr2"]- > , loginName = < -["joe@abc","jane@abc"]- > .`

When you include lists, fragment services are created for all combinations of values in the list. For example, `vr = < -["vr1","vr2"]- > , loginName = < -["joe@abc","jane@abc"]- >` would cause four fragments to be created with the following expressions:

- `vr = "vr1", loginName = "joe@abc"`
- `vr = "vr1", loginName = "jane@abc"`
- `vr = "vr2", loginName = "joe@abc"`
- `vr = "vr2", loginName = "jane@abc"`

Default— No value

`<service>`— Name of the service to be included in the aggregate service as a fragment service.

Value— Name of a service

Default— No value

`<mandatory>`—(Optional) Specifies whether the fragment service must be active for the aggregate service to become active.

Default— Mandatory

`<redundancy-group>`—(Optional) Group name to be applied to each fragment service that is to be part of a redundancy group. The fragment services that have the same group name provide redundancy for each other.

Value— Text

Default— No value

`<subscription-required>`—(Optional) Specifies whether a remote subscriber session must be subscribed to the fragment service for it to become active.

Enabling `subscription-required` can be used to limit the services that can be activated as fragments. Enabling this option lets you control which services can be used as fragments. For example, for an aggregate service that supports VoIP to push a policy to the caller and the callee, you can require that both subscribers sign up for VoIP services. If you disable the option, only one party needs to subscribe to the aggregate service; the policy service sessions are created automatically.

Default— Disabled

`<substitution>`—(Optional) (Multivalue) List of substitutions that are used as arguments for the fragment to become active. If a parameter does not acquire a value, the associated fragment service does not become active.

Value— One or more of the following:

- `< parameter-name >` —The parameter name is defined to have the same value in the fragment service session as in the aggregate service session.
- `< parameter-name > = < substitution-expression >` —The parameter name on the left side of the equals sign is defined for the fragment service session. This parameter name is the result of the evaluation of the expression (in the aggregate service session) on the right side of the equals sign.

Default— No value

Required Privilege Level

service

< parameter >

(configuration/services/global/service)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <parameter>
          <gateway-ip-address>gateway-ip-address</gateway-ip-address>
          <service-ip-address>service-ip-address</service-ip-address>
          <service-ip-mask>service-ip-mask</service-ip-mask>
          <service-port>service-port</service-port>
          <substitution>substitution</substitution>
          <session-volume-quota>session-volume-quota</session-volume-quota>
        </parameter>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure parameter values for services. The policy engine substitutes parameters in policies associated with this service with the values that you specify in this parameter configuration.

Contents

<gateway-ip-address>—(Optional) Actual IP address of the gateway router. This value is substituted for the policy global parameter called gateway_ipAddress.

Value— IP address

Default— No value

<service-ip-address>—(Optional) Actual IP address of the host(s) that provides the service. This value is substituted for the policy global parameter called service_ipAddress.

Value— IP address

Default— No value

<service-ip-mask>—(Optional) Actual IP mask for the service. This value is substituted for the policy global parameter called service_ipMask.

Value— IP address

Default— No value

<service-port>—(Optional) Actual port for the service. This value is substituted for the policy global parameter called service_port.

Value— TCP or UDP port number in the range 0–65535

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for other parameters. These values are substituted for the parameters that you specify.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

`<session-volume-quota>`—(Optional) Upstream and downstream volume quota for the service session.

The SAE does not directly use this value. It is used by applications that implement tracking plug-ins. The value of a service session can be defined at runtime either through an authorization plug-in or a call to the SAE API. If the Session Volume Quota attribute is defined in more than one place, which value is used depends on where the value is defined. The SRC software searches for the value in the following order:

1. Value set in a call to the SAE
2. Value set in an authorization plug-in
3. Value set in a service definition

Value— Volume quota in the format "downstream-quota:upstream-quota"

where

- Downstream quota is the number of bytes available for transmitting data from the network to the subscriber.
- Upstream quota is the number of bytes available for transmitting data from the subscriber to the network.

Default— No value

Required Privilege Level

service

< script > (configuration/services/global/service)

Usage

```
<configuration>
  <services>
    <global>
      <service>
        <script>
          <script-type>script-type-choice</script-type>
          <class-name>class-name</class-name>
          <file>file</file>
          <filename>filename</filename>
        </script>
      </service>
    </global>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the script service.

Contents

<script-type>— Type of script service. Determines how the contents of the "file" attribute will be interpreted.

Value

- url— The value of attribute "file" is a URL that specifies where to find a Java archive (.jar file) containing the script service implementation.
- python— The value of attribute "file" is Python code.
- java-class— The value of attribute "file" is the binary contents of a compiled Java class file (.class file).
- java-archive— The value of attribute "file" is the binary contents of a Java archive file (.jar file).

Default— No value

<class-name>— Name of the Java or Python class that implements the script service. The SAE instantiates the named class when it starts the script service.

Value— Name of the class

Default— No value

<file>— If the script type is "URL", this attribute contains the URL of a Java archive (.jar) file containing the script service implementation. Otherwise, this attribute contains the script service implementation itself (i.e. python code, the binary contents of a compiled .class file, or the binary contents of a .jar file).

Value— The script itself, or a URL pointing to a .jar file containing the script

Default— No value

<filename>—(Optional) The file needs to exist locally. Its content will be read and loaded into the "file" attribute.

Value—Text

Required Privilege Level

service

< scope > (configuration/services)

Usage

```
<configuration>
  <services>
    <scope>
      <name>name</name> <!-- identifier -->
      <precedence>precedence</precedence>
      <substitution>substitution</substitution>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service scope. Service scopes let you customize which services are delivered to specific organizations or locales.

Contents

<name>— Name of a service scope.

Value— Text

<precedence>—(Optional) If multiple scopes are selected for the same subscriber session, they are sorted by their precedence level.

Value— Positive integer; the lower the precedence value, the higher the ranking of the service scope.

Default— No value

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form < parameter name > = < value > . For example, bandwidth = 1000000.

Default— No value

Required Privilege Level

service

< mutex-group > (configuration/services/scope)

Usage

```
<configuration>
  <services>
    <scope>
      <mutex-group>
        <name>name</name> <!-- identifier -->
        <auto-deactivate>auto-deactivate-choice</auto-deactivate>
        <description>description</description>
        <services>services</services>
      </mutex-group>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a mutex group. A mutex group is a collection of services that are mutually exclusive—services that the SAE cannot simultaneously activate for a particular subscriber.

Contents

<name>— Name of the mutex group.

Value— Text

<auto-deactivate>— Specify whether to allow activation of a service if another service is already active.

Value

- **yes**— For any one subscriber, the SAE deactivates a service in the group before activating another service in the group.
- **no**— The SAE refuses access to a requested service if the subscriber is already using another service in this group.

Default— Yes

<description>—(Optional) Description of the mutex group.

Value— Text

Default— No value

<services>—(Optional) (Multivalue) List of services in the mutex group.

Value— List of services

Default— No value

Required Privilege Level

service

< schedule > (configuration/services/scope)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

service

< event > (configuration/services/scope/schedule)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <name>name</name> <!-- identifier -->
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

service

< action >

(configuration/services/scope/schedule/event)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <action>
            <name>name</name> <!-- identifier -->
            <type>type-choice</type>
            <service>service</service>
            <substitution>substitution</substitution>
          </action>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Substitutions to be used when activating the service. Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

service

< attribute >

(configuration/services/scope/schedule/event/action)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <action>
            <attribute>
              <name>name-choice</name> <!-- identifier -->
              <value>value</value>
            </attribute>
          </action>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

service

< except >

(configuration/services/scope/schedule/event)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <except>
            <name>name</name> <!-- identifier -->
          </except>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

service

< from >

(configuration/services/scope/schedule/event/except)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <except>
            <from>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </from>
          </except>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>

—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< to >

(configuration/services/scope/schedule/event/except)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <except>
            <to>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </to>
          </except>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< from >

(configuration/services/scope/schedule/event)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <from>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </from>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

service

< to >

(configuration/services/scope/schedule/event)

Usage

```
<configuration>
  <services>
    <scope>
      <schedule>
        <event>
          <to>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </to>
        </event>
      </schedule>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23**Default**— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59**Default**— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31**Default**— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-week is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

service

< service > (configuration/services/scope)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <type>type-choice</type>
        <category>category</category>
        <url>url</url>
        <policy-group>policy-group</policy-group>
        <authentication-required/>
        <authorization-plug-in>authorization-plug-in</authorization-plug-in>
        <tracking-plug-in>tracking-plug-in</tracking-plug-in>
        <session-timeout>session-timeout</session-timeout>
        <idle-timeout>idle-timeout</idle-timeout>
        <idle-timeout-input>idle-timeout-input</idle-timeout-input>
        <idle-timeout-output>idle-timeout-output</idle-timeout-output>
        <accounting-interim-interval>accounting-interim-interval</accounting-interim-interval>
        <radius-class>radius-class</radius-class>
        <status>status-choice</status>
        <activate-only/>
        <permanent/>
        <available/>
        <secret/>
        <shared-service-name>shared-service-name</shared-service-name>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service.

Contents

<name>— Name of the service.

Value— Text

<description>—(Optional) Description of the service.

Value— Text

Default— No value

<type>— Type of service.

Value

- normal— Individual service that a subscriber activates and deactivates. A normal service provisions a set of policies when activated.
- aggregate— Group of services that a subscriber activates and deactivates as a unit. An aggregate service contains other services (called fragments) that are managed by the aggregate service. The aggregate service is responsible for

activating, deactivating, and monitoring the fragments.

- **script**— Service into which you insert or reference a script. You can use the script to manage third-party devices, provision layer 2 devices, such as DSLAMs, or set up network connections such as MPLS tunnels.
- **infrastructure**— Service that can be provisioned only once and then activated a number of times across network devices.

Default— Normal

<category>—(Optional) The service category is not used by SRC directly. You can use it, for example, to group related services in an SRC application such as a portal. For example, in the residential portal, it is the text that appears in the set of tabs that categorize services.

Value— Text

Default— No value

<url>—(Optional) The service URL is not used by SRC directly. You can use it in applications such as a portal to provide a link to a service provider or to the Web page that a subscriber sees after activating a service.

Value— URL

Default— No value

<policy-group>—(Optional) Policy group that is applied when the service is activated. The policy engine does not allow the activation of a normal service without an associated policy group.

Value— Policy group

Default— No value

<authentication-required>—(Optional) Determines whether activation of the service requires authentication with a username and password that are specific to this service. The service authentication-required flag is not used by the SRC software directly. You can use it, for example, to request a name and password when the service is activated by an SRC application such as a portal.

Default— Disabled

<authorization-plug-in>—(Optional) (Multivalue) Name of the plug-ins that authorize this service. The authorization plug-ins are called when the service is activated.

Value— Single authorization plug-in or a list of authorization plug-ins.

Default— No value

<tracking-plug-in>—(Optional) (Multivalue) Name of the plug-ins that track this service. The tracking plug-ins are called when a service is activated and deactivated, as well as for interim updates.

Value— Single tracking plug-in or a list of tracking plug-ins.

Default— No value

`<session-timeout>`—(Optional) Time after which the service session is deactivated.

Changes to the session timeout take effect immediately if the new value is lower than the remaining time for a session or if you specify that no session timeout applies. Other changes apply only to services that are activated after you make the change.

The session timeout can also be controlled dynamically for each service session by a plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout>`—(Optional) Idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The idle timeout can also be dynamically updated per service session by an authorization plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout-input>`—(Optional) Input idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The input idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The input idle timeout can also be dynamically updated per service session by an authorization plug-in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<idle-timeout-output>`—(Optional) Output idle time after which the SAE deactivates service. To decide whether a service is idle, the SAE collects accounting information for the service, which means that the service activation policy must specify an accounting rule. The input idle timeout is the minimum time the service must be idle before it is deactivated. A service is considered idle if the volume accounting data does not change between interim updates. The actual deactivation time depends on the length of the accounting interval.

The output idle timeout can also be dynamically updated per service session by an authorization plug-in.

in.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<accounting-interim-interval>`—(Optional) Time between interim accounting messages for this service. The accounting interim interval can also be controlled dynamically for each service session by a plug-in.

Value— Number of seconds in the range 0–2147483647. Setting the value to 0 turns off interim accounting.

Default— No value

`<radius-class>`—(Optional) Default value used in the RADIUS class attribute in RADIUS accounting messages. If RADIUS authenticates the service session, the class attribute received in the RADIUS Access-Accept response from the server overrides this value. You can use this option to set the RADIUS attribute to 25.

The RADIUS class can also be dynamically for each service session by a plug-in.

Value— Text

Default— Name of the service

`<status>`—(Optional) Status of the service.

Value

- `inactive`— Service does not accept new subscriptions.
- `active`— Service accepts new subscriptions.

Default— `active`

`<activate-only>`—(Optional) A service that is marked activate only cannot be directly deactivated. It can be deactivated indirectly through a mutex group or a session timeout.

Default— Disabled

`<permanent>`—(Optional) Specifies whether the SAE maintains permanent activation of this service for a subscriber. A service that is marked as permanent is automatically activated as soon as a subscriber subscribes to it.

Default— Disabled

`<available>`—(Optional) Specifies whether a subscriber can activate a service. To be activated, the

service must be available in the currently selected scope.

Default— Enabled

`<secret>`—(Optional) Secret services are visible only to administrators who have permission to see secret information. You can use this flag to hide services from subscribers and unprivileged administrators.

`<shared-service-name>`—(Optional) For infrastructure services, the name of the service to be shared.

Value— Text

Default— No value

Required Privilege Level

service

< admission-control >

(configuration/services/scope/service)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <admission-control>
          <required-downstream-bandwidth>required-downstream-bandwidth</required-downstream-
bandwidth>
          <required-upstream-bandwidth>required-upstream-bandwidth</required-upstream-bandwidth>
          <congestion-points>congestion-points</congestion-points>
        </admission-control>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure upstream and downstream bandwidths for services that ACP manages.

Contents

<required-downstream-bandwidth>—(Optional) Downstream bandwidth to the subscriber required for the service.

Value— Number of bps

Default— No value

<required-upstream-bandwidth>—(Optional) Upstream bandwidth from the subscriber required for the service.

Value— Number of bps

Default— No value

<congestion-points>—(Optional) (Multivalue) Congestion points for this service.

Value— List of expressions

Default— No value

Required Privilege Level

service

< congestion-point-classification > (configuration/services/scope/service/admission-control)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <admission-control>
          <congestion-point-classification>
            <script>script</script>
            <expression>expression</expression>
          </congestion-point-classification>
        </admission-control>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Congestion point classification for this service. It overrides expressions defined with congestion-points attribute.

Contents

<script>—(Optional) Congestion point classification script in python. Functions or variables defined in the script can be referred in congestion point classification expressions.

Value—Multi-line text

<expression>—(Multivalue) Congestion point classification expressions for this service.

Value— List of expressions

Default— No value

Required Privilege Level

service

< fragment >

(configuration/services/scope/service/aggregate)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <aggregate>
          <fragment>
            <name>name</name> <!-- identifier -->
            <expression>expression</expression>
            <service>service</service>
            <mandatory/>
            <redundancy-group>redundancy-group</redundancy-group>
            <subscription-required/>
            <substitution>substitution</substitution>
          </fragment>
        </aggregate>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure service fragments for an aggregate service.

Contents

<name>— Name for service fragment. The fragment name is not stored and is re-created every time the object is read.

Value— Text

<expression>— Subscriber reference expression that identifies the remote subscriber session that will host the fragment. The remote subscriber session is an assigned IP subscriber. If the remote SAE manages the specified interface, the SAE creates an assigned IP subscriber session if necessary.

Value— Valid expressions are:

- current
- address = "A.B.C.D"
- vr = "vrName", interfaceName = "ifName"
- vr = "vrName", interfaceName = "ifName", address = "A.B.C.D"
- vr = "vrName", ifIndex = "1234"
- vr = "vrName", login_name = "user@domain"
- vr = "vrName", primary_user_name = "user@domain"
- dn = "uniqueId = ..."
- login_name = "user@domain"
- primary_user_name = "user@domain"
- ref = "rdn/rdn"

The `rdn/rdn` identifies the hierarchy of directory objects below the LDAP object `o = aggregateService`. The final object contains the attribute `subscriberRefExpr` to identify the subscriber session. A forward slash (/) separates the objects in the path.

You can also use a substitution or a Python expression that represents any of the literal values listed above. For a substitution or Python expression, type `< -` before the expression and type `- >` after it; for example, `< -ifAlias- >`. For a list and description of the fields that you can use to compose Python expressions, see *Managing Services for the SRC CLI* in the *SRC PE Services and Policies Guide*.

Examples of valid expressions are:

- `current`
- `address = "10.10.10.1"`
- `vr = "< -substitution.serviceVr- > ", interfaceName = "< -substitution.serviceInterface- > "`
- `dn = "uniqueId = < -ifAlias- > , < -userDn- > "`
- `vr = < -["vr1","vr2"]- > , loginName = < -["joe@abc","jane@abc"]- > .`

When you include lists, fragment services are created for all combinations of values in the list. For example, `vr = < -["vr1","vr2"]- > , loginName = < -["joe@abc","jane@abc"]- >` would cause four fragments to be created with the following expressions:

- `vr = "vr1", loginName = "joe@abc"`
- `vr = "vr1", loginName = "jane@abc"`
- `vr = "vr2", loginName = "joe@abc"`
- `vr = "vr2", loginName = "jane@abc"`

Default— No value

`<service>`— Name of the service to be included in the aggregate service as a fragment service.

Value— Name of a service

Default— No value

`<mandatory>`—(Optional) Specifies whether the fragment service must be active for the aggregate service to become active.

Default— Mandatory

`<redundancy-group>`—(Optional) Group name to be applied to each fragment service that is to be part of a redundancy group. The fragment services that have the same group name provide redundancy for each other.

Value— Text

Default— No value

`<subscription-required>`—(Optional) Specifies whether a remote subscriber session must be subscribed to the fragment service for it to become active.

Enabling `subscription-required` can be used to limit the services that can be activated as fragments. Enabling this option lets you control which services can be used as fragments. For example, for an aggregate service that supports VoIP to push a policy to the caller and the callee, you can require that both subscribers sign up for VoIP services. If you disable the option, only one party needs to subscribe to the aggregate service; the policy service sessions are created automatically.

Default— Disabled

`<substitution>`—(Optional) (Multivalue) List of substitutions that are used as arguments for the fragment to become active. If a parameter does not acquire a value, the associated fragment service does not become active.

Value— One or more of the following:

- `< parameter-name >` —The parameter name is defined to have the same value in the fragment service session as in the aggregate service session.
- `< parameter-name > = < substitution-expression >` —The parameter name on the left side of the equals sign is defined for the fragment service session. This parameter name is the result of the evaluation of the expression (in the aggregate service session) on the right side of the equals sign.

Default— No value

Required Privilege Level

service

< parameter >

(configuration/services/scope/service)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <parameter>
          <gateway-ip-address>gateway-ip-address</gateway-ip-address>
          <service-ip-address>service-ip-address</service-ip-address>
          <service-ip-mask>service-ip-mask</service-ip-mask>
          <service-port>service-port</service-port>
          <substitution>substitution</substitution>
          <session-volume-quota>session-volume-quota</session-volume-quota>
        </parameter>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure parameter values for services. The policy engine substitutes parameters in policies associated with this service with the values that you specify in this parameter configuration.

Contents

<gateway-ip-address>—(Optional) Actual IP address of the gateway router. This value is substituted for the policy global parameter called gateway_ipAddress.

Value— IP address

Default— No value

<service-ip-address>—(Optional) Actual IP address of the host(s) that provides the service. This value is substituted for the policy global parameter called service_ipAddress.

Value— IP address

Default— No value

<service-ip-mask>—(Optional) Actual IP mask for the service. This value is substituted for the policy global parameter called service_ipMask.

Value— IP address

Default— No value

<service-port>—(Optional) Actual port for the service. This value is substituted for the policy global parameter called service_port.

Value— TCP or UDP port number in the range 0–65535

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for other parameters. These values are substituted for the parameters that you specify.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

`<session-volume-quota>`—(Optional) Upstream and downstream volume quota for the service session.

The SAE does not directly use this value. It is used by applications that implement tracking plug-ins. The value of a service session can be defined at runtime either through an authorization plug-in or a call to the SAE API. If the Session Volume Quota attribute is defined in more than one place, which value is used depends on where the value is defined. The SRC software searches for the value in the following order:

1. Value set in a call to the SAE
2. Value set in an authorization plug-in
3. Value set in a service definition

Value— Volume quota in the format "downstream-quota:upstream-quota"

where

- Downstream quota is the number of bytes available for transmitting data from the network to the subscriber.
- Upstream quota is the number of bytes available for transmitting data from the subscriber to the network.

Default— No value

Required Privilege Level

service

< script > (configuration/services/scope/service)

Usage

```
<configuration>
  <services>
    <scope>
      <service>
        <script>
          <script-type>script-type-choice</script-type>
          <class-name>class-name</class-name>
          <file>file</file>
          <filename>filename</filename>
        </script>
      </service>
    </scope>
  </services>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the script service.

Contents

<script-type>— Type of script service. Determines how the contents of the "file" attribute will be interpreted.

Value

- url— The value of attribute "file" is a URL that specifies where to find a Java archive (.jar file) containing the script service implementation.
- python— The value of attribute "file" is Python code.
- java-class— The value of attribute "file" is the binary contents of a compiled Java class file (.class file).
- java-archive— The value of attribute "file" is the binary contents of a Java archive file (.jar file).

Default— No value

<class-name>— Name of the Java or Python class that implements the script service. The SAE instantiates the named class when it starts the script service.

Value— Name of the class

Default— No value

<file>— If the script type is "URL", this attribute contains the URL of a Java archive (.jar) file containing the script service implementation. Otherwise, this attribute contains the script service implementation itself (i.e. python code, the binary contents of a compiled .class file, or the binary contents of a .jar file).

Value— The script itself, or a URL pointing to a .jar file containing the script

Default— No value

<filename>—(Optional) The file needs to exist locally. Its content will be read and loaded into the "file" attribute.

Value—Text

Required Privilege Level

service

Policy CLI Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Policy CLI. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
policies external-parent-group-folder external-parent-group	<u>< external-parent-group ></u>
policies external-parent-group-folder external-parent-group external-parent-group	<u>< external-parent-group ></u>
policies external-parent-group-folder external-parent-group external-parent-group epg-reference	<u>< epg-reference ></u>
policies external-parent-group-folder external-parent-group external-parent-group epg-reference hierarchical-policy-parameter	<u>< hierarchical-policy-parameter ></u>
policies external-parent-group-folder external-parent-group external-parent-group external-parent-group	<u>< external-parent-group ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit	<u>< rate-limit ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action forward-conditional	<u>< forward-conditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action mark mark-info	<u>< mark-info ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit committed-action parameter	<u>< parameter ></u>
policies external-parent-group-folder external-parent-group external-	

parent-group rate-limit conformed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action forward-conditional	<u>< forward-conditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action mark mark-info	<u>< mark-info ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit conformed-action parameter	<u>< parameter ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action forward-conditional	<u>< forward-conditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action mark mark-info	<u>< mark-info ></u>
policies external-parent-group-folder external-parent-group external-parent-group rate-limit exceed-action parameter	<u>< parameter ></u>
policies external-parent-group-folder external-parent-group rate-limit	<u>< rate-limit ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action forward-conditional	<u>< forward-conditional ></u>

policies external-parent-group-folder external-parent-group rate-limit committed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action mark mark-info	<u>< mark-info ></u>
policies external-parent-group-folder external-parent-group rate-limit committed-action parameter	<u>< parameter ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action forward-conditional	<u>< forward-conditional ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action mark mark-info	<u>< mark-info ></u>
policies external-parent-group-folder external-parent-group rate-limit conformed-action parameter	<u>< parameter ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action filter	<u>< filter ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action forward	<u>< forward ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action forward-conditional	<u>< forward-conditional ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action forward-final	<u>< forward-final ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action forward-unconditional	<u>< forward-unconditional ></u>
policies external-parent-group-folder external-parent-group rate-limit exceed-action mark mark-info	<u>< mark-info ></u>

policies external-parent-group-folder external-parent-group rate-limit exceed-action parameter	<u>< parameter ></u>
policies folder	<u>< folder ></u>
policies global-parameters parameter	<u>< parameter ></u>
policies group	<u>< group ></u>
policies group list	<u>< list ></u>
policies group list parent-group parent-group	<u>< parent-group ></u>
policies group list parent-group parent-group epq-reference	<u>< epq-reference ></u>
policies group list parent-group parent-group epq-reference hierarchical-policy-parameter	<u>< hierarchical-policy-parameter ></u>
policies group list parent-group parent-group parent-group	<u>< parent-group ></u>
policies group list parent-group parent-group parent-group parent-group	<u>< parent-group ></u>
policies group list parent-group parent-group parent-group rate-limit	<u>< rate-limit ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action filter	<u>< filter ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action forward	<u>< forward ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action forward-conditional	<u>< forward-conditional ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action forward-final	<u>< forward-final ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action mark mark-info	<u>< mark-info ></u>
policies group list parent-group parent-group parent-group rate-limit committed-action parameter	<u>< parameter ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action filter	<u>< filter ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action forward	<u>< forward ></u>

policies group list parent-group parent-group parent-group rate-limit conformed-action forward-conditional	<u>< forward-conditional ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action forward-final	<u>< forward-final ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action mark mark-info	<u>< mark-info ></u>
policies group list parent-group parent-group parent-group rate-limit conformed-action parameter	<u>< parameter ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action filter	<u>< filter ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action forward	<u>< forward ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action forward-conditional	<u>< forward-conditional ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action forward-final	<u>< forward-final ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action mark mark-info	<u>< mark-info ></u>
policies group list parent-group parent-group parent-group rate-limit exceed-action parameter	<u>< parameter ></u>
policies group list parent-group parent-group rate-limit	<u>< rate-limit ></u>
policies group list parent-group parent-group rate-limit committed- action filter	<u>< filter ></u>
policies group list parent-group parent-group rate-limit committed- action forward	<u>< forward ></u>
policies group list parent-group parent-group rate-limit committed- action forward-conditional	<u>< forward-conditional ></u>
policies group list parent-group parent-group rate-limit committed- action forward-final	<u>< forward-final ></u>
policies group list parent-group parent-group rate-limit committed-	<u>< forward-</u>

action forward-unconditional	unconditional >
policies group list parent-group parent-group rate-limit committed-action mark mark-info	< mark-info >
policies group list parent-group parent-group rate-limit committed-action parameter	< parameter >
policies group list parent-group parent-group rate-limit conformed-action filter	< filter >
policies group list parent-group parent-group rate-limit conformed-action forward	< forward >
policies group list parent-group parent-group rate-limit conformed-action forward-conditional	< forward-conditional >
policies group list parent-group parent-group rate-limit conformed-action forward-final	< forward-final >
policies group list parent-group parent-group rate-limit conformed-action forward-unconditional	< forward-unconditional >
policies group list parent-group parent-group rate-limit conformed-action mark mark-info	< mark-info >
policies group list parent-group parent-group rate-limit conformed-action parameter	< parameter >
policies group list parent-group parent-group rate-limit exceed-action filter	< filter >
policies group list parent-group parent-group rate-limit exceed-action forward	< forward >
policies group list parent-group parent-group rate-limit exceed-action forward-conditional	< forward-conditional >
policies group list parent-group parent-group rate-limit exceed-action forward-final	< forward-final >
policies group list parent-group parent-group rate-limit exceed-action forward-unconditional	< forward-unconditional >
policies group list parent-group parent-group rate-limit exceed-action mark mark-info	< mark-info >
policies group list parent-group parent-group rate-limit exceed-action parameter	< parameter >
policies group list policer policer	< policer >

policies group list rule	<u>< rule ></u>
policies group list rule color	<u>< color ></u>
policies group list rule color-mark	<u>< color-mark ></u>
policies group list rule docsis-best-effort	<u>< docsis-best-effort ></u>
policies group list rule docsis-down-stream	<u>< docsis-down-stream ></u>
policies group list rule docsis-non-real-time	<u>< docsis-non-real-time ></u>
policies group list rule docsis-parameter	<u>< docsis-parameter ></u>
policies group list rule docsis-real-time	<u>< docsis-real-time ></u>
policies group list rule docsis-unsolicited-grant	<u>< docsis-unsolicited-grant ></u>
policies group list rule docsis-unsolicited-grant-ad	<u>< docsis-unsolicited-grant-ad ></u>
policies group list rule dynamic-profile	<u>< dynamic-profile ></u>
policies group list rule dynamic-profile variables variable	<u>< variable ></u>
policies group list rule exception-application	<u>< exception-application ></u>
policies group list rule filter	<u>< filter ></u>
policies group list rule flow-spec	<u>< flow-spec ></u>
policies group list rule forward	<u>< forward ></u>
policies group list rule forwarding-class	<u>< forwarding-class ></u>
policies group list rule forwarding-instance	<u>< forwarding-instance ></u>
policies group list rule gate-spec	<u>< gate-spec ></u>
policies group list rule http-redirect	<u>< http-redirect ></u>

policies group list rule loss-priority	<u>< loss-priority ></u>
policies group list rule mark	<u>< mark ></u>
policies group list rule mark info	<u>< info ></u>
policies group list rule nat	<u>< nat ></u>
policies group list rule nat ip-network group-network	<u>< group-network ></u>
policies group list rule nat port	<u>< port ></u>
policies group list rule next-hop	<u>< next-hop ></u>
policies group list rule next-interface	<u>< next-interface ></u>
policies group list rule next-rule	<u>< next-rule ></u>
policies group list rule policer	<u>< policer ></u>
policies group list rule policer packet-action	<u>< packet-action ></u>
policies group list rule policer packet-action filter	<u>< filter ></u>
policies group list rule policer packet-action forwarding-class	<u>< forwarding-class ></u>
policies group list rule policer packet-action loss-priority	<u>< loss-priority ></u>
policies group list rule policer packet-action parameter	<u>< parameter ></u>
policies group list rule policer-ref	<u>< policer-ref ></u>
policies group list rule qos-attach	<u>< qos-attach ></u>
policies group list rule qos-condition	<u>< qos-condition ></u>
policies group list rule rate-limit	<u>< rate-limit ></u>
policies group list rule rate-limit committed-action filter	<u>< filter ></u>
policies group list rule rate-limit committed-action forward	<u>< forward ></u>
policies group list rule rate-limit committed-action forward-conditional	<u>< forward-conditional ></u>
policies group list rule rate-limit committed-action forward-final	<u>< forward-final ></u>
policies group list rule rate-limit committed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list rule rate-limit committed-action mark mark-info	<u>< mark-info ></u>
policies group list rule rate-limit committed-action parameter	<u>< parameter ></u>

policies group list rule rate-limit conformed-action filter	<u>< filter ></u>
policies group list rule rate-limit conformed-action forward	<u>< forward ></u>
policies group list rule rate-limit conformed-action forward-conditional	<u>< forward-conditional ></u>
policies group list rule rate-limit conformed-action forward-final	<u>< forward-final ></u>
policies group list rule rate-limit conformed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list rule rate-limit conformed-action mark mark-info	<u>< mark-info ></u>
policies group list rule rate-limit conformed-action parameter	<u>< parameter ></u>
policies group list rule rate-limit exceed-action filter	<u>< filter ></u>
policies group list rule rate-limit exceed-action forward	<u>< forward ></u>
policies group list rule rate-limit exceed-action forward-conditional	<u>< forward-conditional ></u>
policies group list rule rate-limit exceed-action forward-final	<u>< forward-final ></u>
policies group list rule rate-limit exceed-action forward-unconditional	<u>< forward-unconditional ></u>
policies group list rule rate-limit exceed-action mark mark-info	<u>< mark-info ></u>
policies group list rule rate-limit exceed-action parameter	<u>< parameter ></u>
policies group list rule reject	<u>< reject ></u>
policies group list rule routing-instance	<u>< routing-instance ></u>
policies group list rule scheduler-action	<u>< scheduler-action ></u>
policies group list rule scheduler-action drop-profile	<u>< drop-profile ></u>
policies group list rule service-class-name	<u>< service-class-name ></u>
policies group list rule stateful-firewall	<u>< stateful-firewall ></u>
policies group list rule stateful-firewall packet-action filter	<u>< filter ></u>
policies group list rule stateful-firewall packet-action forward	<u>< forward ></u>
policies group list rule stateful-firewall packet-action parameter	<u>< parameter ></u>

policies group list rule stateful-firewall packet-action reject	<u>< reject ></u>
policies group list rule subscriber-profile	<u>< subscriber-profile ></u>
policies group list rule template-activation	<u>< template-activation ></u>
policies group list rule template-activation variables variable	<u>< variable ></u>
policies group list rule traffic-class	<u>< traffic-class ></u>
policies group list rule traffic-condition	<u>< traffic-condition ></u>
policies group list rule traffic-condition application-protocol-condition	<u>< application-protocol-condition ></u>
policies group list rule traffic-condition application-protocol-condition proto-attr	<u>< proto-attr ></u>
policies group list rule traffic-condition application-protocol-condition proto-attr destination-port port	<u>< port ></u>
policies group list rule traffic-condition application-protocol-condition proto-attr source-port port	<u>< port ></u>
policies group list rule traffic-condition destination-network group-network	<u>< group-network ></u>
policies group list rule traffic-condition destination-network network	<u>< network ></u>
policies group list rule traffic-condition icmp-condition	<u>< icmp-condition ></u>
policies group list rule traffic-condition igmp-condition	<u>< igmp-condition ></u>
policies group list rule traffic-condition ipsec-condition	<u>< ipsec-condition ></u>
policies group list rule traffic-condition parameter-protocol-condition	<u>< parameter-protocol-condition ></u>
policies group list rule traffic-condition parameter-protocol-condition proto-attr	<u>< proto-attr ></u>
policies group list rule traffic-condition parameter-protocol-condition proto-attr destination-port port	<u>< port ></u>

policies group list rule traffic-condition parameter-protocol-condition proto-attr source-port port	<u>< port ></u>
policies group list rule traffic-condition protocol-condition	<u>< protocol- condition ></u>
policies group list rule traffic-condition protocol-port-condition	<u>< protocol-port- condition ></u>
policies group list rule traffic-condition protocol-port-condition destination-port port	<u>< port ></u>
policies group list rule traffic-condition protocol-port-condition source- port port	<u>< port ></u>
policies group list rule traffic-condition source-network group-network	<u>< group- network ></u>
policies group list rule traffic-condition source-network network	<u>< network ></u>
policies group list rule traffic-condition tcp-condition	<u>< tcp-condition ></u>
policies group list rule traffic-condition tcp-condition destination-port port	<u>< port ></u>
policies group list rule traffic-condition tcp-condition source-port port	<u>< port ></u>
policies group list rule traffic-condition tos	<u>< tos ></u>
policies group list rule traffic-condition traffic-match-condition	<u>< traffic-match- condition ></u>
policies group list rule traffic-condition traffic-match-condition epg- reference	<u>< epg-reference ></u>
policies group list rule traffic-condition traffic-match-condition epg- reference hierarchical-policy-parameter	<u>< hierarchical- policy- parameter ></u>
policies group list rule traffic-mirror	<u>< traffic-mirror ></u>
policies group list rule traffic-shape	<u>< traffic-shape ></u>
policies group list rule user-packet-class	<u>< user-packet- class ></u>
policies group local-parameters parameter	<u>< parameter ></u>

< external-parent-group > (configuration/policies)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

External Parent Group

Contents

<name>— Name of the External Parent Group

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< external-parent-group > (configuration/policies)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Add a parent group to another parent group. Parent groups let you create hierarchical rate-limit actions.

Contents

<name>— Name of the parent group.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< epg-reference >

(configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <epg-reference>
            </epg-reference>
          </external-parent-group>
        </external-parent-group>
      </external-parent-group-folder>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Required Privilege Level

service

< hierarchical-policy-parameter > (configuration/policies/external-parent-group- folder/external-parent-group/external-parent- group/epg-reference)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <epg-reference>
            <hierarchical-policy-parameter>
              <numeric-aggregation-node>numeric-aggregation-node</numeric-aggregation-node>
              <level-aggregation-node>level-aggregation-node</level-aggregation-node>
              <level-aggregation-node-id>level-aggregation-node-id</level-aggregation-node-id>
            </hierarchical-policy-parameter>
          </epg-reference>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

<numeric-aggregation-node>—(Optional) Specify the numeric aggregation node value which can be in the range from 0 to 65535. External Parent groups can be grouped based on this value.

Value—Text

Default— 0

<level-aggregation-node>—(Optional) Specify the level aggregation node value which can be in the range from 0 to 9 where 0 represents that the level aggregation is not configured and 1 to 9 represents the type of interfaces which can be configured. External Parent groups can be grouped based on this value.

Value— One of the following:

- 1-Forwarding
- 2-vlan
- 3-atm
- 4-svlan
- 5-atm-vc
- 6-atm-vp
- 7-ethernet
- 8-fr-vc
- 9-ppp-interface

Default— 0

`<level-aggregation-node-id>`—(Optional) Specify the level aggregation node id value which can be in the range from 0 to 4095 if Svlan is selected as level aggregation node and can be in range of 0 to 255 if atm-vpnid is selected as level aggregation node. External Parent groups can be grouped based on this value.

Value—Text

Default— No value

Required Privilege Level

service

< external-parent-group > (configuration/policies)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Add a parent group to another parent group. Parent groups let you create hierarchical rate-limit actions.

Contents

<name>— Name of the parent group.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< rate-limit > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <type>type</type>
            <committed-rate>committed-rate</committed-rate>
            <committed-burst>committed-burst</committed-burst>
            <peak-rate>peak-rate</peak-rate>
            <peak-burst>peak-burst</peak-burst>
            <excess-burst>excess-burst</excess-burst>
            <color-aware/>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

<type>— Specify that the rate-limit profile is either one rate or two rate. The one-rate rate-limit profile provides a hard-limit rate limiter or a TCP-friendly rate limiter. The two-rate rate-limit profile provides a two-rate, three-color marking mechanism.

Value— One of the following:

- one_rate—Uses a single-rate committed rate with two burst parameters: committed burst and excess burst; supports a TCP-friendly rate limiter
- two_rate—Uses committed rate and peak rate, each with a burst parameter
- Parameter of type rateLimitType

Default— No value

<committed-rate>—(Optional) Target rate for the traffic that the policy covers.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Parameter of type rate

Default— 0

<committed-burst>—(Optional) Amount of bandwidth allocated to burst traffic in bytes.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression.
- Parameter of type burst

For example, $\text{max}(\text{qos} * 0.1/8, 16384)$ sets the burst size to the maximum of a 100-ms burst at committed rate ($\text{qos} * 0.1$) in bytes (/8) or 16384

where qos is a local parameter that represents the committed rate

Default— 16384

<peak-rate>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to excess traffic flow over the committed rate.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

For example, $\text{qos} * 1.5$ sets the peak rate to 1.5 times the committed rate

where qos is a local parameter that represents the committed rate

Default— 0

<peak-burst>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to burst traffic in excess of the peak rate.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression
- Parameter of type burst

For example, $\text{max}(\text{qos} * 1.5 * 0.1/8, 16384)$

where qos is a local parameter that represents the committed rate

Default— 16384

<excess-burst>—(Optional) For one-rate rate-limit profiles, specifies the amount of bandwidth allocated to accommodate burst traffic.

Value— One of the following:

Number of bytes in the range $< 0 \mid [\text{committed-burst} + 1, 4294967295] >$

- Numeric expression
- Parameter of type burst

Default— No value

`<color-aware>`—(Optional) Specifies whether the rate-limit action is color-aware; that is, whether the rate limits can change depending on the color of the incoming packet. The color might have been set in a previous rate limit, in a policy action, or in an earlier policy. This option is supported in rate-limit hierarchies.

Default—false

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <filter>
                </filter>
              </committed-action>
            </rate-limit>
          </external-parent-group>
        </external-parent-group>
      </external-parent-group-folder>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow does not exceed the committed rate, or for JUNOS rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <forward>
            </forward>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group>
  </external-parent-group-folder>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow does not exceed the committed rate, or for JUNOSe rate-limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <forward-conditional>
              </forward-conditional>
            </committed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <forward-final>
              </forward-final>
            </committed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/external-parent-group- folder/external-parent-group/external-parent- group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <forward-unconditional>
              </forward-unconditional>
            </committed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement the bandwidth allocated to a traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </committed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <committed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </committed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action indicated by the parameter is applied if the traffic flow does not exceed the committed rate, or for JUNOSE rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, .

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <filter>
                </filter>
              </conformed-action>
            </rate-limit>
          </external-parent-group>
        </external-parent-group>
      </external-parent-group-folder>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOSe rate limits, below the peak burst size), the packet is dropped.

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <forward>
            </forward>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group>
  </external-parent-group-folder>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is forwarded.

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <forward-conditional>
              </forward-conditional>
            </conformed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <forward-final>
              </forward-final>
            </conformed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, specify that if the traffic flow exceeds the committed rate but remains below the peak burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/external-parent-group- folder/external-parent-group/external-parent- group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <forward-unconditional>
              </forward-unconditional>
            </conformed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </conformed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <conformed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </conformed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <filter>
                </filter>
            </exceed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow exceeds the peak rate, or for JUNOS rate limits, exceeds peak burst size. .

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <forward>
              </forward>
            </exceed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, if the traffic flow exceeds peak burst size, .

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <forward-conditional>
            </forward-conditional>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group>
  </external-parent-group-folder>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, if the traffic flow does not exceed the committed rate:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <forward-final>
              </forward-final>
            </exceed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional >

(configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <forward-unconditional>
            </forward-unconditional>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group>
  </external-parent-group-folder>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </exceed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <external-parent-group>
          <rate-limit>
            <exceed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </exceed-action>
          </rate-limit>
        </external-parent-group>
      </external-parent-group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action specified by the parameter is applied if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< rate-limit > (configuration/policies/external-parent-group-folder/external-parent-group)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <type>type</type>
          <committed-rate>committed-rate</committed-rate>
          <committed-burst>committed-burst</committed-burst>
          <peak-rate>peak-rate</peak-rate>
          <peak-burst>peak-burst</peak-burst>
          <excess-burst>excess-burst</excess-burst>
          <color-aware/>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

<type>— Specify that the rate-limit profile is either one rate or two rate. The one-rate rate-limit profile provides a hard-limit rate limiter or a TCP-friendly rate limiter. The two-rate rate-limit profile provides a two-rate, three-color marking mechanism.

Value— One of the following:

- **one_rate**—Uses a single-rate committed rate with two burst parameters: committed burst and excess burst; supports a TCP-friendly rate limiter
- **two_rate**—Uses committed rate and peak rate, each with a burst parameter
- Parameter of type `rateLimitType`

Default— No value

<committed-rate>—(Optional) Target rate for the traffic that the policy covers.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Parameter of type `rate`

Default— 0

<committed-burst>—(Optional) Amount of bandwidth allocated to burst traffic in bytes.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression.
- Parameter of type `burst`

For example, $\text{max}(\text{qos} * 0.1/8, 16384)$ sets the burst size to the maximum of a 100-ms burst at committed rate ($\text{qos} * 0.1$) in bytes (/8) or 16384

where qos is a local parameter that represents the committed rate

Default— 16384

<peak-rate>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to excess traffic flow over the committed rate.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type `rate`

For example, $\text{qos} * 1.5$ sets the peak rate to 1.5 times the committed rate

where qos is a local parameter that represents the committed rate

Default— 0

<peak-burst>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to burst traffic in excess of the peak rate.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression
- Parameter of type `burst`

For example, $\text{max}(\text{qos} * 1.5 * 0.1/8, 16384)$

where qos is a local parameter that represents the committed rate

Default— 16384

<excess-burst>—(Optional) For one-rate rate-limit profiles, specifies the amount of bandwidth allocated to accommodate burst traffic.

Value— One of the following:

- Number of bytes in the range $< 0 \mid [\text{committed-burst} + 1, 4294967295]$
- Numeric expression
- Parameter of type `burst`

Default— No value

`<color-aware>`—(Optional) Specifies whether the rate-limit action is color-aware; that is, whether the rate limits can change depending on the color of the incoming packet. The color might have been set in a previous rate limit, in a policy action, or in an earlier policy. This option is supported in rate-limit hierarchies.

Default—false

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <filter>
            </filter>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow does not exceed the committed rate, or for JUNOSe rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <forward>
            </forward>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow does not exceed the committed rate, or for JUNOSe rate-limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate- limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <forward-conditional>
            </forward-conditional>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <forward-final>
            </forward-final>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate- limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <forward-unconditional>
            </forward-unconditional>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement the bandwidth allocated to a traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/committed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <mark>
              <mark-info>
                <value>value</value>
                <mask>mask</mask>
              </mark-info>
            </mark>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <committed-action>
            <parameter>
              <action>action</action>
            </parameter>
          </committed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action indicated by the parameter is applied if the traffic flow does not exceed the committed rate, or for JUNOSE rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, .

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <filter>
            </filter>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOSe rate limits, below the peak burst size), the packet is dropped.

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <forward>
            </forward>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is forwarded.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate- limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <forward-conditional>
            </forward-conditional>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <forward-final>
            </forward-final>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, specify that if the traffic flow exceeds the committed rate but remains below the peak burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate- limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <forward-unconditional>
            </forward-unconditional>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/conformed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <mark>
              <mark-info>
                <value>value</value>
                <mask>mask</mask>
              </mark-info>
            </mark>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <conformed-action>
            <parameter>
              <action>action</action>
            </parameter>
          </conformed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOSe rate limits, below the peak burst size), the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <filter>
            </filter>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size. .

Contents

Required Privilege Level

service

< forward > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <forward>
            </forward>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, if the traffic flow exceeds peak burst size, .

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate-limit/exceed- action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <forward-conditional>
            </forward-conditional>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, if the traffic flow does not exceed the committed rate:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <forward-final>
            </forward-final>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/external-parent-group- folder/external-parent-group/rate-limit/exceed- action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <forward-unconditional>
            </forward-unconditional>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/exceed-action/mark)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <mark>
              <mark-info>
                <value>value</value>
                <mask>mask</mask>
              </mark-info>
            </mark>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/external-parent-group-folder/external-parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <external-parent-group-folder>
      <external-parent-group>
        <rate-limit>
          <exceed-action>
            <parameter>
              <action>action</action>
            </parameter>
          </exceed-action>
        </rate-limit>
      </external-parent-group>
    </external-parent-group-folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action specified by the parameter is applied if the traffic flow exceeds the peak rate, or for JUNOS rate limits, exceeds peak burst size.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< folder > (configuration/policies)

Usage

```
<configuration>
  <policies>
    <folder>
      <name>name</name> <!-- identifier -->
      <description>description</description>
    </folder>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a policy folder, which is a collection of policies.

Contents

<name>— Name for a policy folder, which is a collection of policy folders or groups.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< parameter > (configuration/policies/global-parameters)

Usage

```
<configuration>
  <policies>
    <global-parameters>
      <parameter>
        <name>name</name> <!-- identifier -->
        <description>description</description>
        <default-value>default-value</default-value>
        <type>type</type>
      </parameter>
    </global-parameters>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Defines a global parameter. A global parameter is available for use in any policy. With global parameters, you can define parameters once and then reuse them in many policies. Typically, you would use global parameters if the parameter does not need to change often. If parameters require changes, use local parameters.

Contents

<name>— Name of the parameter

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

<default-value>—(Optional) Value that the policy engine uses if no other values are provided during the parameter value acquisition process. If other values are provided to the policy engine but problems are encountered, the default value for the parameter is not used. The policy engine generates an error message.

Value— Valid value for the parameter type. See the policy documentation in the *SRC PE Services and Policies Guide* for valid values for each parameter type.

Default— No value

<type>—(Optional) Type of attribute for which you can use the parameter. The parameter type determines where you can use the parameter.

Value— See the policy documentation in the *SRC PE Services and Policies Guide* for a list

of parameter types, where each type of parameter is used, and what each parameter is used to specify.

Default— No value

Required Privilege Level

service

< group > (configuration/policies)

Usage

```
<configuration>
  <policies>
    <group>
      <name>name</name> <!-- identifier -->
      <description>description</description>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a policy group, which is a collection of policy lists.

Contents

<name>— Name for a collection of policy lists.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< list > (configuration/policies/group)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <name>name</name> <!-- identifier -->
        <role>role-choice</role>
        <applicability>applicability</applicability>
        <description>description</description>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a policy list that holds a collection of policy rules.

Contents

<name>— Name for a collection of policy rules.

Value— Text

<role>— Platform for which the policy list is created. The selection that you make controls the type of policy rules that you can add to the policy list. You must configure the role before you can configure the policy rule.

Value

- junos— JUNOS routing platform
- junose-ipv4— JUNOSe router that is running IPv4
- junose-ipv6— JUNOSe router that is running IPv6
- junose-l2tp— JUNOSe router that is running L2TP
- pcmm— PCMM platform
- aaa— AAA supporting platforms
- junos-ise— Intelligent Services Edge routing platform
- junos-ptsp—JUNOS Packet Triggered Subscriber Policy

Default— No value

<applicability>— Indicates where the policy is applied on the router or, for PCMM policies, indicates whether the policy applies to the upstream or downstream channel.

For JUNOS routing platforms, applicability determines the types of policy rules that you can create:

- JUNOS ASP—Applicability must be both.

- JUNOS FILTER—Applicability must be input or output.
- JUNOS POLICER—Applicability must be input or output.
- JUNOS SCHEDULER—Applicability must be both.
- JUNOS SHAPING—Applicability must be both.

Value—Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< parent-group > (configuration/policies/group/list)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a parent group, an object that defines a rate-limit action as part of a rate-limit hierarchy. SRC parent groups support JUNOS rate limits.

Contents

<name>— Name of the parent group.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< epg-reference > (configuration/policies/group/list/parent-group/parent-group)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <epg-reference>
              <external-parent-group-name>external-parent-group-name</external-parent-group-name>
            </epg-reference>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Contents

<external-parent-group-name> — Specifies the external parent group name to be referenced

Value—Text

Required Privilege Level

service

< hierarchical-policy-parameter > (configuration/policies/group/list/parent-group/parent-group/epg-reference)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <epg-reference>
              <hierarchical-policy-parameter>
                <numeric-aggregation-node>numeric-aggregation-node</numeric-aggregation-node>
                <level-aggregation-node>level-aggregation-node</level-aggregation-node>
                <level-aggregation-node-id>level-aggregation-node-id</level-aggregation-node-id>
              </hierarchical-policy-parameter>
            </epg-reference>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

<numeric-aggregation-node>—(Optional) Specify the numeric aggregation node value which can be in the range from 0 to 65535. External Parent groups can be grouped based on this value.

Value—Text

Default— 0

<level-aggregation-node>—(Optional) Specify the level aggregation node value which can be in the range from 0 to 9 where 0 represents that the level aggregation is not configured and 1 to 9 represents the type of interfaces which can be configured. External Parent groups can be grouped based on this value.

Value— One of the following:

- 1-Forwarding
- 2-vlan
- 3-atm
- 4-svlan
- 5-atm-vc
- 6-atm-vp
- 7-ethernet
- 8-fr-vc
- 9-ppp-interface

Default— 0

<level-aggregation-node-id>—(Optional) Specify the level aggregation node id value which can be in the range from 0 to 4095 if Svlan is selected as level aggregation node and can be in range of 0 to 255 if atm-vpnid is selected as level aggregation node. External Parent groups can be grouped based on this value.

Value—Text

Default— No value

Required Privilege Level

service

< parent-group > (configuration/policies/group/list)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <name>name</name> <!-- identifier -->
            <description>description</description>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Add a parent group to another parent group. Parent groups let you create hierarchical rate-limit actions.

Contents

<name>— Name of the parent group.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< parent-group > (configuration/policies/group/list)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <name>name</name> <!-- identifier -->
              <description>description</description>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Add a parent group to another parent group. Parent groups let you create hierarchical rate-limit actions.

Contents

<name>— Name of the parent group.

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< rate-limit >

(configuration/policies/group/list/parent-group/parent-group/parent-group)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <type>type</type>
                <committed-rate>committed-rate</committed-rate>
                <committed-burst>committed-burst</committed-burst>
                <peak-rate>peak-rate</peak-rate>
                <peak-burst>peak-burst</peak-burst>
                <excess-burst>excess-burst</excess-burst>
                <color-aware/>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

<type>— Specify that the rate-limit profile is either one rate or two rate. The one-rate rate-limit profile provides a hard-limit rate limiter or a TCP-friendly rate limiter. The two-rate rate-limit profile provides a two-rate, three-color marking mechanism.

Value— One of the following:

- one_rate—Uses a single-rate committed rate with two burst parameters: committed burst and excess burst; supports a TCP-friendly rate limiter
- two_rate—Uses committed rate and peak rate, each with a burst parameter
- Parameter of type rateLimitType

Default— No value

<committed-rate>—(Optional) Target rate for the traffic that the policy covers.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Parameter of type rate

Default— 0

<committed-burst>—(Optional) Amount of bandwidth allocated to burst traffic in bytes.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression.
- Parameter of type burst

For example, $\text{max}(\text{qos} * 0.1/8, 16384)$ sets the burst size to the maximum of a 100-ms burst at committed rate ($\text{qos} * 0.1$) in bytes (/8) or 16384

where qos is a local parameter that represents the committed rate

Default— 16384

<peak-rate>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to excess traffic flow over the committed rate.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

For example, $\text{qos} * 1.5$ sets the peak rate to 1.5 times the committed rate

where qos is a local parameter that represents the committed rate

Default— 0

<peak-burst>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to burst traffic in excess of the peak rate.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression
- Parameter of type burst

For example, $\text{max}(\text{qos} * 1.5 * 0.1/8, 16384)$

where qos is a local parameter that represents the committed rate

Default— 16384

<excess-burst>—(Optional) For one-rate rate-limit profiles, specifies the amount of bandwidth allocated to accommodate burst traffic.

Value— One of the following:

- Number of bytes in the range $< 0 \mid [\text{committed-burst} + 1, 4294967295] >$
- Numeric expression
- Parameter of type burst

Default— No value

`<color-aware>`—(Optional) Specifies whether the rate-limit action is color-aware; that is, whether the rate limits can change depending on the color of the incoming packet. The color might have been set in a previous rate limit, in a policy action, or in an earlier policy. This option is supported in rate-limit hierarchies.

Default—false

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <filter>
                  </filter>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow does not exceed the committed rate, or for JUNOS rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <forward>
                  </forward>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow does not exceed the committed rate, or for JUNOSe rate-limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <forward-conditional>
                  </forward-conditional>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <forward-final>
                  </forward-final>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <forward-unconditional>
                  </forward-unconditional>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement the bandwidth allocated to a traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <mark>
                    <mark-info>
                      <value>value</value>
                      <mask>mask</mask>
                    </mark-info>
                  </mark>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOSe; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <committed-action>
                  <parameter>
                    <action>action</action>
                  </parameter>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action indicated by the parameter is applied if the traffic flow does not exceed the committed rate, or for JUNOSE rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, .

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <filter>
                    </filter>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is dropped.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <forward>
                  </forward>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is forwarded.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <forward-conditional>
                    </forward-conditional>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <forward-final>
                  </forward-final>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, specify that if the traffic flow exceeds the committed rate but remains below the peak burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <forward-unconditional>
                  </forward-unconditional>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <mark>
                    <mark-info>
                      <value>value</value>
                      <mask>mask</mask>
                    </mark-info>
                  </mark>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <conformed-action>
                  <parameter>
                    <action>action</action>
                  </parameter>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOSe rate limits, below the peak burst size), the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <filter>
                  </filter>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow exceeds the peak rate, or for JUNOS rate limits, exceeds peak burst size. .

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <forward>
                  </forward>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, if the traffic flow exceeds peak burst size, .

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <forward-conditional>
                  </forward-conditional>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, if the traffic flow does not exceed the committed rate:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <forward-final>
                  </forward-final>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <forward-unconditional>
                  </forward-unconditional>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <mark>
                    <mark-info>
                      <value>value</value>
                      <mask>mask</mask>
                    </mark-info>
                  </mark>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/parent-group/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <parent-group>
              <rate-limit>
                <exceed-action>
                  <parameter>
                    <action>action</action>
                  </parameter>
                </exceed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action specified by the parameter is applied if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< rate-limit >

(configuration/policies/group/list/parent-group/parent-group)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <type>type</type>
              <committed-rate>committed-rate</committed-rate>
              <committed-burst>committed-burst</committed-burst>
              <peak-rate>peak-rate</peak-rate>
              <peak-burst>peak-burst</peak-burst>
              <excess-burst>excess-burst</excess-burst>
              <color-aware/>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

<type>— Specify that the rate-limit profile is either one rate or two rate. The one-rate rate-limit profile provides a hard-limit rate limiter or a TCP-friendly rate limiter. The two-rate rate-limit profile provides a two-rate, three-color marking mechanism.

Value— One of the following:

- one_rate—Uses a single-rate committed rate with two burst parameters: committed burst and excess burst; supports a TCP-friendly rate limiter
- two_rate—Uses committed rate and peak rate, each with a burst parameter
- Parameter of type rateLimitType

Default— No value

<committed-rate>—(Optional) Target rate for the traffic that the policy covers.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Parameter of type rate

Default— 0

<committed-burst>—(Optional) Amount of bandwidth allocated to burst traffic in bytes.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression.
- Parameter of type burst

For example, $\max(\text{qos} * 0.1/8, 16384)$ sets the burst size to the maximum of a 100-ms burst at committed rate ($\text{qos} * 0.1$) in bytes (/8) or 16384

where qos is a local parameter that represents the committed rate

Default— 16384

<peak-rate>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to excess traffic flow over the committed rate.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

For example, $\text{qos} * 1.5$ sets the peak rate to 1.5 times the committed rate

where qos is a local parameter that represents the committed rate

Default— 0

<peak-burst>—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to burst traffic in excess of the peak rate.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression
- Parameter of type burst

For example, $\max(\text{qos} * 1.5 * 0.1/8, 16384)$

where qos is a local parameter that represents the committed rate

Default— 16384

<excess-burst>—(Optional) For one-rate rate-limit profiles, specifies the amount of bandwidth allocated to accommodate burst traffic.

Value— One of the following:

- Number of bytes in the range `< 0 | [committed-burst + 1, 4294967295] >`
- Numeric expression
- Parameter of type burst

Default— No value

`<color-aware>`—(Optional) Specifies whether the rate-limit action is color-aware; that is, whether the rate limits can change depending on the color of the incoming packet. The color might have been set in a previous rate limit, in a policy action, or in an earlier policy. This option is supported in rate-limit hierarchies.

Default—false

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <filter>
                  </filter>
                </committed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow does not exceed the committed rate, or for JUNOS rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <forward>
                </forward>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow does not exceed the committed rate, or for JUNOS rate-limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <forward-conditional>
                </forward-conditional>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <forward-final>
                </forward-final>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSE rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <forward-unconditional>
                </forward-unconditional>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement the bandwidth allocated to a traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <mark>
                  <mark-info>
                    <value>value</value>
                    <mask>mask</mask>
                  </mark-info>
                </mark>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOSe; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is

0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/group/list/parent-group/parent-group/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <committed-action>
                <parameter>
                  <action>action</action>
                </parameter>
              </committed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action indicated by the parameter is applied if the traffic flow does not exceed the committed rate, or for JUNOSE rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, .

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <filter>
                  </filter>
                </conformed-action>
              </rate-limit>
            </parent-group>
          </parent-group>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is dropped.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <forward>
                </forward>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is forwarded.

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <forward-conditional>
                </forward-conditional>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <forward-final>
                </forward-final>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSE rate-limit hierarchies, specify that if the traffic flow exceeds the committed rate but remains below the peak burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <forward-unconditional>
                </forward-unconditional>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOS rate-limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <mark>
                  <mark-info>
                    <value>value</value>
                    <mask>mask</mask>
                  </mark-info>
                </mark>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOSe; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is

0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <conformed-action>
                <parameter>
                  <action>action</action>
                </parameter>
              </conformed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <filter>
                </filter>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size. .

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <forward>
                </forward>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow exceeds the peak rate, or for JUNOS rate limits, if the traffic flow exceeds peak burst size, .

Contents

Required Privilege Level

service

< forward-conditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <forward-conditional>
                </forward-conditional>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, if the traffic flow does not exceed the committed rate:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <forward-final>
                </forward-final>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <forward-unconditional>
                </forward-unconditional>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <mark>
                  <mark-info>
                    <value>value</value>
                    <mask>mask</mask>
                  </mark-info>
                </mark>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOSe; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is

0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/parent-group/parent-group/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <parent-group>
          <parent-group>
            <rate-limit>
              <exceed-action>
                <parameter>
                  <action>action</action>
                </parameter>
              </exceed-action>
            </rate-limit>
          </parent-group>
        </parent-group>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action specified by the parameter is applied if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< policer > (configuration/policies/group/list)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <policer>
          <name>name</name> <!-- identifier -->
          <bandwidth>bandwidth</bandwidth>
          <max-burst-size>max-burst-size</max-burst-size>
        </policer>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<name>— Name of the policer instance

Value— Text

<bandwidth>—(Optional) Specify bandwidth of the policer instance.

Value—Integer in the range bit/s

<max-burst-size>—(Optional) Specify maximum burst size of the policer instance. For any given policer instance its maximum burst size can be specified only once. If different policy rules reference the same policer instance, they must specify identical maximum burst size parameters, otherwise the activation request will fail.

Value—Integer in the range octets

Required Privilege Level

service

< rule > (configuration/policies/group/list)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <name>name</name> <!-- identifier -->
          <type>type</type>
          <precedence>precedence</precedence>
          <application-accounting>application-accounting</application-accounting>
          <accounting/>
          <description>description</description>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a policy rule, which is a collection of conditions and actions.

Contents

<name>— Name for a policy rule, which is a collection of conditions and actions.

Value— Text

<type>— Policy rule type, which is based on the applicability and the role of the policy.

Value— The type of policy rule that you can create depends on the role and applicability of the policy list in which you create the policy rule.

- For JUNOS policy lists, there is only one type—junose.
- For PCMM policy lists, there is only one type—pcmm.
- For AAA policy lists, there is only one type—aaa.
- For JUNOS policy lists, you can create the following policy rule types:
 - JUNOS ASP—Applicability of policy list must be both input and output.
 - JUNOS FILTER—Applicability of policy list must be input or output.
 - JUNOS POLICER—Applicability of policy list must be input or output.
 - JUNOS SCHEDULER—Applicability of policy list must be both.
 - JUNOS SHAPING—Applicability of policy list must be both.

Default— No value

<precedence>—(Optional) Order in which the policy manager applies policy rules. Rules are evaluated from lowest to highest precedence value. Precedence has meaning only if two rules have different classifiers and if those classifiers overlap. If this is the case and a packet is received that satisfies both

classifiers, then only the action of the rule with the lower precedence value is performed.

- For JUNOS policies, rules with equal precedence are evaluated in the order of creation.
- For JUNOS policies, rules with equal precedence are evaluated in random order. Precedence is not a factor for JUNOS SCHEDULER and JUNOS POLICER policy rules.

Value— One of the following:

- For JUNOS and JUNOS policies, integer in the range 0–32767
- For PCMM policies, integer in the range 64–191
- Parameter of type prPrecedence

Default— 100

`<application-accounting>`—(Optional) If PTSP application accounting is configured on the router, this attributed selects how application accounting is collected. Application accounting is maintained in a flat file on the router and is not collected by SRC.

Application-accounting and rule accounting are mutually exclusive.

Value—Text

`<accounting>`—(Optional) Specifies whether accounting data is collected for the actions specified in the rule.

If you specify that accounting data is collected, the SAE begins collecting accounting information when a service that uses the policy rule is activated. When the service is deactivated, the SAE sends the accounting records to the RADIUS accounting server or to a plug-in.

When you specify multiple actions for accounting, the SAE adds the accounting data for individual actions together to obtain a summary accounting record for that interface direction.

Accounting is not available for all actions. For example, the NAT action does not provide accounting.

Value— One of the following:

- true—Accounting data is collected.
- false—Accounting data is not collected.

Default— false

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

service

< color > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <color>
            <color>color</color>
            <description>description</description>
          </color>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a color action. Use this action to specify the color that is applied to a packet when it passes through the router. You can configure color actions for JUNOS policy rules.

<color>—(Optional) Color that is applied to a packet when it passes through the router.

Value— One of the following:

- Integer in the range 1–3
 - 1—green
 - 2—yellow
 - 3—red
- Parameter of type color

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< color-mark >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <color-mark>
            <green-mark>green-mark</green-mark>
            <yellow-mark>yellow-mark</yellow-mark>
            <red-mark>red-mark</red-mark>
            <mask>mask</mask>
            <description>description</description>
          </color-mark>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a color-mark action. Use this action to specify the mark value and mask for green, yellow and red packets. You can configure color-mark actions for JUNOS policy rules.

<green-mark>—(Optional) Mark value for green packets.

Value— Integer in the range 0–255

Default— 0

<yellow-mark>—(Optional) Mark value for yellow packets.

Value— Integer in the range 0–255

Default— 0

<red-mark>—(Optional) Mark value for red packets.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-best-effort >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-best-effort>
            <traffic-priority>traffic-priority</traffic-priority>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <maximum-sustained-rate>maximum-sustained-rate</maximum-sustained-rate>
            <maximum-traffic-burst>maximum-traffic-burst</maximum-traffic-burst>
            <minimum-reserved-rate>minimum-reserved-rate</minimum-reserved-rate>
            <assumed-minimum-res-packet-size>assumed-minimum-res-packet-size</assumed-minimum-res-
packet-size>
            <description>description</description>
          </docsis-best-effort>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to best-effort service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<traffic-priority>—(Optional) Priority for the service flow. If two traffic flows are identical in all QoS parameters except priority, the higher-priority service flow is given preference.

Value— One of the following:

- Number in the range 0–7, where 0 is the lowest priority and 7 is the highest priority
- Parameter of type trafficPriority

Default— No value

<request-transmission-policy>—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511

Parameter of type requestTransmissionPolicy

Default— No value

`<maximum-sustained-rate>`—(Optional) Maximum sustained rate at which traffic can operate over the service flow.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<maximum-traffic-burst>`—(Optional) Maximum burst size for the service flow. This parameter has no effect unless you configure a nonzero value for the maximum sustained rate.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 1522–4294967295
- Numeric expression
- Parameter of type burst

Default— No value

`<minimum-reserved-rate>`—(Optional) Guaranteed minimum rate that is reserved for the service flow.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295; a value of 0 means that no bandwidth is reserved for the service flow
- Numeric expression
- Parameter of type rate

Default— No value

`<assumed-minimum-res-packet-size>`—(Optional) Assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet

size, the software treats the packet as if its size is equal to the value specified in this option.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type packetLength

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-down-stream >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-down-stream>
            <traffic-priority>traffic-priority</traffic-priority>
            <maximum-latency>maximum-latency</maximum-latency>
            <maximum-sustained-rate>maximum-sustained-rate</maximum-sustained-rate>
            <maximum-traffic-burst>maximum-traffic-burst</maximum-traffic-burst>
            <minimum-reserved-rate>minimum-reserved-rate</minimum-reserved-rate>
            <assumed-minimum-res-packet-size>assumed-minimum-res-packet-size</assumed-minimum-res-
packet-size>
            <description>description</description>
          </docsis-down-stream>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to downstream service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<traffic-priority>—(Optional) Priority for the service flow. If two traffic flows are identical in all QoS parameters except priority, the higher-priority service flow is given preference.

Value— One of the following:

- Number in the range 0–7, where 0 is the lowest priority and 7 is the highest priority
- Parameter of type trafficPriority

Default— No value

<maximum-latency>—(Optional) Maximum latency for downstream service flows. It is the maximum latency for a packet that passes through the CMTS device, from the time that the CMTS device's network side interface receives the packet until the CMTS device forwards the packet on its radio frequency (RF) interface.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression

Parameter of type maxLatency

Default— No value

`<maximum-sustained-rate>`—(Optional) Maximum sustained rate at which traffic can operate over the service flow.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<maximum-traffic-burst>`—(Optional) Maximum burst size for the service flow. This parameter has no effect unless you configure a nonzero value for the maximum sustained rate.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 1522–4294967295
- Numeric expression
- Parameter of type burst

Default— No value

`<minimum-reserved-rate>`—(Optional) Guaranteed minimum rate that is reserved for the service flow.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295; a value of 0 means that no bandwidth is reserved for the service flow
- Numeric expression
- Parameter of type rate

Default— No value

`<assumed-minimum-res-packet-size>`—(Optional) Assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet

size, the software treats the packet as if its size is equal to the value specified in this option.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type packetLength

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-non-real-time >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-non-real-time>
            <traffic-priority>traffic-priority</traffic-priority>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <maximum-sustained-rate>maximum-sustained-rate</maximum-sustained-rate>
            <maximum-traffic-burst>maximum-traffic-burst</maximum-traffic-burst>
            <minimum-reserved-rate>minimum-reserved-rate</minimum-reserved-rate>
            <assumed-minimum-res-packet-size>assumed-minimum-res-packet-size</assumed-minimum-res-
packet-size>
            <nominal-polling-interval>nominal-polling-interval</nominal-polling-interval>
            <description>description</description>
          </docsis-non-real-time>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to non-real-time service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<traffic-priority>—(Optional) Priority for the service flow. If two traffic flows are identical in all QoS parameters except priority, the higher-priority service flow is given preference.

Value— One of the following:

- Number in the range 0–7, where 0 is the lowest priority and 7 is the highest priority
- Parameter of type trafficPriority

Default— No value

<request-transmission-policy>—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511

- Parameter of type requestTransmissionPolicy

Default— No value

`<maximum-sustained-rate>`—(Optional) Maximum sustained rate at which traffic can operate over the service flow.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<maximum-traffic-burst>`—(Optional) Maximum burst size for the service flow. This parameter has no effect unless you configure a nonzero value for the maximum sustained rate.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 1522–4294967295
- Numeric expression
- Parameter of type burst

Default— No value

`<minimum-reserved-rate>`—(Optional) Guaranteed minimum rate that is reserved for the service flow.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295; a value of 0 means that no bandwidth is reserved for the service flow
- Numeric expression
- Parameter of type rate

Default— No value

`<assumed-minimum-res-packet-size>`—(Optional) Assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet

size, the software treats the packet as if its size is equal to the value specified in this option.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type packetLength

Default— No value

`<nominal-polling-interval>`—(Optional) Nominal interval between successive unicast request opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-parameter >

(configuration/policies/group/list/rule)

Usage

```

<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-parameter>
            <service-flow-type>service-flow-type</service-flow-type>
            <traffic-priority>traffic-priority</traffic-priority>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <maximum-sustained-rate>maximum-sustained-rate</maximum-sustained-rate>
            <maximum-traffic-burst>maximum-traffic-burst</maximum-traffic-burst>
            <minimum-reserved-rate>minimum-reserved-rate</minimum-reserved-rate>
            <assumed-minimum-res-packet-size>assumed-minimum-res-packet-size</assumed-minimum-res-
packet-size>
            <maximum-latency>maximum-latency</maximum-latency>
            <nominal-polling-interval>nominal-polling-interval</nominal-polling-interval>
            <tolerated-poll-jitter>tolerated-poll-jitter</tolerated-poll-jitter>
            <grant-size>grant-size</grant-size>
            <grants-per-interval>grants-per-interval</grants-per-interval>
            <tolerated-grant-jitter>tolerated-grant-jitter</tolerated-grant-jitter>
            <nominal-grant-interval>nominal-grant-interval</nominal-grant-interval>
            <description>description</description>
          </docsis-parameter>
        </rule>
      </list>
    </group>
  </policies>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action with the service flow scheduling type set to a parameter. The parameter is a trafficProfileType parameter.

Contents

<service-flow-type>— Parameter that is used to determine the service flow scheduling type.

Value— Parameter of type trafficProfileType. You must enter a parameter that has been created and has been committed.

Default— No value

<traffic-priority>—(Optional) Priority for the service flow. If two traffic flows are identical in all QoS parameters except priority, the higher-priority service flow is given preference.

Value— One of the following:

- Number in the range 0–7, where 0 is the lowest priority and 7 is the highest priority
- Parameter of type trafficPriority

Default— No value

`<request-transmission-policy>`—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511
- Parameter of type `requestTransmissionPolicy`

Default— No value

`<maximum-sustained-rate>`—(Optional) Maximum sustained rate at which traffic can operate over the service flow.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type `rate`

Default— No value

`<maximum-traffic-burst>`—(Optional) Maximum burst size for the service flow. This parameter has no effect unless you configure a nonzero value for the maximum sustained rate.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 1522–4294967295
- Numeric expression
- Parameter of type `burst`

Default— No value

`<minimum-reserved-rate>`—(Optional) Guaranteed minimum rate that is reserved for the service flow.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface

- Number of bits per second in the range 0–4294967295; a value of 0 means that no bandwidth is reserved for the service flow
- Numeric expression
- Parameter of type rate

Default— No value

`<assumed-minimum-res-packet-size>`—(Optional) Assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet size, the software treats the packet as if its size is equal to the value specified in this option.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type packetLength

Default— No value

`<maximum-latency>`—(Optional) Maximum latency for downstream service flows. It is the maximum latency for a packet that passes through the CMTS device, from the time that the CMTS device's network side interface receives the packet until the CMTS device forwards the packet on its radio frequency (RF) interface.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type maxLatency

Default— No value

`<nominal-polling-interval>`—(Optional) Nominal interval between successive unicast request opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

`<tolerated-poll-jitter>`—(Optional) Maximum amount of time that unicast request intervals can be delayed beyond the nominal polling interval. Delaying requests allows the service flow scheduler to fit

as much data as possible in an upstream packet, thereby reducing fragmentation.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type jitter

Default— No value

`<grant-size>`—(Optional) Size of the individual data grants provided to the service flow.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type grantSize

Default— No value

`<grants-per-interval>`—(Optional) Actual number of data grants given to the service flow during each nominal grant interval.

Value— One of the following:

- Integer in the range 0–127
- Numeric expression
- Parameter of type interval

Default— No value

`<tolerated-grant-jitter>`—(Optional) Maximum amount of time that the transmission opportunities can be delayed beyond the nominal grant interval. A jitter buffer can stop latency, but an improperly sized buffer can cause additional latency.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type jitter

Default— No value

`<nominal-grant-interval>`—(Optional) Nominal interval between successive unsolicited data grant opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-real-time >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-real-time>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <maximum-sustained-rate>maximum-sustained-rate</maximum-sustained-rate>
            <maximum-traffic-burst>maximum-traffic-burst</maximum-traffic-burst>
            <minimum-reserved-rate>minimum-reserved-rate</minimum-reserved-rate>
            <assumed-minimum-res-packet-size>assumed-minimum-res-packet-size</assumed-minimum-res-
packet-size>
            <nominal-polling-interval>nominal-polling-interval</nominal-polling-interval>
            <tolerated-poll-jitter>tolerated-poll-jitter</tolerated-poll-jitter>
            <description>description</description>
          </docsis-real-time>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to real-time service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<request-transmission-policy>—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511
- Parameter of type requestTransmissionPolicy

Default— No value

<maximum-sustained-rate>—(Optional) Maximum sustained rate at which traffic can operate over the service flow.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface

- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<maximum-traffic-burst>`—(Optional) Maximum burst size for the service flow. This parameter has no effect unless you configure a nonzero value for the maximum sustained rate.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bytes in the range 1522–4294967295
- Numeric expression
- Parameter of type burst

Default— No value

`<minimum-reserved-rate>`—(Optional) Guaranteed minimum rate that is reserved for the service flow.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295; a value of 0 means that no bandwidth is reserved for the service flow
- Numeric expression
- Parameter of type rate

Default— No value

`<assumed-minimum-res-packet-size>`—(Optional) Assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet size, the software treats the packet as if its size is equal to the value specified in this option.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type `packetLength`

Default— No value

`<nominal-polling-interval>`—(Optional) Nominal interval between successive unicast request

opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

`<tolerated-poll-jitter>`—(Optional) Maximum amount of time that unicast request intervals can be delayed beyond the nominal polling interval. Delaying requests allows the service flow scheduler to fit as much data as possible in an upstream packet, thereby reducing fragmentation.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type jitter

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-unsolicited-grant >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-unsolicited-grant>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <grant-size>grant-size</grant-size>
            <grants-per-interval>grants-per-interval</grants-per-interval>
            <tolerated-grant-jitter>tolerated-grant-jitter</tolerated-grant-jitter>
            <nominal-grant-interval>nominal-grant-interval</nominal-grant-interval>
            <description>description</description>
          </docsis-unsolicited-grant>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to unsolicited grant (UGS) service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<request-transmission-policy>—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511
- Parameter of type requestTransmissionPolicy

Default— No value

<grant-size>—(Optional) Size of the individual data grants provided to the service flow.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type grantSize

Default— No value

`<grants-per-interval>`—(Optional) Actual number of data grants given to the service flow during each nominal grant interval.

Value— One of the following:

- Integer in the range 0–127
- Numeric expression
- Parameter of type interval

Default— No value

`<tolerated-grant-jitter>`—(Optional) Maximum amount of time that the transmission opportunities can be delayed beyond the nominal grant interval. A jitter buffer can stop latency, but an improperly sized buffer can cause additional latency.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type jitter

Default— No value

`<nominal-grant-interval>`—(Optional) Nominal interval between successive unsolicited data grant opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< docsis-unsolicited-grant-ad > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <docsis-unsolicited-grant-ad>
            <request-transmission-policy>request-transmission-policy</request-transmission-policy>
            <nominal-polling-interval>nominal-polling-interval</nominal-polling-interval>
            <grant-size>grant-size</grant-size>
            <grants-per-interval>grants-per-interval</grants-per-interval>
            <tolerated-grant-jitter>tolerated-grant-jitter</tolerated-grant-jitter>
            <nominal-grant-interval>nominal-grant-interval</nominal-grant-interval>
            <description>description</description>
          </docsis-unsolicited-grant-ad>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a DOCSIS action that is set to unsolicited grant service with activity detection (UGS-AD) service flow scheduling type. DOCSIS actions are for PCMM policy rules.

Contents

<request-transmission-policy>—(Optional) Interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. Specifies whether requests can be piggybacked with data. Also, for data packets transmitted on this service flow, specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed. For UGS flows, this option also specifies how to treat packets that do not fit into the UGS grant.

Value— One of the following:

- 4-byte bit field; the valid range is 0–511
- Parameter of type requestTransmissionPolicy

Default— No value

<nominal-polling-interval>—(Optional) Nominal interval between successive unicast request opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type interval

Default— No value

`<grant-size>`—(Optional) Size of the individual data grants provided to the service flow.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type `grantSize`

Default— No value

`<grants-per-interval>`—(Optional) Actual number of data grants given to the service flow during each nominal grant interval.

Value— One of the following:

- Integer in the range 0–127
- Numeric expression
- Parameter of type `interval`

Default— No value

`<tolerated-grant-jitter>`—(Optional) Maximum amount of time that the transmission opportunities can be delayed beyond the nominal grant interval. A jitter buffer can stop latency, but an improperly sized buffer can cause additional latency.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type `jitter`

Default— No value

`<nominal-grant-interval>`—(Optional) Nominal interval between successive unsolicited data grant opportunities for this service flow.

Value— One of the following:

- Number of microseconds in the range 0–4294967295
- Numeric expression
- Parameter of type `interval`

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< dynamic-profile >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <dynamic-profile>
            <profile-name>profile-name</profile-name>
            <description>description</description>
          </dynamic-profile>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a dynamic profile action.

Contents

<profile-name>— Name of dynamic profile to activate.

Value— Text

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< variable >

(configuration/policies/group/list/rule/dynamic-profile)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <dynamic-profile>
            <variables>
              <variable>
                <name>name</name> <!-- identifier -->
                <value>value</value>
                <type>type</type>
              </variable>
            </variables>
          </dynamic-profile>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the parameters used by the action.

Contents

<name>— Name of parameter.

Value— Text

<value>— Value for a variable.

Value— Text

Default— No value

<type>—(Optional) Type of parameter, which determines where the variable is used.

Value— See the policy documentation in the *SRC PE Services and Policies Guide* for a list of parameter types, where each type of parameter is used, and what each parameter is used to specify. Variable types are mapped to parameter types.

Default— No value

Required Privilege Level

service

< exception-application > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <exception-application>
            <application-type>application-type</application-type>
            <description>description</description>
          </exception-application>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify exceptions to a policy rule to identify the client application that is a destination for packets Use this action in policy rules for JUNOSe routers.

Contents

<application-type>— Specify the type of application to receive packets to which the exception action applies.

Value—

Default— http

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< filter > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <filter>
            <description>description</description>
          </filter>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a filter action. Use this action to discard packets. You can configure filter actions for JUNOS filters and JUNOS policy rules.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< flow-spec >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <flow-spec>
            <service-type>service-type</service-type>
            <token-bucket-rate>token-bucket-rate</token-bucket-rate>
            <token-bucket-size>token-bucket-size</token-bucket-size>
            <peak-data-rate>peak-data-rate</peak-data-rate>
            <minimum-policed-unit>minimum-policed-unit</minimum-policed-unit>
            <maximum-packet-size>maximum-packet-size</maximum-packet-size>
            <rate>rate</rate>
            <slack-term>slack-term</slack-term>
            <description>description</description>
          </flow-spec>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a FlowSpec action, which uses an RSVP-style FlowSpec to specify a traffic profile. A FlowSpec is made up of two parts, a traffic specification (TSpec) and a service request specification (RSpec). The TSpec describes the traffic requirements for the flow, and the RSpec specifies resource requirements for the desired service. You can configure FlowSpec actions for PCMM policy rules.

<service-type>—(Optional) Type of FlowSpec service.

Value— One of the following:

- 2—guaranteed_service, which provides both bandwidth and latency and delay guarantees. A guaranteed service can contain both TSpec and RSpec parameters.
- 5—controlled_load_service, which provides minimum bandwidth guarantees, but not latency and delay guarantees. A controlled-load service can contain only TSpec token-bucket parameters, and not RSpec parameters.
- Parameter of type serviceNumber

Default— No value

<token-bucket-rate>—(Optional) Guaranteed minimum rate that is reserved for the service flow. Token bucket rate is a TSpec parameter.

Value— One of the following:

- Predefined global parameter interface_speed, which is the speed of the subscriber's DOCSIS interface

- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<token-bucket-size>`—(Optional) Maximum burst size for the service flow. Token bucket size is a TSpec parameter.

Value— One of the following:

- Number of bits per second in the range 1522–4294967295
- Numeric expression
- Parameter of type tokenBucketSize

Default— No value

`<peak-data-rate>`—(Optional) Amount of bandwidth over the committed rate that is allocated to accommodate excess traffic flow over the committed rate. Peak data rate is a TSpec parameter.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<minimum-policed-unit>`—(Optional) Assumed minimum-reserved-rate packet size. If a packet is smaller than the minimum policed unit, the software treats the packet as if its size is equal to the value specified in this option. Minimum policed unit is a TSpec parameter.

Value— One of the following:

- Number of bytes in the range 0–65535
- Numeric expression
- Parameter of type policedUnit

Default— No value

`<maximum-packet-size>`—(Optional) Maximum packet size for the FlowSpec. Maximum packet size is a TSpec parameter.

Value— One of the following:

- Number of bytes in the range 0–4294967295
- Numeric expression
- Parameter of type packetLength

Default— No value

`<rate>`—(Optional) Average rate. Rate is an RSpec parameter.

Value— One of the following:

- Predefined global parameter interface_speed—Speed of the subscriber's DOCSIS interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

Default— No value

`<slack-term>`—(Optional) Amount of slack in the bandwidth reservation that can be used without redefining the reservation. Slack is the difference between the desired delay and the actual delay obtained with the current bandwidth reservation. It allows some flexibility in bandwidth reservations. Slack term is an RSpec parameter.

Value— One of the following:

- Integer in the range 0–4294967295
- Numeric expression
- Parameter of type slackTerm

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< forward >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <forward>
            <description>description</description>
          </forward>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a forward action. Use this action to forward packets, such as packets that are sent by means of a routing table. You can configure forward actions for JUNOS filters and JUNOS policy rules.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< forwarding-class >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <forwarding-class>
            <forwarding-class>forwarding-class</forwarding-class>
            <description>description</description>
          </forwarding-class>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a forwarding class action. The forwarding class action causes the router to assign a forwarding class to packets that match the associated classify-traffic condition. You can configure forwarding class actions for JUNOS filter policy rules.

<forwarding-class>—(Optional) Name of the forwarding class assigned to packets.

Value— One of the following:

- String expression that matches a forwarding class that is configured on the router.
Be sure to include quotation marks. For example:
 - "assured-forwarding"
 - "best-effort"
 - "expedited-forwarding"
 - "network-control"
- Parameter of type forwardingClass

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< forwarding-instance >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <forwarding-instance>
            <forwarding-instance>forwarding-instance</forwarding-instance>
            <forwarding-unit>forwarding-unit</forwarding-unit>
            <description>description</description>
          </forwarding-instance>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specifies a forwarding instance to assign to flows matching this policy. Allowed values are "__same__", or one of the forwarding instances configured in the router. The value "__same__" is interpreted to mean no change, i.e., the flow is forwarded in whatever forwarding instance it comes in or set from static configuration.

Contents

<forwarding-instance>—(Optional) Name of the forwarding instance assigned to packets.

Value— One of the following:

- String expression that matches a forwarding instance that is configured on the router. Be sure to include quotation marks. For example:
 - "assured-forwarding"
 - "best-effort"
 - "expedited-forwarding"
 - "__same__"
- Parameter of type forwardingInstance

Default— No value

<forwarding-unit>—(Optional) Specifies the multi-service interface unit number to forward flows to in order to reach the forwarding instance specified by attribute forwarding-instance. Note that there is only a very loosed coupling between this unit number and the forwarding instance. The binding between them only happens with the aid of additional router configuration.

Value—Text

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< gate-spec >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <gate-spec>
            <session-class-id-priority>session-class-id-priority</session-class-id-priority>
            <session-class-id-preemption>session-class-id-preemption</session-class-id-preemption>
            <session-class-id-configurable>session-class-id-configurable</session-class-id-
configurable>
            <description>description</description>
          </gate-spec>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a GateSpec action. Use the GateSpec action to specify the session class ID for a gate. You can configure GateSpec actions for PCMM policy rules.

The session class ID provides a way for the application manager and the policy server to group gates into classes with different authorization characteristics. A CMTS device can perform authorization based not only on the requested QoS and the gate's authorized flow specification (FlowSpec), but also on the session class ID specified in the GateSpec. For example, you could use the session class ID to represent a prioritization scheme that allows either the policy server or the CMTS device to preempt a preauthorized gate in favor of allowing a new gate with a higher priority to be authorized.

<session-class-id-priority>—(Optional) Priority bits in the session class ID. The priority field describes the relative importance of the session as compared with other sessions generated by the same policy decision point.

Value— One of the following:

- Number in the range 0–7, where 0 is low priority and 7 is high priority
- String expression
- Parameter of type sessionClassIdPriority

Default— No value

<session-class-id-preemption>—(Optional) Preemption bit in the session class ID. Use the preemption bit to allocate bandwidth to lower-priority sessions.

Value— One of the following:

- 0—Enables preemption

- 1—Disables preemption
- String expression
- Parameter of type sessionClassIdPreemption

Default— No value

`<session-class-id-configurable>`—(Optional) Configurable bit in the session class ID. Application managers that provide novel services may use this value to specify new session classes. Use this option if your policy server supports configurable policies based on this value or if your CMTS device implements a novel session class based on this value.

Value— One of the following:

- Number in the range 0–15
- String expression
- Parameter of type sessionClassIdConfigurable

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< http-redirect >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <http-redirect>
            <subscriber-url>subscriber-url</subscriber-url>
            <description>description</description>
          </http-redirect>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify a destination URL to which subscriber traffic is redirected. Use this action in policy rules for JUNOSe routers.

Contents

<subscriber-url>—(Optional) Destination URL for redirected Web traffic.

You can use the exception-application action to specify exceptions to a rule to identify the client, in this case HTTP, application that is a destination for packets.

Value— Literal string or parameter of type url

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< loss-priority >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <loss-priority>
            <loss-priority>loss-priority</loss-priority>
            <description>description</description>
          </loss-priority>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a loss priority action. The loss priority action causes the router to assign a packet loss priority to packets that match the associated classify-traffic condition. You can configure loss priority actions for JUNOS filter policy rules.

<loss-priority>—(Optional) Packet loss priority.

Value— One of the following:

- Predefined global parameter:
 - any_priority—Sets the packet loss priority to "any." Do not select this value for loss priority actions. In this context, a value of any_priority is not valid.
 - high_priority—Sets the packet loss priority to high
 - low_priority—Sets the packet loss priority to low
- String expression that matches valid values on the router; for example, "high" or "low"
- Parameter of type packetLossPriority

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< mark > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <mark>
            <description>description</description>
          </mark>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a mark action. Use this action to mark packets. You can configure mark actions for JUNOS and PCMM policy rules.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< info >

(configuration/policies/group/list/rule/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <mark>
            <info>
              <value>value</value>
              <mask>mask</mask>
            </info>
          </mark>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and mark mask for mark actions.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— One of the following:

- Integer in the range 0–255
- Parameter of type tosByteMask

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— One of the following:

- Integer values of 224, 252, 255

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-

byte range is 0–63.

- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.
- Parameter of type tosByteMask

Default— 255

Required Privilege Level

service

< nat > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <nat>
            <translation-type>translation-type</translation-type>
            <description>description</description>
          </nat>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a NAT action. You can configure NAT actions for JUNOS ASP policy rules.

Contents

<translation-type>—(Optional) Type of network address translation that is used.

Value— One of the following:

- String expression that matches a NAT type on the router; for example:
 - "destination static"—Implements address translation for destination traffic without port translation; makes selected private servers accessible
 - "source dynamic"—Implements address translation for source traffic with port translation
 - "source static"—Implements address translation for source traffic without port mapping
- Parameter of type natTranslationType

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< group-network > (configuration/policies/group/list/rule/nat/ip-network)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <nat>
            <ip-network>
              <group-network>
                <network-specifier>network-specifier</network-specifier>
              </group-network>
            </ip-network>
          </nat>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configuration of the network specifier for the NAT action.

Contents

<network-specifier>—(Optional) Specifies an IP address and mask.

Value— Specify the subnet in one of the following formats:

- [not] < address > / < mask > or < address > / < prefix length >
 - Include *not* to indicate that the condition matches every address that is not in the specified subnet.
 - < prefix length > is a number in the range 0–32, and specifies how many of the first bits in the address specify the network
- For JUNOS ASP policies, you must enter network in the format:
 - < address > / < prefix length >

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/nat)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <nat>
            <port>
              <from-port>from-port</from-port>
            </port>
          </nat>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the port range for the NAT action.

Contents

<from-port>—(Optional) Port range to restrict port translation when NAT is configured in dynamic-source mode.

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–64000
- Numeric expression that indicates a range of ports; for example, 2010..2020
- 0..65535—Provides the same effect as the automatic option. JUNOS routing platforms support a port option called automatic, which means that it is a router-assigned port.
- Parameter of type port

Default— No value

Required Privilege Level

service

< next-hop >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <next-hop>
            <next-hop-address>next-hop-address</next-hop-address>
            <description>description</description>
          </next-hop>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a next-hop action. Use this action for the ingress side of the interface to specify the next IP address where the classified packets should go. You can configure next-hop actions for JUNOS filters and JUNOS policy rules.

<next-hop-address>—(Optional) Address of next hop through which to send traffic.

Value— One of the following:

- IP address
- Predefined global parameter:
 - gateway_ipAddress—IP address of the gateway as specified by the service object
 - interface_ipAddress—IP address of the router interface
 - service_ipAddress—IP address of the service as specified by the service object
 - user_ipAddress—IP address of the subscriber
 - virtual_ipAddress—Virtual portal address of the SAE that is used in redundant redirect server installations
- Parameter of type address

Default— 0

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< next-interface >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <next-interface>
            <interface-specifier>interface-specifier</interface-specifier>
            <next-hop-address>next-hop-address</next-hop-address>
            <description>description</description>
          </next-interface>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a next-interface action. Use this action to forward packets to a particular interface and/or a next-hop address. You can configure next-interface actions for JUNOS filters and JUNOS policy rules. On JUNOS routers, you can use this action for both ingress and egress sides of the interface.

<interface-specifier> — IP interface to be used as the next interface for packets.

Value — One of the following:

- For JUNOS interfaces, enter interface specifiers in the format:

'< type of specifier > = < value > '

where < type of specifier > is the interface name, alias, description, or UID.

For example: name = 'fastEthernet3/0'

For lists of valid interface specifiers for JUNOS routers, see "Interface Types and Specifiers" in the JUNOS Command Reference Guides.

- For JUNOS interfaces, enter interface specifiers in the format:

'name = < mediatype > - < slot > / < pic > / < port > . < unit > '

For example: 'name = AT-0/1/0.0'

- Predefined global parameter:
 - bfwlf (interface that leads to the bronze firewall server)
 - gfwlf (interface that leads to gold firewall server).
- Parameter of type interfaceSpec

Default — No value

`<next-hop-address>`—(Optional) Address of next hop through which to send traffic.

Value— One of the following:

- IP address
- Predefined global parameter:
 - gateway_ipAddress—IP address of the gateway as specified by the service object
 - interface_ipAddress—IP address of the router interface
 - service_ipAddress—IP address of the service as specified by the service object
 - user_ipAddress—IP address of the subscriber
 - virtual_ipAddress—Virtual portal address of the SAE that is used in redundant redirect server installations
- Parameter of type address

Default— 0

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< next-rule >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <next-rule>
            <description>description</description>
          </next-rule>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a next-rule action. If a packet matches the classify-traffic condition, the next-rule action causes the router to continue to the next rule in the policy list for evaluation. You can configure next-rule actions for JUNOS filter policy rules.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< policer > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <bandwidth-limit>bandwidth-limit</bandwidth-limit>
            <bandwidth-limit-unit>bandwidth-limit-unit</bandwidth-limit-unit>
            <burst>burst</burst>
            <description>description</description>
          </policer>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a policer action. The policer action specifies rate and burst size limits and the action taken if a packet exceeds those limits. You can create policer actions in JUNOS policer and JUNOS filter policy rules.

<bandwidth-limit>—(Optional) Traffic rate, that if exceeded, causes the router to take the indicated packet action.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's router interface.
- Bits per second in the range 32000–32000000000
- Percentage of bandwidth (1–100)
- Numeric expression
- Parameter of type `rate`

Default— No value

<bandwidth-limit-unit>—(Optional) Indicates the type of value that you entered for bandwidth limit.

Value— One of the following:

- Predefined global parameter:
 - `bps`—Value entered for bandwidth limit is bps
 - `percent`—Value entered for bandwidth limit is a percentage of the port speed
- String expression
- Parameter of type `bandwidthSizeUnit`

Default— No value

`<burst>`—(Optional) Maximum burst size. The minimum recommended value is the maximum transmission unit (MTU) of the IP packets being policed.

Value— One of the following:

- Number of bytes
- Numeric expression; for example 8*64000
- Parameter of type burst

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< packet-action >

(configuration/policies/group/list/rule/policer)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <packet-action>
              <name>name</name> <!-- identifier -->
            </packet-action>
          </policer>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the action taken on a packet.

Contents

<name>— Name for the action that is taken on packets that exceed the rate and burst size limits specified in the policer action.

Value— Text

Required Privilege Level

service

< filter >

(configuration/policies/group/list/rule/policer/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <packet-action>
              <filter>
                </filter>
              </packet-action>
            </policer>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the bandwidth and burst rate limits, the packet is dropped.

Contents

Required Privilege Level

service

< forwarding-class > (configuration/policies/group/list/rule/policer/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <packet-action>
              <forwarding-class>
                <forwarding-class>forwarding-class</forwarding-class>
              </forwarding-class>
            </packet-action>
          </policer>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the bandwidth and burst rate limits, it is assigned to a forwarding class.

Contents

<forwarding-class>—(Optional) Name of the forwarding class assigned to packets.

Value— One of the following:

- String expression that matches a forwarding class that is configured on the router.
Be sure to include quotation marks. For example:
 - "assured-forwarding"
 - "best-effort"
 - "expedited-forwarding"
 - "network-control"
- Parameter of type forwardingClass

Default— No value

Required Privilege Level

service

< loss-priority > (configuration/policies/group/list/rule/policer/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <packet-action>
              <loss-priority>
                <loss-priority>loss-priority</loss-priority>
              </loss-priority>
            </packet-action>
          </policer>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

For a policer action, set the loss priority level as the action taken on a packet that exceeds its rate limit.

Contents

<loss-priority>—(Optional) Packet loss priority.

Value— One of the following:

- Predefined global parameter:
 - any_priority—Sets the packet loss priority to "any." Do not select this value for loss priority actions. In this context, a value of any_priority is not valid.
 - high_priority—Sets the packet loss priority to high
 - low_priority—Sets the packet loss priority to low
- String expression that matches valid values on the router; for example, "high" or "low"
- Parameter of type packetLossPriority

Default— No value

Required Privilege Level

service

< parameter > (configuration/policies/group/list/rule/policer/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer>
            <packet-action>
              <parameter>
                <action>action</action>
              </parameter>
            </packet-action>
          </policer>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the bandwidth and burst rate limits, the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< policer-ref >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <policer-ref>
            <policer-name>policer-name</policer-name>
          </policer-ref>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Forwarding instance for matching flows.

Contents

<policer-name>—(Optional) Name of the policer used to police the matching flows.

Value—Text

Default— No value

Required Privilege Level

service

< qos-attach > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <qos-attach>
            <qos-profile>qos-profile</qos-profile>
            <qos-parameters>qos-parameters</qos-parameters>
            <description>description</description>
          </qos-attach>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a QoS attachment action. Use this action to specify the name of the QoS profile and the QoS parameters list to attach to the router interface when this action is taken. You can configure QoS profile attachment actions for JUNOS policy rules.

<qos-profile>— Name of the QoS profile to attach to the JUNOS interface when this action is taken.

Value— One of the following:

- Name of a QoS profile that is configured on the router. Enclose the name in quotation marks. For example: "qp-vod-1024".
- Parameter of type qosProfileSpec.

Default— No value

<qos-parameters>—(Optional) Name-value pairs of the QoS parameters to attach to the interface when this action is taken. The parameters are configured on the JUNOS router and referenced in the scheduler profiles referred to by the QoS profile.

Value— One of the following:

- Name-value pair that defines QoS parameter; map expressions define multiple QoS parameters.

Maps are a list of parameterName = parameterValue pairs separated by commas and enclosed in curly brackets. For example, the map {max-bw = 512000, shape-rate = 1000000} supplies two QoS parameters.

- Parameter of type map.

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< qos-condition >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <qos-condition>
            <name>name</name> <!-- identifier -->
            <forwarding-class>forwarding-class</forwarding-class>
            <description>description</description>
          </qos-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a QoS condition. You can create QoS conditions within JUNOS scheduler policy rules.

Contents

<name>— Name for the QoS condition.

Value— Text

<forwarding-class>—(Optional) Matches packets based on forwarding class

Value— One of the following:

- String expression that matches forwarding classes that are configured on the router. Be sure to include quotation marks. For example:
 - "assured-forwarding"
 - "best-effort"
 - "expedited-forwarding"
 - "network-control"
- Parameter of type forwardingClass

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< rate-limit >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <support-hierarchical/>
            <type>type</type>
            <committed-rate>committed-rate</committed-rate>
            <committed-burst>committed-burst</committed-burst>
            <peak-rate>peak-rate</peak-rate>
            <peak-burst>peak-burst</peak-burst>
            <excess-burst>excess-burst</excess-burst>
            <color-aware/>
            <description>description</description>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a rate-limit action. Use this action to define the quality of service. You can configure rate-limit actions for JUNOS policy rules.

Contents

<support-hierarchical>—(Optional) Specifies whether the rate-limit action supports hierarchical rate limiters.

Value— One of the following:

- **true**—Action supports hierarchical rate limiters.
- **false**—Action does not support hierarchical rate limiters.

Default— false

<type>— Specify that the rate-limit profile is either one rate or two rate. The one-rate rate-limit profile provides a hard-limit rate limiter or a TCP-friendly rate limiter. The two-rate rate-limit profile provides a two-rate, three-color marking mechanism.

Value— One of the following:

- **one_rate**—Uses a single-rate committed rate with two burst parameters: committed burst and excess burst; supports a TCP-friendly rate limiter
- **two_rate**—Uses committed rate and peak rate, each with a burst parameter
- Parameter of type `rateLimitType`

Default— No value

`<committed-rate>`—(Optional) Target rate for the traffic that the policy covers.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Parameter of type rate

Default— 0

`<committed-burst>`—(Optional) Amount of bandwidth allocated to burst traffic in bytes.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression.
- Parameter of type burst

For example, `max(qos*0.1/8, 16384)` sets the burst size to the maximum of a 100-ms burst at committed rate (`qos*0.1`) in bytes (`/8`) or 16384

where `qos` is a local parameter that represents the committed rate

Default— 16384

`<peak-rate>`—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to excess traffic flow over the committed rate.

Value— One of the following:

- Predefined global parameter `interface_speed`, which is the speed of the subscriber's router interface
- Number of bits per second in the range 0–4294967295
- Numeric expression
- Parameter of type rate

For example, `qos*1.5` sets the peak rate to 1.5 times the committed rate

where `qos` is a local parameter that represents the committed rate

Default— 0

`<peak-burst>`—(Optional) For two-rate rate-limit profiles, specifies the amount of bandwidth allocated to burst traffic in excess of the peak rate.

Value— One of the following:

- Number of bytes in the range 8192–4294967295
- Numeric expression
- Parameter of type burst

For example, `max(qos*1.5*0.1/8, 16384)`

where qos is a local parameter that represents the committed rate

Default— 16384

`<excess-burst>`—(Optional) For one-rate rate-limit profiles, specifies the amount of bandwidth allocated to accommodate burst traffic.

Value— One of the following:

- Number of bytes in the range `< 0 | [committed-burst + 1, 4294967295] >`
- Numeric expression
- Parameter of type burst

Default— No value

`<color-aware>`—(Optional) Specifies whether the rate-limit action is color-aware; that is, whether the rate limits can change depending on the color of the incoming packet. The color might have been set in a previous rate limit, in a policy action, or in an earlier policy. This option is supported in rate-limit hierarchies.

Default—false

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <filter>
                </filter>
              </committed-action>
            </rate-limit>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow does not exceed the committed rate, or for JUNOSe rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <forward>
              </forward>
            </committed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow does not exceed the committed rate, or for JUNOSe rate-limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <forward-conditional>
              </forward-conditional>
            </committed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final >

(configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <forward-final>
              </forward-final>
            </committed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <forward-unconditional>
            </forward-unconditional>
          </committed-action>
        </rate-limit>
      </rule>
    </list>
  </group>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement the bandwidth allocated to a traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/rule/rate-limit/committed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </committed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/rule/rate-limit/committed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <committed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </committed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action indicated by the parameter is applied if the traffic flow does not exceed the committed rate, or for JUNOSe rate limits if the traffic flow conforms to the committed rate, committed burst size, exceed rate, and exceed burst size, .

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <filter>
                </filter>
              </conformed-action>
            </rate-limit>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is dropped.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <forward>
              </forward>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOS rate limits, below the peak burst size), the packet is forwarded.

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <forward-conditional>
                </forward-conditional>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <forward-final>
              </forward-final>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, specify that if the traffic flow exceeds the committed rate but remains below the peak burst size, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <forward-unconditional>
              </forward-unconditional>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In JUNOSe rate-limit hierarchies, if the traffic flow exceeds the committed rate but remains below the peak burst size:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/rule/rate-limit/conformed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter >

(configuration/policies/group/list/rule/rate-limit/conformed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <conformed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </conformed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that if the traffic flow exceeds the committed rate but remains below the peak rate (for JUNOSe rate limits, below the peak burst size), the action specified by the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <filter>
                </filter>
              </exceed-action>
            </rate-limit>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is dropped if the traffic flow exceeds the peak rate, or for JUNOS rate limits, exceeds peak burst size. .

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <forward>
              </forward>
            </exceed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the packet is forwarded if the traffic flow exceeds the peak rate, or for JUNOS rate limits, if the traffic flow exceeds peak burst size, .

Contents

Required Privilege Level

service

< forward-conditional > (configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <forward-conditional>
            </forward-conditional>
          </exceed-action>
        </rate-limit>
      </rule>
    </list>
  </group>
</policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, if the traffic flow does not exceed the committed rate:

- Set the packet color to the result calculated by the rate limit.
- Forward the packet to the next rate limit for processing.

Contents

Required Privilege Level

service

< forward-final > (configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <forward-final>
              </forward-final>
            </exceed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate, the packet exits from the rate-limit hierarchy and is forwarded.

Contents

Required Privilege Level

service

< forward-unconditional > (configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <forward-unconditional>
            </forward-unconditional>
            </exceed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

In rate-limit hierarchies, specify that if the traffic flow does not exceed the committed rate:

- Forward the packet.
- Set the packet color to the result calculated by the rate limit.
- Decrement bandwidth allocation for the traffic flow.

Contents

Required Privilege Level

service

< mark-info >

(configuration/policies/group/list/rule/rate-limit/exceed-action/mark)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <mark>
                <mark-info>
                  <value>value</value>
                  <mask>mask</mask>
                </mark-info>
              </mark>
            </exceed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the mark value and the mark mask.

Contents

<value>—(Optional) For IPv4 packets, sets the ToS field in the IP header. For IPv6 packets, sets the traffic-class field in the IP header.

Value— Integer in the range 0–255

Default— 0

<mask>—(Optional) Mask associated with the mark value.

Note: If you configure more than one mark action in a rate limit— for example, for a committed, conformed, or exceed action— configure the same mask for each action. If you use different masks, the results can be unpredictable.

Value— Integer values of 224, 252, 255 for JUNOS; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.

224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.

Default— 255

Required Privilege Level

service

< parameter > (configuration/policies/group/list/rule/rate-limit/exceed-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <rate-limit>
            <exceed-action>
              <parameter>
                <action>action</action>
              </parameter>
            </exceed-action>
          </rate-limit>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify that the action specified by the parameter is applied if the traffic flow exceeds the peak rate, or for JUNOSe rate limits, exceeds peak burst size.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< reject > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <reject>
            <message-type>message-type</message-type>
            <description>description</description>
          </reject>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a reject action. The reject action causes the router to discard a packet and send an ICMP destination unreachable message. You can configure reject actions for JUNOS filter policy rules.

<message-type> —(Optional) Type of ICMP destination unreachable message sent to the client.

Value — One of the following:

- String expression that matches a type of ICMP destination unreachable message supported on the router; for example:
 - "administratively-prohibited"
 - "bad-host-tos"
 - "bad-network-tos"
 - "host-prohibited"
 - "host-unknown"
 - "host-unreachable"
 - "network-prohibited"
 - "network-unknown"
 - "network-unreachable"
 - "port-unreachable"
 - "precedence-cutoff"
 - "precedence-violation"
 - "protocol-unreachable"
 - "source-host-isolated"
 - "source-route-failed"
 - "tcp-reset"—If you specify tcp-reset, a TCP reset message is sent if the packet is a TCP packet. Otherwise, nothing is sent.
- Parameter of type messageType

Default— No value

<description>

—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< routing-instance > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <routing-instance>
            <routing-instance>routing-instance</routing-instance>
            <description>description</description>
          </routing-instance>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a routing instance action. Use routing instance actions for filter-based forwarding to direct traffic to a specific routing instance configured on the router. You can configure routing instance actions for JUNOS filter policy rules.

<routing-instance>—(Optional) Routing instance on the router to which packets are forwarded.

Value— One of the following:

- String expression that matches the name of a routing instance configured on the router; for example "isp2-route-table"
- Parameter of type routingInstance

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< scheduler-action >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <scheduler-action>
            <buffer-size>buffer-size</buffer-size>
            <buffer-size-unit>buffer-size-unit</buffer-size-unit>
            <priority>priority</priority>
            <transmit-rate>transmit-rate</transmit-rate>
            <transmit-rate-unit>transmit-rate-unit</transmit-rate-unit>
            <exact>exact</exact>
            <description>description</description>
          </scheduler-action>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduler action. You use scheduler actions along with QoS conditions and traffic-shape actions to configure transmission scheduling and rate control. Schedulers define the priority, bandwidth, delay buffer size, rate control status, and random early detection (RED) drop profiles to be applied to a particular class of traffic. You can create scheduler actions in JUNOS scheduler policy rules.

<buffer-size>—(Optional) Queue transmission buffer size.

Value— One of the following:

- Integer that represents the number of microseconds or a percentage of total buffer size.
- "remainder"—Uses available buffer that is not assigned to other queues.
- Expression
- Parameter of type schedulerBufferSize

Default— No value

<buffer-size-unit>—(Optional) Type of value that you entered for buffer size.

Value— One of the following:

- Predefined global parameter:
 - buffer_size_percentage—The value is a percentage of the total buffer.
 - buffer_size_remainder—The value is the remaining buffer available.
 - temporal—The value is temporal, in microseconds.
- String expression; for example, "percent"

- Parameter of type schedulerBufferSizeUnit

Default— No value

`<priority>`—(Optional) Packet-scheduling priority. The priority determines the order in which an output interface transmits traffic from the queues.

Value— One of the following:

- Predefined global parameter:
 - low
 - medium_low
 - medium_high
 - high—Assigning high priority to a queue prevents the queue from being starved by traffic in a strict high-priority queue
 - strict_high—Configures a high-priority queue with unlimited transmission bandwidth available to it. As long as it has traffic to send, the strict high-priority queue receives precedence over low, medium-low, and medium-high priority queues, but not high-priority queues. You can configure strict high-priority on only one queue per interface.
- String expression—For example, "strict-high"
- Parameter of type schedulerPriority

Default— No value

`<transmit-rate>`—(Optional) Transmit rate.

Value— One of the following:

- Integer that represents the rate in bps or a percentage of bandwidth
- "remainder"—Uses remaining rate available
- Numeric expression
- Parameter of type schedulerTransmitRate

Default— No value

`<transmit-rate-unit>`—(Optional) Type of value that you entered for transmit rate.

Value—Text

Default— No value

`<exact>`—(Optional) Specifies whether or not to enforce the exact transmission rate. Under sustained congestion, a rate-controlled queue that goes into negative credit fills up and eventually drops packets.

Value— True or false

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< drop-profile > (configuration/policies/group/list/rule/scheduler-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <scheduler-action>
            <drop-profile>
              <name>name</name> <!-- identifier -->
              <loss-priority>loss-priority</loss-priority>
              <protocol>protocol</protocol>
              <drop-probability>drop-probability</drop-probability>
              <drop-profile-type>drop-profile-type</drop-profile-type>
              <queue-threshold>queue-threshold</queue-threshold>
            </drop-profile>
          </scheduler-action>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a drop profile. The scheduler drop profile defines the drop probabilities across the range of delay-buffer occupancy, thereby supporting the RED process. For a packet to be dropped, it must match the drop profile. When a packet arrives, RED checks the queue fill level. If the fill level corresponds to a nonzero drop probability, the RED algorithm determines whether to drop the arriving packet. Depending on the drop probabilities, RED might drop packets aggressively long before the buffer becomes full, or it might drop only a few packets even if the buffer is almost full.

In drop profiles you configure queue threshold (fill level) and drop probability as paired values. The values can be either percentage values (segmented) or data points (interpolated). These two alternatives enable you to configure each drop probability at up to 64 queue threshold/drop-probability paired values, or to configure a profile represented as a series of line segments. For more information about configuring fill level and drop probabilities, see the JUNOS routing platform documentation.

Contents

<name>— Name for the drop profile.

Value— Text

<loss-priority>— Packet loss priority.

Value—Text

Default— No value

`<protocol>` — Protocol type for the drop profile map. The protocol type is ignored for priority levels greater than 2.

Value — Text

Default — No value

`<drop-probability>` — Probability that a packet will be dropped.

Value — One of the following:

- If the drop profile type is segmented, specify the drop probability as a percentage. A value of 0 means that a packet will never be dropped, and a value of 100 means that all packets will be dropped. The range is 0–100.
- If the drop profile type is interpolated, specify a data point for packet drop probability in the range 0–100.
- Predefined parameter:
 - `fwEnterpriseMaxPriority`
 - `fwEnterpriseMinPriority`
 - `fwMaxPriority`
 - `fwMinPriority`
- Parameter of type percent

Default — No value

`<drop-profile-type>` — Relationship between the queue threshold (fill level) and drop probability.

Value — One of the following:

- Predefined global parameter:
 - `interpolated` — Specifies values for interpolating relationship between queue fill level and drop probability
 - `segmented` — Specifies fill level and drop probability as percentages
- Parameter of type `dropProfileType`

Default — No value

`<queue-threshold>` — Fill level of the queue.

Value — One of the following:

- If the drop profile type is segmented, specify how full the queue is as a percentage.
- If the drop profile type is interpolated, specify a data point for mapping the queue fill percentage in the range 0–100.
- Parameter of type percent

Default— No value

Required Privilege Level

service

< service-class-name > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <service-class-name>
            <service-class-name>service-class-name</service-class-name>
            <description>description</description>
          </service-class-name>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service class name action. You can configure service class name actions for PCMM policy rules.

Contents

<service-class-name>—(Optional) Name of a service class on the CMTS device that specifies QoS parameters for a service flow.

Value— One of the following:

- Name of a service class
- String expression
- Parameter of type serviceName

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< stateful-firewall >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <stateful-firewall>
            <description>description</description>
          </stateful-firewall>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a stateful firewall action. Stateful firewall actions specify the action to take on packets that match the classify-traffic condition. You can configure stateful firewall actions for JUNOS ASP policy rules.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< filter >

(configuration/policies/group/list/rule/stateful-firewall/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <stateful-firewall>
            <packet-action>
              <filter>
                </filter>
              </packet-action>
            </stateful-firewall>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Set the packet action for a stateful firewall to filter. The packet is not accepted and is not processed further.

Contents

Required Privilege Level

service

< forward >

(configuration/policies/group/list/rule/stateful-firewall/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <stateful-firewall>
            <packet-action>
              <forward>
                </forward>
              </packet-action>
            </stateful-firewall>
          </rule>
        </list>
      </group>
    </policies>
  </configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Set the packet action for a stateful firewall to forward.

Contents

Required Privilege Level

service

< parameter > (configuration/policies/group/list/rule/stateful- firewall/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <stateful-firewall>
            <packet-action>
              <parameter>
                <action>action</action>
              </parameter>
            </packet-action>
          </stateful-firewall>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Set the packet action for a stateful firewall to parameter. The action specified in the parameter is applied.

Contents

<action>—(Optional) Parameter that specifies the action to take on traffic.

Value— Parameter of type packetOperation.

Default— No value

Required Privilege Level

service

< reject >

(configuration/policies/group/list/rule/stateful-firewall/packet-action)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <stateful-firewall>
            <packet-action>
              <reject>
                <message-type>message-type</message-type>
              </reject>
            </packet-action>
          </stateful-firewall>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Set the action for a stateful firewall to reject. The packet is not accepted, and a rejection message is returned; UDP sends an ICMP unreachable code, and TCP sends RST Reject action in stateful firewall.

Contents

<message-type>—(Optional) Type of ICMP destination unreachable message sent to the client.

Value— One of the following:

- String expression that matches a type of ICMP destination unreachable message supported on the router; for example:
 - "administratively-prohibited"
 - "bad-host-tos"
 - "bad-network-tos"
 - "host-prohibited"
 - "host-unknown"
 - "host-unreachable"
 - "network-prohibited"
 - "network-unknown"
 - "network-unreachable"
 - "port-unreachable"
 - "precedence-cutoff"
 - "precedence-violation"
 - "protocol-unreachable"
 - "source-host-isolated"
 - "source-route-failed"
 - "tcp-reset"—If you specify tcp-reset, a TCP reset message is sent if the

packet is a TCP packet. Otherwise, nothing is sent.

- Parameter of type messageType

Default— No value

Required Privilege Level

service

< subscriber-profile >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <subscriber-profile>
            <profile-name>profile-name</profile-name>
            <description>description</description>
          </subscriber-profile>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Subscriber profile used to police the matching flows.

Contents

<profile-name>—(Optional) Name of subscriber profile.

Value—Text

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< template-activation > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <template-activation>
            <template-name>template-name</template-name>
            <description>description</description>
          </template-activation>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a template activation action. Use this action for CoA supporting devices and PTSP policies.

Contents

<template-name> — Name of template to activate.

Value — Text

Default — No value

<description> — (Optional) Description of the object that you are configuring.

Value — Text

Default — No value

Required Privilege Level

service

< variable >

(configuration/policies/group/list/rule/template-activation)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <template-activation>
            <variables>
              <variable>
                <name>name</name> <!-- identifier -->
                <value>value</value>
                <type>type</type>
              </variable>
            </variables>
          </template-activation>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the parameters used by the action.

Contents

<name>— Name of parameter.

Value— Text

<value>— Value for a variable.

Value— Text

Default— No value

<type>—(Optional) Type of parameter, which determines where the variable is used.

Value— See the policy documentation in the *SRC PE Services and Policies Guide* for a list of parameter types, where each type of parameter is used, and what each parameter is used to specify. Variable types are mapped to parameter types.

Default— No value

Required Privilege Level

service

< traffic-class >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-class>
            <traffic-class>traffic-class</traffic-class>
            <description>description</description>
          </traffic-class>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a traffic-class action. Use this action to put packets in a particular traffic class. You can configure traffic-class actions for JUNOS policy rules.

<traffic-class>— Name of the traffic-class profile that is applied to a packet when it passes through the router.

Value— One of the following:

- Name of a traffic-class profile that is configured on the router
- Parameter of type trafficClassSpec

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< traffic-condition >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <name>name</name> <!-- identifier -->
            <match-direction>match-direction</match-direction>
            <description>description</description>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a classify-traffic condition. A classify-traffic condition contains values or fields that a packet must contain. If a policy rule does not contain a match condition, all packets are considered to match.

You can create classify-traffic conditions in JUNOS policy rules, in JUNOS ASP and JUNOS filter policy rules, and in PCMM policy rules.

Contents

<name>— Name for the classify-traffic condition.

Value— Text

<match-direction>—(Optional) Applies only to JUNOS ASP policy rules. Matches packets based on the direction of the packet flow. For stateful firewall actions, this value is used in place of the **policies group list name applicability** statement.

Value— One of the following:

- input
- output
- both (Both is invalid for NAT actions.)
- String expression
- Parameter of type matchDirection

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< application-protocol-condition > (configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <application-protocol-condition>
              <name>name</name> <!-- identifier -->
              <protocol>protocol</protocol>
              <application-protocol>application-protocol</application-protocol>
              <idle-timeout>idle-timeout</idle-timeout>
              <dce-rpc-uuid>dce-rpc-uuid</dce-rpc-uuid>
              <rpc-program-number>rpc-program-number</rpc-program-number>
              <snmp-command>snmp-command</snmp-command>
              <ttl-threshold>ttl-threshold</ttl-threshold>
            </application-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure application protocols for stateful firewall and NAT services to use in match condition rules. An application protocol defines application parameters by using information from network layer 3 and above. Examples of such applications are FTP and H.323.

Contents

<name>— Name for the application protocol condition.

Value— Text

<protocol>—(Optional) Protocol matched by this classifier list.

Value— One of the following:

- Predefined parameter of type protocol
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression

Default— No value

`<application-protocol>`—(Optional) Application protocol to match.

Value— One of the following:

- Predefined global parameter:
 - bootp—BOOTP protocol
 - dce_rpc—DCE RPC protocol
 - dce_rpc_portmap—DCE RPC portmap
 - dns—DNS protocol
 - exec—Exec protocol
 - ftp—FTP protocol
 - h323—H.323 protocol
 - icmp_app—ICMP protocol
 - iiop—Internet Inter-ORB Protocol, a TCP protocol
 - netbios—NetBIOS protocol
 - netshow—NetShow protocol
 - realaudio—RealAudio protocol
 - rpc—RPC UDP or TCP protocols
 - rpc_portmap—RPC portmap protocol
 - rtsp—Real-Time Streaming Protocol
 - shell—Shell protocol
 - snmp—SNMP protocol
 - sqlnet—SQLNet protocol
 - tftp—Trivial File Transfer Protocol
 - traceroute—Traceroute protocol
 - winframe—WinFrame protocol
- String expression that matches an application protocol name supported on the router
- Map expression—You can use a map expression to define multiple attributes with one command. Maps are a list of attributeName = value pairs separated by commas and enclosed in curly brackets.

For example, the map {applicationProtocol = "ftp", sourcePort = 123, inactivityTimeout = 60} supplies the application protocol, source port, and inactivity timeout in one command. Another map {applicationProtocol = "tcp", inactivityTimeout = 60, destinationPort = 80} supplies the protocol, inactivity timeout, and destination port.

- Parameter of type applicationProtocol—You can add a map expression as the default value of the parameter.

Default— No value

`<idle-timeout>`—(Optional) Length of time the application is inactive before it times out.

Value— One of the following:

- Number of seconds in the range 4–65535
- Numeric expression

- Parameter of type timeout

Default— Unspecified; the router's default value is used

`<dce-rpc-uuid>`—(Optional) For the DCE RPC application protocol, specifies the universal unique identifier (UUID). For information about UUIDs, see <http://www.opengroup.org/onlinepubs/9629399/apdxa.htm>.

Value— One of the following:

- Hex digits in the format xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
- Numeric expression
- Parameter of type dceRpcUuid

Default— dceRpcUuid

`<rpc-program-number>`—(Optional) For the remote procedure call (RPC) application protocol, specifies an RPC program number.

Value— One of the following:

- Integer—RPC or DCE program number in the range 100000–400000
- Numeric expression
- Parameter of type rpcProgramNumber

Default— No value

`<snmp-command>`—(Optional) SNMP command for packet matching.

Value— One of the following:

- Predefined parameter:
 - get
 - get_next
 - set
 - trap
- String expression that matches an SNMP command supported on the router
- Parameter of type snmpCommand

Default— No value

`<ttl-threshold>`—(Optional) For the traceroute application protocol, specifies the traceroute time-to-live (TTL) threshold value. This value sets the acceptable level of network penetration for trace routing.

Value— One of the following:

- Integer in the range 0–255
- Numeric expression
- Parameter of type traceRouteTtlThreshold

Default— No value

Required Privilege Level

service

< proto-attr >

(configuration/policies/group/list/rule/traffic-condition/application-protocol-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <application-protocol-condition>
              <proto-attr>
                <icmp-type>icmp-type</icmp-type>
                <icmp-code>icmp-code</icmp-code>
              </proto-attr>
            </application-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure ICMP packet type and code.

Contents

<icmp-type>—(Optional) ICMP packet type.

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP packet type supported on the router
- Numeric expression
- Parameter of type icmpType

Default— No value

<icmp-code>—(Optional) ICMP code

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP code supported on the router
- Numeric expression
- Parameter of type icmpCode

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/application-protocol-condition/proto-attr/destination-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <application-protocol-condition>
              <proto-attr>
                <destination-port>
                  <port>
                    <from-port>from-port</from-port>
                  </port>
                </destination-port>
              </proto-attr>
            </application-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching destination ports.

Contents

<from-port>—(Optional) Destination port

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/application-protocol-condition/proto-attr/source-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <application-protocol-condition>
              <proto-attr>
                <source-port>
                  <port>
                    <from-port>from-port</from-port>
                  </port>
                </source-port>
              </proto-attr>
            </application-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching source ports.

Contents

<from-port>—(Optional) Source port

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Default— No value

Required Privilege Level

service

< group-network >

(configuration/policies/group/list/rule/traffic-condition/destination-network)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <destination-network>
              <group-network>
                <network-specifier>network-specifier</network-specifier>
              </group-network>
            </destination-network>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify the destination network to match using a network specifier. For JUNOS ASP and JUNOSe IPv6 policy rules, you must specify destination networks in the network specifier format.

Contents

<network-specifier>—(Optional) Specifies an IP address and mask.

Value— Specify the subnet in one of the following formats:

- [not] < address > / < mask > or < address > / < prefix length >
 - Include *not* to indicate that the condition matches every address that is not in the specified subnet.
 - < prefix length > is a number in the range 0–32, and specifies how many of the first bits in the address specify the network
- For JUNOS ASP policies, you must enter network in the format:
 - < address > / < prefix length >

Default— No value

Required Privilege Level

service

< network >

(configuration/policies/group/list/rule/traffic-condition/destination-network)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <destination-network>
              <network>
                <ip-address>ip-address</ip-address>
                <ip-mask>ip-mask</ip-mask>
                <ip-operation>ip-operation</ip-operation>
              </network>
            </destination-network>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify the destination network in IP address and mask format. You also use this statement to specify whether the software matches or does not match the IP address and mask.

Contents

<ip-address>—(Optional) IP address of the source or destination network or host.

Value— One of the following:

- IP address
- Predefined global parameter:
 - gateway_ipAddress—IP address of the gateway as specified by the service object
 - interface_ipAddress—IP address of the router interface
 - service_ipAddress—IP address of the service as specified by the service object
 - user_ipAddress—IP address of the subscriber
 - virtual_ipAddress—Virtual portal address of the SAE that is used in redundant redirect server installations
- Expression—For NAT actions, you can enter a range of addresses; for example, 10.10.13.1..10.10.13.100
- Parameter of type address

Default— 0.0.0.0

`<ip-mask>`—(Optional) IP address mask applied to the IP address.

Value— One of the following:

- IP address mask
- Predefined global parameter:
 - `interface_ipMask`—IP mask of the interface
 - `service_ipMask`—IP mask of the service as specified by the service object
 - `user_ipMask`—IP mask of the subscriber
- Parameter of type `addressMask`

Default— `255.255.255.255`

`<ip-operation>`—(Optional) Matches packets with an IP address and mask that either is equal or is not equal to the specified address and mask.

Value— One of the following:

- `is`—Matches the specified IP address and mask
- `is_not`—Matches any IP address and mask except the specified address and mask
- Parameter of type `networkOperation`

Default— `is`

Required Privilege Level

service

< icmp-condition >

(configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <icmp-condition>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
              <icmp-type>icmp-type</icmp-type>
              <icmp-code>icmp-code</icmp-code>
            </icmp-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for the ICMP protocol.

<protocol>— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

<protocol-operation>—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:

- is—Matches packets that are equal to the specified protocol
 - is_not—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, is_not is not a valid option.
- Boolean expression:
 - 1—is
 - 0—is_not
- Parameter of type protocolOperation

Default— 1

`<ip-flags>`—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type ipFlags

Default— 0

`<ip-flags-mask>`—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type ipFlagsMask

Default— 0

`<fragment-offset>`—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOS routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type fragOffset

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

`<icmp-type>`—(Optional) Matches ICMP packet type.

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP packet type supported on the router or CMTS device
- Numeric expression
- Parameter of type `icmpType`

Default— 255

`<icmp-code>`—(Optional) Matches ICMP code

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP code supported on the router or CMTS device
- Numeric expression
- Parameter of type `icmpCode`

Default— 255

Required Privilege Level

service

< igmp-condition >

(configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <igmp-condition>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
              <igmp-type>igmp-type</igmp-type>
            </igmp-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for the IGMP protocol.

<protocol>— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

<protocol-operation>—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:

- is—Matches packets that are equal to the specified protocol
 - is_not—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, is_not is not a valid option.
- Boolean expression:
 - 1—is
 - 0—is_not
- Parameter of type protocolOperation

Default— 1

<ip-flags>—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type ipFlags

Default— 0

<ip-flags-mask>—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type ipFlagsMask

Default— 0

<fragment-offset>—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOSe routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type fragOffset

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

`<igmp-type>`—(Optional) IGMP packets that can be filtered by IGMP packet type or message name.

Value— One of the following:

- Integer in the range 1–255
- Numeric expression
- Parameter of type `igmpType`

Default— 255

Required Privilege Level

service

< ipsec-condition > (configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <ipsec-condition>
              <spi>spi</spi>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
            </ipsec-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for the IPsec protocol.

Contents

<spi>—(Optional) For IPsec classifiers, specifies the authentication header (AH) or the encapsulating security payload (ESP) security parameter index (SPI). This option appears only in JUNOS policy rules.

Value— One of the following:

- Integer in the range 0–255
- Parameter of type ipSecSpi

Default— No value

<ip-flags>—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type ipFlags

Default— 0

`<ip-flags-mask>`—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type `ipFlagsMask`

Default— 0

`<fragment-offset>`—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOSe routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type `fragOffset`

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

`<protocol>`— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257

For PCMM classifiers, there are two special protocol values:

- 256 matches traffic that has any IP protocol value
- 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

`<protocol-operation>`—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:
 - `is`—Matches packets that are equal to the specified protocol
 - `is_not`—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, `is_not` is not a valid option.
- Boolean expression:
 - 1—`is`
 - 0—`is_not`
- Parameter of type `protocolOperation`

Default— 1

Required Privilege Level

service

< parameter-protocol-condition > (configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <parameter-protocol-condition>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <tcp-flags>tcp-flags</tcp-flags>
              <tcp-flags-mask>tcp-flags-mask</tcp-flags-mask>
              <spi>spi</spi>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
            </parameter-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure protocol conditions that contain a parameter value for the protocol.

Contents

<protocol>— Parameter that is used to determine the protocol that this classifier matches.

Value— Parameter of type protocol. You must enter a parameter that has been created and has been committed.

Default— No value

<protocol-operation>—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:
 - is—Matches packets that are equal to the specified protocol
 - is_not—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, is_not is not a valid option.
- Boolean expression:
 - 1—is

0—`is_not`

- Parameter of type `protocolOperation`

Default— 1

`<tcp-flags>`—(Optional) Value of the TCP flags field in the IP header.

Value— One of the following:

- Integer in the range 0–63
- Numeric expression
- Parameter of type `tcpFlags`

Default— 0

`<tcp-flags-mask>`—(Optional) Mask associated with TCP flags.

Value— One of the following:

- Integer in the range 0–63
- Numeric expression
- Parameter of type `tcpFlagsMask`

Default— 0

`<spi>`—(Optional) For IPsec classifiers, specifies the authentication header (AH) or the encapsulating security payload (ESP) security parameter index (SPI). This option appears only in JUNOS policy rules.

Value— One of the following:

- Integer in the range 0–255
- Parameter of type `ipSecSpi`

Default— No value

`<ip-flags>`—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type `ipFlags`

Default— 0

`<ip-flags-mask>`—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type `ipFlagsMask`

Default— 0

`<fragment-offset>`—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOS routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type `fragOffset`

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

Required Privilege Level

service

< proto-attr >

(configuration/policies/group/list/rule/traffic-condition/parameter-protocol-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <parameter-protocol-condition>
              <proto-attr>
                <icmp-type>icmp-type</icmp-type>
                <icmp-code>icmp-code</icmp-code>
                <igmp-type>igmp-type</igmp-type>
              </proto-attr>
            </parameter-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure ICMP packet type and code and IGMP type.

Contents

<icmp-type>—(Optional) ICMP packet type

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP packet type supported on the router
- Numeric expression
- Parameter of type icmpType

Default— No value

<icmp-code>—(Optional) ICMP code

Value— One of the following:

- Integer in the range 0–255 that represents an ICMP code supported on the router
- Numeric expression
- Parameter of type icmpCode

Default— No value

`<igmp-type>`—(Optional) IGMP packets that can be filtered by IGMP packet type or message name.

Value— One of the following:

- Integer in the range 1–255
- Numeric expression
- Parameter of type `igmpType`

Default— 255

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/parameter-protocol-condition/proto-attr/destination-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <parameter-protocol-condition>
              <proto-attr>
                <destination-port>
                  <port>
                    <port-operation>port-operation</port-operation>
                    <from-port>from-port</from-port>
                  </port>
                </destination-port>
              </proto-attr>
            </parameter-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- `service_port`—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/parameter-protocol-condition/proto-attr/source-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <parameter-protocol-condition>
              <proto-attr>
                <source-port>
                  <port>
                    <port-operation>port-operation</port-operation>
                    <from-port>from-port</from-port>
                  </port>
                </source-port>
              </proto-attr>
            </parameter-protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- `service_port`—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< protocol-condition > (configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <protocol-condition>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
            </protocol-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure protocol conditions that do not include port conditions.

<protocol>— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

<protocol-operation>—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:
 - is—Matches packets that are equal to the specified protocol

- `is_not`—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, `is_not` is not a valid option.
- Boolean expression:
 - 1—`is`
 - 0—`is_not`
- Parameter of type `protocolOperation`

Default— 1

`<ip-flags>`—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type `ipFlags`

Default— 0

`<ip-flags-mask>`—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type `ipFlagsMask`

Default— 0

`<fragment-offset>`—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOS routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type `fragOffset`

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

Required Privilege Level

service

< protocol-port-condition >

(configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <protocol-port-condition>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
            </protocol-port-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for protocols and ports.

<protocol>— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

<protocol-operation>—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:
 - is—Matches packets that are equal to the specified protocol

- `is_not`—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, `is_not` is not a valid option.
- Boolean expression:
 - `1`—is
 - `0`—`is_not`
- Parameter of type `protocolOperation`

Default— 1

`<ip-flags>`—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type `ipFlags`

Default— 0

`<ip-flags-mask>`—(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type `ipFlagsMask`

Default— 0

`<fragment-offset>`—(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOS routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type `fragOffset`

Default— No value

`<packet-length>`—(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type `packetLength`

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/protocol-port-condition/destination-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <protocol-port-condition>
              <destination-port>
                <port>
                  <port-operation>port-operation</port-operation>
                  <from-port>from-port</from-port>
                </port>
              </destination-port>
            </protocol-port-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- `service_port`—A predefined global parameter that is the port of the service as specified by the service object
- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/protocol-port-condition/source-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <protocol-port-condition>
              <source-port>
                <port>
                  <port-operation>port-operation</port-operation>
                  <from-port>from-port</from-port>
                </port>
              </source-port>
            </protocol-port-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as

specified by the service object

- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< group-network >

(configuration/policies/group/list/rule/traffic-condition/source-network)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <source-network>
              <group-network>
                <network-specifier>network-specifier</network-specifier>
              </group-network>
            </source-network>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify the source network to match using a network specifier. For JUNOS ASP and JUNOSe IPv6 policy rules, you must specify source networks in the network specifier format.

Contents

<network-specifier>—(Optional) Specifies an IP address and mask.

Value— Specify the subnet in one of the following formats:

- [not] < address > / < mask > or < address > / < prefix length >
 - Include *not* to indicate that the condition matches every address that is not in the specified subnet.
 - < prefix length > is a number in the range 0–32, and specifies how many of the first bits in the address specify the network
- For JUNOS ASP policies, you must enter network in the format:
 - < address > / < prefix length >

Default— No value

Required Privilege Level

service

< network >

(configuration/policies/group/list/rule/traffic-condition/source-network)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <source-network>
              <network>
                <ip-address>ip-address</ip-address>
                <ip-mask>ip-mask</ip-mask>
                <ip-operation>ip-operation</ip-operation>
              </network>
            </source-network>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Specify the source network in IP address and mask format. You also use this statement to specify whether the software matches or does not match the IP address and mask.

Contents

<ip-address>—(Optional) IP address of the source or destination network or host.

Value— One of the following:

- IP address
- Predefined global parameter:
 - gateway_ipAddress—IP address of the gateway as specified by the service object
 - interface_ipAddress—IP address of the router interface
 - service_ipAddress—IP address of the service as specified by the service object
 - user_ipAddress—IP address of the subscriber
 - virtual_ipAddress—Virtual portal address of the SAE that is used in redundant redirect server installations
- Expression—For NAT actions, you can enter a range of addresses; for example, 10.10.13.1..10.10.13.100
- Parameter of type address

Default— 0.0.0.0

`<ip-mask>`—(Optional) IP address mask applied to the IP address.

Value— One of the following:

- IP address mask
- Predefined global parameter:
 - `interface_ipMask`—IP mask of the interface
 - `service_ipMask`—IP mask of the service as specified by the service object
 - `user_ipMask`—IP mask of the subscriber
- Parameter of type `addressMask`

Default— `255.255.255.255`

`<ip-operation>`—(Optional) Matches packets with an IP address and mask that either is equal or is not equal to the specified address and mask.

Value— One of the following:

- `is`—Matches the specified IP address and mask
- `is_not`—Matches any IP address and mask except the specified address and mask
- Parameter of type `networkOperation`

Default— `is`

Required Privilege Level

service

< tcp-condition > (configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <tcp-condition>
              <tcp-flags>tcp-flags</tcp-flags>
              <tcp-flags-mask>tcp-flags-mask</tcp-flags-mask>
              <protocol>protocol</protocol>
              <protocol-operation>protocol-operation</protocol-operation>
              <ip-flags>ip-flags</ip-flags>
              <ip-flags-mask>ip-flags-mask</ip-flags-mask>
              <fragment-offset>fragment-offset</fragment-offset>
              <packet-length>packet-length</packet-length>
            </tcp-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for the TCP protocol.

Contents

<tcp-flags>—(Optional) Value of the TCP flags field in the IP header.

Value— One of the following:

- Integer in the range 0–63
- Numeric expression
- Parameter of type tcpFlags

Default— 0

<tcp-flags-mask>—(Optional) Mask associated with TCP flags.

Value— One of the following:

- Integer in the range 0–63
- Numeric expression
- Parameter of type tcpFlagsMask

Default— 0

`<protocol>`— Protocol matched by this classifier list.

Value— One of the following:

- Predefined global parameter—Use a ? at the command line to see a list of valid protocols.
- Protocol number in the range 0–257
- For PCMM classifiers, there are two special protocol values:
 - 256 matches traffic that has any IP protocol value
 - 257 matches both TCP and UDP traffic
- String expression
- Parameter of type protocol

Default— No value

`<protocol-operation>`—(Optional) Matches packets with the protocol that is either equal or not equal to the specified protocol.

Value— One of the following:

- Predefined global parameter:
 - is—Matches packets that are equal to the specified protocol
 - is_not—Matches any packets except those that are equal to the specified protocol. If you are configuring an ICMP, IGMP, IPsec, or TCP classifier, is_not is not a valid option.
- Boolean expression:
 - 1—is
 - 0—is_not
- Parameter of type protocolOperation

Default— 1

`<ip-flags>`—(Optional) Value of the IP flags field in the IP header.

Value— One of the following:

- 0—Reserved
- 1—Do not fragment
- 2—More fragments
- Numeric expression
- Parameter of type ipFlags

Default— 0

`<ip-flags-mask>` —(Optional) Mask that is associated with the IP flag.

Value— One of the following:

- Integer in the range 0–7
- Numeric expression
- Parameter of type ipFlagsMask

Default— 0

`<fragment-offset>` —(Optional) Value of the fragment offset field.

Value— One of the following:

- For JUNOSe routers:
 - 0—Equal to 0
 - 1—Equal to 1
 - 2..8191
- For JUNOS routing platforms, integer in the range 0–8191
- Numeric expression
- Parameter of type fragOffset

Default— No value

`<packet-length>` —(Optional) Matches on length of the packet. The length refers only to the IP packet, including the packet header, and does not include any layer 2 encapsulation overhead. This option is available only in JUNOS policy rules.

Value— One of the following:

- Number of bytes; all positive numbers and 0 are valid
- Parameter of type packetLength

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/tcp-condition/destination-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <tcp-condition>
              <destination-port>
                <port>
                  <port-operation>port-operation</port-operation>
                  <from-port>from-port</from-port>
                </port>
              </destination-port>
            </tcp-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as

specified by the service object

- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< port >

(configuration/policies/group/list/rule/traffic-condition/tcp-condition/source-port)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <tcp-condition>
              <source-port>
                <port>
                  <port-operation>port-operation</port-operation>
                  <from-port>from-port</from-port>
                </port>
              </source-port>
            </tcp-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure matching conditions for ports.

Contents

<port-operation>—(Optional) Matches packets with a port that is either equal or not equal to the specified port.

Value— One of the following:

- Predefined global parameter:
 - eq—Matches packets that contain the specified port number
 - neq—Matches any packet except those that contain the specified port number
- String
- Parameter of type portOperation

Default— No value

<from-port>—(Optional) Source or destination port.

Value— One of the following:

- service_port—A predefined global parameter that is the port of the service as

specified by the service object

- Integer in the range 0–65535
- Expression—A range of port numbers; for example, 10..20
- Parameter of type port

Use a range of ports to specify port numbers that are greater than or less than a specified port number. For example:

One of the following:

- To set a range of ports that is greater than 10, use 11..65535.
- To set a range of ports that is less than 200, use 0..199.

Note that PCMM IO2 classifiers do not support port ranges. If you are using PCMM IO2 and you enter a range of port numbers, the software cannot translate the port, and it throws an exception.

PCMM IO3 classifiers do support port ranges.

Default— No value

Required Privilege Level

service

< tos >

(configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <tos>
              <tos-byte>tos-byte</tos-byte>
              <tos-byte-mask>tos-byte-mask</tos-byte-mask>
            </tos>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a particular traffic flow to the service's network for the DA IP field in the IP packet. The CoS feature on JUNOS routing platforms supports DiffServ as well as six-bit IP header ToS byte settings. The DiffServ protocol uses the ToS byte in the IP header. The most significant six bits of this byte form the Differentiated Services code point (DSCP). The CoS feature uses DSCPs to determine the forwarding class associated with each packet. It also uses the ToS byte and ToS byte mask to determine IP precedence.

<tos-byte>—(Optional) For IPv4 packets, matches the value of the ToS field in the IP packet header. For IPv6 packets, matches the traffic-class field in the IP packet header.

Value— One of the following:

- Integer in the range 0–255; uses whole 8 bits of the ToS byte
- Numeric expression
- Parameter of type tosByte

Default— 0

<tos-byte-mask>—(Optional) Mask associated with the ToS byte.

Value— One of the following:

- Integer values of 224, 252, 255 for JUNOSe; values of 224, 252 for JUNOS

For IPv4:

- 255 (tos)—Specifies the use of the whole 8 bits of the ToS byte; tos-byte

range is 0–255.

- 252 (dsfield)—Specifies the use of the upper 6 bits of the ToS byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the ToS byte; tos-byte range is 0–7.

For IPv6:

- 255 (tcfield)—Specifies the use of the whole 8 bits of the traffic-class byte; tos-byte range is 0–255.
- 252 (dsfield)—Specifies the use of the upper 6 bits of the traffic-class byte; tos-byte range is 0–63.
- 224 (precedence)—Specifies the use of the upper 3 bits of the traffic-class byte; tos-byte range is 0–7.
- Numeric expression
- Parameter of type tosByteMask

Default— 0

Required Privilege Level

service

< traffic-match-condition >

(configuration/policies/group/list/rule/traffic-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <traffic-match-condition>
              <forwarding-class>forwarding-class</forwarding-class>
              <interface-group>interface-group</interface-group>
              <parent-group>parent-group</parent-group>
              <source-class>source-class</source-class>
              <destination-class>destination-class</destination-class>
              <allow-ip-options>allow-ip-options</allow-ip-options>
              <traffic-class>traffic-class</traffic-class>
              <term-precedence>term-precedence</term-precedence>
              <application>application</application>
              <application-group>application-group</application-group>
              <nested-application>nested-application</nested-application>
              <color>color</color>
              <user-packet-class>user-packet-class</user-packet-class>
              <destination-local-interface>destination-local-interface</destination-local-
interface>
            </traffic-match-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure match conditions for a classify-traffic condition.

Contents

<forwarding-class>—(Optional) Matches packets based on the name of a forwarding class

Value— One of the following:

- String expression that matches a forwarding class on the router; for example, "assured-forwarding," "best-effort," "expedited-forwarding," or "network-control"
- Parameter of type forwardingClass
- Predefined runtime parameter: fc_assured, fc_besteffort, fc_expedited

Default— No value

<interface-group>—(Optional) Matches packets based on the interface group on which the packet was received.

Value— One of the following:

- Integer in the range 0–4294967295
- Numeric expression
- Parameter of type `interfaceGroup`

Default— No value

`<parent-group>`—(Optional) Matches packets based on the name of a parent group. Parent groups provide support for rate-limit hierarchies.

Value— Name of parent group

Default— No value

`<source-class>`—(Optional) Matches packets based on source class. For JUNOS filter policies, a source class is a set of source prefixes grouped together and given a class name. You would usually match source and destination classes for output firewall filters. Note that you cannot match on both source class and destination class at the same time. You must choose one or the other. For JUNOSe policies, a source class classifies based on packets associated with a route class based on the packet's source address.

Value— One of the following:

- For JUNOS policies, string expression that matches a source class that is configured on the router; for example, "gold-class"
- For JUNOSe policies, route-class in the range 0-255
- Parameter of type `trafficClassSpec`

Default— No value

`<destination-class>`—(Optional) Matches packets based on destination class. For JUNOS filter policies, a destination class is a set of destination prefixes grouped together and given a class name. You would usually match source and destination classes for output firewall filters. Note that you cannot match on both source class and destination class at the same time. You must choose one or the other. For JUNOSe policies, a destination class classifies based on packets associated with a route class based on the packet's destination address.

Value— One of the following:

- For JUNOS policies, string expression that matches a destination class that is configured on the router; for example, "gold-class"
- For JUNOSe policies, route-class in the range 0-255
- Parameter of type `trafficClassSpec`

Default— No value

`<allow-ip-options>`—(Optional) Matches on IP options.

Value— One of the following:

- Numeric value of the IP option
- String expression that matches a text synonym of an IP option on the router; for example, "loose-source-route," "record-route," "router-alert," "strict-source-route," or "timestamp"
- Parameter of type allowIpOptions

Default— No value

`<traffic-class>`—(Optional) Matches packets based on traffic class.

Value—Text

Default— No value

`<term-precedence>`—(Optional) The precedence for this term in a given policy in relation to other terms. Lower precedence terms are searched first. Precedence only matters within the same class of policies, i.e., dynamic or static. Terms with same precedence may be evaluated at any, undeterministic order.

Value—Text

Default— 100

`<application>`—(Optional) (Multivalue) List of applications to match for this policy.

Value—Text

`<application-group>`—(Optional) (Multivalue) List of applications to match for this policy.

Value—Text

`<nested-application>`—(Optional) (Multivalue) List of nested applications to match for this policy.

Value—Text

`<color>`—(Optional) Matches packets based on packet color.

Value— One of the following:

- Integer in the range 1–3
 - 1—green
 - 2—yellow

- 3—red
- Parameter of type color

Default— No value

`<user-packet-class>`—(Optional) Matches packets based on the user packet class action number.

Value— One of the following:

- Integer in the range 0–15
- Parameter of type userPacketClass

Default— No value

`<destination-local-interface>`—(Optional) Matches packets based on whether the destination interface is local.

Value—Text

Default— No value

Required Privilege Level

service

< epg-reference > (configuration/policies/group/list/rule/traffic- condition/traffic-match-condition)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <traffic-match-condition>
              <epg-reference>
                <external-parent-group-name>external-parent-group-name</external-parent-group-
name>
              </epg-reference>
            </traffic-match-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Contents

<external-parent-group-name> — Specifies the external parent group name to be referenced.

Value—Text

Required Privilege Level

service

< hierarchical-policy-parameter >

(configuration/policies/group/list/rule/traffic-condition/traffic-match-condition/epg-reference)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-condition>
            <traffic-match-condition>
              <epg-reference>
                <hierarchical-policy-parameter>
                  <numeric-aggregation-node>numeric-aggregation-node</numeric-aggregation-node>
                  <level-aggregation-node>level-aggregation-node</level-aggregation-node>
                  <level-aggregation-node-id>level-aggregation-node-id</level-aggregation-node-id>
                </hierarchical-policy-parameter>
              </epg-reference>
            </traffic-match-condition>
          </traffic-condition>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

<numeric-aggregation-node> —(Optional) Specify the numeric aggregation node value which can be in the range from 0 to 65535. External Parent groups can be grouped based on this value.

Value—Text

Default— 0

<level-aggregation-node> —(Optional) Specify the level aggregation node value which can be in the range from 0 to 9 where 0 represents that the level aggregation is not configured and 1 to 9 represents the type of interfaces which can be configured. External Parent groups can be grouped based on this value.

Value— One of the following:

- 1-Forwarding
- 2-vlan
- 3-atm
- 4-svlan
- 5-atm-vc
- 6-atm-vp
- 7-ethernet
- 8-fr-vc
- 9-ppp-interface

Default— 0

`<level-aggregation-node-id>`—(Optional) Specify the level aggregation node id value which can be in the range from 0 to 4095 if Svlan is selected as level aggregation node and can be in range of 0 to 255 if atm-vpnid is selected as level aggregation node. External Parent groups can be grouped based on this value.

Value—Text

Default— No value

Required Privilege Level

service

< traffic-mirror > (configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-mirror>
            <description>description</description>
          </traffic-mirror>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a traffic-mirror action. Use this action to mirror traffic from a destination to a source or from a source to a destination. You can configure traffic-mirror actions for JUNOS input policy rules.

Before you use traffic-mirror actions, you must configure forwarding options on JUNOS routing platforms for port mirroring and next-hop group. For information about these features, see the *JUNOS Policy Framework Configuration Guide*.

The policy rule that contains a traffic-mirror action must comply with these conditions:

- It must be combined with forward actions in the same rule. One of the forward actions must accept the traffic if the source and/or destination IP addresses do not match the conditions.
- It contains either no classify-traffic condition or only one classify-traffic condition.
- It can be marked for accounting.

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< traffic-shape >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <traffic-shape>
            <rate>rate</rate>
            <description>description</description>
          </traffic-shape>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a traffic-shape action. Traffic-shape actions specify the maximum rate of traffic transmitted on an interface. You can create traffic-shape actions in JUNOS shaping policy rules.

<rate>—(Optional) Maximum transmission rate.

Value— One of the following:

- Predefined global parameter interface_speed—Speed of the subscriber's router interface
- Bits per second in the range 1000–32000000000
- Numeric expression
- Parameter of type rate

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< user-packet-class >

(configuration/policies/group/list/rule)

Usage

```
<configuration>
  <policies>
    <group>
      <list>
        <rule>
          <user-packet-class>
            <user-packet-class>user-packet-class</user-packet-class>
            <description>description</description>
          </user-packet-class>
        </rule>
      </list>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a user packet class action. Use this action to put packets in a particular user packet class. You can configure user packet class actions for JUNOS policy rules.

`<user-packet-class>`—(Optional) User packet class that is applied to a packet when it passes through the router.

Value— One of the following:

- Integer in the range 0–15
- Parameter of type userPacketClass

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value—Text

Default— No value

Required Privilege Level

service

< parameter > (configuration/policies/group/local-parameters)

Usage

```
<configuration>
  <policies>
    <group>
      <local-parameters>
        <parameter>
          <name>name</name> <!-- identifier -->
          <description>description</description>
          <default-value>default-value</default-value>
          <type>type</type>
        </parameter>
      </local-parameters>
    </group>
  </policies>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Define a local parameter. Local parameters are available only for the policy group in which the parameter is defined.

Contents

<name>— Name of the parameter

Value— Text

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

<default-value>—(Optional) Value that the policy engine uses if no other values are provided during the parameter value acquisition process. If other values are provided to the policy engine but problems are encountered, the default value for the parameter is not used. The policy engine generates an error message.

Value— Valid value for the parameter type. See the policy documentation in the *SRC PE Services and Policies Guide* for valid values for each parameter type.

Default— No value

<type>—(Optional) Type of attribute for which you can use the parameter. The parameter type determines where you can use the parameter.

Value— See the policy documentation in the *SRC PE Services and Policies Guide* for a list of parameter types, where each type of parameter is used, and what each parameter is

used to specify.

Default— No value

Required Privilege Level

service

Subscriber CLI Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Subscriber CLI. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
subscribers retailer	<u><retailer></u>
subscribers retailer info	<u><info></u>
subscribers retailer manager	<u><manager></u>
subscribers retailer schedule	<u><schedule></u>
subscribers retailer schedule event	<u><event></u>
subscribers retailer schedule event action	<u><action></u>
subscribers retailer schedule event action attribute	<u><attribute></u>
subscribers retailer schedule event except	<u><except></u>
subscribers retailer schedule event except from	<u><from></u>
subscribers retailer schedule event except to	<u><to></u>
subscribers retailer schedule event from	<u><from></u>
subscribers retailer schedule event to	<u><to></u>
subscribers retailer subscriber-folder	<u><subscriber-folder></u>
subscribers retailer subscriber-folder device	<u><device></u>
subscribers retailer subscriber-folder device manager	<u><manager></u>
subscribers retailer subscriber-folder device schedule	<u><schedule></u>
subscribers retailer subscriber-folder device schedule event	<u><event></u>
subscribers retailer subscriber-folder device schedule event action	<u><action></u>
subscribers retailer subscriber-folder device schedule event action attribute	<u><attribute></u>
subscribers retailer subscriber-folder device schedule event except	<u><except></u>
subscribers retailer subscriber-folder device schedule event except from	<u><from></u>

subscribers retailer subscriber-folder device schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder device schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder device schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder device subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise	<u>< enterprise ></u>
subscribers retailer subscriber-folder enterprise access	<u>< access ></u>
subscribers retailer subscriber-folder enterprise access admission-control	<u>< admission-control ></u>
subscribers retailer subscriber-folder enterprise access manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise access schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise access schedule event	<u>< event ></u>
subscribers retailer subscriber-folder enterprise access schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise access schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder enterprise access schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise access schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise access schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise access schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise access schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise access subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise device	<u>< device ></u>
subscribers retailer subscriber-folder enterprise device manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise device schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise device schedule	<u>< event ></u>

event	
subscribers retailer subscriber-folder enterprise device schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise device schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder enterprise device schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise device schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise device schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise device schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise device schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise device subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise info	<u>< info ></u>
subscribers retailer subscriber-folder enterprise manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise schedule event	<u>< event ></u>
subscribers retailer subscriber-folder enterprise schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder enterprise schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise schedule event to	<u>< to ></u>

subscribers retailer subscriber-folder enterprise site	<u>< site ></u>
subscribers retailer subscriber-folder enterprise site access	<u>< access ></u>
subscribers retailer subscriber-folder enterprise site access admission-control	<u>< admission-control ></u>
subscribers retailer subscriber-folder enterprise site access manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise site access schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise site access schedule event	<u>< event ></u>
subscribers retailer subscriber-folder enterprise site access schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise site access schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder enterprise site access schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise site access schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site access schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site access schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site access schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site access subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise site device	<u>< device ></u>
subscribers retailer subscriber-folder enterprise site device manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise site device schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise site device schedule event	<u>< event ></u>
subscribers retailer subscriber-folder enterprise site device schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise site device schedule event action attribute	<u>< attribute ></u>

subscribers retailer subscriber-folder enterprise site device schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise site device schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site device schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site device schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site device schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site device subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise site manager	<u>< manager ></u>
subscribers retailer subscriber-folder enterprise site schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder enterprise site schedule event	<u>< event ></u>
subscribers retailer subscriber-folder enterprise site schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder enterprise site schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder enterprise site schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder enterprise site schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder enterprise site schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder enterprise site subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder enterprise vpn	<u>< vpn ></u>
subscribers retailer subscriber-folder manager	<u>< manager ></u>

subscribers retailer subscriber-folder schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder schedule event	<u>< event ></u>
subscribers retailer subscriber-folder schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder subscriber	<u>< subscriber ></u>
subscribers retailer subscriber-folder subscriber admission-control	<u>< admission-control ></u>
subscribers retailer subscriber-folder subscriber info	<u>< info ></u>
subscribers retailer subscriber-folder subscriber schedule	<u>< schedule ></u>
subscribers retailer subscriber-folder subscriber schedule event	<u>< event ></u>
subscribers retailer subscriber-folder subscriber schedule event action	<u>< action ></u>
subscribers retailer subscriber-folder subscriber schedule event action attribute	<u>< attribute ></u>
subscribers retailer subscriber-folder subscriber schedule event except	<u>< except ></u>
subscribers retailer subscriber-folder subscriber schedule event except from	<u>< from ></u>
subscribers retailer subscriber-folder subscriber schedule event except to	<u>< to ></u>
subscribers retailer subscriber-folder subscriber schedule event from	<u>< from ></u>
subscribers retailer subscriber-folder subscriber schedule event to	<u>< to ></u>
subscribers retailer subscriber-folder subscriber subscription	<u>< subscription ></u>
subscribers retailer subscriber-folder subscription	<u>< subscription ></u>
subscribers retailer subscription	<u>< subscription ></u>

subscribers retailer vpn	<vpn>
--------------------------	-----------------------------

< retailer > (configuration/subscribers)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <name>name</name> <!-- identifier -->
      <domain-name>domain-name</domain-name>
      <authentication-plug-in>authentication-plug-in</authentication-plug-in>
      <dhcp-authentication-plug-in>dhcp-authentication-plug-in</dhcp-authentication-plug-in>
      <tracking-plug-in>tracking-plug-in</tracking-plug-in>
      <maximum-login>maximum-login</maximum-login>
      <session-timeout>session-timeout</session-timeout>
      <scope>scope</scope>
      <imported-extranet>imported-extranet</imported-extranet>
      <substitution>substitution</substitution>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a retailer subscriber.

Contents

<name>— Name of the retailer.

Value— Text

<domain-name>—(Multivalue) Domain names associated with the retailer.

Value— Domain name in the format domainName.domainExtension. For example: virneo.com.

Default— No value

<authentication-plug-in>—(Optional) (Multivalue) Single authentication plug-in or a list of plug-ins used to authenticate subscribers who log in to the domains specified for this retailer. If you do not specify a plug-in for the retailer, the SAE uses the default retailer authentication plug-in.

Value— Single authentication plug-in or a list of plug-ins

Default— No value

<dhcp-authentication-plug-in>—(Optional) (Multivalue) Single authentication plug-in or a list of plug-ins used to authenticate DHCP address requests for subscribers who log in to the domains specified for this retailer. If you do not specify a plug-in for the retailer, the SAE uses the default retailer DHCP authentication plug-in.

Value— Single authentication plug-in or a list of plug-ins

Default— No value

`<tracking-plug-in>`—(Optional) (Multivalue) Single tracking plug-in or a list of tracking plug-ins used to track subscriber sessions associated with this retailer. If you do not specify a plug-in for the retailer, the SAE uses the global subscriber tracking plug-in.

Value— Single tracking plug-in or a list of tracking plug-ins

Default— No value

`<maximum-login>`—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0–2147483647

Default— No value

`<session-timeout>`—(Optional) Timeout for subscriber sessions. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<scope>`—(Optional) (Multivalue) Service scope(s) assigned to subscribers. By default, this value is inherited from parent objects. However, if you specify a value here, it overrides the default for this subscriber and all subordinate objects.

Value— Single service or a list of scopes

Default— No value

`<imported-extranet>`—(Optional) (Multivalue) Extranet exported by another retailer or enterprise.

Value— DN of the extranet

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

subscriber

< info > (configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <info>
        <contact>contact</contact>
        <e-mail>e-mail</e-mail>
        <url>url</url>
      </info>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure contact information for the retailer.

Contents

<contact>—(Optional) Name of the contact person at the retailer.

Value— Text

Default— No value

<e-mail>—(Optional) E-mail address of the contact person at the retailer.

Value— E-mail address

Default— No value

<url>—(Optional) URL of the retailer.

Value— URL

Default— No value

Required Privilege Level

subscriber

< manager > (configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <manager>
        <name>name</name> <!-- identifier -->
        <role>role-choice</role>
        <encrypted-password>encrypted-password</encrypted-password>
        <plain-text-password-value>plain-text-password-value</plain-text-password-value>
        <description>description</description>
      </manager>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

<encrypted-password>—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- crypt—Style is /etc/passwd
- sha—Secure hash algorithm
- md5—Message digest #5

Default— No value

<plain-text-password-value>—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule > (configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <name>name</name> <!-- identifier -->
        <description>description</description>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <name>name</name> <!-- identifier -->
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <action>
            <name>name</name> <!-- identifier -->
            <type>type-choice</type>
            <service>service</service>
            <substitution>substitution</substitution>
          </action>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service. Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <action>
            <attribute>
              <name>name-choice</name> <!-- identifier -->
              <value>value</value>
            </attribute>
          </action>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <except>
            <name>name</name> <!-- identifier -->
          </except>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <except>
            <from>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </from>
          </except>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+|-) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <except>
            <to>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </to>
          </except>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day

of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+|-) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <from>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </from>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated from or to time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <schedule>
        <event>
          <to>
            <effective>effective</effective>
            <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
            <hour>hour</hour>
            <minute>minute</minute>
            <day-of-month>day-of-month</day-of-month>
            <day-of-week>day-of-week</day-of-week>
            <month>month</month>
            <year>year</year>
            <time-zone>time-zone</time-zone>
          </to>
        </event>
      </schedule>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23**Default**— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59**Default**— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31**Default**— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

subscriber

< subscriber-folder >

(configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <folder-name>folder-name</folder-name> <!-- identifier -->
        <maximum-login>maximum-login</maximum-login>
        <session-timeout>session-timeout</session-timeout>
        <scope>scope</scope>
        <substitution>substitution</substitution>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber folder. You can create subscriber folders for retailers, existing subscriber folders, enterprises, and sites. You must create a subscriber folder in a retailer object before you can add other types of subscribers.

Contents

<folder-name>— Name of the subscriber folder.

Value— Text

<maximum-login>—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0–2147483647

Default— No value

<session-timeout>—(Optional) Timeout for subscriber sessions. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Number of seconds in the range 0–2147483647

Default— No value

<scope>—(Optional) (Multivalue) Service scope(s) assigned to subscribers. By default, this value is inherited from parent objects. However, if you specify a value here, it overrides the default for this subscriber and all subordinate objects.

Value— Single service or a list of scopes

Default— No value

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form < parameter name > = < value > . For example,
bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< device >

(configuration/subscribers/retailer/subscriber- folder)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <device-name>device-name</device-name> <!-- identifier -->
          <display-name>display-name</display-name>
          <maximum-login>maximum-login</maximum-login>
          <accounting-user-id>accounting-user-id</accounting-user-id>
          <substitution>substitution</substitution>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a device subscriber for subscriber sessions that manage the forwarding interface on JUNOS routing platforms and the router pseudo-subscriber on JUNOSe routers.

Contents

<device-name>— Name of the device subscriber.

Value— Text

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<maximum-login>—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0-2147483647

Default— No value

<accounting-user-id>—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all

parts of the enterprise generally use the same ID.

Value— Text

Default— No value

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form < parameter name > = < value > . For example,
bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber- folder/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <manager>
            <name>name</name> <!-- identifier -->
            <role>role-choice</role>
            <encrypted-password>encrypted-password</encrypted-password>
            <plain-text-password-value>plain-text-password-value</plain-text-password-value>
            <description>description</description>
          </manager>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <name>name</name> <!-- identifier -->
            <description>description</description>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/device/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <name>name</name> <!-- identifier -->
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <action>
                <name>name</name> <!-- identifier -->
                <type>type-choice</type>
                <service>service</service>
                <substitution>substitution</substitution>
              </action>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <action>
                <attribute>
                  <name>name-choice</name> <!-- identifier -->
                  <value>value</value>
                </attribute>
              </action>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <except>
                <name>name</name> <!-- identifier -->
              </except>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <except>
                <from>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </except>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— ***Required Privilege Level**

subscriber

< to >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <except>
                <to>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </except>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you

specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <from>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </from>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this scheduler configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or

exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber- folder/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <schedule>
            <event>
              <to>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </to>
            </event>
          </schedule>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <device>
          <subscription>
            <subscription-name>subscription-name</subscription-name> <!-- identifier -->
            <status>status-choice</status>
            <activation>activation-choice</activation>
            <activation-order>activation-order</activation-order>
            <substitution>substitution</substitution>
          </subscription>
        </device>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

`<activation>`— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< enterprise > (configuration/subscribers/retailer/subscriber- folder)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <name>name</name> <!-- identifier -->
          <display-name>display-name</display-name>
          <accounting-user-id>accounting-user-id</accounting-user-id>
          <description>description</description>
          <scope>scope</scope>
          <imported-extranet>imported-extranet</imported-extranet>
          <substitution>substitution</substitution>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an enterprise subscriber.

Contents

<name>— Name of the enterprise subscriber

Value— Text

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<accounting-user-id>—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

`<scope>`—(Optional) (Multivalue) Service scope(s) assigned to subscribers. By default, this value is inherited from parent objects. However, if you specify a value here, it overrides the default for this subscriber and all subordinate objects.

Value— Single service or a list of scopes

Default— No value

`<imported-extranet>`—(Optional) (Multivalue) Extranet exported by another retailer or enterprise.

Value— DN of the extranet

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value > .` For example,
bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< access >

(configuration/subscribers/retailer/subscriber-folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <name>name</name> <!-- identifier -->
            <routing-protocol>routing-protocol</routing-protocol>
            <interface-alias>interface-alias</interface-alias>
            <interface-description>interface-description</interface-description>
            <interface-name>interface-name</interface-name>
            <unique-id>unique-id</unique-id>
            <port-id>port-id</port-id>
            <device-name>device-name</device-name>
            <display-name>display-name</display-name>
            <accounting-user-id>accounting-user-id</accounting-user-id>
            <substitution>substitution</substitution>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an access. You can configure an access for an enterprise or for a site. An access determines the way that the enterprise or site accesses Internet services, and specifies a set of services that are available to the enterprise or site.

Contents

<name>— Name of the access.

Value— Text

<routing-protocol>—(Optional) Routing protocol used at the enterprise or site. If you build a custom enterprise manager application, you can access this information through the enterprise portal APIs.

Value— Routing protocol

Default— No value

<interface-alias>—(Optional) Description of the router interface. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Interface description that is configured on the router.

Default— No value

`<interface-description>`—(Optional) Name of the interface that SNMP uses. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— One of the following:

- For JUNOS routers, the format of the description is
ip < slot > / < port > . < subinterface >
- On the JUNOS routing platform, interface description is the same as
interfaceName

Default— No value

`<interface-name>`—(Optional) Name of the interface. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— One of the following:

- Name of the interface in your router CLI syntax.
- FORWARDING_INTERFACE for routing instance (used by traffic mirroring).

Default— No value

`<unique-id>`—(Optional) Unique identifier of the router. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Index of the router in the SNMP table for all interfaces.

Default— No value

`<port-id>`—(Optional) NAS port ID reported by the JUNOS router through COPS. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Includes the interface name and additional layer 2 information.

Default— No value

`<device-name>`—(Optional) Name of the router or other device.

Value— Name of the device

Default— No value

`<display-name>`—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

`<accounting-user-id>`—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example,
bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< admission-control >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <admission-control>
              <downstream-provisioned-rate>downstream-provisioned-rate</downstream-provisioned-
rate>
              <upstream-provisioned-rate>upstream-provisioned-rate</upstream-provisioned-rate>
              <downstream-sync-rate>downstream-sync-rate</downstream-sync-rate>
              <upstream-sync-rate>upstream-sync-rate</upstream-sync-rate>
              <congestion-points>congestion-points</congestion-points>
              <detect-link-rate/>
            </admission-control>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure bandwidths for subscribers that the SRC-ACP manages.

Contents

<downstream-provisioned-rate>—(Optional) Provisioned downstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the downstream-sync-rate option.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

<upstream-provisioned-rate>—(Optional) Provisioned upstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the upstream-sync-rate option.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

<downstream-sync-rate>—(Optional) Actual downstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the downstream-provisioned-rate option is used.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

`<upstream-sync-rate>`—(Optional) Actual upstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the upstream-provisioned-rate option is used.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

`<congestion-points>`—(Optional) (Multivalue) Congestion points for the subscriber.

Value— DN of interface associated with congestion point

Default— No value

`<detect-link-rate>`—(Optional) To identify the possibility of getting the actual link rate information for a congestion point via L2C or other solutions developed later. By default , it is false for the sake of backward compatibility.

Default— false

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <manager>
              <name>name</name> <!-- identifier -->
              <role>role-choice</role>
              <encrypted-password>encrypted-password</encrypted-password>
              <plain-text-password-value>plain-text-password-value</plain-text-password-value>
              <description>description</description>
            </manager>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <name>name</name> <!-- identifier -->
              <description>description</description>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/enterprise/access/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <name>name</name> <!-- identifier -->
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <action>
                  <name>name</name> <!-- identifier -->
                  <type>type-choice</type>
                  <service>service</service>
                  <substitution>substitution</substitution>
                </action>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <action>
                  <attribute>
                    <name>name-choice</name> <!-- identifier -->
                    <value>value</value>
                  </attribute>
                </action>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/enterprise/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <except>
                  <name>name</name> <!-- identifier -->
                </except>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <except>
                  <from>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </from>
                </except>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31**Default**— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <except>
                  <to>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </to>
                </except>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <from>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <schedule>
              <event>
                <to>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </event>
            </schedule>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber-folder/enterprise/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <access>
            <subscription>
              <subscription-name>subscription-name</subscription-name> <!-- identifier -->
              <status>status-choice</status>
              <activation>activation-choice</activation>
              <activation-order>activation-order</activation-order>
              <substitution>substitution</substitution>
            </subscription>
          </access>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

<activation>— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

<activation-order>—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0-21474863647

Default— 10000

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< device >

(configuration/subscribers/retailer/subscriber- folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <device-name>device-name</device-name> <!-- identifier -->
            <display-name>display-name</display-name>
            <maximum-login>maximum-login</maximum-login>
            <accounting-user-id>accounting-user-id</accounting-user-id>
            <substitution>substitution</substitution>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a device subscriber for subscriber sessions that manage the forwarding interface on JUNOS routing platforms and the router pseudo-subscriber on JUNOSe routers.

Contents

<device-name>— Name of the device subscriber.

Value— Text

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<maximum-login>—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0-2147483647

Default— No value

<accounting-user-id>—(Optional) Value that identifies the subscriber in accounting records. For a

household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example,
`bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <manager>
              <name>name</name> <!-- identifier -->
              <role>role-choice</role>
              <encrypted-password>encrypted-password</encrypted-password>
              <plain-text-password-value>plain-text-password-value</plain-text-password-value>
              <description>description</description>
            </manager>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <name>name</name> <!-- identifier -->
              <description>description</description>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/enterprise/device/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <name>name</name> <!-- identifier -->
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <action>
                  <name>name</name> <!-- identifier -->
                  <type>type-choice</type>
                  <service>service</service>
                  <substitution>substitution</substitution>
                </action>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

`<service>`— Name of service affected by this action.

Value—Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/enterprise/device/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <action>
                  <attribute>
                    <name>name-choice</name> <!-- identifier -->
                    <value>value</value>
                  </attribute>
                </action>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <except>
                  <name>name</name> <!-- identifier -->
                </except>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <except>
                  <from>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </from>
                </except>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <except>
                  <to>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </to>
                </except>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <from>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <schedule>
              <event>
                <to>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </event>
            </schedule>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber-folder/enterprise/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <device>
            <subscription>
              <subscription-name>subscription-name</subscription-name> <!-- identifier -->
              <status>status-choice</status>
              <activation>activation-choice</activation>
              <activation-order>activation-order</activation-order>
              <substitution>substitution</substitution>
            </subscription>
          </device>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

<activation>— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

<activation-order>—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0-21474863647

Default— 10000

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< info >

(configuration/subscribers/retailer/subscriber-folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <info>
            <phone>phone</phone>
            <fax>fax</fax>
            <po-box>po-box</po-box>
            <city>city</city>
            <street>street</street>
            <state>state</state>
            <postal-code>postal-code</postal-code>
          </info>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure additional information about the enterprise subscriber.

Contents

<phone>—(Optional) Telephone number for the subscriber.

Value— Telephone number

Default— No value

<fax>—(Optional) Fax number for the subscriber.

Value— Fax number

Default— No value

<po-box>—(Optional) Post office box for the subscriber.

Value— Post office box

Default— No value

<city>—(Optional) City name for the subscriber.

Value— City name

Default— No value

`<street>`—(Optional) Street address for the subscriber.

Value— Street address

Default— No value

`<state>`—(Optional) State or province for the subscriber.

Value— State or province

Default— No value

`<postal-code>`—(Optional) Postal code for the subscriber.

Value— Postal code

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber- folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <manager>
            <name>name</name> <!-- identifier -->
            <role>role-choice</role>
            <encrypted-password>encrypted-password</encrypted-password>
            <plain-text-password-value>plain-text-password-value</plain-text-password-value>
            <description>description</description>
          </manager>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <name>name</name> <!-- identifier -->
            <description>description</description>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/enterprise/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <name>name</name> <!-- identifier -->
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber- folder/enterprise/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <action>
                <name>name</name> <!-- identifier -->
                <type>type-choice</type>
                <service>service</service>
                <substitution>substitution</substitution>
              </action>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber-folder/enterprise/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <action>
                <attribute>
                  <name>name-choice</name> <!-- identifier -->
                  <value>value</value>
                </attribute>
              </action>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/enterprise/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <except>
                <name>name</name> <!-- identifier -->
              </except>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/enterprise/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <except>
                <from>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </except>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— ***Required Privilege Level**

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <except>
                <to>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </except>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you

specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <from>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </from>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this scheduler configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or

exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <schedule>
            <event>
              <to>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </to>
            </event>
          </schedule>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< site >

(configuration/subscribers/retailer/subscriber-folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <name>name</name> <!-- identifier -->
            <network>network</network>
            <display-name>display-name</display-name>
            <accounting-user-id>accounting-user-id</accounting-user-id>
            <description>description</description>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an enterprise site.

Contents

<name>— Name of the site.

Value— Text

<network>—(Optional) (Multivalue) Network used at the enterprise or site. If you build a custom enterprise manager application, you can access this information through the enterprise portal APIs.

Value— Network

Default— No value

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<accounting-user-id>—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< access >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <name>name</name> <!-- identifier -->
              <routing-protocol>routing-protocol</routing-protocol>
              <interface-alias>interface-alias</interface-alias>
              <interface-description>interface-description</interface-description>
              <interface-name>interface-name</interface-name>
              <unique-id>unique-id</unique-id>
              <port-id>port-id</port-id>
              <device-name>device-name</device-name>
              <display-name>display-name</display-name>
              <accounting-user-id>accounting-user-id</accounting-user-id>
              <substitution>substitution</substitution>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an access. You can configure an access for an enterprise or for a site. An access determines the way that the enterprise or site accesses Internet services, and specifies a set of services that are available to the enterprise or site.

Contents

<name>— Name of the access.

Value— Text

<routing-protocol>—(Optional) Routing protocol used at the enterprise or site. If you build a custom enterprise manager application, you can access this information through the enterprise portal APIs.

Value— Routing protocol

Default— No value

<interface-alias>—(Optional) Description of the router interface. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Interface description that is configured on the router.

Default— No value

`<interface-description>`—(Optional) Name of the interface that SNMP uses. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— One of the following:

- For JUNOSe routers, the format of the description is
ip <slot> / <port> . <subinterface>
- On the JUNOS routing platform, interface description is the same as
interfaceName

Default— No value

`<interface-name>`—(Optional) Name of the interface. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— One of the following:

- Name of the interface in your router CLI syntax.
- FORWARDING_INTERFACE for routing instance (used by traffic mirroring).

Default— No value

`<unique-id>`—(Optional) Unique identifier of the router. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Index of the router in the SNMP table for all interfaces.

Default— No value

`<port-id>`—(Optional) NAS port ID reported by the JUNOSe router through COPS. You can use this option to allow subscriber classification scripts to match interfaces reported from the network to be matched with the corresponding access.

Value— Includes the interface name and additional layer 2 information.

Default— No value

`<device-name>`—(Optional) Name of the router or other device.

Value— Name of the device

Default— No value

`<display-name>`—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

`<accounting-user-id>`—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< admission-control >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access)

Usage

```

<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <admission-control>
                <downstream-provisioned-rate>downstream-provisioned-rate</downstream-provisioned-
rate>
                <upstream-provisioned-rate>upstream-provisioned-rate</upstream-provisioned-rate>
                <downstream-sync-rate>downstream-sync-rate</downstream-sync-rate>
                <upstream-sync-rate>upstream-sync-rate</upstream-sync-rate>
                <congestion-points>congestion-points</congestion-points>
                <detect-link-rate/>
              </admission-control>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure bandwidths for subscribers that the SRC-ACP manages.

Contents

<downstream-provisioned-rate>—(Optional) Provisioned downstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the downstream-sync-rate option.

Value— Number of bps in the range 0-9223372036854775807

Default— No value

<upstream-provisioned-rate>—(Optional) Provisioned upstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the upstream-sync-rate option.

Value— Number of bps in the range 0-9223372036854775807

Default— No value

<downstream-sync-rate>—(Optional) Actual downstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the downstream-provisioned-rate option is used.

Value— Number of bps in the range 0-9223372036854775807

Default— No value

`<upstream-sync-rate>`—(Optional) Actual upstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the upstream-provisioned-rate option is used.

Value— Number of bps in the range 0-9223372036854775807

Default— No value

`<congestion-points>`—(Optional) (Multivalue) Congestion points for the subscriber.

Value— DN of interface associated with congestion point

Default— No value

`<detect-link-rate>`—(Optional) To identify the possibility of getting the actual link rate information for a congestion point via L2C or other solutions developed later. By default , it is false for the sake of backward compatibility.

Default— false

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <manager>
                <name>name</name> <!-- identifier -->
                <role>role-choice</role>
                <encrypted-password>encrypted-password</encrypted-password>
                <plain-text-password-value>plain-text-password-value</plain-text-password-value>
                <description>description</description>
              </manager>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <name>name</name> <!-- identifier -->
                <description>description</description>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/access/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <name>name</name> <!-- identifier -->
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <action>
                    <name>name</name> <!-- identifier -->
                    <type>type-choice</type>
                    <service>service</service>
                    <substitution>substitution</substitution>
                  </action>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <action>
                    <attribute>
                      <name>name-choice</name> <!-- identifier -->
                      <value>value</value>
                    </attribute>
                  </action>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <except>
                    <name>name</name> <!-- identifier -->
                  </except>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <except>
                    <from>
                      <hour>hour</hour>
                      <minute>minute</minute>
                      <day-of-month>day-of-month</day-of-month>
                      <day-of-week>day-of-week</day-of-week>
                      <month>month</month>
                      <year>year</year>
                      <time-zone>time-zone</time-zone>
                    </from>
                  </except>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you

specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/access/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <except>
                    <to>
                      <hour>hour</hour>
                      <minute>minute</minute>
                      <day-of-month>day-of-month</day-of-month>
                      <day-of-week>day-of-week</day-of-week>
                      <month>month</month>
                      <year>year</year>
                      <time-zone>time-zone</time-zone>
                    </to>
                  </except>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <from>
                    <effective>effective</effective>
                    <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </from>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/access/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <schedule>
                <event>
                  <to>
                    <effective>effective</effective>
                    <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </to>
                </event>
              </schedule>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/access)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <access>
              <subscription>
                <subscription-name>subscription-name</subscription-name> <!-- identifier -->
                <status>status-choice</status>
                <activation>activation-choice</activation>
                <activation-order>activation-order</activation-order>
                <substitution>substitution</substitution>
              </subscription>
            </access>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

`<activation>`— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< device >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <device-name>device-name</device-name> <!-- identifier -->
              <display-name>display-name</display-name>
              <maximum-login>maximum-login</maximum-login>
              <accounting-user-id>accounting-user-id</accounting-user-id>
              <substitution>substitution</substitution>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a device subscriber for subscriber sessions that manage the forwarding interface on JUNOS routing platforms and the router pseudo-subscriber on JUNOSe routers.

Contents

<device-name>— Name of the device subscriber.

Value— Text

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<maximum-login>—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0-2147483647

Default— No value

`<accounting-user-id>`—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value > .` For example,
`bandwidth = 1000000.`

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <manager>
                <name>name</name> <!-- identifier -->
                <role>role-choice</role>
                <encrypted-password>encrypted-password</encrypted-password>
                <plain-text-password-value>plain-text-password-value</plain-text-password-value>
                <description>description</description>
              </manager>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <name>name</name> <!-- identifier -->
                <description>description</description>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <name>name</name> <!-- identifier -->
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <action>
                    <name>name</name> <!-- identifier -->
                    <type>type-choice</type>
                    <service>service</service>
                    <substitution>substitution</substitution>
                  </action>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

`<service>`— Name of service affected by this action.

Value—Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Substitutions to be used when activating the service. Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/device/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <action>
                    <attribute>
                      <name>name-choice</name> <!-- identifier -->
                      <value>value</value>
                    </attribute>
                  </action>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <except>
                    <name>name</name> <!-- identifier -->
                  </except>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <except>
                    <from>
                      <hour>hour</hour>
                      <minute>minute</minute>
                      <day-of-month>day-of-month</day-of-month>
                      <day-of-week>day-of-week</day-of-week>
                      <month>month</month>
                      <year>year</year>
                      <time-zone>time-zone</time-zone>
                    </from>
                  </except>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you

specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <except>
                    <to>
                      <hour>hour</hour>
                      <minute>minute</minute>
                      <day-of-month>day-of-month</day-of-month>
                      <day-of-week>day-of-week</day-of-week>
                      <month>month</month>
                      <year>year</year>
                      <time-zone>time-zone</time-zone>
                    </to>
                  </except>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <from>
                    <effective>effective</effective>
                    <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </from>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <schedule>
                <event>
                  <to>
                    <effective>effective</effective>
                    <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </to>
                </event>
              </schedule>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated from or to time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/device)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <device>
              <subscription>
                <subscription-name>subscription-name</subscription-name> <!-- identifier -->
                <status>status-choice</status>
                <activation>activation-choice</activation>
                <activation-order>activation-order</activation-order>
                <substitution>substitution</substitution>
              </subscription>
            </device>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

<activation>— Specify how the service is activated.

Value

- **manual**— Subscriber must manually activate the service.
- **automatically-on-login**— Service is activated automatically when the subscriber logs in.

Default— Manual activation

<activation-order>—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form < parameter name > = < value > . For example, bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <manager>
              <name>name</name> <!-- identifier -->
              <role>role-choice</role>
              <encrypted-password>encrypted-password</encrypted-password>
              <plain-text-password-value>plain-text-password-value</plain-text-password-value>
              <description>description</description>
            </manager>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <name>name</name> <!-- identifier -->
              <description>description</description>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <name>name</name> <!-- identifier -->
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <action>
                  <name>name</name> <!-- identifier -->
                  <type>type-choice</type>
                  <service>service</service>
                  <substitution>substitution</substitution>
                </action>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <action>
                  <attribute>
                    <name>name-choice</name> <!-- identifier -->
                    <value>value</value>
                  </attribute>
                </action>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <except>
                  <name>name</name> <!-- identifier -->
                </except>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <except>
                  <from>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </from>
                </except>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31**Default**— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12**Default**— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year**Default**— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/enterprise/site/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <except>
                  <to>
                    <hour>hour</hour>
                    <minute>minute</minute>
                    <day-of-month>day-of-month</day-of-month>
                    <day-of-week>day-of-week</day-of-week>
                    <month>month</month>
                    <year>year</year>
                    <time-zone>time-zone</time-zone>
                  </to>
                </except>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <from>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <schedule>
              <event>
                <to>
                  <effective>effective</effective>
                  <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </event>
            </schedule>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder/enterprise/site)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <site>
            <subscription>
              <subscription-name>subscription-name</subscription-name> <!-- identifier -->
              <status>status-choice</status>
              <activation>activation-choice</activation>
              <activation-order>activation-order</activation-order>
              <substitution>substitution</substitution>
            </subscription>
          </site>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

<activation>— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

<activation-order>—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

<substitution>—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <subscription>
            <subscription-name>subscription-name</subscription-name> <!-- identifier -->
            <status>status-choice</status>
            <activation>activation-choice</activation>
            <activation-order>activation-order</activation-order>
            <substitution>substitution</substitution>
          </subscription>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

`<activation>`— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< vpn >

(configuration/subscribers/retailer/subscriber- folder/enterprise)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <enterprise>
          <vpn>
            <vpn-id>vpn-id</vpn-id> <!-- identifier -->
            <extranet-client>extranet-client</extranet-client>
            <display-name>display-name</display-name>
            <description>description</description>
          </vpn>
        </enterprise>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Add a VPN to the subscriber configuration.

Contents

<vpn-id>— Name of the routing instance on a JUNOS routing platform that implements the VPN.

Value— Text

<extranet-client>—(Optional) (Multivalue) DN of a retailer or an enterprise that is an extranet client of this VPN.

Value— DN

Default— No value

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< manager >

(configuration/subscribers/retailer/subscriber-folder)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <manager>
          <name>name</name> <!-- identifier -->
          <role>role-choice</role>
          <encrypted-password>encrypted-password</encrypted-password>
          <plain-text-password-value>plain-text-password-value</plain-text-password-value>
          <description>description</description>
        </manager>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a manager account.

Contents

<name>— Name of the manager account.

Value— Text

<role>—(Multivalue) Privilege level of the enterprise manager account. If you do not specify a privilege level, the manager has read-only access to associated objects.

Value

- administrator— Administrators have all privileges of the subscription, substitution, activation, and vpn roles. Additionally, administrators can create, delete, and modify other enterprise manager objects.
- subscription— Subscription managers can create, delete, modify, activate, and deactivate subscriptions.
- substitution— Substitution managers can modify policy parameters provided by subscriptions, enterprises, sites, and accesses.
- activation— Activation managers can activate and deactivate subscriptions.
- vpn— VPN managers can modify, export, and cancel the export of VPNs.

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- `crypt`—Style is `/etc/passwd`
- `sha`—Secure hash algorithm
- `md5`—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<description>`—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <name>name</name> <!-- identifier -->
          <description>description</description>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <name>name</name> <!-- identifier -->
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber-folder/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <action>
              <name>name</name> <!-- identifier -->
              <type>type-choice</type>
              <service>service</service>
              <substitution>substitution</substitution>
            </action>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber-folder/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <action>
              <attribute>
                <name>name-choice</name> <!-- identifier -->
                <value>value</value>
              </attribute>
            </action>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

<value>— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber-folder/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <except>
              <name>name</name> <!-- identifier -->
            </except>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <except>
              <from>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </from>
            </except>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <except>
              <to>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </to>
            </except>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+|-) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <from>
              <effective>effective</effective>
              <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </from>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0-153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <schedule>
          <event>
            <to>
              <effective>effective</effective>
              <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
              <hour>hour</hour>
              <minute>minute</minute>
              <day-of-month>day-of-month</day-of-month>
              <day-of-week>day-of-week</day-of-week>
              <month>month</month>
              <year>year</year>
              <time-zone>time-zone</time-zone>
            </to>
          </event>
        </schedule>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

`<hour>`—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscriber > (configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <name>name</name> <!-- identifier -->
          <common-name>common-name</common-name>
          <surname>surname</surname>
          <given-name>given-name</given-name>
          <initials>initials</initials>
          <anonymous/>
          <ip-address>ip-address</ip-address>
          <interface-name>interface-name</interface-name>
          <maximum-login-group>maximum-login-group</maximum-login-group>
          <display-name>display-name</display-name>
          <encrypted-password>encrypted-password</encrypted-password>
          <plain-text-password-value>plain-text-password-value</plain-text-password-value>
          <maximum-login>maximum-login</maximum-login>
          <session-timeout>session-timeout</session-timeout>
          <accounting-user-id>accounting-user-id</accounting-user-id>
          <substitution>substitution</substitution>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a residential subscriber. The SRC software uses the information in the subscriber definition to create a subscriber profile.

Contents

<name>— Name of the residential subscriber

Value— Text

<common-name>— Name that defines the subscriber in the directory. The value is not used directly by the SRC software, but it is not optional because it is required by the LDAP schema. The common name is available through SRC APIs.

Value— Text. Typically in the format firstName lastName or lastname firstName

Default— No value

<surname>— Subscriber's last name. The surname is not directly used by the SRC software, but it is not optional because it is required by the LDAP schema. The surname is available through SRC APIs.

Value— Text

Default— No value

`<given-name>`—(Optional) Subscriber's given name. The given name is not used directly by the SRC software, but it is available through SRC APIs.

Value— Text

Default— No value

`<initials>`—(Optional) Subscriber's initials. The initials are not used directly by the SRC software but are available through SRC APIs.

Value— Text

Default— No value

`<anonymous>`—(Optional) A flag that marks the subscriber profile as a shared profile. Shared profiles can be used by multiple subscriber sessions. The SAE API prevents subscribers from making changes to their profile if the profile is marked as anonymous.

Default— Disabled

`<ip-address>`—(Optional) IP address for subscribers who have fixed addresses, and for whom the SRC does not learn addresses through its management of routers or through calls to its notification API.

Value— IP address

Default— No value

`<interface-name>`—(Optional) Type and specifier of the router interface and virtual router that manage this subscriber. Use this option when you want the subscriber classification script to identify the subscriber entry in the directory based on the interface name received from the router.

Value— Interface as configured on the router. For example:

- For JUNOS routers: "fastethernet6/0.1@vrName@routerName"
- For JUNOS routing platforms: "fe-0/10.0@vrName@routerName"

Default— No value

`<maximum-login-group>`—(Optional) Maximum number of concurrent logins for this subscriber and all subordinate objects; typically the maximum number of concurrent logins for a household.

Value— Integer in the range 0-2147483647

Default— No value

`<display-name>`—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

`<encrypted-password>`—(Optional) Login password and type of encryption.

Value— Enter a password, and select an encryption method that your directory supports.

- crypt—Style is /etc/passwd
- sha—Secure hash algorithm
- md5—Message digest #5

Default— No value

`<plain-text-password-value>`—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

`<maximum-login>`—(Optional) Maximum number of concurrent logins for subscribers associated with this object. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Integer in the range 0–2147483647

Default— No value

`<session-timeout>`—(Optional) Timeout for subscriber sessions. By default, all subordinate objects use this value. However, if you specify this value for a subordinate object, that object and its subordinate objects will use the subordinate's value.

Value— Number of seconds in the range 0–2147483647

Default— No value

`<accounting-user-id>`—(Optional) Value that identifies the subscriber in accounting records. For a household subscriber, all subordinate subscribers generally use the same ID. For an enterprise, all parts of the enterprise generally use the same ID.

Value— Text

Default— No value

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example,

bandwidth = 1000000.

Default— No value

Required Privilege Level

subscriber

< admission-control >

(configuration/subscribers/retailer/subscriber- folder/subscriber)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <admission-control>
            <downstream-provisioned-rate>downstream-provisioned-rate</downstream-provisioned-rate>
            <upstream-provisioned-rate>upstream-provisioned-rate</upstream-provisioned-rate>
            <downstream-sync-rate>downstream-sync-rate</downstream-sync-rate>
            <upstream-sync-rate>upstream-sync-rate</upstream-sync-rate>
            <congestion-points>congestion-points</congestion-points>
            <detect-link-rate/>
          </admission-control>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure bandwidths for subscribers that the SRC-ACP manages.

Contents

<downstream-provisioned-rate>—(Optional) Provisioned downstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the downstream-sync-rate option.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

<upstream-provisioned-rate>—(Optional) Provisioned upstream bandwidth. This rate is used if the subscriber bandwidth settings are not provided by the API for ACP or by the upstream-sync-rate option.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

<downstream-sync-rate>—(Optional) Actual downstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the downstream-provisioned-rate option is used.

Value— Number of bps in the range 0–9223372036854775807

Default— No value

`<upstream-sync-rate>`—(Optional) Actual upstream bandwidth for the current subscriber session. If you do not set this value and it is not provided by the API for ACP, the value of the upstream-provisioned-rate option is used.

Value— Number of bps in the range 0-9223372036854775807

Default— No value

`<congestion-points>`—(Optional) (Multivalue) Congestion points for the subscriber.

Value— DN of interface associated with congestion point

Default— No value

`<detect-link-rate>`—(Optional) To identify the possibility of getting the actual link rate information for a congestion point via L2C or other solutions developed later. By default , it is false for the sake of backward compatibility.

Default— false

Required Privilege Level

subscriber

< info >

(configuration/subscribers/retailer/subscriber-folder/subscriber)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <info>
            <home-phone>home-phone</home-phone>
            <additional-phone>additional-phone</additional-phone>
            <fax>fax</fax>
            <e-mail>e-mail</e-mail>
            <city>city</city>
            <street>street</street>
            <postal-code>postal-code</postal-code>
            <language>language</language>
            <job>job</job>
            <description>description</description>
          </info>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure administrative information about the subscriber. The additional subscriber information is not used directly by the SRC software.

Contents

<home-phone>—(Optional) Home telephone number of the subscriber.

Value— Telephone number

Default— No value

<additional-phone>—(Optional) Additional telephone number for the subscriber.

Value— Telephone number

Default— No value

<fax>—(Optional) Fax number for the subscriber.

Value— Fax number

Default— No value

<e-mail>—(Optional) E-mail address for the subscriber.

Value— E-mail address

Default— No value

<city>—(Optional) City name for the subscriber.

Value— City name

Default— No value

<street>—(Optional) Street address for the subscriber.

Value— Street address

Default— No value

<postal-code>—(Optional) Postal code for the subscriber.

Value— Postal code

Default— No value

<language>—(Optional) Preferred language for the subscriber.

Value— Language name

Default— No value

<job>—(Optional) Job or business category for the subscriber.

Value— Job or business category

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

< schedule >

(configuration/subscribers/retailer/subscriber- folder/subscriber)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <name>name</name> <!-- identifier -->
            <description>description</description>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service schedule.

Contents

<name>— Name of service schedule.

Value—Text

<description>—(Optional) Description of the service schedule.

Value—Text

Default— No value

Required Privilege Level

subscriber

< event >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <name>name</name> <!-- identifier -->
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a scheduling event.

Contents

<name>— Name of the scheduling event.

Value—Text

Required Privilege Level

subscriber

< action >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <action>
                <name>name</name> <!-- identifier -->
                <type>type-choice</type>
                <service>service</service>
                <substitution>substitution</substitution>
              </action>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure actions to perform for the scheduled event.

Contents

<name>— Arbitrary identifier for action.

Value—Text

<type>— Type of action.

Value

- activate— Activate service at the time specified in the entry schedule.
- deactivate— Deactivate service at the time specified in the entry schedule.
- deny— Deny new activation requests during the time specified in the entry schedule; current sessions are not affected. This value applies only to services that have an authorization plug-in configured.
- deny-deactivate— Deny new activation requests during the time specified in the entry schedule; current sessions are deactivated at the specified time. This value applies only to services that have an authorization plug-in configured.

Default— No value

<service>— Name of service affected by this action.

Value—Text

Default— No value

<substitution>—(Optional) (Multivalue) Substitutions to be used when activating the service.
Substitutions apply only to service activations.

Value— An entry in valid substitution format. See the *SRC PE Services and Policies Guide*.

Default— No value

Required Privilege Level

subscriber

< attribute >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule/event/action)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <action>
                <attribute>
                  <name>name-choice</name> <!-- identifier -->
                  <value>value</value>
                </attribute>
              </action>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscription attributes. Subscription attributes apply only to service activations.

Contents

Subscription attributes.

Value

- `sessionName`— Name of the service session.
- `sessionTag`— Tag that can be used for accounting purposes.
- `sessionTimeout`— Session timeout to be used when the service is activated. The service session is deactivated when this timeout expires.
- `downStreamBandwidth`— Attribute used by SRC Admission Control Plug-In (SRC ACP) to specify the rate of traffic between the network and the subscriber.
- `upStreamBandwidth`— Attribute used by SRC ACP to specify the rate of traffic between the subscriber and the network.

`<value>`— Value of the specified subscription attribute.

Value— Depends on the specified subscription attribute

Default— No value

Required Privilege Level

subscriber

< except >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <except>
                <name>name</name> <!-- identifier -->
              </except>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure an exclusion for the event.

Contents

<name>— Arbitrary identifier for exclusion rule.

Value—Text

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <except>
                <from>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </from>
              </except>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+|-) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber- folder/subscriber/schedule/event/except)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <except>
                <to>
                  <hour>hour</hour>
                  <minute>minute</minute>
                  <day-of-month>day-of-month</day-of-month>
                  <day-of-week>day-of-week</day-of-week>
                  <month>month</month>
                  <year>year</year>
                  <time-zone>time-zone</time-zone>
                </to>
              </except>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time of the exclusion. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you

specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< from >

(configuration/subscribers/retailer/subscriber-folder/subscriber/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <from>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </from>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the start time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

Contents

<effective>—(Optional) Interval after the associated **from** or **to** time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this scheduler configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or

exclusion.

Value— 0-23

Default— *

`<minute>`—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

`<day-of-month>`—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 1-31

Default— *

`<day-of-week>`—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both `day-of-month` and `day-of-week`, `day-of-month` is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

`<month>`—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

`<year>`—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

`<time-zone>`—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< to >

(configuration/subscribers/retailer/subscriber-folder/subscriber/schedule/event)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <schedule>
            <event>
              <to>
                <effective>effective</effective>
                <weekly-recur-freq>weekly-recur-freq</weekly-recur-freq>
                <hour>hour</hour>
                <minute>minute</minute>
                <day-of-month>day-of-month</day-of-month>
                <day-of-week>day-of-week</day-of-week>
                <month>month</month>
                <year>year</year>
                <time-zone>time-zone</time-zone>
              </to>
            </event>
          </schedule>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the end time for the event. For guidelines about entering time values, see the *SRC PE Services and Policies Guide*.

These values apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, these values are ignored.

Contents

<effective>—(Optional) Interval after the associated *from* or *to* time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

Value— Number of minutes in the range 0–153722867280912

Default— *

<weekly-recur-freq>—(Optional) weekly frequency at which a particular event should be configured recursively. Example Activate a service every 2nd Monday from 2:00pm to 4:00pm. In this schedular configuration, the weekly recurrence frequency would be 2

Value— ANY integer

Default— *

<hour>—(Optional) Hour of the day in the indicated month in which to schedule the event or exclusion.

Value— 0-23

Default— *

<minute>—(Optional) Minutes past the indicated hour in which to schedule the event or exclusion.

Value— 0-59

Default— *

<day-of-month>—(Optional) Day of the month in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 1-31

Default— *

<day-of-week>—(Optional) Day of the week in which to schedule the event or exclusion. If you specify both day-of-month and day-of-week, day-of-month is used.

Value— 0-6, with 0 representing Sunday and each subsequent number representing the next day of the week

Default— *

<month>—(Optional) Month of the year in which to schedule the event or exclusion.

Value— 1-12

Default— *

<year>—(Optional) Year in which to schedule the event or exclusion.

Value— Four integers that indicate the year

Default— *

<time-zone>—(Optional) Name of the time zone to use in the schedule.

Value— One of the following values:

- *—Local time zone of the SAE
- An offset to GMT in the format: GMT (+ | -) (*hh:mm* | *hh mm* | *hh*)
 - *hh*—Hour of the day in the range of 0-23
 - *mm*—Minutes past the hour in the range of 0-59

Default— *

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder/subscriber)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscriber>
          <subscription>
            <subscription-name>subscription-name</subscription-name> <!-- identifier -->
            <status>status-choice</status>
            <activation>activation-choice</activation>
            <activation-order>activation-order</activation-order>
            <substitution>substitution</substitution>
          </subscription>
        </subscriber>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

`<activation>`— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–21474863647

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer/subscriber- folder)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscriber-folder>
        <subscription>
          <subscription-name>subscription-name</subscription-name> <!-- identifier -->
          <status>status-choice</status>
          <activation>activation-choice</activation>
          <activation-order>activation-order</activation-order>
          <substitution>substitution</substitution>
        </subscription>
      </subscriber-folder>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name>— Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value— Text

<status>— Status of the service subscription.

Value

- **active**— The subscriber can activate the subscription.
- **suspended**— The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden**— Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default— Active

`<activation>`— Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0–2147486367

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< subscription >

(configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <subscription>
        <subscription-name>subscription-name</subscription-name> <!-- identifier -->
        <status>status-choice</status>
        <activation>activation-choice</activation>
        <activation-order>activation-order</activation-order>
        <substitution>substitution</substitution>
      </subscription>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a service subscription.

Contents

<subscription-name> — Name of the service optionally followed by "% *subscription-id*". Use "% *subscription-id*" to subscribe subscribers to the same service multiple times with different subscription attributes.

Value — Text

<status> — Status of the service subscription.

Value

- **active** — The subscriber can activate the subscription.
- **suspended** — The subscriber cannot activate the subscription, although it may be visible through the portal. If you change the status of the subscription to suspended while the subscription is active, the service is deactivated.
- **hidden** — Service is not available through a portal and cannot be activated automatically when the subscribers log in. If you change the status of the subscription to hidden while the subscription is active, the service is not deactivated.

Default — Active

<activation> — Specify how the service is activated.

Value

- `manual`— Subscriber must manually activate the service.
- `automatically-on-login`— Service is activated automatically when the subscriber logs in.

Default— Manual activation

`<activation-order>`—(Optional) Order in which subscriptions are automatically activated on login relative to the subscriber's other subscriptions that are configured to activate on login. Review all subscriptions that are configured to activate on login for the subscriber, and review the activation order for subscriptions of the parent subscribers. Assign the lowest number to the subscription that you want to activate first. Assign higher numbers to the other subscriptions in the order that you want the SAE to activate them. If you assign the same number to multiple subscriptions, the SAE activates them in an unspecified order.

Value— Integer in the range 0-21474863647

Default— 10000

`<substitution>`—(Optional) (Multivalue) Actual values for parameters associated with this object. The policy engine substitutes parameters in policies associated with this object with the values that you specify in the substitution configuration.

Value— Substitution in the form `< parameter name > = < value >` . For example, `bandwidth = 1000000`.

Default— No value

Required Privilege Level

subscriber

< vpn > (configuration/subscribers/retailer)

Usage

```
<configuration>
  <subscribers>
    <retailer>
      <vpn>
        <vpn-id>vpn-id</vpn-id> <!-- identifier -->
        <extranet-client>extranet-client</extranet-client>
        <display-name>display-name</display-name>
        <description>description</description>
      </vpn>
    </retailer>
  </subscribers>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Add a VPN to the subscriber configuration.

Contents

<vpn-id>— Name of the routing instance on a JUNOS routing platform that implements the VPN.

Value— Text

<extranet-client>—(Optional) (Multivalue) DN of a retailer or an enterprise that is an extranet client of this VPN.

Value— DN

Default— No value

<display-name>—(Optional) Subscriber's name as it appears in portal applications. If you do not specify a display name, the value of the name option is used.

Value— Text

Default— No value

<description>—(Optional) Description of the object that you are configuring.

Value— Text

Default— No value

Required Privilege Level

subscriber

Redirect Server Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Redirect Server. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
redirect-server	<u>< redirect-server ></u>
redirect-server dns	<u>< dns ></u>
redirect-server ip-redirect	<u>< ip-redirect ></u>
redirect-server ldap	<u>< ldap ></u>
redirect-server monitor	<u>< monitor ></u>

< redirect-server > (configuration)

Usage

```
<configuration>
  <redirect-server>
    <tcp-port>tcp-port</tcp-port>
    <destination-url>destination-url</destination-url>
    <proxy-support/>
    <proxy-destination-url>proxy-destination-url</proxy-destination-url>
    <refresh/>
    <refresh-document>refresh-document</refresh-document>
    <request-rate>request-rate</request-rate>
    <request-burst-size>request-burst-size</request-burst-size>
    <client-rate>client-rate</client-rate>
    <client-burst-size>client-burst-size</client-burst-size>
    <check-file-extensions/>
    <file-extensions>file-extensions</file-extensions>
    <redundancy/>
  </redirect-server>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure redirect server properties. The redirect server redirects HTTP requests to a captive portal page.

Contents

<tcp-port>—(Optional) TCP port number on which the redirect server listens for requests. Use any valid TCP port number.

Value—Integer in the range 1-65535

Default—8800

<destination-url>— URL sent as a response to redirect requests. Typically, this URL is the URL of the captive portal.

The URL can contain the special strings "%(url)s" and "%(proxy)s." If the HTTP request is sent to a proxy, the "%(url)s" string is replaced with the originally requested URL, and the "%(proxy)s" string is replaced with the proxy's "< ipAddress> : < port> ". If the request is sent directly, the string is replaced with "None."

If the `proxy-destination-url` option is not configured, this URL is used for both proxy and nonproxy requests.

Value— `http:// < serverHost> /accessDenied.do?url = %(url)s` where `< serverHost>` is a valid URL; a string of ASCII characters.

<proxy-support>—(Optional) Enable proxy support. If you do not enable proxy support, the redirect server handles proxy requests in the same manner as direct requests.

`<proxy-destination-url>`—(Optional) URL sent as a response to proxy requests. If you do not configure a value, then the URL defaults to the value for the `destination-url` option. You can use this option to send proxy requests to a page different from the page specified by the `destination-url` option.

Value— Valid URL; string of ASCII characters in URL string format

`<refresh>`—(Optional) Specify that the redirect server send an HTTP 200 OK response with an HTML document that includes the `<HTTP-Equiv = "Refresh" >` header to a subscriber's browser in response to a captured request. If not set, the redirect server sends a 302 Found response to the client. If the client is not a Web browser, typically it does not follow the URL included in the `refresh` option.

`<refresh-document>`—(Optional) Directory path to a local HTML file that the redirect server returns to a subscriber's browser in response to a captured HTTP request.

If you enter an invalid path, the redirect server uses a default file. This file can contain the string `"%(url)s"` which is replaced with the URL of the local HTML file to be returned to the subscriber's browser.

Value— Path to HTML file

`<request-rate>`—(Optional) Number of requests that the redirect server can accept per minute from all clients (global sustained rate).

Value— Integer in the range 0–2147483647

Default—12000

`<request-burst-size>`—(Optional) Maximum number of requests that the redirect server can accept from all clients (burst size). This value should exceed value set by the `request-rate` option. If the number of requests exceeds this value, the redirect server drops the excess requests.

Value— Integer in the range 0–2147483647

Default—18000

`<client-rate>`—(Optional) Number of requests that the redirect server can accept per minute for a single client (per client sustained rate).

Value— Integer in the range 0–2147483647

Default—25

`<client-burst-size>`—(Optional) Maximum number of requests that the redirect server can accept for a single client (per client burst size). This value should exceed the value set by the `client-rate` option. If at any time the number of requests from one client exceeds this value, the redirect server drops the excess requests.

Value— Integer in the range 0-2147483647

Default—50

`<check-file-extensions>`—(Optional) Check file extension of requested URLs and accept only URLs that point to files that have standard file extensions— `<empty>` , .asp, .htm, .html, .jsp, .php, .shtml, .shtm and .xml, and extensions specified by the `file-extensions` option. If a URL does not have a standard extension, the redirect server returns an HTTP 403 Forbidden message.

If not set, the redirect server accepts all file extensions.

Default—false

`<file-extensions>`—(Optional) (Multivalue) List of file extensions that augments the standard list of extensions. Entries for extensions are case-sensitive and are preceded by a period.

Value— Text string of file extensions.

`<redundancy>`—(Optional) Enable redundancy for the redirect server on this system, which then monitors a redundant redirect server and configures static routes in the managed routers running JunosE Software to facilitate failover.

Required Privilege Level

system

< dns > (configuration/redirect-server)

Usage

```
<configuration>
  <redirect-server>
    <dns>
      <enable/>
      <tcp-port>tcp-port</tcp-port>
      <udp-port>udp-port</udp-port>
      <forwarder>forwarder</forwarder>
      <error-ip-address>error-ip-address</error-ip-address>
    </dns>
  </redirect-server>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure properties for the DNS server included with the redirect server.

Contents

<enable>—(Optional) Enable the DNS server included with the redirect server.

A DNS server is required to support HTTP proxies to resolve the name of any HTTP proxy, even if the name is valid only in the private domain of the client. You can use an external DNS server or the DNS server that is included with the redirect for this purpose.

<tcp-port>— TCP port on which the DNS server listens. You can disable the TCP port by entering 0.

Value—Integer in the range 0–65535

Default—8853

<udp-port>— UDP port on which the DNS server listens. You can disable the UDP port by entering 0.

Value—Integer in the range 0–65535

Default—8853

<forwarder>—(Optional) (Multivalue) DNS servers to which requests are forwarded.

If you specify DNS servers for this option, incoming requests are forwarded to one of these servers. If you do not specify servers, the DNS server will resolve incoming requests using the normal DNS method.

Value— List of fully qualified IP address of DNS servers.

<error-ip-address>—(Optional) IP address that is returned when a DNS request results in an

unknown name (NXDOMAIN) error.

Value— Fully qualified IP address

Default— 192.168.254.2

Required Privilege Level

system

< ip-redirect > (configuration/redirect-server)

Usage

```
<configuration>
  <redirect-server>
    <ip-redirect>
      <interface>interface</interface>
      <port>port</port>
    </ip-redirect>
  </redirect-server>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure IP redirection.

Contents

<interface>—(Optional) (Multivalue) Interface on a C Series Controller that forwards traffic to be redirected. If you do not specify one or more interface names, the redirect server accepts specified traffic from all interfaces.

Value— Interface name

<port>—(Optional) (Multivalue) Port number that identifies traffic destined for this port to be redirected to another URL.

Value—Integer in the range 1–65535

Default— 80

Required Privilege Level

system

< ldap > (configuration/redirect-server)

Usage

```
<configuration>
  <redirect-server>
    <ldap>
      <url>url</url>
      <bind-dn>bind-dn</bind-dn>
      <bind-password>bind-password</bind-password>
      <base-dn>base-dn</base-dn>
    </ldap>
  </redirect-server>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure directories employed by the redirect server.

Contents

<url>—(Multivalue) List of the URLs for directories employed by the redirect server.

Value— URL in the format `ldap://<host>:<portNumber>`, where `<host>` is the IP address or name of the host that supports the directory, and `<portNumber>` is the number of the TCP port. Example— `ldap://localhost ldap://1.2.3.4:389`

<bind-dn>— DN that the redirect server uses to authorize connections to the directory. The DN must have read and write access to `o = Network`, `<baseDN>`, where `<baseDN>` is the root of the SRC directory tree.

Value— DN

<bind-password>— Password used to authorize connections to the directory.

Value— Text string in LDAP format

<base-dn>—(Optional) Base DN that is the root of the SRC directory tree. The redirect server can store information at any DN subordinate to the base DN that you specify.

Value— DN

Default—`o = umc`

Required Privilege Level

system

< monitor > (configuration/redirect-server)

Usage

```
<configuration>
  <redirect-server>
    <monitor>
      <redundant-host-ip-address>redundant-host-ip-address</redundant-host-ip-address>
      <virtual-ip-address>virtual-ip-address</virtual-ip-address>
      <real-ip-address>real-ip-address</real-ip-address>
      <primary-server/>
      <check-interval>check-interval</check-interval>
      <virtual-routers>virtual-routers</virtual-routers>
    </monitor>
  </redirect-server>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure redundancy for the redirect server. With redundancy configured, a pair of redirect servers monitor each other. If one server detects that the other server is not responding, it reconfigures all managed JunosE virtual routers with a static route that points to a virtual IP address to the active redirect server.

Contents

<redundant-host-ip-address>— IP address of the redundant redirect server.

Value— Fully qualified IP address

<virtual-ip-address>— Virtual IP address of the redirect server. Do not specify a hostname.

You can configure the primary and redundant redirect servers to share this address under a common name in the DNS. Each redirect server dynamically sets up and maintains a static route on managed routers running JunosE Software. The static route directs client traffic destined for the virtual IP address to the real IP address of the active redirect server.

Value— Fully qualified IP address

Default—192.168.254.1

<real-ip-address>— Real IP address of the redirect server. Do not specify a hostname.

Each redirect server dynamically sets up and maintains a static route on managed routers running JunosE Software. The static route directs client traffic that is destined for the virtual IP address to the real IP address of the active redirect server.

Value— Fully qualified IP address

<primary-server>—(Optional) Set this redirect server as the primary server. When the primary redirect server is started, it configures a static route for the virtual IP address.

If not enabled for this redirect server, this server becomes the redundant one.

Default—false

`<check-interval>`—(Optional) Interval at which the primary redirect server polls the redundant redirect server.

A shorter interval leads to faster detection of problems and results in higher consumption of CPU resources.

Value— Number of seconds in the range 60/clientRate–2147483647, where clientRate is the number of requests per minute that the redirect server accepts from one client.

Default—30

`<virtual-routers>`—(Multivalue) List of virtual routers to which the redirect server connects.

Value— Identifier for the virtual router in the format `<vrName> @ <routerName>`, where `<vrName>` is the name of the virtual router, and `<routerName>` is the name of the router on which the virtual router is configured.

Required Privilege Level

system

External Subscriber Monitor Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the External Subscriber Monitor. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
slot external-subscriber-monitor	<u>< external-subscriber-monitor ></u>
slot external-subscriber-monitor event-notification	<u>< event-notification ></u>
slot external-subscriber-monitor initial	<u>< initial ></u>
slot external-subscriber-monitor initial directory-connection	<u>< directory-connection ></u>
slot external-subscriber-monitor initial directory-eventing	<u>< directory-eventing ></u>
slot external-subscriber-monitor logger	<u>< logger ></u>
slot external-subscriber-monitor logger file	<u>< file ></u>
slot external-subscriber-monitor logger syslog	<u>< syslog ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-accounting-nic cache	<u>< cache ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-accounting-nic nic-host-selection	<u>< nic-host-selection ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-accounting-nic nic-host-selection blacklisting	<u>< blacklisting ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-accounting-nic resolution	<u>< resolution ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-authorization-nic cache	<u>< cache ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-authorization-nic nic-host-selection	<u>< nic-host-selection ></u>

slot external-subscriber-monitor nic-proxy-configuration radius-authorization-nic nic-host-selection blacklisting	<u>< blacklisting ></u>
slot external-subscriber-monitor nic-proxy-configuration radius-authorization-nic resolution	<u>< resolution ></u>
slot external-subscriber-monitor radius-accounting	<u>< radius-accounting ></u>
slot external-subscriber-monitor radius-accounting client	<u>< client ></u>
slot external-subscriber-monitor radius-attribute-extraction default interface-name	<u>< interface-name ></u>
slot external-subscriber-monitor radius-attribute-extraction default virtual-router-name	<u>< virtual-router-name ></u>
slot external-subscriber-monitor radius-authorization	<u>< radius-authorization ></u>
slot external-subscriber-monitor radius-authorization client	<u>< client ></u>
slot external-subscriber-monitor radius-authorization ldap cached-dhcp-profile	<u>< cached-dhcp-profile ></u>
slot external-subscriber-monitor radius-authorization ldap cached-dhcp-profile directory-connection	<u>< directory-connection ></u>
slot external-subscriber-monitor radius-authorization ldap subscriber-data	<u>< subscriber-data ></u>
slot external-subscriber-monitor radius-authorization ldap subscriber-data directory-connection	<u>< directory-connection ></u>

< external-subscriber-monitor > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-garbage-collection-
options>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the local properties for External Subscriber Monitor.

Contents

<java-heap-size>— Maximum Java heap (memory) size available to the JRE. Changes take effect only after you restart External Subscriber Monitor.

Value— Number of megabytes in the format *integerm*

Default— 160m

<java-garbage-collection-options>—(Optional) Garbage collection functionality of the Java Virtual Machine.

Value—

Default— -Xbatch -XX: + UseConcMarkSweepGC -

XX:CMSInitiatingOccupancyFraction = 80 -XX: + UseParNewGC -XX:SurvivorRatio = 1 -

XX:InitialTenuringThreshold = 8 -XX:MaxTenuringThreshold = 10 -

XX:TargetSurvivorRatio = 90 -XX: + UseCMSCompactAtFullCollection -

XX:CMSFullGCsBeforeCompaction = 0 -XX: + CMSClassUnloadingEnabled -

XX: + CMSParallelRemarkEnabled

Required Privilege Level

No specific privilege required.

< event-notification >

(configuration/slot/external-subscriber-monitor)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <event-notification>
        <event-threads>event-threads</event-threads>
        <event-thread-idle-timeout>event-thread-idle-timeout</event-thread-idle-timeout>
        <event-retry-timeout>event-retry-timeout</event-retry-timeout>
        <event-retry-interval>event-retry-interval</event-retry-interval>
        <session-timeout>session-timeout</session-timeout>
      </event-notification>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure event notification. This is mandatory if radius-accounting is on.

Contents

<event-threads>—(Optional) Maximum number of concurrent threads in a pool for event handler.

Value—Integer in the range 1-2147483648

Default— 8

<event-thread-idle-timeout>—(Optional) Time to keep an event handler alive for reuse.

Value—Integer in the range 1-2147483648 second

Default— 300

<event-retry-timeout>—(Optional) Maximum time to wait before discarding failed events.

Value—Integer in the range 1-2147483648 second

Default— 300

<event-retry-interval>—(Optional) Time to wait before retrying failed events.

Value—Integer in the range 1-2147483648 second

Default— 30

<session-timeout>—(Optional) Keepalive time for a RADIUS subscriber or service. This value should be larger than the interim update interval. We recommend twice the interim update interval. Setting

the session timeout less than or equal to zero means the subscriber session never expires.

Value—Integer in the range -2147483648–2147483647 second

Default— 1800

Required Privilege Level

No specific privilege required.

< initial > (configuration/slot/external-subscriber-monitor)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <initial>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure initial properties for SRC components.

Contents

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration,ou = Configuration,o = Management,o = umc

Required Privilege Level

No specific privilege required.

< directory-connection > (configuration/slot/external-subscriber-monitor/initial)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

`<protocol>`—(Optional) Security protocol used to connect to the directory. If you do not configure a security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

No specific privilege required.

< directory-eventing >

(configuration/slot/external-subscriber-monitor/initial)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0–2147483647

Default—1

Required Privilege Level

No specific privilege required.

< logger > (configuration/slot/external-subscriber-monitor)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value— Text

Required Privilege Level

No specific privilege required.

< file > (configuration/slot/external-subscriber-monitor/logger)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the logging destination for file-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

No specific privilege required.

< syslog > (configuration/slot/external-subscriber-monitor/logger)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the logging destination for syslog-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

No specific privilege required.

< cache > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-accounting-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-accounting-nic>
          <cache>
            <cache-size>cache-size</cache-size>
            <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
            <cache-entry-age>cache-entry-age</cache-entry-age>
          </cache>
        </radius-accounting-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure the NIC Proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

No specific privilege required.

< nic-host-selection > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-accounting-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-accounting-nic>
          <nic-host-selection>
            <groups>groups</groups>
            <selection-criteria>selection-criteria-choice</selection-criteria>
          </nic-host-selection>
        </radius-accounting-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- **roundRobin**—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- **randomPick**—NIC proxy selects NIC hosts randomly from the list.
- **priorityList**—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default—roundRobin

Required Privilege Level

No specific privilege required.

< blacklisting > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-accounting-nic/nic-host-selection)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-accounting-nic>
          <nic-host-selection>
            <blacklisting>
              <try-next-system-on-error/>
              <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
              <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
            </blacklisting>
          </nic-host-selection>
        </radius-accounting-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

No specific privilege required.

< resolution > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-accounting-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-accounting-nic>
          <resolution>
            <resolver-name>resolver-name</resolver-name>
            <constraints>constraints</constraints>
          </resolution>
        </radius-accounting-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name>— NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value— Path to the NIC resolver.

Example—/realms/ip/A1

Default— No value

<constraints>—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

No specific privilege required.

< cache > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-authorization-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-authorization-nic>
          <cache>
            <cache-size>cache-size</cache-size>
            <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
            <cache-entry-age>cache-entry-age</cache-entry-age>
          </cache>
        </radius-authorization-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure the NIC Proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

No specific privilege required.

< nic-host-selection > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-authorization-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-authorization-nic>
          <nic-host-selection>
            <groups>groups</groups>
            <selection-criteria>selection-criteria-choice</selection-criteria>
          </nic-host-selection>
        </radius-authorization-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- **roundRobin**—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- **randomPick**—NIC proxy selects NIC hosts randomly from the list.
- **priorityList**—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default—roundRobin

Required Privilege Level

No specific privilege required.

< blacklisting > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-authorization-nic/nic-host-selection)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-authorization-nic>
          <nic-host-selection>
            <blacklisting>
              <try-next-system-on-error/>
              <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
              <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
            </blacklisting>
          </nic-host-selection>
        </radius-authorization-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

No specific privilege required.

< resolution > (configuration/slot/external-subscriber-monitor/nic-proxy-configuration/radius-authorization-nic)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <nic-proxy-configuration>
        <radius-authorization-nic>
          <resolution>
            <resolver-name>resolver-name</resolver-name>
            <constraints>constraints</constraints>
          </resolution>
        </radius-authorization-nic>
      </nic-proxy-configuration>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name>— NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value— Path to the NIC resolver.

Example—/realms/ip/A1

Default— No value

<constraints>—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

No specific privilege required.

< radius-accounting >

(configuration/slot/external-subscriber-monitor)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-accounting>
        <port>port</port>
        <include-mac-address/>
        <include-interface-name/>
        <service-type>service-type-choice</service-type>
        <allow>allow</allow>
        <deny>deny</deny>
        <maximum-queue-length>maximum-queue-length</maximum-queue-length>
      </radius-accounting>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the pseudo-RADIUS server. If not configured, no pseudo-RADIUS service is started.

Contents

<port>— Listening port for RADIUS accounting requests.

Value—Integer in the range 1–65535

Default— 1813

<include-mac-address>—(Optional) Specify whether the MAC address is included in the event notification.

NOTE: Do not configure if you are not extracting RADIUS attributes with the pseudo-RADIUS server.

Default— false

<include-interface-name>—(Optional) Specify whether the interface name is included in the event notification.

NOTE: Do not configure if you are not extracting RADIUS attributes with the pseudo-RADIUS server.

Default— false

<service-type>—(Optional) Service type of RADIUS packets that will be forwarded.

Value

- `all`— Forward all packets
- `login`— Forward packets with type of Login
- `framed`— Forward packets with type of Framed
- `callback-login`— Forward packets with type of Callback Login
- `callback-framed`— Forward packets with type of Callback Framed
- `outbound`— Forward packets with type of Outbound
- `administrative`— Forward packets with type of Administrative
- `nas-prompt`— Forward packets with type of NAS Prompt
- `authenticate-only`— Forward packets with type of Authenticate Only
- `callback-nas-prompt`— Forward packets with type of Callback NAS Prompt
- `callback-check`— Forward packets with type of Callback Check
- `callback-administrative`— Forward packets with type of Callback Administrative

Default— `framed`

`<allow>`—(Optional) (Multivalue) List of hosts that filters which packets are forwarded. If both the allow and deny lists are empty, forward all packets. If the allow list has entries and the deny list is empty, forward packets from the listed hosts and ignore all others. If the allow list is empty and the deny list has entries, forward all packets except those from the listed hosts in the deny list. If both the allow and deny lists have entries, forward packets from the listed hosts in the allow list and ignore the deny list entries.

Value— Entries are delimited by spaces in the format `ID = < regular expression >` or `IP = < regular expression >`

Example—`allow = ID = C2000.*`

Default— Empty list

`<deny>`—(Optional) (Multivalue) List of hosts that filters which packets are forwarded. If both the allow and deny lists are empty, forward all packets. If the allow list has entries and the deny list is empty, forward packets from the listed hosts and ignore all others. If the allow list is empty and the deny list has entries, forward all packets except those from the listed hosts in the deny list. If both the allow and deny lists have entries, forward packets from the listed hosts in the allow list and ignore the deny list entries.

Value— Entries are delimited by spaces in the format `ID = < regular expression >` or `IP = < regular expression >`

Example—`deny = ID = SAE.*`

Default— Empty list

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages received from the RADIUS server before it discards new messages. 0 or negative number means infinite number of

messages are allowed.

Value— Integer in the range 0–2147483647

Default— 10000

Required Privilege Level

No specific privilege required.

< client > (configuration/slot/external-subscriber-monitor/radius-accounting)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-accounting>
        <client>
          <client-address>client-address</client-address> <!-- identifier -->
          <secret>secret</secret>
        </client>
      </radius-accounting>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the shared secret between the RADIUS server and its clients.

Contents

<client-address>— Address of the specific RADIUS client.

Value— Address in dot format. Currently, only IPv4 addresses are supported.

<secret>— Shared secret of a specific RADIUS client.

Value—Secret text

Required Privilege Level

No specific privilege required.

< interface-name > (configuration/slot/external-subscriber-monitor/radius-attribute-extraction/default)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-attribute-extraction>
        <default>
          <interface-name>
            <regular-expression>regular-expression</regular-expression>
          </interface-name>
        </default>
      </radius-attribute-extraction>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the interface name attribute value extraction. By default, the interface-name attribute value is extracted from standard RADIUS attribute id = 87(RADIUS, 87) with RADIUS attribute type of chars.

Contents

<regular-expression>—(Optional) (Multivalue) The regular expression of the radius attribute, A multi-value can be specified. If no regular expression is specified, the whole value would be considered the valid value; if any regular expression is present, Only the first group of regular expression is considered the valid value. Note that if type is raw-byte, the regular expression should be described hexadecimal format

Value—Text

Default— None

Required Privilege Level

No specific privilege required.

< virtual-router-name > (configuration/slot/external-subscriber-monitor/radius-attribute-extraction/default)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-attribute-extraction>
        <default>
          <virtual-router-name>
            <id>id</id>
            <vsa/>
            <vsa-id>vsa-id</vsa-id>
            <regular-expression>regular-expression</regular-expression>
            <type>type-choice</type>
            <prefix>prefix</prefix>
          </virtual-router-name>
        </default>
      </radius-attribute-extraction>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the virtual router name attribute value extraction.

Contents

<id>— Specifies radius attribute id

Value—Integer in the range 0–2147483647

<vsa>—(Optional) Indicate if this attribute is vendor specific

Default— false

<vsa-id>—(Optional) Specifies radius vendor specific identifier

Value—Integer in the range 0–2147483647

<regular-expression>—(Optional) (Multivalue) The regular expression of the radius attribute, A multi-value can be specified. If no regular expression is specified, the whole value would be considered the valid value; if any regular expression is present, Only the first group of regular expression is considered the valid value. Note that if type is raw-byte, the regular expression should be described hexadecimal format

Value—Text

Default— None

<type>—(Optional) The value type of this radius attribute. Currently only supports two type: 'r' (raw bytes) and 's' (string). By default, the type is raw type,'r'

Value

- `raw-byte`— Set type as raw byte
- `chars`— Set type as a sequence of characters

Default— r

<prefix>—(Optional) The prefix that is to be appended to radius attribute's value.

Value—Text

Default— None

Required Privilege Level

No specific privilege required.

< radius-authorization >

(configuration/slot/external-subscriber-monitor)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <port>port</port>
        <local-address>local-address</local-address>
        <check-lease-limit-with-sae/>
        <query-cached-dhcp-profile/>
        <default-lease-limit>default-lease-limit</default-lease-limit>
        <invalid-pool-name>invalid-pool-name</invalid-pool-name>
        <lease-time-limit>lease-time-limit</lease-time-limit>
        <cleanup-interval>cleanup-interval</cleanup-interval>
        <maximum-age>maximum-age</maximum-age>
        <minimum-pool-size>minimum-pool-size</minimum-pool-size>
        <maximum-queue-length>maximum-queue-length</maximum-queue-length>
        <service-type>service-type-choice</service-type>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the Pseudo-RADIUS authorization server.

Contents

<port>— Listening port for RADIUS access requests.

Value—Integer in the range 1-65535

Default— 1812

<local-address>—(Optional) Address to bind to pseudo-RADIUS authorization server. Absence of this attribute means binding the server to a wildcard (*) address. Currently, only IPV4 addresses are supported.

Value—Text

<check-lease-limit-with-sae>—(Optional) Specify whether to query the SAE for the number of active subscribers for a given interface. If set to true, the response to the RADIUS access request depends on the comparison between the number of active subscriber sessions and the lease limit for the interface. If the number of active subscriber sessions is less than the lease limit, the response is RADIUS access accept message without the lease limit RADIUS attribute; otherwise, the response is RADIUS access deny message. If set to false, the response is RADIUS access accept message with the lease limit RADIUS attribute.

Default— false

`<query-cached-dhcp-profile>`—(Optional) Specify whether to search for a cached DHCP profile in the o = AuthCache directory based on the MAC address.

If set to true, you must configure a directory connection to the cached DHCP profiles and the following conditions apply:

- If a cached DHCP profile is found, the RADIUS response message includes the RADIUS attributes for framed IP address, pool name, service bundle, and RADIUS class attributes.
- If the check-lease-limit-with-sae option is set to true and the number of active subscriber sessions is less than the lease limit, the RADIUS access accept message includes the cached DHCP profile.
- If the check-lease-limit-with-sae option is set to false, the RADIUS response always includes the cached DHCP profile.

If set to false, the cached DHCP profile information is not included in the RADIUS response.

Default— false

`<default-lease-limit>`—(Optional) Default lease limit for all interfaces.

Value—Integer in the range -2147483648–2147483647

Default— 1

`<invalid-pool-name>`—(Optional) Invalid pool name returned when number of active subscriber sessions exceeds the lease limit.

Value— None empty pool name

`<lease-time-limit>`—(Optional) Timeout of a cached authenticated request.

Value—Integer in the range 1–9223372036854775807 ms

Default— 60000

`<cleanup-interval>`—(Optional) Time to wait before cleaning up cached RADIUS access requests that have been authenticated or accepted.

Value—Integer in the range 1–9223372036854775807 ms

Default— 3600000

`<maximum-age>`—(Optional) Maximum age of an unacknowledged request packet cached in memory. We recommend a value slightly greater than the RADIUS packet retry interval.

Value—Integer in the range 1–9223372036854775807 ms

Default— 60000

`<minimum-pool-size>`—(Optional) Number of concurrent threads processing RADIUS messages subtasks.

Value—Integer in the range 1–2147483647

Default— 8

`<maximum-queue-length>`— Maximum number of unacknowledged RADIUS messages received from the RADIUS server before it discards new messages. 0 or negative number means infinite number of messages are allowed.

Value— Integer in the range 0–2147483647

Default— 10000

`<service-type>`—(Optional) Service type of RADIUS packets that will be forwarded.

Value

- `all`— Forward all packets
- `login`— Forward packets with type of Login
- `framed`— Forward packets with type of Framed
- `callback-login`— Forward packets with type of Callback Login
- `callback-framed`— Forward packets with type of Callback Framed
- `outbound`— Forward packets with type of Outbound
- `administrative`— Forward packets with type of Administrative
- `nas-prompt`— Forward packets with type of NAS Prompt
- `authenticate-only`— Forward packets with type of Authenticate Only
- `callback-nas-prompt`— Forward packets with type of Callback NAS Prompt
- `callback-check`— Forward packets with type of Callback Check
- `callback-administrative`— Forward packets with type of Callback Administrative

Default— framed

Required Privilege Level

No specific privilege required.

< client > (configuration/slot/external-subscriber-monitor/radius-authorization)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <client>
          <client-address>client-address</client-address> <!-- identifier -->
          <secret>secret</secret>
        </client>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the shared secret between the RADIUS server and its clients.

Contents

<client-address>— Address of the specific RADIUS client.

Value— Address in dot format. Currently, only IPv4 addresses are supported.

<secret>— Shared secret of a specific RADIUS client.

Value—Secret text

Required Privilege Level

No specific privilege required.

< cached-dhcp-profile > (configuration/slot/external-subscriber-monitor/radius-authorization/ldap)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <ldap>
          <cached-dhcp-profile>
            <base>base</base>
            <base-dn>base-dn</base-dn>
          </cached-dhcp-profile>
        </ldap>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the connection to the directory in which the cached DHCP profile data is stored.

Contents

<base>—(Optional) Top level or base or directory DN

Value— DN. You can use < base > to refer to the globally configured base DN. The string < base > is replaced with the directory base DN.

Default— < base >

<base-dn>—(Optional) Subtree in the directory in which authCache profile data is stored.

Value— DN. You can use < base > to refer to the globally configured base DN. The string < base > is replaced with the directory base DN.

Default— o = authCache, < base >

Required Privilege Level

No specific privilege required.

< directory-connection >

(configuration/slot/external-subscriber-monitor/radius-authorization/ldap/cached-dhcp-profile)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <ldap>
          <cached-dhcp-profile>
            <directory-connection>
              <url>url</url>
              <principal>principal</principal>
              <credentials>credentials</credentials>
              <protocol>protocol-choice</protocol>
              <backup-urls>backup-urls</backup-urls>
              <timeout>timeout</timeout>
              <check-interval>check-interval</check-interval>
              <blacklist/>
              <snmp-agent/>
              <signature-dn>signature-dn</signature-dn>
            </directory-connection>
          </cached-dhcp-profile>
        </ldap>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

`<protocol>`—(Optional) Security protocol used to connect to the directory. If you do not configure a security protocol, plain socket is used.

Value

- `ldaps`— LDAPS which uses SSL.

`<backup-urls>`—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Enable the SRC SNMP agent to export MIBs for this directory connection.

Default—false

`<signature-dn>`—(Optional) DN of the directory entry that specifies the `usedDirectory` attribute for the SRC CLI. The `usedDirectory` attribute identifies the vendor of the directory server.

Value— DN

Default—`o = umc`

Required Privilege Level

No specific privilege required.

< subscriber-data > (configuration/slot/external-subscriber-monitor/radius-authorization/ldap)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <ldap>
          <subscriber-data>
            <base>base</base>
            <base-dn>base-dn</base-dn>
          </subscriber-data>
        </ldap>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the connection to the directory in which subscriber data is stored.

Contents

<base>—(Optional) Top level or base or directory DN.

Value— DN. You can use < base > to refer to the globally configured base DN. The string < base > is replaced with the directory base DN.

Default— < base >

<base-dn>—(Optional) Subtree in the directory in which subscriber data is stored.

Value— DN. You can use < base > to refer to the globally configured base DN. The string < base > is replaced with the directory base DN.

Default— o = Users, < base >

Required Privilege Level

No specific privilege required.

< directory-connection >

(configuration/slot/external-subscriber-monitor/radius-authorization/ldap/subscriber-data)

Usage

```
<configuration>
  <slot>
    <external-subscriber-monitor>
      <radius-authorization>
        <ldap>
          <subscriber-data>
            <directory-connection>
              <url>url</url>
              <principal>principal</principal>
              <credentials>credentials</credentials>
              <protocol>protocol-choice</protocol>
              <backup-urls>backup-urls</backup-urls>
              <timeout>timeout</timeout>
              <check-interval>check-interval</check-interval>
              <blacklist/>
              <snmp-agent/>
              <signature-dn>signature-dn</signature-dn>
            </directory-connection>
          </subscriber-data>
        </ldap>
      </radius-authorization>
    </external-subscriber-monitor>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

`<protocol>`—(Optional) Security protocol used to connect to the directory. If you do not configure a security protocol, plain socket is used.

Value

- `ldaps`— LDAPS which uses SSL.

`<backup-urls>`—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Enable the SRC SNMP agent to export MIBs for this directory connection.

Default—false

`<signature-dn>`—(Optional) DN of the directory entry that specifies the `usedDirectory` attribute for the SRC CLI. The `usedDirectory` attribute identifies the vendor of the directory server.

Value— DN

Default—`o = umc`

Required Privilege Level

No specific privilege required.

Dynamic Service Activator Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Dynamic Service Activator. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared dsa configuration	<u>< configuration ></u>
shared dsa configuration client	<u>< client ></u>
shared dsa configuration client application	<u>< application ></u>
shared dsa configuration client application event-subscription	<u>< event-subscription ></u>
shared dsa configuration client permissions	<u>< permissions ></u>
shared dsa configuration client permissions attributes	<u>< attributes ></u>
shared dsa configuration client permissions method	<u>< method ></u>
shared dsa configuration client permissions method constraints	<u>< constraints ></u>
shared dsa configuration client permissions script	<u>< script ></u>
shared dsa configuration client permissions script constraints	<u>< constraints ></u>
shared dsa configuration logger	<u>< logger ></u>
shared dsa configuration logger file	<u>< file ></u>
shared dsa configuration logger syslog	<u>< syslog ></u>
shared dsa configuration method commit-resources constraints	<u>< constraints ></u>
shared dsa configuration method invoke-gateway-extension constraints	<u>< constraints ></u>
shared dsa configuration method invoke-script constraints	<u>< constraints ></u>
shared dsa configuration method query-available-services constraints	<u>< constraints ></u>
shared dsa configuration method query-contexts constraints	<u>< constraints ></u>
shared dsa configuration method release-resources constraints	<u>< constraints ></u>
shared dsa configuration method subscriber-activate-service	

constraints	< constraints >
shared dsa configuration method subscriber-deactivate-service constraints	< constraints >
shared dsa configuration method subscriber-login constraints	< constraints >
shared dsa configuration method subscriber-logout constraints	< constraints >
shared dsa configuration method subscriber-modify-service constraints	< constraints >
shared dsa configuration method subscriber-read-subscription constraints	< constraints >
shared dsa configuration method subscribers-activate-service constraints	< constraints >
shared dsa configuration method subscribers-deactivate-service constraints	< constraints >
shared dsa configuration method subscribers-login constraints	< constraints >
shared dsa configuration method subscribers-logout constraints	< constraints >
shared dsa configuration method subscribers-modify-service constraints	< constraints >
shared dsa configuration method subscribers-read constraints	< constraints >
shared dsa configuration method subscribers-read-subscriber constraints	< constraints >
shared dsa configuration method subscribers-read-subscription constraints	< constraints >
shared dsa configuration nic-proxy-configuration nic-proxies	< nic-proxies >
shared dsa configuration nic-proxy-configuration nic-proxies cache	< cache >
shared dsa configuration nic-proxy-configuration nic-proxies nic-host-selection	< nic-host-selection >
shared dsa configuration nic-proxy-configuration nic-proxies nic-host-selection blacklisting	< blacklisting >
shared dsa configuration nic-proxy-configuration nic-proxies resolution	< resolution >
shared dsa configuration nic-proxy-configuration nic-proxies test-nic-bindings	< test-nic-bindings >

shared dsa configuration nic-proxy-configuration nic-proxies test-nic-bindings key-values	<u>< key-values ></u>
shared dsa configuration script	<u>< script ></u>
shared dsa configuration script constraints	<u>< constraints ></u>
shared dsa configuration session-handle	<u>< session-handle ></u>
shared dsa configuration subscriber-types subscriber-types	<u>< subscriber-types ></u>
shared dsa group	<u>< group ></u>
slot dsa	<u>< dsa ></u>
slot dsa deploy	<u>< deploy ></u>
slot dsa initial	<u>< initial ></u>
slot dsa initial directory-connection	<u>< directory-connection ></u>
slot dsa initial directory-eventing	<u>< directory-eventing ></u>

< configuration > (configuration/shared/dsa)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <disable-soap-client-authentication/>
        <disable-access-control-mechanism/>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the general properties that determine the behavior of the application.

Contents

<disable-soap-client-authentication>—(Optional) Disables security control for SOAP clients.

Default—true

<disable-access-control-mechanism>—(Optional) Specify whether the access control mechanism is disabled.

Required Privilege Level

system

< client >

(configuration/shared/dsa/configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <name>name</name> <!-- identifier -->
          <restricted/>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the client.

Contents

<name>— Name of Dynamic Service Activator client. You must use a name that is configured on the Web application server for the user account.

Value—Text

<restricted>—(Optional) If set to true, restricts access to the client's own service session; otherwise, exposes all service sessions to the client.

Default—false

Required Privilege Level

system

< application >

(configuration/shared/dsa/configuration/client)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <application>
            <application-id>application-id</application-id> <!-- identifier -->
            <disabled/>
            <listener-url>listener-url</listener-url>
            <http-id>http-id</http-id>
            <http-password>http-password</http-password>
            <jms-queue-size>jms-queue-size</jms-queue-size>
          </application>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure an external SOAP application to which Dynamic Service Activator may publish subscriber, service session, and interface events.

Contents

<application-id>— Identifier of an external SOAP application to which Dynamic Service Activator may publish subscriber, service session, and interface events.

Value—Text

<disabled>—(Optional) When set, disables the sending of events to this external SOAP application.

Default—false

<listener-url>— URL of the external SOAP application to which events are published.

Value—Text

<http-id>—(Optional) Username that Dynamic Service Activator provides to the external SOAP application if HTTP authentication is required.

Value—Text

`<http-password>`—(Optional) Password that Dynamic Service Activator provides to the external SOAP application if HTTP authentication is required.

Value—Secret text

`<jms-queue-size>`—(Optional) Size of the queue that holds events received from the SAE but not yet published by SOAP. In the event of a failure, these events may be lost. If the queue is full, events from the SAE are rejected. The SAE's JMS adapter plug-in will write those rejected events to disk, and attempt to resend them periodically.

Value—Integer in the range 1-2147483647

Default— 1200 events

Required Privilege Level

system

< event-subscription >

(configuration/shared/dsa/configuration/client/application)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <application>
            <event-subscription>
              <event-subscription-name>event-subscription-name</event-subscription-name> <!-- identifier --
            >
              <disabled/>
              <subject-id>subject-id</subject-id>
              <public-interface-id>public-interface-id</public-interface-id>
              <event-type-filter>event-type-filter-choice</event-type-filter>
              <service-name-filter>service-name-filter</service-name-filter>
              <event-filter>event-filter</event-filter>
              <attribute-names>attribute-names</attribute-names>
            </event-subscription>
          </application>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Defines a set of events (and the attributes in those events) that are published to the external SOAP application.

Contents

<event-subscription-name>— Arbitrary name used to distinguish this event subscription from others.

Value—Text

<disabled>—(Optional) When set, disables this event subscription.

Default—false

<subject-id>— Persistent identifier of the subscriber or interface for which subscriber, service session, or interface events are published. This event subscription causes only those events associated with the specified subscriber or interface to be forwarded to the external SOAP application.

Value—Text

<public-interface-id>—(Optional) For interface events only, the identifier that is published to the external SOAP application instead of the interface's actual name or alias (that is, instead of its subject ID). With this identifier, the network provider can hide network information from the external SOAP application. If not specified, the value of the subject ID is published to the external SOAP application in interface events.

Value—Text

`<event-type-filter>`—(Optional) (Multivalue) Types of events that Dynamic Service Activator may forward to the external SOAP application. If no event types are specified, all event types are allowed. Note that only subscriptions for subscriber and service session events may be created by calls to Dynamic Service Activator's SOAP interface.

Value

- `user-start`—User start events (such as login)
- `user-interim`—User interim events
- `user-stop`—User stop events (such as logout)
- `service-start`—Service session start events
- `service-interim`—Service session interim events
- `service-stop`—Service session stop events
- `interface-start`—Interface up events
- `interface-interim`—Interface interim events
- `interface-stop`—Interface down events

`<service-name-filter>`—(Optional) (Multivalue) Names of services for which Dynamic Service Activator may send service session events to the external SOAP application. If no service names are specified, events for all services are allowed.

Value—Text

`<event-filter>`—(Optional) LDAP-style filter that determines which SAE plug-in events Dynamic Service Activator may forward to the external SOAP application. It allows arbitrary constraints to be placed on arbitrary plug-in event attributes. If the event attributes do not satisfy the specified constraints, Dynamic Service Activator is not allowed to forward the event to the CSP application. If not specified, no constraints are applied.

Value—Text

`<attribute-names>`—(Optional) (Multivalue) Names of SAE plug-in event attributes that Dynamic Service Activator may forward to the external SOAP application. If no attribute names are specified, all attributes are forwarded.

Value—Text

Required Privilege Level

system

< permissions >

(configuration/shared/dsa/configuration/client)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <pcmm-service>pcmm-service</pcmm-service>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the services available to the client.

Contents

<pcmm-service>—(Optional) (Multivalue) PCMM services available to the client.

Value—Text

Required Privilege Level

system

< attributes >

(configuration/shared/dsa/configuration/client/permissions)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <attributes>
              <service>service</service>
              <subscription>subscription</subscription>
              <subscriber>subscriber</subscriber>
            </attributes>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Control attributes to which a gateway client has access. If you do not configure the client's access to attributes, all configured attributes are allowed.

Contents

<service>—(Optional) (Multivalue) Service attributes to which a gateway client has access. Set this value only if you want gateway clients to have restricted access to configured attributes. If you do not want to allow access to any of these attributes, set this value to `none`.

Value—Text

<subscription>—(Optional) (Multivalue) Subscription attributes to which a gateway client has access. Set this value only if you want gateway clients to have restricted access to configured attributes. If you do not want to allow access to any of these attributes, set this value to `none`.

Value—Text

<subscriber>—(Optional) (Multivalue) Subscriber attributes to which a gateway client has access. Set this value only if you want gateway clients to have restricted access to configured attributes. If you do not want to allow access to any of these attributes, set this value to `none`.

Value—Text

Required Privilege Level

system

< method >

(configuration/shared/dsa/configuration/client/permissions)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <method>
              <name>name</name> <!-- identifier -->
            </method>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure client access to methods.

Contents

<name> — Name of the method.

Value — Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/client/permissions/method)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <method>
              <constraints>
                <argument-index>argument-index</argument-index> <!-- identifier -->
                <value>value</value>
              </constraints>
            </method>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the access constraints for this gateway client.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< script >

(configuration/shared/dsa/configuration/client/permissions)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <script>
              <name>name</name> <!-- identifier -->
            </script>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure client access to scripts.

Contents

<name> — Name of the script.

Value — Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/client/permissions/script)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <client>
          <permissions>
            <script>
              <constraints>
                <argument-index>argument-index</argument-index> <!-- identifier -->
                <value>value</value>
              </constraints>
            </script>
          </permissions>
        </client>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the access constraints for this gateway client.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< logger >

(configuration/shared/dsa/configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <logger>
          <name>name</name> <!-- identifier -->
        </logger>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Create a logging configuration for Dynamic Service Activator.

Contents

<name>— Name of the logging configuration.

Value—Text

Required Privilege Level

system

< file >

(configuration/shared/dsa/configuration/logger)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <logger>
          <file>
            <filter>filter</filter>
            <filename>filename</filename>
            <rollover-filename>rollover-filename</rollover-filename>
            <maximum-file-size>maximum-file-size</maximum-file-size>
          </file>
        </logger>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— No value

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

<maximum-file-size>—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

system

< syslog >

(configuration/shared/dsa/configuration/logger)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <logger>
          <syslog>
            <filter>filter</filter>
            <host>host</host>
            <facility>facility</facility>
            <format>format</format>
          </syslog>
        </logger>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default—/error-

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

<format>—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in

<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Default— None

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/commit-resources)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <commit-resources>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </commit-resources>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/invoke-gateway-extension)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <invoke-gateway-extension>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </invoke-gateway-extension>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/invoke-script)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <invoke-script>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </invoke-script>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/query-available-services)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <query-available-services>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </query-available-services>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/query- contexts)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <query-contexts>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </query-contexts>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/release-resources)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <release-resources>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </release-resources>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscriber-activate-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-activate-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-activate-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscriber-deactivate-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-deactivate-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-deactivate-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscriber- login)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-login>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-login>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscriber-logout)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-logout>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-logout>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscriber-modify-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-modify-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-modify-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscriber-read-subscription)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscriber-read-subscription>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscriber-read-subscription>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscribers-activate-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-activate-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-activate-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscribers-deactivate-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-deactivate-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-deactivate-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

`<argument-index>`— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

`<value>`— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscribers- login)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-login>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-login>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscribers-logout)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-logout>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-logout>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

`<argument-index>`— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

`<value>`— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscribers- modify-service)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-modify-service>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-modify-service>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscribers-read)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-read>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-read>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

`<argument-index>`— Zero-based index of the argument.

Value—Integer in the range 1–2147483647

`<value>`— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints > (configuration/shared/dsa/configuration/method/subscribers-read-subscriber)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-read-subscriber>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-read-subscriber>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

`<argument-index>`— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

`<value>`— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/method/subscribers-read-subscription)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <method>
          <subscribers-read-subscription>
            <constraints>
              <argument-index>argument-index</argument-index> <!-- identifier -->
              <value>value</value>
            </constraints>
          </subscribers-read-subscription>
        </method>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the method for all clients.

Contents

`<argument-index>`— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

`<value>`— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< nic-proxies >

(configuration/shared/dsa/configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <name>name</name> <!-- identifier -->
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the NIC proxy.

Contents

<name>— Name of the NIC proxy configuration.

Value—Text

Required Privilege Level

system

< cache >

(configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <cache>
              <cache-size>cache-size</cache-size>
              <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
              <cache-entry-age>cache-entry-age</cache-entry-age>
            </cache>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

< nic-host-selection >

(configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <nic-host-selection>
              <groups>groups</groups>
              <selection-criteria>selection-criteria-choice</selection-criteria>
            </nic-host-selection>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- **roundRobin**—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- **randomPick**—NIC proxy selects NIC hosts randomly from the list.
- **priorityList**—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

< blacklisting >

(configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies/nic-host-selection)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <nic-host-selection>
              <blacklisting>
                <try-next-system-on-error/>
                <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
                <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
              </blacklisting>
            </nic-host-selection>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s
Default—15

Required Privilege Level

system

< resolution >

(configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip—Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

<value-type>— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

<expect-multiple-values>—(Optional) Specifies whether or not the key can have multiple corresponding values.

<constraints>—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< test-nic-bindings > (configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <test-nic-bindings>
              <use-test-bindings/>
            </test-nic-bindings>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

`<use-test-bindings>`—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

< key-values > (configuration/shared/dsa/configuration/nic-proxy-configuration/nic-proxies/test-nic-bindings)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxies>
            <test-nic-bindings>
              <key-values>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </key-values>
            </test-nic-bindings>
          </nic-proxies>
        </nic-proxy-configuration>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>— Name of the key.

Value—Text

<value>— Value of the key.

Value—Text

Required Privilege Level

system

< script >

(configuration/shared/dsa/configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <script>
          <name>name</name> <!-- identifier -->
          <sae-locator-index>sae-locator-index</sae-locator-index>
        </script>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure a script for Dynamic Service Activator.

Contents

<name>— Name of Dynamic Service Activator script.

Value—Text

<sae-locator-index>— The zero-based index of the script argument to be used to locate the SAE server on which to invoke the script.

Value—Integer in the range -2147483648–2147483647

Required Privilege Level

system

< constraints >

(configuration/shared/dsa/configuration/script)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <script>
          <constraints>
            <argument-index>argument-index</argument-index> <!-- identifier -->
            <value>value</value>
          </constraints>
        </script>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access constraints for the script for all clients.

Contents

<argument-index>— Zero-based index of the argument.

Value—Integer in the range 1-2147483647

<value>— Regular expression that the argument must match.

Value—Text

Required Privilege Level

system

< session-handle > (configuration/shared/dsa/configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <session-handle>
          <strong-encoding/>
          <encoding-key>encoding-key</encoding-key>
        </session-handle>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure client's session handle.

Contents

<strong-encoding>—(Optional) Level of encoding used to encode a sessionHandle attribute to sessionUri. If set to true, a DES algorithm is used for encoding; otherwise, an exclusive-or algorithm is applied.

Default—false

<encoding-key>— Private key used for encoding a sessionHandle attribute to sessionUri.

Value—Text

Default—yS6RfY0t

Required Privilege Level

system

< subscriber-types >

(configuration/shared/dsa/configuration)

Usage

```
<configuration>
  <shared>
    <dsa>
      <configuration>
        <subscriber-types>
          <name>name</name> <!-- identifier -->
          <subscriber-id-type>subscriber-id-type-choice</subscriber-id-type>
          <nic-proxy>nic-proxy</nic-proxy>
        </subscriber-types>
      </configuration>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the subscriber types.

Contents

<name>— Name of the subscriber type used to construct the subscriber URI.

Value—Text

<subscriber-id-type>— The subscriber ID type used to pass correct argument to the subscriber URI.

Value— One of the following types:

- address—Subscriber's IP address
- dn—Distinguished name of subscriber profile
- login-name—Subscriber's login name
- interface-name—Name of the interface and name of the virtual router to which the subscriber connects
- interface-index—SNMP index of the interface and name of the virtual router to which the subscriber connects
- address-interface-name—Subscriber's IP address, name of the managed interface, and name of the virtual router to which the subscriber connects
- primary-user-name—Primary username
- session-handle—Subscriber session handle
- tunnel-session—Subscriber's L2TP tunnel session identifier, tunnel identifier and IP of L2TP Access Concentrator
- global-address—Subscriber's IP address and VPN identifier
- global-login-name—Subscriber's login name and VPN identifier

`<nic-proxy>`— Configuration that contains the NIC proxy configuration properties for the subscriber type.

Value—Text

Required Privilege Level

system

< group > (configuration/shared/dsa)

Usage

```
<configuration>
  <shared>
    <dsa>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </dsa>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure group of Dynamic Service Activator configuration properties.

Contents

<name>— Name of an SRC DSA configuration.

Value—Text

Required Privilege Level

system

< dsa > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <dsa>
      <shared>shared</shared>
    </dsa>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure local properties for Dynamic Service Activator.

Contents

<shared>— The configuration namespace that contains the Dynamic Service Activator's configuration data. You cannot specify root (/).

Value—Text

Default—/sample

Required Privilege Level

system

< deploy > (configuration/slot/dsa)

Usage

```
<configuration>
  <slot>
    <dsa>
      <deploy>
        <virtual-host>virtual-host</virtual-host>
      </deploy>
    </dsa>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the virtual host on which to deploy the application.

Contents

<virtual-host>—(Optional) The host to which the application is deployed.

Value—Text

Required Privilege Level

system

< initial > (configuration/slot/dsa)

Usage

```
<configuration>
  <slot>
    <dsa>
      <initial>
        <base-dn>base-dn</base-dn>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </dsa>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure initial properties for SRC components.

Contents

<base-dn>— DN of the root of the SDX data in the directory.

If you are storing non-SDX data in the directory, and that data changes frequently whereas the SDX data does not, you may need to adjust the default value to improve performance. For optimal performance, set the value to the DN of an entry superior to both the SDX data and the changing non-SDX data.

Value— DN

Default—o = UMC

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—

l = DynamicServiceActivation, l = WebApplication, ou = staticConfiguration, ou = Configuration, o = Management, < base >

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration, ou = Configuration, o = Management, < base >

Required Privilege Level

system

< directory-connection >

(configuration/slot/dsa/initial)

Usage

```
<configuration>
  <slot>
    <dsa>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </dsa>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

system

< directory-eventing >

(configuration/slot/dsa/initial)

Usage

```
<configuration>
  <slot>
    <dsa>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </dsa>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

system

Sessions Database Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Sessions Database. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared session-database cluster	<u>< cluster ></u>
shared session-database cluster configuration servers	<u>< servers ></u>
shared session-database cluster configuration servers server	<u>< server ></u>

< cluster > (configuration/shared/session-database)

Usage

```
<configuration>
  <shared>
    <session-database>
      <cluster>
        <name>name-choice</name> <!-- identifier -->
      </cluster>
    </session-database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the session database cluster.

Contents

Name of a session database cluster. Only one cluster (primary) is supported.

Value

- `primary`— Only one cluster is supported.

Default—`primary`

Required Privilege Level

system

< servers > (configuration/shared/session-database/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <session-database>
      <cluster>
        <configuration>
          <servers>
            <java-heap-size>java-heap-size</java-heap-size>
            <java-garbage-collection-options>java-garbage-collection-options</java-garbage-
collection-options>
          </servers>
        </configuration>
      </cluster>
    </session-database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the session database topology.

Contents

<java-heap-size>— Maximum amount of Java heap (memory) available. Do not change this value unless instructed to do so by Juniper Networks.

Value— Number of megabytes in the format *integerm*

Default—512m

<java-garbage-collection-options>— Garbage collection functionality.

Value— Options defined by the JVM

Default— -XX:NewRatio3 -XX:MaxTenuringThreshold = 15 -
XX: + HeapDumpOnOutOfMemoryError

Required Privilege Level

system

< server > (configuration/shared/session-database/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <session-database>
      <cluster>
        <configuration>
          <servers>
            <server>
              <hostname>hostname</hostname> <!-- identifier -->
              <address>address</address>
            </server>
          </servers>
        </configuration>
      </cluster>
    </session-database>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.0.0

Description

Configure the session database cluster server.

Contents

<hostname> — Hostname of the session database cluster server.

Value—Text

<address> — IP address of the session database cluster server.

Value—Text

Required Privilege Level

system

IP Multimedia Subsystem (IMS) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the IP Multimedia Subsystem (IMS). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared ims configuration	<u>< configuration ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration	<u>< nic-proxy-configuration ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration cache	<u>< cache ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration nic-host-selection	<u>< nic-host-selection ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration nic-host-selection blacklisting	<u>< blacklisting ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration resolution	<u>< resolution ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration test-nic-bindings	<u>< test-nic-bindings ></u>
shared ims configuration nic-proxy-configuration nic-proxy-configuration test-nic-bindings key-values	<u>< key-values ></u>
shared ims configuration redundancy	<u>< redundancy ></u>
shared ims configuration subscriber-types subscriber-types	<u>< subscriber-types ></u>
shared ims group	<u>< group ></u>
slot ims	<u>< ims ></u>
slot ims aracf-rq	<u>< aracf-rq ></u>
slot ims aracf-rq peer	<u>< peer ></u>
slot ims aracf-rq test templates aar	<u>< aar ></u>
slot ims aracf-rq test templates aar globally-unique-address	<u>< globally-unique-address ></u>

slot ims aracf-rq test templates aar media-component-description	<u>< media-component-description ></u>
slot ims aracf-rq test templates aar media-component-description media-sub-component	<u>< media-sub-component ></u>
slot ims initial	<u>< initial ></u>
slot ims initial directory-connection	<u>< directory-connection ></u>
slot ims initial directory-eventing	<u>< directory-eventing ></u>
slot ims java-orb object-adapter	<u>< object-adapter ></u>
slot ims logger	<u>< logger ></u>
slot ims logger file	<u>< file ></u>
slot ims logger syslog	<u>< syslog ></u>

< configuration > (configuration/shared/ims)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Description

Configure the general properties that determine the behavior of the application.

Required Privilege Level

system

< nic-proxy-configuration > (configuration/shared/ims/configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <name>name</name> <!-- identifier -->
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a NIC proxy.

Contents

<name>—

Value—Text

Required Privilege Level

system

< cache >

(configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <cache>
              <cache-size>cache-size</cache-size>
              <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
              <cache-entry-age>cache-entry-age</cache-entry-age>
            </cache>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

< nic-host-selection >

(configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <nic-host-selection>
              <groups>groups</groups>
              <selection-criteria>selection-criteria-choice</selection-criteria>
            </nic-host-selection>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- roundRobin—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- randomPick—NIC proxy selects NIC hosts randomly from the list.
- priorityList—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

< blacklisting >

(configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration/nic-host-selection)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <nic-host-selection>
              <blacklisting>
                <try-next-system-on-error/>
                <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
                <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
              </blacklisting>
            </nic-host-selection>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

system

< resolution >

(configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip—Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<value-type>`— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<expect-multiple-values>`—(Optional) Specifies whether or not the key can have multiple corresponding values.

`<constraints>`—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< test-nic-bindings > (configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <test-nic-bindings>
              <use-test-bindings/>
            </test-nic-bindings>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

`<use-test-bindings>`—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

< key-values >

(configuration/shared/ims/configuration/nic-proxy-configuration/nic-proxy-configuration/test-nic-bindings)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <test-nic-bindings>
              <key-values>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </key-values>
            </test-nic-bindings>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>— Name of the key.

Value—Text

<value>— Value of the key.

Value—Text

Required Privilege Level

system

< redundancy >

(configuration/shared/ims/configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <redundancy>
          <event-notification/>
          <state-synchronization-timeout>state-synchronization-timeout</state-synchronization-
timeout>
          <state-synchronization/>
          <state-sync-bulk-size>state-sync-bulk-size</state-sync-bulk-size>
        </redundancy>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure IMS failover.

Contents

<event-notification>—(Optional) Enables event notification. When event notification is enabled, the SRC Diameter Gateway will send RAR requests if a specific action is specified in the initial AAR and specific events occur.

Default—false

<state-synchronization-timeout>—(Optional) Time to wait for initial full synchronization request from the SAE after starting or restarting IMS. Incoming requests are blocked when waiting for initial full synchronization. If IMS does not receive any full synchronization signal from the SAE after the configured time, IMS will accept incoming requests from its peer. The suggested waiting time is the sum of state-synchronization batch time and the ping interval.

Value—Integer in the range 0–2147483647 s

Default—120

<state-synchronization>—(Optional) Enables state synchronization for IMS from the SAE. With state synchronization enabled, the state of the IMS can be synchronized at any time.

Default—false

<state-sync-bulk-size>—(Optional) Number of events that the SAE sends to the SRC Diameter Gateway at one time during state synchronization. This value is used if state synchronization is

enabled.

Value—Integer in the range 1–1000

Default— 50

Required Privilege Level

system

< subscriber-types >

(configuration/shared/ims/configuration)

Usage

```
<configuration>
  <shared>
    <ims>
      <configuration>
        <subscriber-types>
          <name>name-choice</name> <!-- identifier -->
          <subscriber-id-type>subscriber-id-type-choice</subscriber-id-type>
          <nic-proxy>nic-proxy</nic-proxy>
        </subscriber-types>
      </configuration>
    </ims>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a subscriber type.

Contents

Subscriber type used to construct the subscriber URI. The subscriber types are the same ones that you can use in applications created with the SAE CORBA remote API.

Value

- ip—
- login-name—

<subscriber-id-type>— Type of information used to identify a subscriber. It is used to pass the correct argument to the subscriber URI.

Value— One of the following types:

- address—Subscriber's IP address
- login-name—Subscriber's login name
- primary-user-name—Primary username

<nic-proxy>— Configuration that contains the NIC proxy configuration properties for the subscriber type.

Value—Text

Required Privilege Level

system

< group > (configuration/shared/ims)

Usage

```
<configuration>
  <shared>
    <ims>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </ims>
  </shared>
</configuration>
```

Description

Configure group of IMS configuration properties.

Contents

<name>— Name of an SRC-IMS configuration.

Value—Text

Required Privilege Level

system

< ims > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <ims>
      <shared>shared</shared>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure local properties for IMS.

Contents

<shared>— The configuration namespace that contains the IP Multimedia Subsystem's configuration data.

Value—Text

Default—/

Required Privilege Level

No specific privilege required.

< aracf-rq > (configuration/slot/ims)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <protocol>protocol-choice</protocol>
        <port>port</port>
        <address>address</address>
        <origin-host>origin-host</origin-host>
        <origin-realm>origin-realm</origin-realm>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the A-RACF Rq interface.

<protocol>—(Optional) Protocol to use for the transport connection.

Value— tcp or sctp

<port>—(Optional) Port to use for incoming connections.

Value— Port number

Default—3868

<address>—(Optional) IP address of the local peer.

Value— IP address

Default— 127.0.0.1

<origin-host>—(Optional) Diameter identifier for the endpoint that is the originator of the Diameter message. The Origin-Host AVP (AVP Code 264) is of type DiameterIdentity and is present in all Diameter messages.

Value—Text

<origin-realm>—(Optional) Diameter identifier for the realm of the endpoint that is the originator of the Diameter message. The Origin-Realm AVP (AVP Code 296) is of type DiameterIdentity and is present in all Diameter messages.

Value—Text

Required Privilege Level

No specific privilege required.

< peer > (configuration/slot/ims/aracf-rq)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <peer>
          <name>name</name> <!-- identifier -->
          <address>address</address>
          <port>port</port>
          <origin-host>origin-host</origin-host>
          <watchdog-timeout>watchdog-timeout</watchdog-timeout>
          <incoming-queue-limit>incoming-queue-limit</incoming-queue-limit>
        </peer>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the remote Diameter peers.

Contents

<name>— Name of SPDF Diameter peer from which this A-RACF accepts connections.

Value—Text

<address>—(Optional) IP address of the remote peer.

Value— IP address

Default— 127.0.0.1

<port>—(Optional) TCP port used of the remote peer.

Value— TCP port number

Default— 3868

<origin-host>— Diameter identifier for the endpoint that is the originator of the Diameter message. The Origin-Host AVP (AVP Code 264) is of type DiameterIdentity and is present in all Diameter messages.

Value—Text

<watchdog-timeout>—(Optional) Watchdog timeout of the connection to the remote peer (in ms).

Value—Text

Default—30000

`<incoming-queue-limit>`—(Optional) Size of incoming message queue, before system rejects messages.

Value—Text

Default—100

Required Privilege Level

No specific privilege required.

< aar > (configuration/slot/ims/aracf-rq/test/templates)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <test>
          <templates>
            <aar>
              <name>name</name> <!-- identifier -->
              <origin-host>origin-host</origin-host>
              <origin-realm>origin-realm</origin-realm>
              <af-charging-identifier>af-charging-identifier</af-charging-identifier>
              <authorization-lifetime>authorization-lifetime</authorization-lifetime>
              <user-name>user-name</user-name>
              <specific-action>specific-action-choice</specific-action>
            </aar>
          </templates>
        </test>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure AAR test settings.

Contents

<name>— Name of AAR message.

Value—Text

<origin-host>—(Optional) Diameter identifier for the endpoint that is the originator of the Diameter message.

Value—Text

<origin-realm>—(Optional) Diameter identifier for the realm of the endpoint that is the originator of the Diameter message.

Value—Text

<af-charging-identifier>—(Optional) Charging identifier for the Application Function (AF).

Value—Text

`<authorization-lifetime>`—(Optional) Timeout for an authorization. The A-RACF interprets this value as a request for a soft-state reservation.

Value—Integer in the range 0–2147483647

`<user-name>`—(Optional) Subscriber name.

Value—Text

`<specific-action>`—(Optional) (Multivalue) Specific actions.

Value

- `indication-of-bearer-release`—
- `indication-of-subscriber-detachment`—

Required Privilege Level

No specific privilege required.

< globally-unique-address > (configuration/slot/ims/aracf-rq/test/templates/aar)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <test>
          <templates>
            <aar>
              <globally-unique-address>
                <framed-ip-address>framed-ip-address</framed-ip-address>
              </globally-unique-address>
            </aar>
          </templates>
        </test>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Specify the globally unique address AVP.

Contents

<framed-ip-address>—(Optional) IPv4 address or fully qualified domain name.

Value—Text

Required Privilege Level

No specific privilege required.

< media-component-description > (configuration/slot/ims/aracf-rq/test/templates/aar)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <test>
          <templates>
            <aar>
              <media-component-description>
                <media-component-number>media-component-number</media-component-number> <!--
identifier -->
                <af-application-identifier>af-application-identifier</af-application-identifier>
                <media-type>media-type-choice</media-type>
                <flow-status>flow-status-choice</flow-status>
                <max-requested-download-bandwidth>max-requested-download-bandwidth</max-requested-
download-bandwidth>
                <max-requested-upload-bandwidth>max-requested-upload-bandwidth</max-requested-
upload-bandwidth>
              </media-component-description>
            </aar>
          </templates>
        </test>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure AAR test settings for service information about media types. The service information is used to determine QoS requirements for the media type.

Contents

<media-component-number> — Specify media component number. It contains the ordinal number of a media component

Value—Integer in the range 1-2147483647

<af-application-identifier> — Service name.

Value—Text

<media-type> —(Optional) Media type.

Value — One of the following values:

- audio
- video

- data
- application
- control
- text
- message
- other

Default—0

`<flow-status>`—(Optional) Action taken for the AAR.

Value

- enabled—
- removed—

Default— Enabled

`<max-requested-download-bandwidth>`—(Optional) Maximum download bandwidth requested.

Value—Integer in the range 0-2147483647

`<max-requested-upload-bandwidth>`—(Optional) Maximum upload bandwidth requested.

Value—Integer in the range 0-2147483647

Required Privilege Level

No specific privilege required.

< media-sub-component > (configuration/slot/ims/aracf- rq/test/templates/aar/media-component- description)

Usage

```
<configuration>
  <slot>
    <ims>
      <aracf-rq>
        <test>
          <templates>
            <aar>
              <media-component-description>
                <media-sub-component>
                  <flow-number>flow-number</flow-number> <!-- identifier -->
                  <flow-description>flow-description</flow-description>
                  <max-requested-download-bandwidth>max-requested-download-bandwidth</max-
requested-download-bandwidth>
                  <max-requested-upload-bandwidth>max-requested-upload-bandwidth</max-requested-
upload-bandwidth>
                </media-sub-component>
              </media-component-description>
            </aar>
          </templates>
        </test>
      </aracf-rq>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure AAR test settings for the QoS and filters for the IP flows.

Contents

<flow-number>— Flow number; the ordinal number of the IP flow.

Value—Integer in the range 1–2147483647

<flow-description>—(Optional) (Multivalue) Flow description AVP contains the classifier (or filter) information. The syntax of this AVP has the following restrictions:

- Only permit action should be used as action.
- No options shall be used.

A subcomponent may include up to two flow descriptions (uplink and downlink), including:

- Direction(in—uplink or out—downlink)
- Source IP address
- Destination IP address
- Source port

- Destination port
- Protocol

Value—Text

`<max-requested-download-bandwidth>`—(Optional) Maximum download bandwidth requested.

Value—Integer in the range 0-2147483647

`<max-requested-upload-bandwidth>`—(Optional) Maximum upload bandwidth requested.

Value—Integer in the range 0-2147483647

Required Privilege Level

No specific privilege required.

< initial > (configuration/slot/ims)

Usage

```
<configuration>
  <slot>
    <ims>
      <initial>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for SRC components.

Contents

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—ou = staticConfiguration,ou = Configuration,o = Management,o = umc

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration,ou = Configuration,o = Management,o = umc

Required Privilege Level

No specific privilege required.

< directory-connection >

(configuration/slot/ims/initial)

Usage

```
<configuration>
  <slot>
    <ims>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </ims>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

No specific privilege required.

< directory-eventing >

(configuration/slot/ims/initial)

Usage

```
<configuration>
  <slot>
    <ims>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

No specific privilege required.

< object-adapter > (configuration/slot/ims/java-orb)

Usage

```
<configuration>
  <slot>
    <ims>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

No specific privilege required.

< logger > (configuration/slot/ims)

Usage

```
<configuration>
  <slot>
    <ims>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value— Text

Required Privilege Level

No specific privilege required.

< file > (configuration/slot/ims/logger)

Usage

```
<configuration>
  <slot>
    <ims>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination for file-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

No specific privilege required.

< syslog > (configuration/slot/ims/logger)

Usage

```
<configuration>
  <slot>
    <ims>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </ims>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination for syslog-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings `{#}` are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

No specific privilege required.

Diameter Application Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Diameter Application. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared network diameter peer	<u><peer></u>
shared network nas-group	<u><nas-group></u>
shared network nas-group device-capabilities	<u><device-capabilities></u>
shared network nas-group interface-classifier rule	<u><rule></u>
shared network nas-group interface-classifier rule condition	<u><condition></u>
shared network nas-group interface-classifier rule script	<u><script></u>
shared network nas-group routes route	<u><route></u>
shared network nas-group routes route term	<u><term></u>
system diameter	<u><diameter></u>
system diameter client	<u><client></u>
system diameter java-orb object-adapter	<u><object-adapter></u>
system diameter logger	<u><logger></u>
system diameter logger file	<u><file></u>
system diameter server	<u><server></u>

< peer > (configuration/shared/network/diameter)

Usage

```
<configuration>
  <shared>
    <network>
      <diameter>
        <peer>
          <name>name</name> <!-- identifier -->
          <protocol>protocol-choice</protocol>
          <address>address</address>
          <enforce-source-address/>
          <local-address>local-address</local-address>
          <connect-timeout>connect-timeout</connect-timeout>
          <watchdog-timeout>watchdog-timeout</watchdog-timeout>
          <state-machine-timeout>state-machine-timeout</state-machine-timeout>
          <reconnect-timeout>reconnect-timeout</reconnect-timeout>
          <port>port</port>
          <origin-host>origin-host</origin-host>
          <incoming-queue-limit>incoming-queue-limit</incoming-queue-limit>
          <active-peer/>
        </peer>
      </diameter>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the peer in the NAS group.

Contents

<name>— Name of the peer. The peer name must be unique in the NAS group.

Value—Text

<protocol>—(Multivalue) Supported transport protocol.

Value

- tcp—TCP
- sctp—SCTP

<address>—(Multivalue) Addresses to which the peer can be connected.

Value—IP address

<enforce-source-address>—(Optional) Specify whether the remote peer must connect from one of the IP addresses listed by address.

Default—false

`<local-address>`—(Optional) Local IP address.

Value—IP address

`<connect-timeout>`—(Optional) Connect timeout.

Value—Integer in the range 0–2147483 s

Default—10

`<watchdog-timeout>`—(Optional) Watchdog timeout used for the connection to the remote peer.

Value—Integer in the range 0–2147483 s

Default—30

`<state-machine-timeout>`—(Optional) Diameter state machine timeout as specified in RFC 3588.

Value—Integer in the range 0–2147483 s

Default—30

`<reconnect-timeout>`—(Optional) Time interval between connection attempts when the peer is in the disconnected state.

Value—Integer in the range 0–2147483 s

Default—10

`<port>`—(Optional) Client port.

Value—Integer in the range 1–65565

Default—3868

`<origin-host>`—(Optional) The expected origin-host that the peer presents during connection establishment.

Value—Text

`<incoming-queue-limit>`—(Optional) Number of messages of the incoming message queue for a peer. Whenever the number of messages in the queue exceeds any multiple of this limit, the peer connection stops reading incoming requests. Similarly, when the limit is no longer exceeded, the peer connection resumes reading from the operating system transports.

Value—Integer in the range 1–2147483647

`<active-peer>`—(Optional) Specify whether the peer connection is in active mode.

Required Privilege Level

system

< nas-group > (configuration/shared/network)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <name>name</name> <!-- identifier -->
        <hosted-by>hosted-by</hosted-by>
        <peers>peers</peers>
        <scope>scope</scope>
        <default-peer>default-peer</default-peer>
        <update-grace-period>update-grace-period</update-grace-period>
        <initial-ppr-delay>initial-ppr-delay</initial-ppr-delay>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure group of equivalent peers.

Contents

<name>— Name of the NAS group.

Value—Text

<hosted-by>—(Multivalue) Hosts that instantiate this peer group.

The DIAMETER server is running on every SRC PE host. If the peer group is of type aaa, then the SAEs on the listed hosts will create device drivers for this peer group.

Value—Text

<peers>—(Optional) (Multivalue) Peers.

Value—Text

<scope>—(Optional) (Multivalue) Service scopes associated with the NAS group. The scopes are available for subscribers connected to this NAS group for selecting customized versions of services.

Value— Text

Default— No value

<default-peer>—(Optional) Default peer.

Value—Text

`<update-grace-period>`—(Optional) Grace period for interim updates.

Value—Integer in the range 0–2147483647 s

`<initial-ppr-delay>`—(Optional) Delay for sending initial policy-install PPRs.

Value—Integer in the range 0–9223372036854775807 ms

Default—0

Required Privilege Level

system

< device-capabilities > (configuration/shared/network/nas-group)

Usage

```
<configuration>  
  <shared>  
    <network>  
      <nas-group>  
        <device-capabilities>  
          <no-user-interim-update/>  
        </device-capabilities>  
      </nas-group>  
    </network>  
  </shared>  
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Properties describing the NAS device capabilities

Contents

<no-user-interim-update>—(Optional) Device does not provide user interim update

Default— No value

Required Privilege Level

system

< rule > (configuration/shared/network/nas-group/interface-classifier)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <interface-classifier>
          <rule>
            <name>name</name> <!-- identifier -->
            <target>target</target>
          </rule>
        </interface-classifier>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure an interface classification rule.

Contents

<name>— Name of the rule in the interface classification script.

Value— Text

<target>—(Optional) Result of the classification script that gets returned to the SAE.

Value— Path to a policy group. For example, /sample/junose/DHCP.

Default— No value

Required Privilege Level

system

< condition > (configuration/shared/network/nas-group/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <interface-classifier>
          <rule>
            <condition>
              <name>name</name> <!-- identifier -->
            </condition>
          </rule>
        </interface-classifier>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure match conditions used to find a target. You can configure multiple conditions for each classifier rule.

Contents

<name>— Match conditions used to find a target. For more information about configuring match conditions, see *Classifying Interfaces and Subscribers with the SRC CLI* in *SRC PE Subscribers and Subscriptions Guide*.

Value—Text

Required Privilege Level

system

< script > (configuration/shared/network/nas-group/interface-classifier/rule)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <interface-classifier>
          <rule>
            <script>
              <script-value>script-value</script-value>
              <include>include</include>
            </script>
          </rule>
        </interface-classifier>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Contents

`<script-value>`—(Optional) Script target. A script that can contain definitions of custom functions that can be called during the matching process. The complete content of the script is interpreted when the classifier is initially loaded. Because you can insert code into a script target, you can use the classification script to perform various tasks.

Value— Script enclosed in quotation marks.

Default— No value

`<include>`—(Optional) Script reference

Value—Text

Required Privilege Level

system

< route > (configuration/shared/network/nas-group)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <routes>
          <route>
            <name>name</name> <!-- identifier -->
            <precedence>precedence</precedence>
          </route>
        </routes>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure Diameter routing configuration.

Contents

<name>— Name of the route configuration.

Value—Text

<precedence>—(Optional) The order by which the route is selected. The route which meets all the matching criteria and has the lowest precedence is selected first. Routes without the precedence defined are considered after those that have the precedence defined. Route with precedence of -1 is the default route. The default route is considered after all the other routes and only one default route can be defined.

Value—Integer in the range -1-2147483647

Required Privilege Level

system

< term > (configuration/shared/network/nas-group/routes/route)

Usage

```
<configuration>
  <shared>
    <network>
      <nas-group>
        <routes>
          <route>
            <term>
              <name>name</name> <!-- identifier -->
              <transaction-variable>transaction-variable-choice</transaction-variable>
              <dictionary-attribute>dictionary-attribute-choice</dictionary-attribute>
              <operator>operator-choice</operator>
              <value>value</value>
              <low>low</low>
              <high>high</high>
            </term>
          </route>
        </routes>
      </nas-group>
    </network>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the criteria for route selection.

Contents

<name>— Name of the matching criteria configuration.

Value—Text

<transaction-variable>— Name of the transaction variable used as the matching criterion.

Value

- request-packet—RequestPacket transaction variable
- user-name—User-Name transaction variable
- realm—Realm transaction variable

<dictionary-attribute>—(Optional) Name of the dictionary attribute contained in the attribute store. Only applicable if the transaction variable is 'request-packet'.

Value

- user-name—The name of the user to be authenticated
- user-password—The password of the user to be authenticated

- `chap-password`—The response value provided by a PPP CHAP user
- `nas-ip-address`—The identifying IP address of the NAS
- `nas-port`—The physical port number of the NAS
- `service-type`—The type of service the user has requested
- `framed-protocol`—The framing to be used for framed access
- `framed-ip-address`—The address to be configured for the user
- `framed-ip-netmask`—The IP netmask to be configured for the user
- `framed-mtu`—The Maximum Transmission Unit to be configured for user
- `framed-compression`—A compression protocol to be used for the link
- `login-ip-host`—The system with which to connect the user
- `callback-number`—A dialing string to be used for callback
- `state`—A state attribute provided by the RADIUS server
- `vendor-specific`—A vendor-specific extended attribute
- `called-station-id`—The phone number that the user called
- `calling-station-id`—The phone number that the call came from
- `nas-identifier`—A string identifying the NAS originating the request
- `login-lat-service`—The system with which to connect the user by LAT
- `login-lat-node`—The node with which to automatically connect user by LAT
- `login-lat-group`—The LAT group codes which the user is authorized to use
- `chap-challenge`—The challenge sent by the NAS to a PPP CHAP user
- `nas-port-type`—The type of the physical port of the NAS
- `port-limit`—The maximum number of ports to be provided to the user
- `login-lat-port`—The port with which to connect the user by LAT

`<operator>`— Operator for criterion matching.

Value

- `equals`—Target value equals
- `not_equal`—Target value not equals
- `present`—Target exists
- `not_present`—Target not exists
- `prefix`—Target value starts with
- `suffix`—Target value ends with
- `range`—Target value in the range of

`<value>`—(Optional) Value to be matched by the target.

Value—Text

`<low>`—(Optional) Low end of the range criterion.

Value—Integer in the range -2147483648–2147483647

<high>—(Optional) High end of the range criterion.

Value—Integer in the range -2147483648–2147483647

Required Privilege Level

system

< diameter > (configuration/system)

Usage

```
<configuration>
  <system>
    <diameter>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-new-size>java-new-size</java-new-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-garbage-collection-
options>
      <protocol>protocol-choice</protocol>
      <local-address>local-address</local-address>
      <port>port</port>
      <origin-host>origin-host</origin-host>
      <origin-realm>origin-realm</origin-realm>
      <active-peers/>
      <debug-mode/>
      <load-balancing-mode>load-balancing-mode-choice</load-balancing-mode>
      <transaction-processing-log>transaction-processing-log-choice</transaction-processing-log>
      <packet-trace-log>packet-trace-log-choice</packet-trace-log>
      <peer-state-machine-log>peer-state-machine-log-choice</peer-state-machine-log>
      <configuration-log>configuration-log-choice</configuration-log>
      <diameter-server-timeout>diameter-server-timeout</diameter-server-timeout>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure DIAMETER application.

Contents

<java-heap-size>— Maximum Java heap (memory) size available to the JRE.

Value— Number of megabytes followed by m. For example, 896m. Change this value if you experience problems caused by lack of memory. Set the value lower than the available physical memory to avoid low performance caused by disk swapping. See the documentation for the JRE for valid values.

Default— The value is calculated dynamically to 70% of the available real memory.

<java-new-size>— Maximum Java new generation heap (memory) size available to the JRE when the Diameter server starts.

Value— Integer in the range 0–<Java heap size>. Specify the value in bytes or add m for megabytes, k for kilobytes, or g for gigabytes. For example, 200m. See the documentation for the JRE for valid values.

Default— 200m

<java-garbage-collection-options>— Garbage collection functionality of the Java Virtual Machine.

Value—

Default— -XX:-DontCompileHugeMethods -XX:+UseConcMarkSweepGC -

XX:CMSInitiatingOccupancyFraction = 80 -XX:+UseParNewGC -XX:SurvivorRatio = 2 -

```

XX: + CMSConcurrentMTEnabled -XX:ParallelGCThreads = 4 -
XX: + CMSParallelSurvivorRemarkEnabled -XX:TargetSurvivorRatio = 90 -
XX:ParallelCMSThreads = 4 -XX:MaxTenuringThreshold = 3 -XX:ThreadPriorityPolicy = 1
-XX: + AggressiveOpts -XX: + CMSCompactWhenClearAllSoftRefs -
XX: + AlwaysActAsServerClassMachine -XX: + CMSClassUnloadingEnabled -
XX: + CMSParallelRemarkEnabled -XX: + CMSScavengeBeforeRemark -
XX: + UseGCTaskAffinity -XX: + BindGCTaskThreadsToCPUs -XX: + UseTLAB -
XX:TLABSize = 500k -XX: + ResizeTLAB -XX: + TieredCompilation -
XX: + UseBiasedLocking -XX: + DontYieldALot

```

`<protocol>`—(Multivalue) Supported transport protocol.

Value

- `tcp`—TCP
- `sctp`—SCTP

`<local-address>`—(Optional) (Multivalue) Local IP addresses that the remote peers can use to reach this server.

Value—IP address

Default—`${interface eth0 unit 0 family inet address}`

`<port>`—(Optional) Server port.

Value—Integer in the range 1–65565

Default—3868

`<origin-host>`—(Optional) Fully qualified domain name used to identify this host to its DIAMETER peers.

Value—Text

Default— The host name as reported by
`java.net.InetAddress.getLocalHost().getCanonicalHostName()`

`<origin-realm>`—(Optional) The DNS name of the machine used to identify this host to its DIAMETER peers.

Value—Text

Default— The DNS name part of the local hostname as reported by
`java.net.InetAddress.getLocalHost().getCanonicalHostName()`

`<active-peers>`—(Optional) Specify whether the peer connection is in active mode.

Default—true

<debug-mode>—(Optional) Specify whether the peer connection is in debug mode.

Default—false

<load-balancing-mode>—(Optional) Strategy used to select a peer to forward a request message.

Value

- failover—
- round-robin—

Default—failover

<transaction-processing-log>—(Optional) Log level for transaction processing log.

Value

- log-no-messages—
- log-severe-messages—
- log-normal-messages—
- log-debug-messages—

<packet-trace-log>—(Optional) Log level for packet trace log.

Value

- log-no-messages—
- log-severe-messages—
- log-normal-messages—
- log-debug-messages—

<peer-state-machine-log>—(Optional) Log level for peer state machine log.

Value

- log-no-messages—
- log-severe-messages—
- log-normal-messages—
- log-debug-messages—

`<configuration-log>`—(Optional) Log level for configuration log.

Value

- `log-no-messages`—
- `log-severe-messages`—
- `log-normal-messages`—
- `log-debug-messages`—

`<diameter-server-timeout>`—(Optional) Diameter Server will hold the Unsolicited requests (like PPR, ASR) till the configured time waiting for the matching response (like PPA, ASA) .If no reply comes within the specified time, the request would be dropped from the server and the subsequent response would be discarded. Preferred value is between 10 to 30 Seconds.

Value—Integer in the range 1-65565 s

Default—25

Required Privilege Level

system

< client > (configuration/system/diameter)

Usage

```
<configuration>
  <system>
    <diameter>
      <client>
        <threads>threads</threads>
        <keep-alive-time>keep-alive-time</keep-alive-time>
      </client>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure properties for the client.

Contents

<threads>—(Optional) Minimum number of threads to use.

Value—Integer in the range -2147483648–2147483647

Default—50

<keep-alive-time>—(Optional) Interval to keep threads alive waiting for new commands.

Value—Integer in the range -9223372036854775808–9223372036854775807 ms

Default—60000

Required Privilege Level

system

< object-adapter >

(configuration/system/diameter/java-orb)

Usage

```
<configuration>
  <system>
    <diameter>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

system

< logger > (configuration/system/diameter)

Usage

```
<configuration>
  <system>
    <diameter>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value—Text

Required Privilege Level

system

< file > (configuration/system/diameter/logger)

Usage

```
<configuration>
  <system>
    <diameter>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0-2147483647 kbytes

Default— 1000000

Required Privilege Level

system

< server > (configuration/system/diameter)

Usage

```
<configuration>
  <system>
    <diameter>
      <server>
        <threads>threads</threads>
        <keep-alive-time>keep-alive-time</keep-alive-time>
      </server>
    </diameter>
  </system>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure properties for the server.

Contents

<threads>—(Optional) Minimum number of threads to use.

Value—Integer in the range -2147483648–2147483647

Default—50

<keep-alive-time>—(Optional) Interval to keep threads alive waiting for new commands.

Value—Integer in the range -9223372036854775808–9223372036854775807 ms

Default—60000

Required Privilege Level

system

Volume Tracking Application (VTA) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Volume Tracking Application (VTA). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

CLI Configuration Statement	Configuration Tag Element
shared vta group	<u>< group></u>
shared vta group name	<u>< configuration></u>
shared vta group name action	<u>< action></u>
shared vta group name action action-name parameter	<u>< parameter></u>
shared vta group name action action-name parameter name	<u>< name></u>
shared vta group name action action-name parameter substitution	<u>< substitution></u>
shared vta group name api	<u>< api></u>
shared vta group name database	<u>< database></u>
shared vta group name event-handler	<u>< event-handler></u>
shared vta group name logger	<u>< logger></u>
shared vta group name logger name file	<u>< file></u>
shared vta group name logger name syslog	<u>< syslog></u>
shared vta group name processor db-engine	<u>< db-engine></u>
shared vta group name processor db-engine account	<u>< account></u>
shared vta group name processor db-engine account-update-script	<u>< account-update-script></u>
shared vta group name processor db-engine service	<u>< service></u>
shared vta group name processor mailer	<u>< mailer></u>
shared vta group name processor scripts	<u>< scripts></u>
shared vta group name processor scripts external-script	<u>< external-script></u>
shared vta group name processor scripts javascript	<u>< javascript></u>

shared vta group name queue	<u>< queue></u>
shared vta logger	<u>< logger></u>
shared vta logger name file	<u>< file></u>
shared vta logger name syslog	<u>< syslog></u>
shared vta nic-proxy-configuration	<u>< nic-proxy></u>
shared vta nic-proxy-configuration name cache	<u>< cache></u>
shared vta nic-proxy-configuration name nic-host-selection	<u>< nic-host-selection></u>
shared vta nic-proxy-configuration name nic-host-selection blacklisting	<u>< blacklisting></u>
shared vta nic-proxy-configuration name resolution	<u>< resolution></u>
shared vta nic-proxy-configuration name test-nic-bindings	<u>< test-nic-bindings></u>
shared vta nic-proxy-configuration name test-nic-bindings key-values	<u>< key-values></u>
shared vta test-events	<u>< test-events></u>
shared vta test-events name attributes	<u>< attributes></u>
shared vta test-events name callback-attributes	<u>< callback-attributes></u>

<group> (configuration/shared/vta)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a group of Volume Tracking Application (VTA) configuration properties.

Contents

<name>— Name of an SRC VTA configuration.

Value—Text

Required Privilege Level

system

<configuration> (configuration/shared/vta/group)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <nic-proxy>nic-proxy</nic-proxy>
          <subscriber-id-solution>subscriber-id-solution-choice</subscriber-id-
solution>
          <sae-subscriber-id>sae-subscriber-id-choice</sae-subscriber-id>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

<nic-proxy>—(Optional) Name of the NIC proxy to use. If you are using a NIC to map subscriber IDs to an SAE, and you select a subscriber-id-solution that provides a data key for the NIC, specify which NIC proxy uses that data key.

Value— Name of a NIC proxy configured under "shared vta nic-proxy-configuration"

<subscriber-id-solution>—(Optional) Subscriber attributes whose values are used to uniquely identify VTA accounts and sessions in the VTA database, to query the NIC, and to access subscribers via the SAE API.

Value— One of the following:

- login-name: DB: login name, NIC: login name, SAE: login name
- user-dn: DB: user DN, NIC: user DN, SAE: user DN
- interface-and-router: DB: intfName and routerName, NIC: routerName, SAE: intfName and routerName
- interface-alias: DB: intfAlias, NIC: none, SAE: none
- interface-alias-and-router: DB: intfAlias and routerName, NIC: none, SAE: none
- mac-address: DB: userMacAddr, NIC: none, SAE: none
- primary-user-name (PPP login or public DHCP name): DB: primaryUserName, NIC: none, SAE: primaryUserName
- nas-port-id-and-router: DB: nasPortId and routerName, NIC: none, SAE: none
- accounting-id: DB: acctId, NIC: acctId, SAE: User IP from NIC lookup

Default—LOGIN_NAME

`<sae-subscriber-id>`—(Optional) How to generate the value that SAE uses to uniquely identify a user session, from attributes in the event received from the SAE.

Value— One of the following:

- `user-ip`: Subscriber's IP address and timestamp (time of retrieval request)
- `user-dn`: Distinguished name of subscriber profile
- `login-name`: Subscriber's login name
- `interface-and-router`: Name of interface and the name or virtual router to which the subscriber connects
- `primary-user-name`: Primary username (PPP login or public DHCP name)
- `user-ip-and-interface-and-router`: Subscriber's IP address, name of the managed interface, and name of the virtual router to which the subscriber connects
- `user-session-id`: Subscriber's RADIUS session ID

Default—`USER_SESSION_ID`

Required Privilege Level

system

<action> (configuration/shared/vta/group/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <action>
            <action-name>action-name</action-name> <!-- identifier -->
            <on-error>on-error-choice</on-error>
            <function>function-choice</function>
          </action>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure an action to be executed by an event handler in response to an event. For example, the action may update an account balance, start a service, or stop a service. You configure what action the event handler takes in response to an event when you configure an event handler. An action is performed only if an event matches the event type and condition specified in the event handler configuration. An action can invoke functions provided by any processor.

Contents

<action-name>— Name of a VTA action.

Value—Text

<on-error>—(Optional) Next step to take if this action encounters an error.

Value

- abort-event-processing— Stop processing the current event.
- go-to-next-action— Continue to the next action, if any, in the same event handler.
- go-to-next-event-handler— Skip any remaining actions in the current event handler and proceed to the next event handler (if

any).

<function>— Function that this action invokes.

Value

- db-engine-calculate-interim— Action invokes the db-engine-calculate-interim function.
- db-engine-calculate-usage— Action invokes the db-engine-calculate-usage function.
- db-engine-get-accounts— Action invokes the db-engine-get-accounts function.
- db-engine-terminate-session— Action invokes the db-engine-terminate-session function.
- db-engine-update-accounts— Action invokes the db-engine-update-accounts function.
- mailer-send— Action invokes the mailer-send function.
- sae-set-interim-interval— Action invokes the sae-set-interim-interval function.
- sae-set-service-timeout— Action invokes the sae-set-service-timeout function.
- sae-set-user-timeout— Action invokes the sae-set-user-timeout function.
- sae-start-service— Action invokes the sae-start-service function.
- sae-stop-service— Action invokes the sae-stop-service function.
- scripts-run-javascript— Action invokes the scripts-run-javascript function.
- scripts-run-external-script— Action invokes the scripts-run-external-script function.

Required Privilege Level

system

<parameter> (configuration/shared/vta/group/configuration/action/action)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <action>
            <action>
              <parameter>
                <script-name>script-name</script-name>
                <recipient>recipient</recipient>
                <from>from</from>
                <subject>subject</subject>
                <text>text</text>
                <subscription-name>subscription-name</subscription-name>
                <session-name>session-name</session-name>
                <current-subscriber-only/>
                <session-timeout>session-timeout</session-timeout>
                <persistent/>
                <reason>reason-choice</reason>
              </parameter>
            </action>
          </action>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Specify the parameters required by the chosen function.

Contents

<script-name>—(Optional) Name of a script that exists under the processor "scripts".

Value—Text

<recipient>—(Optional) Destination e-mail address.

Value—Text

<from>—(Optional) Source e-mail address.

Value—Text

<subject>—(Optional) Subject of the e-mail.

Value—Text

<text>—(Optional) Body of the e-mail.

Value—Text

<subscription-name>—(Optional) Name of the SAE service subscription.

Value—Text

<session-name>—(Optional) Name of the SAE service session.

Value—Text

<current-subscriber-only>—(Optional) Specifies whether the function is applied only to the subscriber identified in the event or to all subscribers who have the same subscriber ID. Set to True (default) to apply the function to the current subscriber only. Set to False to apply the function to all subscribers who have the same subscriber ID.

Default—true

<session-timeout>—(Optional) SAE service session timeout.

Value—Integer in the range -9223372036854775808–9223372036854775807

<persistent>—(Optional) Make the SAE service session start or stop persistent across user sessions.

Default—false

`<reason>`—(Optional) RADIUS Acct-Terminate-Cause code to use when stopping an SAE service session.

Value

- `terminate-cause-undefined`— Cause for service termination is undefined.
- `user-request`— User requested termination of service, for example with LCP Terminate or by logging out.
- `lost-carrier`— DCD was dropped on the port.
- `lost-service`— Service can no longer be provided; for example, user's connection to a host was interrupted.
- `idle-timeout`— Idle timer expired.
- `session-timeout`— Maximum session length timer expired.
- `admin-reset`— Administrator reset the port or session.
- `admin-reboot`— Administrator is ending service on the NAS, for example prior to rebooting the NAS.
- `port-error`— NAS detected an error on the port which required ending the session.
- `nas-error`— NAS detected some error, other than on the port, which required ending the session.
- `nas-request`— NAS ended session for a non-error reason not otherwise listed here.
- `nas-reboot`— NAS ended the session in order to reboot non-administratively (crash).
- `port-unneeded`— NAS ended session because resource usage fell below low-water mark.
- `port-preempted`— NAS ended session in order to allocate the port to a higher priority use.
- `port-suspended`— NAS ended session to suspend a virtual session.
- `service-unavailable`— NAS was unable to provide requested service.
- `callback`— NAS is terminating current session in order to perform callback for a new session.
- `user-error`— Input from user is in error, causing termination of session.
- `host-request`— Login Host terminated session normally.

Required Privilege Level

system

<name> (configuration/shared/vta/group/configuration/action/action/parameter)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <action>
            <action>
              <parameter>
                <name>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </name>
              </parameter>
            </action>
          </action>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Specify any input parameters required for the function.

Contents

<name>— Name of a script parameter.

Value—Text

<value>—(Optional) Value to provide for the named script parameter.

Value—Text

Required Privilege Level

system

<substitution> (configuration/shared/vta/group/configuration/action/action/parameter)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <action>
            <action>
              <parameter>
                <substitution>
                  <name>name</name> <!-- identifier -->
                  <value>value</value>
                </substitution>
              </parameter>
            </action>
          </action>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Specify the parameter substitutions to use when a service is started or stopped.

Contents

<name>— Name of a substitution to send to SAE when starting or stopping a service.

Value—Text

<value>—(Optional) Value of a substitution to send to the SAE when starting or stopping a service.

Value—Text

Required Privilege Level

system

<api> (configuration/shared/vta/group/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <api>
            <enable-soap-api/>
            <disable-client-authentication/>
          </api>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the SOAP API.

Contents

<enable-soap-api>—(Optional) Deploy and expose the VTA's SOAP API.

Default—false

<disable-client-authentication>—(Optional) Disable security control for VTA API clients.

Default—true

Required Privilege Level

system

<database> (configuration/shared/vta/group/configuration)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <database>
            <driver-class>driver-class</driver-class>
            <datasource-mapping>datasource-mapping</datasource-mapping>
            <connection-url>connection-url</connection-url>
            <user-name>user-name</user-name>
            <password>password</password>
            <check-valid-connection-sql>check-valid-connection-sql</check-valid-
connection-sql>
            <min-pool-size>min-pool-size</min-pool-size>
            <max-pool-size>max-pool-size</max-pool-size>
          </database>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the connection to the database used to store VTA account and session data.

Contents

<driver-class>— Fully qualified Java class name for JDBC driver.

Value—Text

Default—com.mysql.jdbc.Driver

<datasource-mapping>— Name of JDBC datasource mapping.

Value—Text

Default—mySQL

`<connection-url>`— URL used to connect to this VTA's database.

Value—Text

Default—`jdbc:mysql://example.com:3306/vta-example`

`<user-name>`— Username used to connect to this VTA's database.

Value—Text

Default—`vta`

`<password>`— Password used to connect to this VTA's database.

Value—Secret text

Default—`vta`

`<check-valid-connection-sql>`— SQL used to check if a database connection is still valid.

Value— SQL depends on the type of database server. For example, with Oracle you can use "select 1 from dual", and with MySQL or MS SQL Server you can use "select 1".

Default—`select 1`

`<min-pool-size>`— Minimum number of simultaneous connections to the database.

Value—Text

Default—`5`

`<max-pool-size>`— Maximum number of simultaneous connections to the database.

Value—Text

Default—`50`

Required Privilege Level

system

<event-handler> (configuration/shared/vta/group/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <event-handler>
            <event-handler-name>event-handler-name</event-handler-name> <!--
identifier -->
            <priority>priority</priority>
            <events>events</events>
            <condition>condition</condition>
            <actions>actions</actions>
          </event-handler>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a VTA event handler. You can set up multiple event handlers to process events. When an event is received, the corresponding event type and condition configured for the event handler are evaluated based on the priority. When a condition is met, the corresponding actions are performed according to the event attributes.

Contents

<event-handler-name>— Name of the VTA event handler.

Value—Text

<priority>— Priority of event handler. The event handler with the lowest priority number sees the event before other event handlers with higher priority numbers.

Value—Integer in the range 0–1000

<events>—(Optional) (Multivalue) Types of events handled by event handler. Types of events including service and subscriber tracking events, account update events, and callback events.

Only the specified events are handled by the event handler. You can configure the event handler to handle multiple types of events. Separate events with a comma.

Value—Text

`<condition>`—(Optional) Condition to be met. Each event handler evaluates conditions to determine whether it should handle the event. Specify conditions as a script written in the JavaScript programming language. If the script returns a value of True, the event handler performs the corresponding actions.

Value—Multi-line text

`<actions>`—(Multivalue) Actions to execute, in order, for each handled event. Actions are performed only if the event matches the specified event type and condition you configure for the event handler. An action can invoke functions provided by any processor.

Value—Text

Required Privilege Level

system

<logger> (configuration/shared/vta/group/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <logger>
            <name>name</name> <!-- identifier -->
          </logger>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Create a logging configuration for the SRC Volume Tracking Application (SRC VTA).

Contents

<name>— Name of the logging configuration.

Value—Text

Required Privilege Level

system

<file> (configuration/shared/vta/group/configuration/logger)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <logger>
            <file>
              <filter>filter</filter>
              <filename>filename</filename>
              <rollover-filename>rollover-filename</rollover-filename>
              <maximum-file-size>maximum-file-size</maximum-file-size>
            </file>
          </logger>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— Default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server, or Web application server runs, has write access to this folder. If the user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename**Default**— No value

`<rollover-filename>`—(Optional) Absolute path to the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename**Example**—`/opt/UMC/sae/var/log/sae.alt`**Default**— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes**Default**— 1000000**Required Privilege Level**

system

<syslog> (configuration/shared/vta/group/configuration/logger)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <logger>
            <syslog>
              <filter>filter</filter>
              <host>host</host>
              <facility>facility</facility>
              <format>format</format>
            </syslog>
          </logger>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure logging of messages to a system logging facility.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default—/error-

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

`<facility>`—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in <http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Default— None

Required Privilege Level

system

<db-engine> (configuration/shared/vta/group/configuration/processor)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <db-engine>
              <record-balance-change/>
              <session-history-depth>session-history-depth</session-history-
depth>
            </db-engine>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the db-engine processor. The SRC VTA uses the db-engine processor to update database and subscriber accounts. The db-engine processor works as a proxy to the external database. It calculates usage, updates account balances, retrieves account and active session data, and sets initial balances of subscriber accounts.

Contents

<record-balance-change>—(Optional) Record every account balance change in VTA database.

Default—false

<session-history-depth>—(Optional) Session history depth in hours. This is the number of past hours to examine when calculating the average usage rates and session lengths.

Value—Text

Required Privilege Level

system

<account> (configuration/shared/vta/group/configuration/processor/db-engine)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <db-engine>
              <account>
                <name>name</name> <!-- identifier -->
                <initial-balance>initial-balance</initial-balance>
                <initial-status>initial-status</initial-status>
              </account>
            </db-engine>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the initial settings of all newly created VTA accounts.

Contents

<name>— Name of a VTA database account.

Value—Text

<initial-balance>— Set initial balance of new accounts to this value.

Value—Integer in the range -9223372036854775808–9223372036854775807

<initial-status>— Set initial status of new accounts to this value.

Value—Text

Required Privilege Level

system

<account-update-script> (configuration/shared/vta/group/configuration/processor/db-engine)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <db-engine>
              <account-update-script>
                <name>name</name> <!-- identifier -->
                <script>script</script>
              </account-update-script>
            </db-engine>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a script that updates accounts. You can set up scripts to update balances in the accounts from which the usage of a service is charged and update accounts by assigning values to variables for the account balances.

Contents

<name>— Name of script that updates VTA accounts.

Value—Text

<script>— Script that updates VTA accounts.

Value—Multi-line text

Required Privilege Level

system

<service> (configuration/shared/vta/group/configuration/processor/db-engine)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <db-engine>
              <service>
                <name>name</name> <!-- identifier -->
                <usage-metric-function>usage-metric-function</usage-metric-
function>
                <interim-interval-function>interim-interval-function</interim-
interval-function>
              </service>
            </db-engine>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the db-engine processor to manage a service.

Contents

<name>— Name of an SAE service.

Value—Text

<usage-metric-function>—(Optional) Script that returns the usage of this service.

Value—Multi-line text

`<interim-interval-function>`—(Optional) Script that returns desired interim accounting interval.

Value—Multi-line text

Required Privilege Level

system

<mailer> (configuration/shared/vta/group/configuration/processor)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <mailer>
              <smtp-server>smtp-server</smtp-server>
              <smtp-server-port>smtp-server-port</smtp-server-port>
              <smtp-server-user>smtp-server-user</smtp-server-user>
              <smtp-server-password>smtp-server-password</smtp-server-password>
            </mailer>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the mailer processor. You can use the functions provided by the mailer processor to set up the SRC VTA to send e-mail notifications when certain events occur. You can specify that e-mail notifications be sent to anyone, for example, subscribers, system administrators, or an automated billing system.

Contents

<smtp-server>— SMTP server used for outgoing e-mail. Specify the host name or IP address of the SMTP server.

Value—Text

<smtp-server-port>—(Optional) Port used to connect to the SMTP server.

Value—Text

`<smtp-server-user>`—(Optional) User name for SMTP server authentication.

Value—Text

`<smtp-server-password>`—(Optional) Password for SMTP server authentication.

Value—Secret text

Required Privilege Level

system

<scripts> (configuration/shared/vta/group/configuration/processor)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <scripts>
            </scripts>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the processor that executes scripts.

Required Privilege Level

system

<external-script> (configuration/shared/vta/group/configuration/processor/scripts)

Usage

```

<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <scripts>
              <external-script>
                <name>name</name> <!-- identifier -->
                <full-path>full-path</full-path>
                <parameters>parameters</parameters>
                <return-type>return-type-choice</return-type>
                <return-attribute>return-attribute</return-attribute>
              </external-script>
            </scripts>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the scripts processor to run an external script. External scripts are executable programs, such as shell scripts, that are available on the SRC VTA host. Each external script can perform a task and return a value. If the script returns a value, the value can be added to the current event as an event attribute.

Contents

<name>— Name of an external script.

Value—Text

<full-path>— Absolute path to executable file containing the script.

Value—Text

`<parameters>`—(Multivalue) Ordered list of parameter names required by the script.

Value—Text

`<return-type>`—(Optional) Type of the value returned by this script.

Value

- Integer—
- Long—
- Float—
- Double—
- String—
- Boolean—

`<return-attribute>`—(Optional) Event attribute in which to store script's return value.

Value—Text

Required Privilege Level

system

<javascript> (configuration/shared/vta/group/configuration/processor/scripts)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <processor>
            <scripts>
              <javascript>
                <name>name</name> <!-- identifier -->
                <script>script</script>
                <return-type>return-type-choice</return-type>
                <return-attribute>return-attribute</return-attribute>
              </javascript>
            </scripts>
          </processor>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the scripts processor to run a JavaScript program. JavaScript programs are used to process attributes of a VTA event and can also be used for any arbitrary purpose, just like external scripts. For example, it can convert a VTA event attribute in a timestamp to a date string and add it to the event as a new attribute. The attribute can then be used for subsequent actions, such as sending an e-mail notification to the subscriber. The JavaScript program can refer to any attributes of the event being processed, and it must return a value.

Contents

<name>— Name of JavaScript script.

Value—Text

<script>— Script written in the JavaScript programming language.

Value—Multi-line text

<return-type>—(Optional) Type of value returned by this script.

Value

- Integer—
- Long—
- Float—
- Double—
- String—
- Boolean—

<return-attribute>—(Optional) Event attribute in which to store script's return value.

Value—Text

Required Privilege Level

system

<queue> (configuration/shared/vta/group/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <group>
        <configuration>
          <queue>
            <max-queue-size>max-queue-size</max-queue-size>
            <persistent/>
            <max-concurrency>max-concurrency</max-concurrency>
          </queue>
        </configuration>
      </group>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a VTA event queue.

Contents

<max-queue-size>—(Optional) Maximum number of events that this VTA will hold in its JMS queue while they await processing by the configured event handlers.

Value—Integer in the range -2147483648–2147483647

Default—10000

<persistent>—(Optional) Locate a VTA event queue on disk, rather than in memory. If set, events that this VTA holds in its JMS queue while they await processing will be persistent; that is, they should survive a server restart.

Default—false

<max-concurrency>—(Optional) Maximum number of threads consuming events from the queue and passing them to the configured event handlers.

Value—Integer in the range -2147483648–2147483647

Default—100

Required Privilege Level

system

<logger> (configuration/shared/vta/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <logger>
          <name>name</name> <!-- identifier -->
        </logger>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Create a logging configuration for the SRC Volume Tracking Application (SRC VTA).

Contents

<name>— Name of the logging configuration.

Value—Text

Required Privilege Level

system

<file> (configuration/shared/vta/configuration/logger)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <logger>
          <file>
            <filter>filter</filter>
            <filename>filename</filename>
            <rollover-filename>rollover-filename</rollover-filename>
            <maximum-file-size>maximum-file-size</maximum-file-size>
          </file>
        </logger>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— Default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server, or Web application server runs, has write access to this folder. If the user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— No value

`<rollover-filename>`—(Optional) Absolute path to the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—`/opt/UMC/sae/var/log/sae.alt`

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

system

<syslog> (configuration/shared/vta/configuration/logger)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <logger>
          <syslog>
            <filter>filter</filter>
            <host>host</host>
            <facility>facility</facility>
            <format>format</format>
          </syslog>
        </logger>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure logging of messages to a system logging facility.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default—/error-

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in <http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Default— None

Required Privilege Level

system

<nic-proxy> (configuration/shared/vta/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <name>name</name> <!-- identifier -->
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure the NIC proxy configuration for the SRC VTA.

Contents

<name>— Name of the NIC proxy configuration.

Value—Text

Required Privilege Level

system

<cache> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <cache>
              <cache-size>cache-size</cache-size>
              <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-
interval>
              <cache-entry-age>cache-entry-age</cache-entry-age>
            </cache>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default— 10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default— 15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The

NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

<nic-host-selection> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <nic-host-selection>
              <groups>groups</groups>
              <selection-criteria>selection-criteria-choice</selection-criteria>
            </nic-host-selection>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- roundRobin—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- randomPick—NIC proxy selects NIC hosts randomly from the list.
- priorityList—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

<blacklisting> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy/nic-host-selection)

Usage

```

<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <nic-host-selection>
              <blacklisting>
                <try-next-system-on-error/>
                <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
                <blacklist-retry-interval>blacklist-retry-interval</blacklist-
retry-interval>
              </blacklisting>
            </nic-host-selection>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

`<blacklist-retry-interval>`— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

system

<resolution> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name>— NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value— Path to the NIC resolver.

Example—/realms/ip/A1/realms/dn/A1.

Default— No value

<key-type>— Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value— One of the following types:

- Ip—Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<value-type>`— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<expect-multiple-values>`—(Optional) Specifies whether or not the key can have multiple corresponding values.

`<constraints>`—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

<test-nic-bindings> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <test-nic-bindings>
              <use-test-bindings/>
            </test-nic-bindings>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

<use-test-bindings>—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

<key-values> (configuration/shared/vta/configuration/nic-proxy-configuration/nic-proxy/test-nic-bindings)

Usage

```

<configuration>
  <shared>
    <vta>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy>
            <test-nic-bindings>
              <key-values>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </key-values>
            </test-nic-bindings>
          </nic-proxy>
        </nic-proxy-configuration>
      </configuration>
    </vta>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>—

Value—Text

<value>—

Value—Text

Required Privilege Level

system

<test-events> (configuration/shared/vta/configuration)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <test-events>
          <name>name</name> <!-- identifier -->
          <type>type</type>
        </test-events>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Configure a test event for the SRC VTA.

Contents

<name>— Name of the test event.

Value—Text

<type>—(Optional) Type of simulated event.

Value—Text

Required Privilege Level

system

<attributes> (configuration/shared/vta/configuration/test-events)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <test-events>
          <attributes>
            <name>name</name> <!-- identifier -->
            <value>value</value>
          </attributes>
        </test-events>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Specify the attributes that are sent to the VTA in the test event.

Contents

<name>— Name of the attribute to assign a value to.

Value—Text

<value>— Value of the attribute.

Value—Text

Required Privilege Level

system

<callback-attributes> (configuration/shared/vta/configuration/test-events)

Usage

```
<configuration>
  <shared>
    <vta>
      <configuration>
        <test-events>
          <callback-attributes>
            <name>name</name> <!-- identifier -->
            <value>value</value>
            <type>type-choice</type>
          </callback-attributes>
        </test-events>
      </configuration>
    </vta>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Specify the callback attributes that are sent to the VTA in the test event.

Contents

<name>— Name of the attribute to assign a value to.

Value—Text

<value>— Value of the attribute.

Value—Text

<type>— Type of the attribute.

Value

- **boolean**—

- long—
- integer—
- double—
- float—
- string—

Default—string

Required Privilege Level

system

Application Server Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Application Server. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

| CLI Configuration Statement | Configuration Tag Element |
|--|--|
| shared application-server cluster | <u>< cluster></u> |
| shared application-server cluster name | <u>< configuration></u> |
| shared application-server cluster name nodes node | <u>< node></u> |
| shared application-server user | <u>< user></u> |
| shared application-server user name authentication | <u>< authentication></u> |
| slot number application-server | <u>< server></u> |
| slot number application-server shared-cluster | <u>< server></u> |
| slot number application-server web http | <u>< http></u> |
| slot number application-server web https | <u>< https></u> |
| slot number application-server web virtual-host | <u>< host></u> |

<cluster> (configuration/shared/application-server)

Usage

```
<configuration>
  <shared>
    <application-server>
      <cluster>
        <name>name</name> <!-- identifier -->
      </cluster>
    </application-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Description

Application server cluster.

Contents

<name>— Name of a application server cluster.

Value— Name of a application server cluster.

Required Privilege Level

system

<configuration> (configuration/shared/application-server/cluster)

Usage

```
<configuration>
  <shared>
    <application-server>
      <cluster>
        <configuration>
          <channel-stack>channel-stack-choice</channel-stack>
          <multicast-address>multicast-address</multicast-address>
        </configuration>
      </cluster>
    </application-server>
  </shared>
</configuration>
```

<channel-stack>— Protocol for cluster communication (jgroups)

Value

- `udp`— UDP as jgroup-protocol.
- `tcp`— TCP as jgroup-protocol.

Default— `true`

<multicast-address>—(Optional) Multicast Address for Cluster

Value—Text

Required Privilege Level

system

<node> (configuration/shared/application-server/cluster/configuration)

Usage

```
<configuration>
  <shared>
    <application-server>
      <cluster>
        <configuration>
          <nodelist>
            <node>
              <address>address</address> <!-- identifier -->
              <node-id>node-id</node-id>
            </node>
          </nodelist>
        </configuration>
      </cluster>
    </application-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.2.0

Contents

<address>— IP address of cluster node

Value—IP address

<node-id>— Unique server peer id of cluster node

Value—Integer in the range -2147483648–2147483647

Required Privilege Level

system

<user> (configuration/shared/application-server)

Usage

```
<configuration>
  <shared>
    <application-server>
      <user>
        <name>name</name> <!-- identifier -->
        <role>role</role>
      </user>
    </application-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure Web application user.

Contents

<name>— Name that is used to access the Web applications.

Value— Name

<role>—(Optional) (Multivalue) Name of the role which is allowed to access the Web applications.

Value—Text

Required Privilege Level

system

<authentication> (configuration/shared/application-server/user)

Usage

```
<configuration>
  <shared>
    <application-server>
      <user>
        <authentication>
          <plain-text-password-value>plain-text-password-value</plain-text-
password-value>
          <encrypted-password>encrypted-password</encrypted-password>
        </authentication>
      </user>
    </application-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure authentication methods for a user to log in to a C Series Controller. You can assign multiple authentication methods to a single user.

Contents

<plain-text-password-value>—(Optional) Plain-text password that is autoencrypted.

Value— Password characters

<encrypted-password>—(Optional) Password in encrypted format.

Value— Encrypted-password

Required Privilege Level

system

<application-server> (configuration/slot)

Usage

```
<configuration>
  <slot>
    <application-server>
      <java-heap-size>java-heap-size</java-heap-size>
      <java-garbage-collection-options>java-garbage-collection-options</java-
garbage-collection-options>
    </application-server>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure the properties for application server deployment.

Contents

<java-heap-size>— Java heap (memory) size available to application server.

Value— Number of megabytes followed by m. For example, 896m. Change this value if you experience problems caused by lack of memory. Set the value lower than the available physical memory to avoid low performance caused by disk swapping. See the documentation for the JRE for valid values.

Default— 615m

<java-garbage-collection-options>— Garbage collection functionality of the Java Virtual Machine.

Value—Text

Default— -Dsun.rmi.dgc.client.gcInterval= 3600000 -Dsun.rmi.dgc.server.gcInterval= 3600000>

Required Privilege Level

system

<application-server> (configuration/slot)

Usage

```
<configuration>
  <slot>
    <application-server>
      <shared-cluster>shared-cluster</shared-cluster>
    </application-server>
  </slot>
</configuration>
```

Contents

<shared-cluster>—(Optional) Shared cluster object that holds all of the cluster configuration.

Value— Name of the object in the format "/cluster/< path> ". The < path> is separated by /.

Required Privilege Level

system

<http> (configuration/slot/application-server/web)

Usage

```
<configuration>
  <slot>
    <application-server>
      <web>
        <http>
          <port>port</port>
          <interface>interface</interface>
        </http>
      </web>
    </application-server>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access to the application server through HTTP without encryption.

Contents

<port>— TCP port to be used for incoming connections to the Web applications.

Value—Integer in the range 1–65535

Default—8080

<interface>—(Multivalue) List of network interfaces to accept incoming connections. If you do not specify any interfaces, the software accepts connections from all interfaces.

Value—Text

Default—eth

Required Privilege Level

system

<https> (configuration/slot/application-server/web)

Usage

```
<configuration>
  <slot>
    <application-server>
      <web>
        <https>
          <port>port</port>
          <interface>interface</interface>
          <local-certificate>local-certificate</local-certificate>
        </https>
      </web>
    </application-server>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure access to the application server through secure HTTP with encryption.

Contents

<port>— TCP port to be used for incoming connections to the Web applications.

Value—Integer in the range 1–65535

Default—8443

<interface>—(Multivalue) List of network interfaces to accept incoming connections. If you do not specify any interfaces, the software accepts connections from all interfaces.

Value—Text

Default—eth0

<local-certificate>—(Optional) Name of the security certificate (in X.509 format) on the local system. This certificate is used to secure connections from external Web browsers to the Web applications.

Value— Name of digital security certificate

Required Privilege Level

system

<virtual-host> (configuration/slot/application-server/web)

Usage

```
<configuration>
  <slot>
    <application-server>
      <web>
        <virtual-host>
          <host-name>host-name</host-name> <!-- identifier -->
          <alias>alias</alias>
          <allow-address>allow-address</allow-address>
          <deny-address>deny-address</deny-address>
          <allow-host>allow-host</allow-host>
          <deny-host>deny-host</deny-host>
        </virtual-host>
      </web>
    </application-server>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.0.0

Description

Configure virtual hosts for the Web applications.

Contents

<host-name>— Network name associated with the application server.

Value—Text

<alias>—(Multivalue) Network name associated with the virtual host.

Value—Text

<allow-address>—(Optional) (Multivalue) Remote client's IP address allowed access to this virtual host.

Value—IP address

`<deny-address>`—(Optional) (Multivalue) Remote client's IP address denied access to this virtual host.

Value—IP address

`<allow-host>`—(Optional) (Multivalue) Remote client's hostname allowed access to this virtual host.

Value—Text

`<deny-host>`—(Optional) (Multivalue) Remote client's hostname denied access to this virtual host.

Value—Text

Required Privilege Level

system

License Management Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for license management. The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

| CLI Configuration Statement | Configuration Tag Element |
|---|---|
| shared license-server alarm | <u>< alarm></u> |
| shared license-server corba | <u>< corba></u> |
| shared license-server email | <u>< email></u> |
| shared license-server engine | <u>< engine></u> |
| shared license-server logging logger | <u>< logger></u> |
| shared license-server logging logger name file-logger | <u>< file-logger></u> |
| shared license-server logging logger name syslog-logger | <u>< syslog-logger></u> |
| shared license-server persistence-control | <u>< persistence-control></u> |
| shared license-server repository | <u>< repository></u> |

<alarm> (configuration/shared/license-server/configuration/license-server)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <alarm>
            <threshold>threshold</threshold>
            <report-server>report-server</report-server>
          </alarm>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure the SRC license server to send alarms to administrators through SNMP and e-mail messages.

Contents

<threshold>— A threshold as a percentage of licensed capacity that, when exceeded, sends SNMP minor traps and initiates e-mail alerts to the system administrator.

Value—Integer in the range 0–100

Default— 80

<report-server>—(Optional) SNMP server to receive warning traps.

Value— IP address or hostname

Default— No value

Required Privilege Level

system

<corba> (configuration/shared/license-server/configuration/license-server)

Usage

```

<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <corba>
            <orb-configuration-property-file>orb-configuration-property-file</
orb-configuration-property-file>
          </corba>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Use the CORBA configuration to define the location of the property file for the object request broker (ORB). Typically, you do not need to change this property.

Contents

<orb-configuration-property-file>— ORB configuration property file.

Value— *filename*

Default— *etc/jacorb.properties*

Required Privilege Level

system

<email> (configuration/shared/license-server/configuration/license-server)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <email>
            <server>server</server>
            <alarm-report-address>alarm-report-address</alarm-report-address>
            <usage-report-address>usage-report-address</usage-report-address>
          </email>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure e-mail addresses to receive messages about license server warnings or license server usage reports.

Contents

<server>— SMTP e-mail server to receive alarms and usage reports.

Value— IP address or hostname

Default— No value

<alarm-report-address>— E-mail address of the system administrator to receive warning e-mail messages.

Value— E-mail address

Default— No value

<usage-report-address>—(Optional) (Multivalue) E-mail address of the system administrator to receive usage report e-mail messages.

Value— E-mail address

Default— No value

Required Privilege Level

system

<engine> (configuration/shared/license-server/configuration/license-server)

Usage

```

<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <engine>
            <service-session-unit-size>service-session-unit-size</service-
session-unit-size>
            <sae-service-unit-size>sae-service-unit-size</sae-service-unit-size>
            <lease-renew-interval>lease-renew-interval</lease-renew-interval>
            <allocate-license-threshold>allocate-license-threshold</allocate-
license-threshold>
            <release-license-threshold>release-license-threshold</release-
license-threshold>
          </engine>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure general properties for the SRC license server.

Contents

<service-session-unit-size>— Size of each license unit for the service session property; this is the size of the license unit allocated to the SAE.

Value—Integer in the range -2147483648–2147483647

Default— 50

<sae-service-unit-size>—(Optional) Size of each license unit for the SAE service property; this is the size of the license unit allocated to the SAE.

Value—Integer in the range -2147483648–2147483647

Default— 25

`<lease-renew-interval>`— Lease period for the licenses that the SAE client receives.

Value— Number of seconds in the range 0-129600 **Note:** 604800 is 1 week;
129600 is 2 weeks.

Default— 604800 (one week)

`<allocate-license-threshold>`— Threshold, as a percentage of the chunk size, at which the SAE client obtains more licenses.

Value— Integer in the range 0–100

Default— 90

`<release-license-threshold>`— Threshold, as a percentage of the chunk size, at which the SAE client releases one license unit.

Value— Integer in the range 0–100

Default— 10

Required Privilege Level

system

<logger> (configuration/shared/license-server/configuration/license-server/logging)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <logging>
            <logger>
              <name>name</name> <!-- identifier -->
            </logger>
          </logging>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure logging properties for the SRC license server.

Contents

<name>— Name of the logging configuration.

Value—Text

Required Privilege Level

system

<file-logger> (configuration/shared/license-server/configuration/license-server/logging/logger)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <logging>
            <logger>
              <file-logger>
                <filter>filter</filter>
                <filename>filename</filename>
                <rollover-filename>rollover-filename</rollover-filename>
                <maximum-file-size>maximum-file-size</maximum-file-size>
              </file-logger>
            </logger>
          </logging>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default

folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

`<rollover-filename>`—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example— /opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value— Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

system

<syslog-logger> (configuration/shared/license-server/ configuration/license-server/logging/logger)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <logging>
            <logger>
              <syslog-logger>
                <filter>filter</filter>
                <host>host</host>
                <port>port</port>
                <facility>facility</facility>
                <format>format</format>
              </syslog-logger>
            </logger>
          </logging>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

`<port>`—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

`<facility>`—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings {#} are replaced with the log information [...]).

Value— MessageFormat string as specified in <http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

system

<persistence-control> (configuration/shared/license-server/ configuration/license-server)

Usage

```
<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <persistence-control>
            <root-directory-of-the-license-server>root-directory-of-the-license-
server</root-directory-of-the-license-server>
            <work-directory-of-the-license-server>work-directory-of-the-license-
server</work-directory-of-the-license-server>
            <license-server-state-cache-file>license-server-state-cache-file</
license-server-state-cache-file>
          </persistence-control>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure the root directory, the working directory, and the cache file location for the SRC license server.

Contents

<root-directory-of-the-license-server>— Root directory of the license server.

Value— DN

Default— */opt/UMC/licsvr*

<work-directory-of-the-license-server>— Work directory of the license server, in which license server states are saved.

Value— Directory path

Default— *var/run*

`<license-server-state-cache-file>`— Cache file for license server state information.

Value— *filename*

Default— state

Required Privilege Level

system

<repository> (configuration/shared/license-server/configuration/license-server)

Usage

```

<configuration>
  <shared>
    <license-server>
      <configuration>
        <license-server>
          <repository>
            <ldap-server-address>ldap-server-address</ldap-server-address>
            <server-port>server-port</server-port>
            <search-base>search-base</search-base>
            <authentication-dn>authentication-dn</authentication-dn>
            <password>password</password>
            <signature-dn>signature-dn</signature-dn>
            <polling-interval>polling-interval</polling-interval>
            <timeout>timeout</timeout>
          </repository>
        </license-server>
      </configuration>
    </license-server>
  </shared>
</configuration>

```

Release Information

Statement introduced in SRC Release 3.1.0

Description

Configure access to the Juniper Networks database for the SRC license server.

Contents

<ldap-server-address>—(Multivalue) IP addresses or hostnames of the LDAP server that stores licensing data.

This is a required property. If no value is assigned, the license server does not start. If this value is removed while the license server is running, the server rejects licensing requests. After a new value is entered and the license server connects to the LDAP server, the license server accepts license requests again.

Value— IP address or hostname

Default— 127.0.0.1

<server-port>— Port of the LDAP server that stores licensing data.

Value— Integer in the range 0–65535

Default— 389

<search-base>— Base directory of the LDAP server that stores licensing data.

Value— DN

Default— *o= umc*

<authentication-dn>— DN used by the SAE to authenticate access to the LDAP server that stores licensing data.

Value— DN

Default— *cn= licsvr, ou= Components, o= Operators, o= umc*

<password>— Password used to authenticate access to the LDAP server that stores licensing data.

Value— *password*

Default— *licsvr*

<signature-dn>—(Optional) DN of the entry that specifies the LDAP schema attribute usedDirectory. This attribute identifies the type of directory, such as openLDAP or DirX, on which the license data is stored.

Value— *< DN>* . The string *< base>* is replaced with the directory base DN

Default— No value

<polling-interval>—(Optional) Frequency for checking the directory for changes.

Value— Integer in the range 15–86400 s

Default— 30

<timeout>—(Optional) Maximum time that the directory eventing system waits for the directory to respond.

Value— Integer in the range 0–9223372036854775807 ms

Default— No value

Required Privilege Level

system

Juniper Policy Server (JPS) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Juniper Policy Server (JPS). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

| CLI Configuration Statement | Configuration Tag Element |
|---|---|
| slot jps | <u><jps></u> |
| slot jps am-interface | <u><am-interface></u> |
| slot jps cmts-interface | <u><cmts-interface></u> |
| slot jps cmts-registry cmts | <u><cmts></u> |
| slot jps cmts-registry cmts range-pool | <u><range-pool></u> |
| slot jps cmts-registry cmts subnet-pool | <u><subnet-pool></u> |
| slot jps logger | <u><logger></u> |
| slot jps logger file | <u><file></u> |
| slot jps logger syslog | <u><syslog></u> |
| slot jps rks-interface | <u><rks-interface></u> |
| slot jps rks-interface am | <u><am></u> |
| slot jps rks-interface rks-pair | <u><rks-pair></u> |

<jps> (configuration/slot)

Usage

```
<configuration>
  <slot>
    <jps>
      <java-heap-size>java-heap-size</java-heap-size>
      <snmp-agent/>
      <policy-server-id>policy-server-id</policy-server-id>
      <use-psid-in-gate-commands/>
      <cmts-message-buffer-size>cmts-message-buffer-size</cmts-message-buffer-size>
      <am-message-buffer-size>am-message-buffer-size</am-message-buffer-size>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the Juniper Policy Server (JPS).

Contents

<java-heap-size>—Maximum amount of Java heap (memory) available to the JRE.

Value—Number of megabytes in the format *integerm*
Default—400m

<snmp-agent>—(Optional) Enables the JPS to communicate with the SNMP agent.

<policy-server-id>—(Optional) Network-wide unique identifier for the JPS that is sent to CMTS devices in Pdp-Config messages and gate commands generated by the JPS.

Value—Integer in the range 0–65535
Default—0

<use-psid-in-gate-commands>—(Optional) Specifies whether gate control messages (such as gate-info messages) generated by this JPS should contain its policy server identifier. These gate control messages are not generated by an application manager for forwarding by the JPS.

When the JPS is communicating only with PCMM I03 CMTS devices, the value must be true. When the JPS is communicating with any pre-PCMM I03 CMTS devices, the value must be false.

Default—false

<cmts-message-buffer-size>—(Optional) Maximum number of messages buffered for each CMTS destination.

Value—Integer in the range 1–2147483647

`<am-message-buffer-size>`—(Optional) Maximum number of messages buffered for each application manager destination.

Value—Integer in the range 1–2147483647

Required Privilege Level

No specific privilege required.

< am-interface > (configuration/slot/jps)

Usage

```
<configuration>
  <slot>
    <jps>
      <am-interface>
        <validate-pcmm-objects/>
        <message-max-length>message-max-length</message-max-length>
        <message-read-buffer-size>message-read-buffer-size</message-read-buffer-size>
        <message-write-buffer-size>message-write-buffer-size</message-write-buffer-size>
        <open-connection-timeout>open-connection-timeout</open-connection-timeout>
        <pep-id>pep-id</pep-id>
        <listening-address>listening-address</listening-address>
      </am-interface>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the application manager-to-policy server interface (PKT-MM3) so that the policy server can communicate with application managers.

Contents

<validate-pcmm-objects>—(Optional) Specifies whether to validate PCMM objects received from PDPs.

Default—true

<message-max-length>—(Optional) Maximum length of incoming messages.

Value—Integer in the range 1-2147483647

<message-read-buffer-size>—(Optional) Size of message read buffer.

Value—Integer in the range 1-2147483647

<message-write-buffer-size>—(Optional) Size of message write buffer.

Value—Integer in the range 1-2147483647

<open-connection-timeout>—(Optional) Maximum time to wait for the initial PCMM messages to be exchanged after a TCP connection is established. The connection is dropped when initial PCMM messages are not exchanged within this time period.

Value— Number of seconds in the range 1-65535

Default—5

`<pep-id>`—(Optional) Network-wide unique identifier for this JPS instance. Changes apply only to COPS connections that are established after you make the change.

Value—Text

Default—SDX-JPS

`<listening-address>`—(Optional) Local IP address on which the JPS listens for incoming connections from application managers. If no value is specified, the JPS listens on all IP addresses. Changes take effect only after you restart the JPS.

Value—IP address

Required Privilege Level

No specific privilege required.

< cmts-interface > (configuration/slot/jps)

Usage

```
<configuration>
  <slot>
    <jps>
      <cmts-interface>
        <message-max-length>message-max-length</message-max-length>
        <message-read-buffer-size>message-read-buffer-size</message-read-buffer-size>
        <message-write-buffer-size>message-write-buffer-size</message-write-buffer-size>
        <open-connection-timeout>open-connection-timeout</open-connection-timeout>
        <connection-open-retry-interval>connection-open-retry-interval</connection-open-retry-
interval>
        <sent-message-timeout>sent-message-timeout</sent-message-timeout>
        <validate-pcmm-objects/>
        <cmts-addresses>cmts-addresses</cmts-addresses>
        <keepalive-interval>keepalive-interval</keepalive-interval>
        <synch-despite-unreachable-pep/>
        <synch-despite-pre-i03-pep/>
        <use-ssq-ssc-with-pre-i03-pep/>
        <local-address>local-address</local-address>
      </cmts-interface>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the policy server-to-CMTS interface (PKT-MM2) so that the policy server can communicate with CMTS devices.

Contents

<message-max-length>—(Optional) Maximum length of incoming messages.

Value—Integer in the range 1-2147483647

<message-read-buffer-size>—(Optional) Size of message read buffer.

Value—Integer in the range 1-2147483647

<message-write-buffer-size>—(Optional) Size of message write buffer.

Value—Integer in the range 1-2147483647

<open-connection-timeout>—(Optional) Maximum time to wait for the initial PCMM messages to be exchanged after a TCP connection is established. The connection is dropped when initial PCMM messages are not exchanged within this time period.

Value— Number of seconds in the range 1-65535

Default—5

`<connection-open-retry-interval>`—(Optional) Time to wait before the JPS tries to reconnect to CMTS devices.

Value— Number of seconds in the range 1-2147483647

`<sent-message-timeout>`—(Optional) Maximum time to wait for the sent messages to be exchanged after a TCP connection is established. This value must be less than `held-decs-max-age` and `pending-rks-event-max-age` of the corresponding RKS interface.

Value—Integer in the range 1-2147483647 s

`<validate-pcmm-objects>`—(Optional) Specifies whether to validate PCMM objects received from PEPs.

Default—true

`<cmts-addresses>`—(Multivalue) IP addresses of all the CMTS devices to which the JPS will try to connect.

Value— List of IP addresses

`<keepalive-interval>`—(Optional) Interval between keepalive messages sent from the COPS client (CMTS device) to the COPS server (JPS). Changes apply only to COPS connections that are established after you make the change.

Value— Number of seconds in the range 0-65535. A value of 0 means that no keepalive messages will be exchanged between the CMTS device and the JPS.

Default—60

`<synch-despite-unreachable-pep>`—(Optional) Controls whether synchronization proceeds when the JPS receives a synchronization request from an application manager (such as the SAE) and the JPS is not connected to a CMTS device to which it should be connected.

If a CMTS device is not connected and `synch-despite-unreachable-pep` is false, synchronization does not proceed and ends with a `transport-error` in a `synch-complete` message. If a CMTS device is not connected and `synch-despite-unreachable-pep` is true, synchronization proceeds only with the connected CMTS devices and ends with a `state-data-incomplete` error in a `synch-complete` message.

Default—true

`<synch-despite-pre-i03-pep>`—(Optional) Controls whether synchronization proceeds when the JPS receives a synchronization request from an application manager (such as the SAE) and the JPS is connected to a pre-PCMM I03 CMTS device.

If any connected CMTS device is pre-PCMM I03 and sync-despite-pre-i03-pep is false, synchronization does not proceed and ends with a state-data-incomplete error in a synch-complete message. If any connected CMTS device is pre-PCMM I03 and sync-despite-pre-i03-pep is true, synchronization proceeds; whether the pre-PCMM I03 CMTS devices are included in the synchronization depends on the use-ssq-ssc-with-pre-i03-pep value.

Default—true

`<use-ssq-ssc-with-pre-i03-pep>`—(Optional) Controls whether synchronization includes both pre-PCMM I03 and PCMM I03 CMTS devices when the JPS receives a synchronization request from an application manager (such as the SAE) and the JPS is connected to a pre-PCMM I03 CMTS device. Relevant only when at least one pre-PCMM I03 CMTS device is connected and sync-despite-pre-i03-pep is specified as true.

If use-ssq-ssc-with-pre-i03-pep is false, synchronization proceeds only with PCMM I03 CMTS devices and ends with a state-data-incomplete error in a synch-complete message. If use-ssq-ssc-with-pre-i03-pep is true, synchronization proceeds with both PCMM I03 and pre-PCMM I03 CMTS devices. With the pre-PCMM I03 CMTS devices, an SSQ solicits Gate-Info-Acks which are filtered based on the original Synch-Request's application manager ID and subscriber ID (if any). The Gate-Info-Acks are transformed into Synch-Reports. Note that if two synchronization attempts must send SSQs to pre-PCMM I03 CMTS devices concurrently, the second attempt is rejected with an insufficient-resources error in a synch-complete message.

Default—false

`<local-address>`—(Optional) Source IP address that the JPS uses to communicate with CMTS devices. If a JPS has only one IP address, this value can be left blank.

Value— IP address. If no value is specified and there is more than one local address, a random local address is used as the source address.

Required Privilege Level

No specific privilege required.

< cmts > (configuration/slot/jps)

Usage

```
<configuration>
  <slot>
    <jps>
      <cmts-registry>
        <cmts>
          <cmts-ip>cmts-ip</cmts-ip> <!-- identifier -->
        </cmts>
      </cmts-registry>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure a CMTS device to which the JPS can connect and the pools of subscriber IP addresses that are managed by the CMTS device.

Contents

<cmts-ip>— IP address of the CMTS device.

Value—IP address

Required Privilege Level

No specific privilege required.

< range-pool > (configuration/slot/jps/cmts-registry/cmts)

Usage

```
<configuration>
  <slot>
    <jps>
      <cmts-registry>
        <cmts>
          <range-pool>
            <pool-index>pool-index</pool-index> <!-- identifier -->
            <low>low</low>
            <high>high</high>
          </range-pool>
        </cmts>
      </cmts-registry>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscriber IP pools in IP address ranges.

Contents

<pool-index>—Address range pool index

Value—Integer in the range -2147483648–2147483647

<low>— First IP address in the IP range for the pool of subscriber IP addresses that are managed by the CMTS device.

Value—IP address

<high>— Last IP address in the IP range for the pool of subscriber IP addresses that are managed by the CMTS device.

Value—IP address

Required Privilege Level

No specific privilege required.

< subnet-pool > (configuration/slot/jps/cmts-registry/cmts)

Usage

```
<configuration>
  <slot>
    <jps>
      <cmts-registry>
        <cmts>
          <subnet-pool>
            <subnet>subnet</subnet> <!-- identifier -->
            <exclude>exclude</exclude>
          </subnet-pool>
        </cmts>
      </cmts-registry>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure subscriber IP pools in IP subnets.

Contents

<subnet>— IP address and mask of the subnet for the pool of subscriber IP addresses that are managed by the CMTS device.

Value— IP address/IP mask

<exclude>—(Optional) (Multivalue) IP addresses of the subnet that are excluded from the subscriber IP pool managed by the CMTS device.

Value—IP address

Required Privilege Level

No specific privilege required.

< logger > (configuration/slot/jps)

Usage

```
<configuration>
  <slot>
    <jps>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value—Text

Required Privilege Level

No specific privilege required.

< file > (configuration/slot/jps/logger)

Usage

```
<configuration>
  <slot>
    <jps>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to a file.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

No specific privilege required.

< syslog > (configuration/slot/jps/logger)

Usage

```
<configuration>
  <slot>
    <jps>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure logging of messages to system logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings `{#}` are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

No specific privilege required.

< rks-interface > (configuration/slot/jps)

Usage

```
<configuration>
  <slot>
    <jps>
      <rks-interface>
        <pending-rks-event-max-size>pending-rks-event-max-size</pending-rks-event-max-size>
        <pending-rks-event-max-age>pending-rks-event-max-age</pending-rks-event-max-age>
        <held-decs-max-size>held-decs-max-size</held-decs-max-size>
        <held-decs-max-age>held-decs-max-age</held-decs-max-age>
        <bcid-cache-size>bcid-cache-size</bcid-cache-size>
        <bcid-cache-age>bcid-cache-age</bcid-cache-age>
        <use-default-when-am-requests-unconfigured-rks/>
        <element-id>element-id</element-id>
        <local-address>local-address</local-address>
        <local-port>local-port</local-port>
        <retry-interval>retry-interval</retry-interval>
        <local-timeout>local-timeout</local-timeout>
        <mso-data>mso-data</mso-data>
        <mso-domain-name>mso-domain-name</mso-domain-name>
        <default-rks-pair>default-rks-pair</default-rks-pair>
      </rks-interface>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure the the policy server-to-RKS interface (PKT-MM4) so that policy events can be sent to the RKS. As part of the configuration, you can configure RKS pairs and their associated application managers.

Contents

<pending-rks-event-max-size>—(Optional) Maximum number of RKS events waiting for Gate-Set/Del-Ack/Err messages.

Value—Integer in the range 0–2147483647

<pending-rks-event-max-age>—(Optional) The oldest age of RKS events waiting for Gate-Set/Del-Ack/Err messages. The maximum age must be greater than sent-message-timeout of the corresponding CMTS interface.

Value— Number of seconds in the range 0–2147483647

<held-decs-max-size>—(Optional) Maximum number of outstanding Gate-Info requests.

Value—Integer in the range 0–2147483647

<held-decs-max-age>—(Optional) The oldest age of outstanding Gate-Info requests. The maximum age must be greater than sent-message-timeout of the corresponding CMTS interface.

Value— Number of seconds in the range 0–2147483647

`<bcid-cache-size>`—(Optional) Size of billing correlation ID (BCID) cache.

Value—Integer in the range 0–2147483647

`<bcid-cache-age>`—(Optional) The oldest age of billing correlation ID (BCID) in cache.

Value—Integer in the range 0–2147483647 s

`<use-default-when-am-requests-unconfigured-rks>`—(Optional) Specifies whether the default RKS pair is used when an application manager requests the use of an unconfigured RKS pair.

If true, use the default RKS pair (normally used in cases where no RKS pair specific to an application manager is configured for a given application manager). If false, only use the default RKS pair when no RKS pair specific to an application manager is found.

Default—false

`<element-id>`— Network-wide unique identifier for RKS event origin.

Value—Integer in the range 0–99999

`<local-address>`—(Optional) Source IP address used to communicate with the RKS. If no value is specified and there is more than one local address, the JPS randomly selects a local address to be used as the source address.

Value—IP address

`<local-port>`—(Optional) (Multivalue) Source UDP port or a pool of ports used to communicate with the RKS.

Value—Text

`<retry-interval>`—(Optional) Time the JPS waits for a response from an RKS before it resends the packet. The JPS keeps sending packets until either the RKS acknowledges the packet or the maximum timeout is reached.

Value—Integer in the range 0–2147483647

`<local-timeout>`—(Optional) Maximum time (ms) the JPS waits for a response from an RKS.

Value—Integer in the range 0–2147483647 ms

`<mso-data>` —(Optional) MSO-defined data in the financial entity ID (FEID) attribute, which is included in event messages.

Value— ASCII character string of 8 bytes; first eight bytes of the FEID attribute.

`<mso-domain-name>` —(Optional) MSO domain name in the financial entity ID (FEID) attribute that uniquely identifies the MSO for billing and settlement purposes.

Value— ASCII character string of up to 239 bytes; begins at the ninth byte of the FEID attribute.

`<default-rks-pair>` —(Optional) Default RKS pair that the JPS uses unless an RKS pair is configured for a given application manager.

Value—Text

Required Privilege Level

No specific privilege required.

< am > (configuration/slot/jps/rks-interface)

Usage

```
<configuration>
  <slot>
    <jps>
      <rks-interface>
        <am>
          <am-name>am-name</am-name> <!-- identifier -->
          <am-id>am-id</am-id>
          <rks-pair-name>rks-pair-name</rks-pair-name>
          <trusted/>
        </am>
      </rks-interface>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure RKS pairs for associated application managers.

Contents

<am-name> — Name used to group parameters for the associated application manager. All parameters that share the same application manager name configure the RKS pair to which events associated with a specific application manager are sent.

Value—Text

<am-id>— Identifier of the application manager. The application manager includes this identifier in all messages that it sends to the JPS. The JPS passes this ID to the CMTS device in gate control messages. The CMTS device returns the ID associated with the gate to the JPS. The JPS sends events associated with this application manager to the RKS pair specified by rks-pair-name with the same application manager name (am-name).

If no value is specified, the RKS pair configuration is not defined for this application manager. If you must set trusted to true without defining the RKS pair configuration, you must specify a value for am-id and not specify a value for rks-pair-name.

Value—Integer in the range 0–2147483647

<rks-pair-name> —(Optional) RKS pair that the JPS will send events to when those events are triggered by gate transitions associated with the application manager specified by am-id with the same application manager name (am-name).

If no value is specified, the RKS pair configuration is not defined for this application manager. Use when you must set trusted to true without defining the RKS pair configuration.

Value—Text

`<trusted>`—(Optional) Specifies whether this application manager is a trusted network element to the JPS.

If an application manager is trusted by the JPS and it provides a billing correlation ID (BCID) as part of a gate-set message, the JPS reuses the BCID provided by the application manager instead of generating a new one. If an application manager is trusted by the JPS and it specifies an RKS pair as part of a gate-set message, the JPS uses the RKS pair supplied by the application manager instead of using the one specified by `rks-pair-name` (which might not be defined in the JPS configuration). However, the RKS pair specified by the application manager is used only if the RKS pair exists in the JPS configuration. If the application manager specifies an RKS pair that does not exist in the JPS configuration, the default RKS pair is used.

Required Privilege Level

No specific privilege required.

< rks-pair > (configuration/slot/jps/rks-interface)

Usage

```
<configuration>
  <slot>
    <jps>
      <rks-interface>
        <rks-pair>
          <rks-pair-name>rks-pair-name</rks-pair-name> <!-- identifier -->
          <primary-address>primary-address</primary-address>
          <primary-port>primary-port</primary-port>
          <secondary-address>secondary-address</secondary-address>
          <secondary-port>secondary-port</secondary-port>
        </rks-pair>
      </rks-interface>
    </jps>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure RKS pairs. When running more than one JPS in a group to provide redundancy, all the JPSs in that group must have same RKS pair configuration (including the default RKS pair and any configured RKS pairs associated with a specific application manager).

Contents

<rks-pair-name>—RKS pair name

Value—Text

<primary-address>— IP address of the primary RKS for this RKS pair.

Value—IP address

<primary-port>—(Optional) UDP port on the primary RKS to which the JPS sends events.

Value—Integer in the range 1-65535

Default—1813

<secondary-address>—(Optional) IP address of the secondary RKS for this RKS pair.

Value—IP address

<secondary-port>—(Optional) UDP port on the secondary RKS to which the JPS sends events.

Value—Integer in the range 1-65535

Default—1813

Required Privilege Level

No specific privilege required.

Third-Generation Partnership Project Gateway (3GPP) Configuration Tag Elements

The following table summarizes the tag elements in the SRC XML API for the Third-Generation Partnership Project Gateway (3GPP). The table lists the SRC CLI configuration statements that have corresponding SRC XML tag elements, and maps each statement to its tag element. CLI commands are listed in alphabetical order.

| CLI Configuration Statement | Configuration Tag Element |
|--|--|
| shared gw-3gpp configuration | <u>< configuration ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration | <u>< nic-proxy-configuration ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration cache | <u>< cache ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration nic-host-selection | <u>< nic-host-selection ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration nic-host-selection blacklisting | <u>< blacklisting ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration resolution | <u>< resolution ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration test-nic-bindings | <u>< test-nic-bindings ></u> |
| shared gw-3gpp configuration nic-proxy-configuration nic-proxy-configuration test-nic-bindings key-values | <u>< key-values ></u> |
| shared gw-3gpp configuration subscriber-types subscriber-types | <u>< subscriber-types ></u> |
| shared gw-3gpp group | <u>< group ></u> |
| slot gw-3gpp | <u>< gw-3gpp ></u> |
| slot gw-3gpp gx | <u>< gx ></u> |
| slot gw-3gpp initial | <u>< initial ></u> |
| slot gw-3gpp initial directory-connection | <u>< directory-connection ></u> |
| slot gw-3gpp initial directory-eventing | <u>< directory-eventing ></u> |

| | |
|--------------------------------------|--|
| slot gw-3gpp java-orb object-adapter | < object-adapter > |
| slot gw-3gpp logger | < logger > |
| slot gw-3gpp logger file | < file > |
| slot gw-3gpp logger syslog | < syslog > |

< configuration > (configuration/shared/gw-3gpp)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Description

Configure the general properties of the 3GPP gateway that determine the behavior of the application.

Required Privilege Level

system

< nic-proxy-configuration > (configuration/shared/gw-3gpp/configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <name>name</name> <!-- identifier -->
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure a NIC proxy.

Contents

<name>—

Value—Text

Required Privilege Level

system

< cache > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <cache>
              <cache-size>cache-size</cache-size>
              <cache-cleanup-interval>cache-cleanup-interval</cache-cleanup-interval>
              <cache-entry-age>cache-entry-age</cache-entry-age>
            </cache>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Description

Configure the NIC proxy cache properties. You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties.

Contents

<cache-size>—(Optional) Maximum size of the cache in which the NIC proxy retains data. If you decrease the cache size or disable the cache while the NIC proxy is running, the NIC proxy removes entries in order of descending age until the cache size meets the new limit.

Value— Integer in the range 0–2147483647

Default—10000

<cache-cleanup-interval>— Time interval at which the NIC proxy removes expired entries from its cache.

Value— Number of seconds in the range 5–2147483

Default—15

<cache-entry-age>—(Optional) Maximum time that the NIC proxy can cache an entry. The NIC proxy compares this property with the life expectancy of each entry and uses the lower value to determine when to remove the entry.

Value— Number of seconds in the range 0–4294967295

- 0 or unspecified—Life expectancy of the data, which determines expiration of data
- Other values—Actual time that the NIC proxy caches entries

Required Privilege Level

system

< nic-host-selection > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <nic-host-selection>
              <groups>groups</groups>
              <selection-criteria>selection-criteria-choice</selection-criteria>
            </nic-host-selection>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Description

Configure the mechanism that a NIC proxy uses to select NIC system if multiple systems are available. You use NIC host selection when you use NIC replication.

Contents

<groups>—(Optional) (Multivalue) List of groups of NIC hosts that the NIC proxy can contact for resolution requests.

Value— Names of groups.

Default— No value

<selection-criteria>— Selection criteria that the NIC proxy uses to determine which NIC host to contact. Configure selection criteria if you configure more than one group.

Value— One of the following criteria:

- roundRobin—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.
- randomPick—NIC proxy selects NIC hosts randomly from the list.
- priorityList—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

Use round-robin or random pick to distribute resolution requests among NIC hosts. Use priority list if you prefer to use a particular NIC host; for example, you may reduce operating cost by using a local NIC host.

Default— roundRobin

Required Privilege Level

system

< blacklisting > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration/nic-host-selection)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <nic-host-selection>
              <blacklisting>
                <try-next-system-on-error/>
                <number-of-retries-before-blacklisting>number-of-retries-before-
blacklisting</number-of-retries-before-blacklisting>
                <blacklist-retry-interval>blacklist-retry-interval</blacklist-retry-interval>
              </blacklisting>
            </nic-host-selection>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure how to handle nonresponsive NIC hosts. When a NIC host does not respond, it is blacklisted which means that other NIC hosts are contacted until the blacklisted host becomes available again.

Contents

<try-next-system-on-error>—(Optional) Specifies whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable. Configure this property only if you configure more than one group.

Default—true

<number-of-retries-before-blacklisting>— Number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time.

Value—Integer in the range 0–2147483647

Default—3

<blacklist-retry-interval>— Interval at which the NIC proxy attempts to connect to an unavailable NIC host.

Value—Integer in the range 15–2147483647 s

Default—15

Required Privilege Level

system

< resolution > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <resolution>
              <resolver-name>resolver-name</resolver-name>
              <key-type>key-type</key-type>
              <value-type>value-type</value-type>
              <expect-multiple-values/>
              <constraints>constraints</constraints>
            </resolution>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Description

Configure properties for a NIC proxy (NIC locator), the NIC component that requests information on behalf of an application.

Contents

<resolver-name> — NIC resolver that the NIC proxy uses. This resolver must be the same as one that is configured on the NIC host.

Value — Path to the NIC resolver.

Example—/realms/ip/A1,/realms/dn/A1.

Default — No value

<key-type> — Type of data used that the key provides for the NIC resolution. You can provide a qualifier to a data type to distinguish between different instances of a data type in a resolution scenario, or to provide information about a data type to clarify the use of that data type in a resolution.

Value — One of the following types:

- Ip—Subscriber's IP address
- Vr—Virtual router
- Interface—Name of router's interface
- InterfaceId—Identifier of an interface on the router
- Dn—LDAP distinguished name for subscriber
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<value-type>`— Type of value to be returned in the resolution. The value type varies according to the application that uses the NIC proxy.

Value— One of the following types:

- SaeId—SAE server ID
- LoginName—Subscriber login ID
- AnyString—Other information

To qualify data types, enter a qualifier within parentheses.

Example—LoginName(username).

Default— No value

`<expect-multiple-values>`—(Optional) Specifies whether or not the key can have multiple corresponding values.

`<constraints>`—(Optional) Data type that a resolver uses during the resolution process. A constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

Configure a constraint only if the constraint will be provided by the application in the resolution request. Typically, you do not need to configure constraints.

Value— Data types of constraints specified for the NIC resolution. Separate data types with commas.

Default— No value

Required Privilege Level

system

< test-nic-bindings > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <test-nic-bindings>
              <use-test-bindings/>
            </test-nic-bindings>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure key-value mappings to be used to test a NIC resolution.

Contents

<use-test-bindings>—(Optional) Test the NIC resolutions without having to configure or run a NIC host. The values returned are those configured in the key-values property.

Default—false

Required Privilege Level

system

< key-values > (configuration/shared/gw-3gpp/configuration/nic-proxy-configuration/nic-proxy-configuration/test-nic-bindings)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <nic-proxy-configuration>
          <nic-proxy-configuration>
            <test-nic-bindings>
              <key-values>
                <name>name</name> <!-- identifier -->
                <value>value</value>
              </key-values>
            </test-nic-bindings>
          </nic-proxy-configuration>
        </nic-proxy-configuration>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure keys and associated values to use for testing. Define all of values to be returned for specified keys.

Contents

<name>— Name of the key.

Value—Text

<value>— Value of the key.

Value—Text

Required Privilege Level

system

< subscriber-types > (configuration/shared/gw-3gpp/configuration)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <configuration>
        <subscriber-types>
          <name>name-choice</name> <!-- identifier -->
          <subscriber-id-type>subscriber-id-type-choice</subscriber-id-type>
          <nic-proxy>nic-proxy</nic-proxy>
        </subscriber-types>
      </configuration>
    </gw-3gpp>
  </shared>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure a subscriber type.

Contents

Subscriber type used to construct the subscriber URI. The subscriber types are the same ones that you can use in applications created with the SAE CORBA remote API.

Value

- session-handle—

Default—handle

<subscriber-id-type>— Type of information used to identify a subscriber. It is used to pass the correct argument to the subscriber URI.

Value— One of the following types:

- session handle—Subscriber's Session Handle

Default—session-handle

<nic-proxy>— Configuration that contains the NIC proxy configuration properties for the subscriber type.

Value—Text

Required Privilege Level

system

< group > (configuration/shared/gw-3gpp)

Usage

```
<configuration>
  <shared>
    <gw-3gpp>
      <group>
        <name>name</name> <!-- identifier -->
      </group>
    </gw-3gpp>
  </shared>
</configuration>
```

Description

Configure a group of 3GPP gateway configuration properties.

Contents

<name>— Name of an SRC 3GPP gateway configuration.

Value—Text

Required Privilege Level

system

< gw-3gpp > (configuration/slot)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <shared>shared</shared>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure local properties for 3GPP-PCC GW.

Contents

<shared>— The configuration namespace that contains the 3GPP-PCC Gateway Subsystem's configuration data.

Value—Text

Default—/

Required Privilege Level

No specific privilege required.

< gx > (configuration/slot/gw-3gpp)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <gx>
        <diameter-peer>diameter-peer</diameter-peer>
        <protocol>protocol-choice</protocol>
        <port>port</port>
        <address>address</address>
        <origin-host>origin-host</origin-host>
        <origin-realm>origin-realm</origin-realm>
      </gx>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure the 3GPP Gx interface.

<diameter-peer>—(Multivalue) List of remote diameter peers acting as PCRF.

Value—Text

Introduced in—4.3.0

<protocol>—(Optional) Protocol to use for the transport connection.

Value— tcp or sctp

Default—tcp

<port>—(Optional) Port to use for incoming connections.

Value— Port number

Default—3868

<address>— IP address of the local peer.

Value— IP address

Default—\${interface eth0 unit 0 family inet address}

<origin-host>— Diameter identifier for the endpoint that is the originator of the Diameter message. The Origin-Host AVP (AVP Code 264) is of type DiameterIdentity and is present in all Diameter messages.

Value—Text

Default— The host name as reported by

```
java.net.InetAddress.getLocalHost().getCanonicalHostName()
```

`<origin-realm>`— Diameter identifier for the realm of the endpoint that is the originator of the Diameter message. The Origin-Realm AVP (AVP Code 296) is of type DiameterIdentity and is present in all Diameter messages.

Value—Text

Default— The DNS name part of the local hostname as reported by
`java.net.InetAddress.getLocalHost().getCanonicalHostName()`

Required Privilege Level

No specific privilege required.

< initial > (configuration/slot/gw-3gpp)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <initial>
        <static-dn>static-dn</static-dn>
        <dynamic-dn>dynamic-dn</dynamic-dn>
      </initial>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Configure initial properties for SRC components.

Contents

<static-dn>—(Optional) Location of administrator-defined configuration data in the directory.

Value—Text

Default—ou = staticConfiguration,ou = Configuration,o = Management,o = umc

<dynamic-dn>—(Optional) Location of programmatically-defined configuration data in the directory.

Value—Text

Default—ou = dynamicConfiguration,ou = Configuration,o = Management,o = umc

Required Privilege Level

No specific privilege required.

< directory-connection > (configuration/slot/gw-3gpp/initial)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <initial>
        <directory-connection>
          <url>url</url>
          <backup-urls>backup-urls</backup-urls>
          <principal>principal</principal>
          <credentials>credentials</credentials>
          <protocol>protocol-choice</protocol>
          <timeout>timeout</timeout>
          <check-interval>check-interval</check-interval>
          <blacklist/>
          <snmp-agent/>
        </directory-connection>
      </initial>
    </gw-3gpp>
  </slot>
</configuration>
```

Description

Configure properties for the directory connection.

Contents

<url>—(Optional) URL that identifies the location of the primary directory server.

Value— URL

Default—ldap://127.0.0.1:389

<backup-urls>—(Optional) (Multivalue) URLs that identify the locations of backup directory servers. Backup servers are used if the primary directory server is not accessible.

Value— List of URLs

<principal>— DN that the SRC component uses for authentication to access the directory.

Value— DN.

When you specify the DN, you can use <base> to indicate the base DN.

<credentials>— Password with which the SRC component accesses the directory.

Value— Password

<protocol>—(Optional) Security protocol used to connect to the directory. If you do not configure a

security protocol, plain socket is used.

Value

- `ldaps`—LDAPS which uses SSL.

`<timeout>`—(Optional) Maximum amount of time during which the directory must respond to a connection request.

Value—Integer in the range 1–2147483647 s

Default—10

`<check-interval>`—(Optional) Time interval at which the directory monitoring system verifies its connection to the directory. If the directory connection fails after this interval, the directory monitoring system initiates a connection to another directory.

Value—Integer in the range 15–2147483647 s

Default—60

`<blacklist>`—(Optional) Specifies whether the directory monitoring system prevents connection to a directory if the directory fails to respond during 10 polling intervals.

Default—false

`<snmp-agent>`—(Optional) Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

Default—false

Required Privilege Level

No specific privilege required.

< directory-eventing > (configuration/slot/gw-3gpp/initial)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <initial>
        <directory-eventing>
          <eventing/>
          <signature-dn>signature-dn</signature-dn>
          <polling-interval>polling-interval</polling-interval>
          <event-base-dn>event-base-dn</event-base-dn>
          <dispatcher-pool-size>dispatcher-pool-size</dispatcher-pool-size>
        </directory-eventing>
      </initial>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 1.0.0

Description

Change configuration for directory eventing properties. In most cases, you can use the default configuration for these properties.

Contents

<eventing>—(Optional) Enable an SRC component to poll the directory for changes.

Default—true

<signature-dn>—(Optional) DN of the directory entry that specifies the usedDirectory attribute for the SRC CLI. The usedDirectory attribute identifies the vendor of the directory server.

Value—DN

Default—o = umc

<polling-interval>—(Optional) Interval at which an SRC component polls the directory to check for directory changes.

Value—Integer in the range 15–2147483647 s

Default—30

<event-base-dn>—(Optional) DN of an entry superior to the data associated with an SRC component in the directory.

If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal

performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.

Value— DN

Default—o = UMC

`<dispatcher-pool-size>`—(Optional) Number of directory change notifications that can be sent simultaneously to the SRC component.

Value—Integer in the range 0-2147483647

Default—1

Required Privilege Level

No specific privilege required.

< object-adapter > (configuration/slot/gw-3gpp/java-orb)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <java-orb>
        <object-adapter>
          <address>address</address>
        </object-adapter>
      </java-orb>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC-3.2.0 Release

Description

Object adapter internet address configuration

Contents

<address>—(Optional) Object Adapter Internet Address: IP address on multi-homed host.

Value— IP address

Default— No value

Required Privilege Level

No specific privilege required.

< logger > (configuration/slot/gw-3gpp)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <logger>
        <name>name</name> <!-- identifier -->
      </logger>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure the logging destination.

Contents

<name>— Name used to group parameters for the logging destination.

Value— Text

Required Privilege Level

No specific privilege required.

< file > (configuration/slot/gw-3gpp/logger)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <logger>
        <file>
          <filter>filter</filter>
          <filename>filename</filename>
          <rollover-filename>rollover-filename</rollover-filename>
          <maximum-file-size>maximum-file-size</maximum-file-size>
        </file>
      </logger>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure the logging destination for file-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<filename>— Absolute path of the filename that contains the current logs.

Note: Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

Value— Filename

Default— By default, SRC components and applications write log files in the folder in which the component or application is started.

<rollover-filename>—(Optional) Absolute path of the filename that contains the log history. When the log file reaches the maximum size, the software closes the log file and renames it with the name you specify for the rollover file. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

Value— Path of filename

Example—/opt/UMC/sae/var/log/sae.alt

Default— The default value is different for each type of component.

`<maximum-file-size>`—(Optional) Maximum size of the log file and the rollover file.

Do not set the maximum file size to a value greater than the available disk space.

Value—Integer in the range 0–2147483647 kbytes

Default— 1000000

Required Privilege Level

No specific privilege required.

< syslog > (configuration/slot/gw-3gpp/logger)

Usage

```
<configuration>
  <slot>
    <gw-3gpp>
      <logger>
        <syslog>
          <filter>filter</filter>
          <host>host</host>
          <port>port</port>
          <facility>facility</facility>
          <format>format</format>
        </syslog>
      </logger>
    </gw-3gpp>
  </slot>
</configuration>
```

Release Information

Statement introduced in SRC Release 4.3.0

Description

Configure the logging destination for syslog-based logging.

Contents

<filter>—(Optional) Filter to define which event messages the software logs or ignores. Filters can specify the logging level, such as debug, or can specify expressions. For information about expressions, see the documentation that describes how to configure logging.

Value— Log filter

Default— The default value is different for each type of component.

<host>— IP address or name of a host that collects event messages by means of a standard system logging daemon.

Value— IP address or hostname

Default—loghost

<port>—(Optional) Port number for system logging daemon.

Value— Port number in the range of 0–65535

Default— 514

<facility>—(Optional) Type of system log in accordance with the system logging protocol.

Value—Integer in the range 0–23

Default— 3

`<format>`—(Optional) MessageFormat string that specifies how the information in an event message is printed. (The strings `{#}` are replaced with the log information [...]).

Value— MessageFormat string as specified in
<http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html>.

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Required Privilege Level

No specific privilege required.