



JunosE™ Software for E Series™ Broadband Services Routers

Subscriber Management

Release

14.2.x



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

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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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About the Documentation

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E Series and JunosE Documentation and Release Notes

For a list of related JunosE documentation, see
<http://www.juniper.net/techpubs/software/index.html>.

If the information in the latest release notes differs from the information in the documentation, follow the *JunosE Release Notes*.

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at
<http://www.juniper.net/techpubs/>.

Audience

This guide is intended for experienced system and network specialists working with Juniper Networks E Series Broadband Services Routers in an Internet access environment.

E Series and JunosE Text and Syntax Conventions

Table 1 on page x defines notice icons used in 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 on page x defines text and syntax conventions that we use throughout the E Series and JunosE documentation.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents commands and keywords in text.	<ul style="list-style-type: none"> Issue the clock source command. Specify the keyword exp-msg.
Bold text like this	Represents text that the user must type.	host1(config)#traffic class low-loss1
Fixed-width text like this	Represents information as displayed on your terminal's screen.	host1#show ip ospf 2 Routing Process OSPF 2 with Router ID 5.5.0.250 Router is an Area Border Router (ABR)
<i>Italic text like this</i>	<ul style="list-style-type: none"> Emphasizes words. Identifies variables. Identifies chapter, appendix, and book names. 	<ul style="list-style-type: none"> There are two levels of access: <i>user</i> and <i>privileged</i>. <i>clusterId</i>, <i>ipAddress</i>. <i>Appendix A, System Specifications</i>
Plus sign (+) linking key names	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
Syntax Conventions in the Command Reference Guide		
Plain text like this	Represents keywords.	terminal length
<i>Italic text like this</i>	Represents variables.	<i>mask</i> , <i>accessListName</i>

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
(pipe symbol)	Represents a choice to select one keyword or variable to the left or to the right of this symbol. (The keyword or variable can be either optional or required.)	diagnostic line
[] (brackets)	Represent optional keywords or variables.	[internal external]
[]* (brackets and asterisk)	Represent optional keywords or variables that can be entered more than once.	[level1 level2 l1]*
{ } (braces)	Represent required keywords or variables.	{ permit deny } { in out } { clusterId ipAddress }

Obtaining Documentation

To obtain the most current version of all Juniper Networks technical documentation, see the Technical Documentation page on the Juniper Networks Web site at <http://www.juniper.net/>.

To download complete sets of technical documentation to create your own documentation CD-ROMs or DVD-ROMs, see the Portable Libraries page at

<http://www.juniper.net/techpubs/resources/index.html>

Copies of the Management Information Bases (MIBs) for a particular software release are available for download in the software image bundle from the Juniper Networks Web site at <http://www.juniper.net/>.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation to better meet your needs. 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

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>.

PART 1

Overview

- [Unified Subscriber Management Features on page 3](#)

CHAPTER 1

Unified Subscriber Management Features

- [Understanding Subscriber Management on page 3](#)
- [Subscriber Management Attributes on page 4](#)
- [Subscriber Management Platform Considerations on page 5](#)
- [Subscriber Management Procedure Overview on page 5](#)

Understanding Subscriber Management

The E Series router enables customers to create a unified subscriber management, provisioning, and service delivery environment. The flexibility of the router provides a variety of methods and configurations that enable customers to dynamically provision new subscribers and quickly create new value-added services.

Two major aspects of subscriber management are subscriber provisioning and differentiated service delivery. The E Series router enables you to use both static and dynamic methods to add and delete subscribers. Important subscriber management concepts provided by JunosE subscriber management include:

- Subscriber use of a shared medium
- Multiple subscribers using the same primary interface
- User authentication and accounting
- Differentiated services for individual subscribers

A subscriber management environment can include the following components:

- Local Dynamic Host Configuration Protocol (DHCP) server
- External DHCP server
- RADIUS server
- Session and Resource Control (SRC) software

You employ the components you need in a variety of configurations, depending on your specific requirements.

Related Documentation

- [Subscriber Management Platform Considerations on page 5](#)
- [Subscriber Management Procedure Overview on page 5](#)

Subscriber Management Attributes

E Series routers take advantage of many of the JunosE features to enable you to create the subscriber management environment that best meets your requirements. These features include:

- Authentication—Uses RADIUS to determine whether a user can access a specific service or resource.
- Accounting—Uses RADIUS and policy management to track service usage that can be used for volume-based billing.
- Dynamic address assignment—Uses RADIUS, DHCP, and profiles to dynamically allocate IP addresses to subscribers.
- Dynamic policy management—Uses policy and quality of service (QoS) management to assign and monitor subscriber bandwidth restrictions.
- Security—Uses policy management, source address validation, and media access control (MAC) address validation to grant subscriber access and to enable the use of classification when monitoring subscriber traffic flows.
- Dynamic interfaces—Automatically creates an interface column based on a catalyst packet or event.
- Marking—Uses policy management marking to enable differential treatment of specific packets.
- Policy routing—Uses policy management routing policies to assign subscriber routes that are based on classification.

Dynamic IP Subscriber Interfaces

You can set up your subscriber management environment to create dynamic IP subscriber interfaces in two situations—when a DHCP event occurs or when a packet is detected.

In the first case, the interface is created when an external DHCP server or the DHCP local server responds to a subscriber request. In the second case, the subscriber interface is created when the router receives a packet (the packet detect feature) with a source IP address that is not in the demultiplexer table. In this second case the primary IP interface must be in autoconfiguration mode.

Subscriber management uses the following process when validating the IP source address of the packet:

- If the address is not valid, no subscriber interface is created. A discard entry is added to the demultiplexer table, and an error message is generated.
- If the address is valid with respect to the address ranges configured on the primary IP interface, subscriber management uses packet information to select the appropriate dynamic subscriber interface profile. The commands corresponding to the profile are then used to create the subscriber interface.

- Related Documentation**
- [Understanding Subscriber Management on page 3](#)
 - [Configuring Subscriber Management with an External DHCP Server on page 9](#)

Subscriber Management Platform Considerations

Subscriber management is supported on all E Series routers.

For information about the modules supported on E Series routers:

- See the *ERX Module Guide* for modules supported on ERX7xx models, ERX14xx models, and the ERX310 Broadband Services Router.
- See the *E120 and E320 Module Guide* for modules supported on the E120 and E320 Broadband Services Routers.

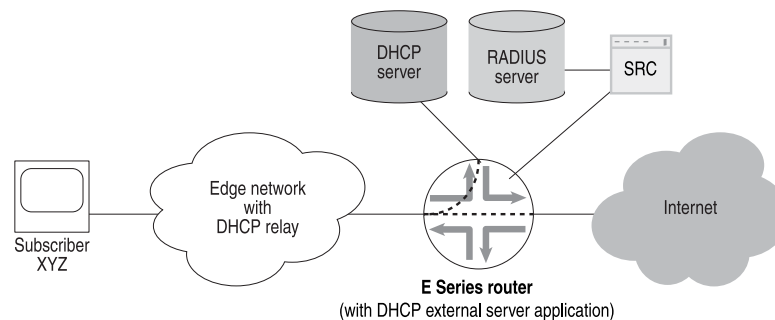
Subscriber Management Procedure Overview

Figure 1 on page 5 shows a subscriber management environment that includes an external DHCP server, a RADIUS server, the SRC software, and the DHCP external server application running on the E Series router.

The E Series router DHCP external server application is used with other JunosE features to provide subscriber management. Using the router's DHCP external server application for subscriber management enables you to take advantage of the following features:

- Profile assignment—A dynamic subscriber interface profile is associated with a specific source address by the router's packet detect feature.
- Dynamic subscriber interface packet detection and inactivity timer—Subscriber interfaces are dynamically created based on packet information that is identified by the packet detection feature. The inactivity timer determines when a dynamic subscriber interface expires and needs to be deleted.
- DHCP external server application—DHCP packets are examined to determine the state of subscribers.

Figure 1: DHCP External Server



In Figure 1 on page 5, the subscriber requests an address from the DHCP server. The E Series router DHCP external server application monitors all DHCP communications

between the subscriber and the DHCP server. After the subscriber receives an IP address, the subscriber can access the Internet and use the value-added services provided by the SRC software. The following list describes the various procedures performed in the subscriber management environment:

- Subscriber PC—Requests an IP address from the DHCP server
- E Series router
 - Monitors DHCP traffic between the subscriber and the DHCP server:
 - Identifies the subscriber's IP address, MAC address, giaddr, and client identifier
 - Extracts the lease time, creates a shadow lease, and starts its own lease timer that is associated with the subscriber
 - Determines the subscriber is active when the subscriber sends a packet after receiving an IP address from DHCP. The router then:
 - Processes the subscriber's IP address by using a route map
 - Extracts the dynamic subscriber interface profile (optional)
The router uses the profile to provide authentication, authorization, accounting, and address assignment. RADIUS uses the profile to obtain information for the subscriber's IP interface.
 - Creates the subscriber's dynamic subscriber interface (DSI)
 - If the SRC software is configured, the router also alerts the SRC software that the subscriber's DSI and address exist.
 - The DHCP external server application continues to monitor all traffic between the subscriber and the DHCP server, and periodically resets the shadow lease it originally created when the subscriber first requested an IP address. When the subscriber disconnects, the shadow lease eventually expires, at which time the E Series router performs the following:
 - Deletes the DSI
 - Alerts the SRC software that the DSI has been deleted
 - Alerts the SRC software that the subscriber's address has been deleted
- SRC software—Provides enhanced services to the subscriber.

**Related
Documentation**

- [Understanding Subscriber Management on page 3](#)
- [Configuring Subscriber Management with an External DHCP Server on page 9](#)

PART 2

Configuration

- [Configuration Task on page 9](#)
- [Examples on page 11](#)
- [Configuration Commands on page 15](#)

CHAPTER 2

Configuration Task

- [Configuring Subscriber Management with an External DHCP Server on page 9](#)

Configuring Subscriber Management with an External DHCP Server

To configure subscriber management for clients by using an external DHCP server, as in shown in the *DHCP External Server* figure in “[Subscriber Management Procedure Overview](#)” on [page 5](#), use the following procedure on E Series routers:

1. Enable the DHCP external server application.

```
host1(config)#service dhcp-external
```

2. Specify each DHCP server for which to monitor traffic. You can specify a maximum of four DHCP servers.

```
host1(config)#ip dhcp-external server-address 10.10.10.1
```

3. Configure a default policy for subscribers, using a previously configured classifier group.

```
host1(config)#ip policy-list filterAll
host1(config-policy-list)#classifier-group filterGroupA
host1(config-policy-list-classifier-group)#filter
host1(config-policy-list-classifier-group)#exit
host1(config-policy-list)#exit
```

4. Configure a dynamic subscriber interface policy.

```
host1(config)#profile disableUser
host1(config-profile)#ip policy input filterAll
host1(config-profile)#ip policy output filterAll
host1(config-profile)#exit
```

5. Configure a route map.

```
host1(config)#route-map routeMapWest21
host1(config-route-map)#set ip interface-profile disableUser
host1(config-route-map)#exit
```

6. Enable autoconfiguration mode.

```
host1(config)#interface gigabitEthernet 12/0
host1(config-if)#ip address 192.168.1.1 255.255.255.0
host1(config-if)#ip auto-configure ip-subscriber include-primary
host1(config-if)#ip route-map ip-subscriber routeMapWest21
```

```
host1(config-if)#ip auto-detect ip-subscriber
host1(config-profile)#exit
```

**Related
Documentation**

- [Subscriber Management Procedure Overview on page 5](#)
- [ip policy on page 21](#)
- [ip policy-list on page 23](#)
- [route-map on page 26](#)
- [service dhcp-external on page 27](#)
- [set ip interface-profile on page 28](#)

CHAPTER 3

Examples

- [Subscriber Management Configuration Examples on page 11](#)

Subscriber Management Configuration Examples

This section contains examples of creating dynamic usernames and shows the usernames that are generated. The examples all use the following IP policy, interface profile, and route map:

- An IP policy that restricts access.

```
host1(config)#ip policy-list restrictAccess
host1(config-policy-list)#classifier-group *
host1(config-policy-list-classifier-group)#filter
host1(config-policy-list-classifier-group)#exit
host1(config-policy-list)#exit
host1(config)#
```

- An interface profile that references the restrictAccess policy.

```
host1(config)#profile atlInterfaceProfile
host1(config-profile)#ip policy input restrictAccess
host1(config-profile)#ip policy output restrictAccess
host1(config-profile)#exit
host1(config)#
```

- A route map that references the interface profile and the atlServiceProfile service profile.

```
host1(config)#route-map atlRouteMap
host1(config-route-map)#set interface-profile atlInterfaceProfile
host1(config-route-map)#set ip service-profile atlServiceProfile
host1(config-route-map)#exit
host1(config)#
```

The following examples show the configuration of a service profile that enables RADIUS authentication:

- [Username with ATM Circuit Identifier and No Circuit Type on page 12](#)
- [Username with VLAN Circuit Identifier and Circuit Type on page 12](#)
- [Username with MAC Address on page 13](#)

Username with ATM Circuit Identifier and No Circuit Type

This example shows the steps to configure a service profile for a username that includes the ATM circuit identifier, but does not include the circuit type.

```
host1(config)#ip service-profile atlServiceProfile
host1(config-service-profile)#user-prefix xyzcorp.atl
host1(config-service-profile)#domain eastcoast
host1(config-service-profile)#include hostname
host1(config-service-profile)#include circuit-identifier atm
host1(config-service-profile)#exit
host1(config)#
```

The example generates the following username:

user prefix	circuit identifier	domain
xyzcorp.atl	2.3.32.100	@eastcoast

The circuit identifier indicates a user at slot 2, port 3, with a virtual path identifier (VPI) of 32 and a virtual channel identifier (VCP) of 100.

Username with VLAN Circuit Identifier and Circuit Type

This example shows the steps to configure a service profile for a username that includes a VLAN circuit identifier and the circuit type.

```
host1(config)#ip service-profile atlServiceProfile
host1(config-service-profile)#user-prefix xyzcorp.atl
host1(config-service-profile)#domain eastcoast
host1(config-service-profile)#include hostname
host1(config-service-profile)#include circuit-identifier vlan prepend-circuit-type
host1(config-service-profile)#exit
```

The example generates the following username:

user prefix	circuit type	circuit identifier	domain
xyzcorp.atl	vlan	1.0.0.45	@eastcoast

The circuit identifier indicates a user on slot 1, port 0, no stacked vlan, and a vlan ID of 45.

Username with MAC Address

Step-by-Step Procedure This example shows the steps to configure a service profile that generates a username that includes a MAC address.



NOTE: Including a MAC address in a username works only for DHCP users. It does not work for IP subscribers that have statically configured IP addresses.

```
host1(config)#ip service-profile atlServiceProfile
host1(config-service-profile)#user-prefix xyzcorp.atl
host1(config-service-profile)#domain eastcoast
host1(config-service-profile)#include hostname
host1(config-service-profile)#include circuit-identifier vlan
host1(config-service-profile)#include mac-address
host1(config-service-profile)#include dhcp-option 82 agent-circuit-id
host1(config-service-profile)#exit
host1(config)#
```

The example generates the following username, which includes the MAC address:

user prefix	circuit identifier	mac-address	domain
xyzcorp.atl	1.0.0.45	1234.5678.9012	@eastcoast

Related Documentation

- [Understanding Subscriber Management on page 3](#)
- [Subscriber Management Procedure Overview on page 5](#)
- [Configuring Subscriber Management with an External DHCP Server on page 9](#)
- [include circuit-identifier on page 16](#)
- [include dhcp-option 82 on page 17](#)
- [include hostname on page 18](#)
- [include ip-address on page 19](#)
- [include mac-address on page 20](#)
- [ip policy on page 21](#)
- [ip policy-list on page 23](#)
- [ip service-profile on page 24](#)
- [profile on page 25](#)
- [route-map on page 26](#)
- [set ip interface-profile on page 28](#)
- [set ip service-profile on page 29](#)

- [user-prefix on page 30](#)

CHAPTER 4

Configuration Commands

include circuit-identifier

Syntax include circuit-identifier *circuitType* [prepend-circuit-type]
 no include circuit-identifier

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies that the circuit identifier is included when the router automatically generates a username for an IP service profile. The **no** version disables inclusion of the circuit identifier.

Options • *circuitType*—Type of circuit; atm or vlan
 • prepend-circuit-type—Specifies that the circuit type is included in the username

Mode IP Service Profile Configuration

include dhcp-option 82

Syntax [no] include dhcp-option 82 { agent-circuit-id | agent-remote-id }

Release Information Command introduced in JunosE Release 7.3.0.

Description Specifies that the agent-circuit-id suboption or the agent-remote-id suboption of the DHCP relay agent information option (option 82) is included when the router automatically generates a username for an IP service profile. The **no** version disables inclusion of the suboption.

Mode IP Service Profile Configuration

include hostname

Syntax [no] include hostname

Release Information Command introduced in JunosE Release 7.3.0.

Description Specifies that the router's hostname is included when the router automatically generates a username for an IP service profile. The **no** version disables inclusion of the hostname.

Mode IP Service Profile Configuration

include ip-address

Syntax [no] include ip-address

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies that the IP address is included when the router automatically generates a username for an IP service profile. The **no** version disables inclusion of the IP address.

Mode IP Service Profile Configuration

include mac-address

Syntax [no] include mac-address

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies that the MAC address is included when the router automatically generates a username for an IP service profile. The **no** version disables inclusion of the MAC address.

Mode IP Service Profile Configuration

ip policy

Syntax For standard policy lists in Interface Configuration mode:

```
ip policy { input | output | secondary-input } policyName
[ statistics { enabled [ baseline { enabled | disabled } ] [ preserve | merge ] |
disabled [ merge ] } ] merge ]
```

```
no ip policy { input | output | secondary-input } [ policyName ]
```

For secure policy lists in Interface Configuration mode:

```
ip policy { secure-input | secure-output } policyName
[ statistics { enabled [ baseline baselineValue ] [ preserve ] | disabled } ]
```

```
no ip policy { secure-input | secure-output }
```

For policy lists in Profile Configuration mode:

```
ip policy { input | output | secondary-input } policyName
[ statistics { enabled | disabled } ] [ merge ]
```

```
no ip policy { input | output | secondary-input } [ policyName ]
```

Release Information Command introduced before JunosE Release 7.1.0.
merge keyword added in JunosE Release 7.2.0.
 Profile Configuration mode added in JunosE Release 7.2.0.

Description Assigns a policy list to the ingress or egress of an interface.

For standard policy lists, specify the **input** or **output** keyword to assign the policy list to the ingress or egress of the interface. If you enter the **ip policy** command and the policy list does not exist, the router inserts a default filter rule. Attaching this policy list to an interface filters all packets on that interface.

For secure policy lists, which are used for packet mirroring, use the **secure-input** or **secure-output** keyword to assign the packet mirroring policy list to the ingress or egress side of the interface. If you use the **ip policy** command and the secure policy list does not exist, the router creates a secure policy list with a default mirror rule that disables mirroring. Attaching this policy list to an interface results in no packet mirroring.

In Profile Configuration mode, assigns the policy list to a profile, which then assigns the policy to an interface.

In Interface Configuration mode, the **no** version removes the association between a policy list and an interface. In Profile Configuration mode, the **no** version removes policy reference from the profile.

- Options**
- **input**—Applies policy to data arriving at this interface before a route lookup
 - **output**—Applies policy to data leaving this interface

- **secondary-input**—Applies policy to data that arrives at this interface after a route lookup
- **secure-input**—Applies secure policy to data arriving at this interface
- **secure-output**—Applies secure policy to data leaving this interface



NOTE: The **ip policy** command used with the **secure-input** and **secure-output** keywords provides packet mirroring support. These keywords are available in Interface Configuration mode and do not support the statistics-related keywords. The **ip policy** command used with these keywords replaces the **ip mirror** command, which has been deprecated.

- **policyName**—Name of the policy; a maximum of 40 characters
- **statistics**—Enables or disables collection of policy routing statistics
 - **enabled**—Enables collection of policy routing statistics
 - **baseline enabled**—Enables baselining of policy routing statistics (Interface Configuration mode only)
 - **baseline disabled**—Disables baselining of policy routing statistics (Interface Configuration mode only)
 - **preserve**—Preserves existing statistics for any classifier list that is the same for both the new and old policy attachments when you attach a new policy to an interface
 - **disabled**—Disable collection of policy routing statistics
- **merge**—Enables merging of multiple policies to form a single policy



NOTE: The **local-input** keyword for the **ip policy** command is deprecated, and might be completely removed in a future release. We recommend that you remove the keyword from scripts.

Mode Interface Configuration, Profile Configuration

Related Documentation

- Setting a Statistics Baseline for Policies
- Configuring CLI-Based Packet Mirroring

ip policy-list

Syntax [no] ip policy-list *policyName*

Release Information Command introduced before JunosE Release 7.1.0.

Description Creates or modifies an IP policy list. If you execute an **ip policy-list** command and type **exit**, the router creates a policy list with no rules, the default. When a policy list does not have rules, the router inserts a default filter rule. Attaching this policy list to an interface filters all packets on that interface. The **no** version removes a policy list.

Options • *policyName*—Name of the policy list

Mode Global Configuration

Related Documentation • Creating Policy Lists for IP

ip service-profile

Syntax ip service-profile *profileName*
 no ip service-profile

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies a service profile used in the route map and enters Service Profile configuration mode. The **no** version deletes the profile.

Options • *profileName*—Name of service profile

Mode Global Configuration

profile

Syntax To assign a profile name for a remote host:

```
[ no ] profile profileName
```

To create a profile or assign a profile to an interface:

```
profile [ bridgedEthernet | ip | l2tp | ppp | pppoe | vlan | any ] profileName
```

```
no profile [ bridgedEthernet | ip | l2tp | ppp | pppoe | vlan | any ]
```

Release Information Command introduced before JunosE Release 7.1.0.
vlan keyword added in JunosE Release 7.1.0.
 IP Tunnel Destination Profile Configuration mode added in JunosE Release 8.2.0.

Description When used from Global Configuration mode, creates a profile. Use profiles to configure interfaces dynamically, which enables you to manage a large number of interfaces effectively. The **no** version removes the profile.

When used from Interface Configuration mode and Subinterface Configuration mode, assigns a profile to an interface. Use profiles to configure interfaces dynamically, which enables you to manage a large number of interfaces effectively. The **no** version removes the profile assigned to the interface.

When used in IP Tunnel Destination Profile Configuration mode, defines an IP profile with parameters that are used to stack an upper IP interface over a dynamic GRE or DVMRP tunnel. The **no** version removes the IP profile from the destination profile.

When used from L2TP Destination Profile Host Configuration mode, sets an attribute of the current remote host. The **no** version removes the attribute from the remote host.

- Options**
- **bridgedEthernet**—Specifies a bridged Ethernet encapsulation type to which the profile applies
 - **ip**—Specifies an IP encapsulation type to which the profile applies
 - **l2tp**—Specifies an L2TP encapsulation type to which the profile applies
 - **ppp**—Specifies a PPP encapsulation type to which the profile applies
 - **pppoe**—Specifies a PPPoE encapsulation type to which the profile applies
 - **vlan**—Specifies a VLAN encapsulation type to which the profile applies
 - **any**—Specifies any autoconfigured encapsulation that does not have a specific profile assignment
 - ***profileName***—Profile name of up to 80 characters

Mode Global Configuration, Interface Configuration, IP Tunnel Destination Profile Configuration, L2TP Destination Profile Host Configuration, Subinterface Configuration

route-map

Syntax Specifying a route map for DVMRP or RIP:

```
[ no ] route-map mapTag [ interfaceType interfaceSpecifier ]
```

Defining a route map:

```
[ no ] route-map mapTag [ permit | deny ] [ sequence ]
```

Defining a route map for data MDTs:

```
route-map routeMapName
```

```
no route-map
```

Release Information Command introduced before JunosE Release 7.1.0.
IP PIM Data MDT Configuration mode added in JunosE Release 8.2.0.

Description Specifies a route map for DVMRP, RIP, or data MDTs, or defines the conditions for applying routing policies to filter or modify routes redistributed into or propagated by a routing protocol. The **no** version deletes the route map.

- Options**
- *mapTag*—String of up to 32 alphanumeric characters.
 - *interfaceType*—Interface type; see Interface Types and Specifiers
 - *interfaceSpecifier*—Particular interface; format varies according to interface type; see Interface Types and Specifiers
 - *mapTag*—String of up to 32 alphanumeric characters. The **redistribute** Router Configuration command uses this string to reference this route map. Multiple route maps may share the same map tag.
 - **permit**—If the match criteria are met for this route map and **permit** is specified, the route is redistributed as controlled by the set actions.
 - **deny**—If the match criteria are met for the route map and **deny** is specified, the route is not redistributed, and no further route maps sharing the same map tag are examined.
 - *sequence*—Number, in the range 0–65535, that indicates the position a new route map is to have in the list of route maps already configured with the same map tag. If given with the **no** version of this command, it specifies the position of the route map that should be deleted.

Mode Address Family Configuration (RIP), Global Configuration, IP PIM Data MDT Configuration

Related Documentation

- show route-map

service dhcp-external

Syntax [no] service dhcp-external

Release Information Command introduced before JunosE Release 7.1.0.

Description Enables the DHCP external server. The **no** version disables the DHCP external server and does not save the previous settings.

Mode Global Configuration

set ip interface-profile

Syntax set ip interface-profile *profileName*
 no set ip interface-profile

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies a dynamic IP interface profile that is used in the route map. The **no** version removes the interface profile from the route map.

Options • *profileName*—Name of the dynamic profile

Mode Route Map Configuration

set ip service-profile

Syntax set ip service-profile *profileName*

 no set ip service-profile

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies the name of a subscriber's service profile that is used in the route map. The **no** version removes the service profile from the route map.

Options • *profileName*—Name of service profile

Mode Route Map Configuration

user-prefix

Syntax `user-prefix prefixString`

`no user-prefix`

Release Information Command introduced before JunosE Release 7.1.0.

Description Specifies the user prefix for an IP service profile. The **no** version removes the user prefix.

Options • *prefixString*—Appends the interface physical location to the username

Mode IP Service Profile Configuration

PART 3

Administration

- [Monitoring Tasks on page 33](#)
- [Monitoring Commands on page 37](#)

CHAPTER 5

Monitoring Tasks

- [Monitoring Active IP Subscribers Created by Subscriber Management on page 33](#)
- [Monitoring IP Service Profiles on page 34](#)

Monitoring Active IP Subscribers Created by Subscriber Management

Purpose Display information about active IP subscribers that were created by the JunosE Software's subscriber management feature.

Action To display information about subscribers that were created by subscriber management:

```
host1# show ip-subscriber 2835349506
```

Id	User Name	Ip Address	Virtual Router	Interface
2835349506	user1@isp1.com	192.168.0.1	default	ip192.168.0.1

Id	Login time
2835349506	WED AUG 23 20:46:24 2006

```
host1# show ip-subscriber detail
```

```
Subscriber List
```

Id	User Name	Ip Address	Virtual Router	Interface
2835349506	user1@isp1.com	192.168.0.1	default	ip192.168.0.1

Id	Login Time	Mac Address	Profile Handle
2835349506	WED AUG 23 20:46:24 2006	3000.0001.9365	13631489

Id	Interface Profile	Service Profile	Option 82
2835349506	myProfile	profile22	FastEthernet 3/1

Meaning [Table 3 on page 34](#) lists the **show ip-subscriber** command output fields.

Table 3: show ip-subscriber Output Fields

Field Name	Field Description
Id	ID of the subscriber
User Name	Username used to retrieve information from RADIUS for the subscriber interface
Ip Address	IP address of the subscriber interface
Virtual Router	Name of the virtual router on which the subscriber interface is configured
Interface	Name of subscriber interface; ip indicates that subscriber manager created this interface
Login Time	Day, date, and time that the subscriber logged in
Mac Address	MAC address of the subscriber
Profile Handle	AAA profile handle
Interface Profile	Interface profile name used to configure the subscriber interface
Service Profile	IP service profile name used by subscriber management to authorize and configure the subscriber interface with AAA
Option 82	DHCP relay agent information (option 82) circuit identifier that describes the physical interface location associated with the subscriber

Related Documentation

- [show ip-subscriber on page 39](#)

Monitoring IP Service Profiles

Purpose Display information for all IP service profiles or for a specific profile.

Action To display information about IP service profiles:

```
host1#show ip service-profile
ip service-profile west500
  user-name: finance22
  user-prefix: xyz.bos
  domain: xyzcorp.net
  include virtual-router-name
  include mac-address
  include circuit-identifier atm prepend-circuit-type
  password: 4398aa

ip service-profile at1SerPro9
  user-name: salesCorp
```

```

domain: xyzcorp.net
include virtual-router-name
include circuit-identifier vlan
password: u473qv

```

Meaning [Table 4 on page 35](#) lists the **show ip service-profile** command output field.

Table 4: show ip service-profile Output Fields

Field Name	Field Description
ip service-profile	Name of profile
user-name	Username used to retrieve information from RADIUS for subscriber interfaces
user-prefix	User prefix used to retrieve information from RADIUS for subscriber interfaces
domain	Domain used to retrieve information from RADIUS for subscriber interfaces
include ip-address	IP address is included in the service profile
include virtual-router-name	Virtual router is included in the service profile
include mac-address	MAC address is included in the service profile
include circuit-identifier	Circuit identifier that is included in the service profile; atm or vlan, and whether the circuit type is prepended
include hostname	Router hostname is included in the service profile
include dhcp-option 82	Suboptions of DHCP option 82 are included in the service profile: agent-circuit-id or agent-remote-id
password	Password used to retrieve information from RADIUS for subscriber interfaces

Related Documentation

- [show ip service-profile on page 38](#)

CHAPTER 6

Monitoring Commands

show ip service-profile

Syntax show ip service-profile [*profileName*]

Release Information Command introduced before JunosE Release 7.1.0.

Description Displays information for IP service profiles.

Options • *profileName*—Name of a specific service profile

Mode Privileged Exec

show ip-subscriber

Syntax `show ip-subscriber [subscriberId | interface interfaceType interfaceSpecifier | username userName | virtual-router vrName | summary] [detail] [filter]`

Release Information Command introduced in JunosE Release 8.1.0.
filter variable added in JunosE Release 9.1.0.

Description Displays information about the active IP subscribers that are created by subscriber manager.

- Options**
- *subscriberId*—ID of the IP subscriber
 - *interfaceType*—Interface type; see Interface Types and Specifiers
 - *interfaceSpecifier*—Particular interface; format varies according to interface type; see Interface Types and Specifiers
 - *userName*—Username of a specific active subscriber
 - *vrName*—Name of the virtual router to which interfaces of active IP subscribers are bound
 - *summary*—Displays the number of IP subscribers for each virtual router
 - *detail*—Displays detailed information about IP subscribers
 - *filter*—See Filtering show Commands

Mode Privileged Exec

PART 4

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