

Chapter 2

Monitoring and Troubleshooting Remote Access

Use the commands in this chapter to set baselines for and to monitor remote access.

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Use the following commands to monitor PPP interfaces:

- **show ppp interface summary**
- **show ppp interface** <selective control>

For details on the **show ppp** commands, see *JUNOS Link Layer Configuration Guide, Chapter 7, Configuring Point-to-Point Protocol*.

You can use the output filtering feature of the **show** command to include or exclude lines of output based on a text string you specify. For details, see *JUNOS System Basics Configuration Guide, Chapter 2, Command-Line Interface*.



NOTE: AAA and RADIUS statistics are not preserved across a warm restart when stateful SRP Switchover is enabled.

Setting Baselines for Remote Access

You can set baseline statistics using the **baseline** commands. The router implements the baseline by reading and storing the statistics at the time the baseline is set and then subtracting this baseline when you retrieve baseline-relative statistics.

Issue the **delta** keyword with the **show aaa statistics** command to show baselined statistics.

Setting a Baseline for AAA Statistics

You can set a baseline for all AAA statistics.

To set a baseline for AAA statistics:

- Issue the **baseline aaa** command:

```
host1#baseline aaa
```

There is no **no** version.

Setting a Baseline for AAA Route Downloads

To set a baseline for route downloads:

- Issue the **baseline aaa route-download** command:

```
host1#baseline aaa route-download
```

There is no **no** version.

Setting a Baseline for COPS Statistics

To set a baseline for COPS statistics:

- Issue the **show cops statistics** command:

```
host1#show cops statistics
```

There is no **no** version.

Setting a Baseline for Local Address Pool Statistics

To set a baseline for local address pool statistics:

- Issue the **show local pool statistics** command:

```
host1#show local pool statistics
```

There is no **no** version.

Setting a Baseline for RADIUS Statistics

To set a baseline for RADIUS statistics:

- Issue the **show radius statistics** command:

```
host1#show radius statistics
```

There is no **no** version.

Setting the Baseline for SRC Statistics

To set a baseline for SRC statistics:

- Issue the **show ssc statistics** command:

```
host#1how ssc statistics
```

There is no **no** version.

Related Topics

- **baseline aaa** command
- **baseline aaa route-download** command
- **baseline cops** command
- **baseline local pool** command
- **baseline radius** command
- **baseline ssc** command

Monitoring AAA Accounting Configuration

Purpose Display the AAA accounting configuration.

Action To display the **show aaa accounting** command:

```
host1:vrXyz7#show aaa accounting
```

```
Accounting duplication set to router vrXyz25
Broadcast accounting uses group groupXyzCompany20
send acct-stop on AAA access deny is enabled
send acct-stop on authentication server access deny is disabled
acct-interval (for PPP Clients) 0
service-acct-interval 0
send immediate-update is enabled
```

Meaning Table 11 lists the **show aaa accounting** command output fields.

Table 11: show aaa accounting Output Fields

Field Name	Field Description
Accounting duplication	Name of the virtual router to which duplicate accounting records are sent to the accounting server
Broadcast accounting	Name of the virtual router groups to which broadcast accounting records are sent to the accounting server
send acct-stop on AAA access deny	Enabled, disabled
send acct-stop on authentication server access deny	Enabled, disabled
acct-interval (for PPP Clients)	Number of minutes between accounting update operations
service-acct-interval	Number of minutes between interim accounting updates for services created by the Service Manager feature
send immediate-update	On receipt of response to Acct-Start message; enabled, disabled

Related Topics

- **show aaa accounting** command

Monitoring AAA Accounting Default

Purpose Display the AAA accounting default method for a subscriber type.

You can view the method used for ATM 1483, IPSec, PPP, RADIUS relay server, and tunnel subscribers, and IP subscriber management interfaces.

Action To display the default AAA accounting method:

```
host1#show aaa accounting tunnel default
radius
```

Related Topics

- `show aaa accounting default` command

Monitoring Accounting Interval

Purpose Display the accounting interval.

Action To display the accounting interval:

```
host1#show aaa accounting interval
acct-interval (for PPP Clients) 10
```

Related Topics

- `show aaa accounting interval` command

Monitoring Specific Virtual Router Groups

Purpose Display the names of a specific virtual router group or of all virtual router groups configured on the router, and of the virtual routers making up the groups.

Action To display the names of a specific virtual router group or of all virtual router groups configured on the router. Display the virtual routers making up the groups:

```
host1#show aaa accounting vr-group
vr-group groupXyzCompany10:
  virtual-router 1 vrXyzA
  virtual-router 2 vrXyzB
  virtual-router 3 vrXyzC
  virtual-router 4 vrXyzD
vr-group groupXyzCompany20:
  virtual-router 1 vrXyzP
  virtual-router 2 vrXyzQ
  virtual-router 3 vrXyzR
  virtual-router 4 vrXyzS
```

Meaning Table 12 lists the `show aaa accounting vr-group` command output fields.

Table 12: show aaa accounting vr-group Output Fields

Field Name	Field Description
vr-group	Name of the virtual router group

Monitoring the Default AAA Authentication Method List

Purpose Display the default AAA authentication method list for a subscriber type. You can view the method list used for ATM 1483 subscribers, IPsec subscribers, IP subscriber management interfaces, PPP subscribers, RADIUS relay subscribers, and tunnel subscribers.

For example, you can verify that the local authentication method is configured for PPP subscribers.

Action To display the default AAA authentication method list for a subscriber type:

```
host1#show aaa authentication ppp default
local none
```

Related Topics

- `show aaa authentication default` command

Monitoring Domain and Realm Name Delimiters

Purpose Display the domain and realm name delimiters, parse order, and parse direction configured on the router.

Action To display the domain and realm name delimiters, parse order, and parse direction configured on the router.

```
host1#show aaa delimiters
domain delimiters "@"
realm delimiters "/"
parse order is realm-first
domain parse direction is right-to-left
realm parse direction is left-to-right
```

Related Topics

- `show aaa delimiters` command

Monitoring Mapping Between User Domains and Virtual Routers

Purpose Display the mapping between user domains and virtual routers.

The following keywords have significance when used as user domains:

- **none**—All client requests with no user domain name are associated with the virtual router mapped to the **none** entry
- **default**—All client requests with a domain present that have no map are associated with the virtual router mapped to the **default** entry

Action To display the mapping between user domains and virtual routers:

```

host1#show aaa domain-map
Domain: lac-tunnel; router-name: lac; ipv6-router-name: default
Tunnel
Tag      Tunnel Peer      Tunnel Source      Tunnel Type      Tunnel Medium      Tunnel Password      Tunnel Id
-----
5        192.168.1.1      <null>             l2tp              ipv4              welcome              lac-tunnel

Tunnel      Tunnel      Tunnel      Tunnel      Tunnel
Tag         Client Name Server Name Preference Max Sessions Tunnel RWS
-----
5          lac        boston      5           0           4

Tunnel      Tunnel      Tunnel      Tunnel      Tunnel
Tag         Virtual Router Failover Resync Switch Profile Tx Speed Method
-----
5          <null>      silent failover denver qos

```

Meaning Table 13 lists the **show aaa domain-map** command output fields.

Table 13: show aaa domain-map Output Fields

Field Name	Field Description
Domain	Name of the domain
router-name	Virtual router to which user domain name is mapped
tunnel-group	Name of the tunnel group assigned to the domain map
ipv6-router-name	IPv6 virtual router to which user domain name is mapped
local-interface	Interface information to use on the local (E-series) side of the subscriber's interface
ipv6-local-interface	IPv6 interface information to use on the local (E-series) side of the subscriber's interface
poolname	Local address pool from which the router allocates addresses for this domain
IP hint	IP hint is enabled
strip-domain	Strip domain is enabled
override-username	Single username used for all users from a domain in place of the values received from the remote client
override-password	Single password used for all users from a domain in place of the values received from the remote client
Tunnel Tag	Tag that identifies the tunnel
Tunnel Peer	Destination address of the tunnel
Tunnel Source	Source address of the tunnel
Tunnel Type	L2TP
Tunnel Medium	Type of medium for the tunnel; only IPv4 is supported
Tunnel Password	Password for the tunnel

Table 13: show aaa domain-map Output Fields (continued)

Field Name	Field Description
Tunnel Id	ID of the tunnel
Tunnel Client Name	Host name that the LAC sends to the LNS when communicating to the LNS about the tunnel
Tunnel Server Name	Host name expected from the peer (the LNS) when during tunnel startup
Tunnel Preference	Preference level for the tunnel
Tunnel Max Sessions	Maximum number of sessions allowed on a tunnel
Tunnel RWS	L2TP receive window size (RWS) for a tunnel on the LAC; displays either the configured value or the default behavior, which is indicated by system chooses
Tunnel Virtual Router	Name of the virtual router to map to the user domain name
Tunnel Failover Resync	L2TP peer resynchronization method
Tunnel Switch Profile	Name of the L2TP tunnel switch profile
Tunnel Tx Speed Method	Method that the router uses to calculate the transmit connect speed of the subscriber's access interface: static layer2, dynamic layer2, qos, actual, not set

Related Topics

- [show aaa domain-map command](#)

Monitoring Tunnel Subscriber Authentication

Purpose Verify configuration of tunnel subscriber authentication. When authentication is enabled, the output indicates this configuration. When authentication is disabled, the output presents no information about the configuration.

Action To display tunnel subscriber authentication configuration:

```
host1#show aaa domain-map
Domain: tunnel.com; router-name: default; ipv6-router-name: default;
tunnel-subscriber authentication: enable
```

Meaning Authentication is enabled.

Monitoring Routing Table Address Lookup

- Purpose** Display whether the routing table address lookup or duplicate address check is enabled or disabled.
- Action** To display whether the routing table address lookup or duplicate address check is enabled or disabled:

```
host1#show aaa duplicate-address-check
enabled
```

Related Topics

- `show aaa duplicate-address-check` command

Monitoring the AAA Model

- Purpose** Display the AAA model.
- Action** To display the AAA model:

```
host1#show aaa model
aaa model: old model
```

Related Topics

- `show aaa model` command

Monitoring IP Addresses of Primary and Secondary DNS and WINS Name Servers

- Purpose** Display the IP addresses of the primary and secondary DNS and WINS name servers.
- Action** To display the IP addresses of the primary and secondary DNS and WINS name servers:

```
host1#show aaa name-servers
Name Server Addresses (for PPP Clients):
primary DNS Addr          10.2.3.4
secondary DNS Addr        10.6.7.8
primary NBNS (WINS) Addr  10.22.33.44
secondary NBNS (WINS) Addr 10.66.77.88
```

- Meaning** The IP addresses of DNS and WINS name servers are displayed.

Related Topics

- `show aaa name-servers` command

Monitoring AAA Profile Configuration

Purpose Display the configuration of all AAA profiles or of a specific profile.

Action To display the configuration of all AAA profiles or of a specific profile:

```
host1#show aaa profile name PreAuth1
preAuth1:
  atm nas-port-type: ADSL-CAP
  ethernet nas-port-type: Cable
  profile-service-description: xyzService
  pre-authenticate
  allow xyz.com
  deny default
  translate xyz1.com abc.com
```

Meaning Table 14 Lists the **show aaa profile** command output fields.

Table 14: show aaa profile Output Fields

Field Name	Field Description
atm nas-port-type	Configuration of NAS-Port-Type attribute for ATM interfaces
ethernet nas-port-type	Configuration of NAS-Port-Type attribute for Ethernet interfaces
profile-service-description	Description configured in the Service-Description attribute
pre-authenticate	Indicates that subscriber preauthentication is configured for the profile
allow	One or more domain names that are allowed access to AAA authentication
deny	One or more domain names that are denied access to AAA authentication
translate	Original domain name and the name to which it is mapped for domain map lookup

Related Topics

- **show aaa profile** command

Monitoring Statistics about the RADIUS Route-Download Server

- Purpose**
- Display statistics about the RADIUS route-download server configuration. Use the optional **statistics** keyword to display information about the RADIUS route download server operation.
 - Use the optional **delta** keyword to show baselined statistics.

Action To display statistics about the RADIUS route-download server configuration:

```

host1#show aaa route-download
AAA Route Downloader:    configured in virtual router default
Download Interval:       720 minutes
Retry Interval:          10 minutes
Default Cost:            2
Default Tag:             0
Base User Name:          <HOSTNAME>
Password:                <DEFAULT>
Synchronization:        <NOT SET>

Status:                  idle
Last Download Attempt:   TUE DEC 19 22:46:47 2006
Last Download Success:   TUE DEC 19 22:46:47 2006
Last Regular Download:   complete
Next Download Scheduled: WED DEC 20 10:46:47 2006
Next Regular Download:   WED DEC 20 10:46:47 2006

```

To display information about the RADIUS route download server operation:

```

host1#show aaa route-download statistics

Total Download Attempts: 2
Successful Downloads:    2
Downloaded Fragments:    3756
Downloaded Routes:       192000
IP Updates:              1
Updated Routes:          96000
Cleared Route Intervals: 0

```

Meaning Table 15 lists the **show aaa route-download** command output fields.

Table 15: show aaa route-download Output Fields

Field Name	Field Description
AAA Route Downloader	Virtual router where the RADIUS route-download server is configured
Download Interval	Number of minutes between route downloads
Retry Interval	Number of minutes before retry after a download failure
Default Cost	Default cost of downloaded routes
Default Tag	Default tag for downloaded routes
Base User Name	Virtual router used for route-download requests; either <HOSTNAME> or the configured name
Password	Password for route-download requests or <DEFAULT>
Synchronization	Either <NOT SET> or the time that the server starts the route download operation each day
Status	Current status of route-download server; waiting for base router, waiting for IP warmstart, idle, downloading, updating ip, downloading and updating ip, or suspended
Last Download Attempt	Either <NEVER> or the day, date, and time of attempt

Table 15: show aaa route-download Output Fields (continued)

Field Name	Field Description
Last Download Success	Either < NEVER > or the day, date, and time of success
Last Regular Download	Status of last regular download; either complete or not complete
Next Download Scheduled	< DOWNLOAD ACTIVE > , < NOT SCHEDULED > , or the day, date, and time of next download
Next Regular Download	Day, date, and time
Total Download Attempts	Number of downloads attempted
Successful Downloads	Number of successful download operations
Downloaded Fragments	Number of downloaded fragments
Downloaded Routes	Number of downloaded routes
IP Updates	Number of IP updates
Updated Routes	Number of updated routes
Cleared Route Intervals	Number of cleared route intervals

Related Topics

- [show aaa route-download command](#)

Monitoring Routes Downloaded by the RADIUS Route-Download Server

Purpose Display information about the routes that are downloaded by the RADIUS route-download server. Use the optional **detail** keyword to display more detailed information about the downloaded routes.

Action To display information about the routes that are downloaded by the RADIUS route-download server:

```
host1#show aaa route-download routes
96000 downloaded routes
```

To display detailed information about the routes that are downloaded by the RADIUS route-download server:

```
host1#show aaa route-download routes detail
Prefix/Length    Type           NextHop        Dst/Met  Intf    Tag
-----
192.168.1.1/32   Access-P      255.255.255.255 254/2    nu110   0
192.168.1.5/32   Access-P      255.255.255.255 254/2    nu110   0
192.168.1.9/32   Access-P      255.255.255.255 254/2    nu110   0
192.168.1.13/32  Access-P      255.255.255.255 254/2    nu110   0
192.168.1.17/32  Access-P      255.255.255.255 254/2    nu110   0
192.168.1.21/32  Access-P      255.255.255.255 254/2    nu110   0
```

Meaning Table 16 lists the **show aaa route-download routes** command output fields.

Table 16: show aaa route-download routes Output Fields

Field Name	Field Description
downloaded routes	Number of current downloaded routes
Prefix/Length	IP address prefix and mask information for downloaded routes
Type	Type of downloaded routes; Access-P indicates routes downloaded from the RADIUS route-download server
NextHop	IP address of the next hop
Dst/Met	Administrative distance and number of hops for the route
Tag	Tag assigned to downloaded routes
Intf	Interface type and specifier

Related Topics

- **show aaa route-download routes** command

Monitoring Chassis-Wide Routes Downloaded by RADIUS Route-Download Servers

Purpose Display chassis-wide information about routes that are downloaded by RADIUS route-download servers.

Use the optional **detail** keyword to display more detailed information about the downloaded routes.

Use the optional **start** keyword to specify the first router context that you want to display in the output. For example, **aaa:a2** specifies that the display shows a list of router contexts starting with VRF a2 in virtual router aaa.

Action To display chassis-wide information about routes that are downloaded by RADIUS route-download servers:

```
host1#show aaa route-download routes global
                                     Number
                                     of
Virtual Router      VRF      Present Routes
-----
aaa                 n        4
aaa                 a1       4
default            y        4
default            d1       4
```

To display more detailed information about the downloaded routes:

```
host1#show aaa route-download routes global detail
Virtual Router  VRF  Present  Prefix/Length  Type      NextHop      Dst/Met  Intf  Tag
-----
aaa            n      192.168.1.1/32  Access-P      255.255.255.255  0/2      null0    0
aaa            n      192.168.1.2/32  Access-P      255.255.255.255  0/2      null0    0
aaa            n      192.168.3.1/32  Access-P      255.255.255.255  0/2      null0    0
```

aaa		n	192.168.4.1/32	Access-P	255.255.255.255	0/2	null0	0
aaa	a1	n	192.168.5.3/32	Access-P	255.255.255.255	0/2	null0	0
aaa	a1	n	192.168.7.1/32	Access-P	255.255.255.255	0/2	null0	0
aaa	a1	n	192.168.7.5/32	Access-P	255.255.255.255	0/2	null0	0
aaa	a1	n	192.168.9.1/32	Access-P	255.255.255.255	0/2	null0	0
default		y	192.168.22.1/32	Access-P	255.255.255.255	0/2	null0	0
default		y	192.168.23.1/32	Access-P	255.255.255.255	0/2	null0	0
default		y	192.168.24.1/32	Access-P	255.255.255.255	0/2	null0	0
default		y	192.168.25.1/32	Access-P	255.255.255.255	0/2	null0	0
default	d1	n	192.168.40.6/32	Access-P	255.255.255.255	0/2	null0	0
default	d1	n	192.168.40.7/32	Access-P	255.255.255.255	0/2	null0	0
default	d1	n	192.168.40.8/32	Access-P	255.255.255.255	0/2	null0	0
default	d1	n	192.168.40.9/32	Access-P	255.255.255.255	0/2	null0	0

To specify the first router context that you want to display in the output:

```
host1#show aaa route-download routes global start aaa:a2
```

Virtual Router	VRF	Present	Number of Routes
default		y	4
default	d1	n	4

Meaning Table 17 lists the **show aaa route-download routes global** command output fields.

Table 17: show aaa route-download routes global Output Fields

Field Name	Field Description
Virtual Router	Name of the virtual router used to download the routes
VRF	Name of the VRF used to download the routes
Present	Routes have been downloaded; y (yes) or n (no) indicates if the router context has been created.
Number of Routes	Number of current downloaded routes
Prefix/Length	IP address prefix and mask information for downloaded routes
Type	Type of downloaded routes; Access-P indicates routes downloaded from the RADIUS route-download server
NextHop	IP address of the next hop
Dst/Met	Administrative distance and number of hops for the route
Tag	Tag assigned to downloaded routes
Intf	Interface type and specifier

Related Topics

- **show aaa route-download routes global** command

Monitoring Authentication, Authorization, and Accounting Statistics

Purpose Display authentication, authorization, and accounting statistics.

Use the optional **delta** keyword to specify that baselined statistics are to be shown.

Action To display authentication, authorization, and accounting statistics:

```
host1#show aaa statistics
```

```

                        AAA Statistics
                        -----
Statistic                               Count
-----
incoming initiate requests             109
incoming disconnect requests           7
outgoing grant (tunnel) responses       3
outgoing grant responses                6
outgoing deny responses                0
outgoing error responses                0
outgoing Authentication requests        9
incoming Authentication responses       9
outgoing Re-Authentication requests     0
incoming Re-Authentication responses    0
outgoing Pre-Authentication requests    1
incoming Pre-Authentication responses   1
outgoing Accounting requests            120
incoming Accounting responses           120
outgoing Duplicate Acct requests        18
incoming Duplicate Acct responses       18
outgoing Broadcast Acct requests        32
incoming Broadcast Acct responses       32
outgoing Address requests               0
incoming Address responses              0

```

Meaning Table 18 lists the **show aaa statistics** command output fields.

Table 18: show aaa statistics Output Fields

Field Name	Field Description
incoming initiate requests	Number of incoming AAA requests (from other E-series applications) for user connect services
incoming disconnect requests	Number of incoming AAA requests (from other E-series applications) for user disconnect services
outgoing grant (tunnel) responses	Number of outgoing tunnel grant responses to AAA requests
outgoing grant responses	Number of outgoing grant responses to AAA requests
outgoing deny responses	Number of outgoing deny responses to AAA requests
outgoing error responses	Number of outgoing error responses to AAA requests
outgoing Authentication requests	Number of authentication requests from AAA to the authentication task
incoming Authentication responses	Number of authentication responses from the authentication task to AAA
outgoing Re-Authentication requests	Number of reauthentication requests from AAA to the authentication task

Table 18: show aaa statistics Output Fields (continued)

Field Name	Field Description
incoming Re-Authentication responses	Number of reauthentication responses from the authentication task to AAA
outgoing Pre-Authentication requests	Number of preauthentication requests from AAA to the preauthentication task
incoming Pre-Authentication responses	Number of preauthentication responses from the preauthentication task to AAA
outgoing Accounting requests	Number of accounting requests (starts, updates, stops) from AAA to the accounting task
incoming Accounting responses	Number of accounting responses (starts, updates, stops) from the accounting task to AAA
outgoing Duplicate Acct requests	Number of duplicate accounting requests (starts, updates, stops) from AAA to the accounting task
incoming Duplicate Acct responses	Number of duplicate accounting responses (starts, updates, stops) from the accounting task to AAA
outgoing Broadcast Acct requests	Number of broadcast accounting requests (starts, updates, stops) from AAA to the accounting task
incoming Broadcast Acct responses	Number of broadcast accounting responses (starts, updates, stops) from the accounting task to AAA
outgoing Address requests	Number of address allocation/release requests from AAA to address allocation task
incoming Address responses	Number of address allocation/release responses from the address allocation task to AAA

Related Topics

- `show aaa statistics` command

Monitoring the Number of Active Subscribers Per Port

Purpose Display the maximum number of active subscribers configured per port.

Action To display the maximum number of active subscribers configured per port:

```
host1#show aaa subscriber per-port-limit
Subscriber Port Limits
-----
Port          Limit
-----
0/2           5
0/3           2
3/2           2
```

Related Topics

- `show aaa subscriber per-port-limit` command

Monitoring the Maximum Number of Active Subscribers Per Virtual Router

Purpose Display the maximum number of active subscribers configured per virtual router.

Action To display the maximum number of active subscribers configured per virtual router:

```
host1#show aaa subscriber per-vr-limit
subscriber limit is 0
```

Related Topics

- `show aaa subscriber per-vr-limit` command

Monitoring Session Timeouts

Purpose Display idle and session timeouts.

Action To display idle and session timeouts:

```
host1#show aaa timeout
idle timeout (for PPP Clients) 0 seconds
session timeout (for PPP Clients) 31622400 seconds
```

Related Topics

- `show aaa timeout` command

Monitoring Interim Accounting for Users on the Virtual Router

Purpose Display the default interval used for interim accounting for users on the virtual router. An entry of 0 indicates that the feature is disabled.

Action To display the default interval used for interim accounting for users on the virtual router:

```
host1:vrXyz7#show aaa user accounting interval
user-acct-interval 20
```

Related Topics

- `show aaa user accounting interval` command

Monitoring Virtual Router Groups Configured for AAA Broadcast Accounting

Purpose Display the virtual router groups that are configured for AAA broadcast accounting.

For additional information about the **show configuration** command, see *Customizing the Configuration Output* in *JUNOS System Basics Configuration Guide, Chapter 5, Managing the System*.

Action To display the virtual router groups that are configured for AAA broadcast accounting:

```
host1#show configuration category aaa global-attributes
! Configuration script being generated on MON JAN 10 2005 15:19:19 UTC
! Juniper Edge Routing Switch ERX-1440
! Version: 9.9.9 development-4.0 (January 7, 2005 17:26)
! Copyright (c) 1999-2004 Juniper Networks, Inc. All rights reserved.
!
! Commands displayed are limited to those available at privilege level 15
!
! NOTE: This script represents only a subset of the full system
configuration.
! The category displayed is: aaa global-attributes
!
aaa accounting vr-group groupXyzCompany10
aaa virtual-router 1 vrXyzA
aaa virtual-router 2 vrXyzB
aaa virtual-router 3 vrXyzC
aaa virtual-router 4 vrXyzD

aaa accounting vr-group groupXyzCompany20
aaa virtual-router 1 vrXyzP
aaa virtual-router 2 vrXyzQ
aaa virtual-router 3 vrXyzR
aaa virtual-router 4 vrXyzS
!
hostname "host1"
```

Meaning Table 19 lists the **show configuration category aaa global-attributes** command output fields.

Table 19: show configuration category aaa global-attributes Output Fields

Field Name	Field Description
aaa accounting vr-group	Name of virtual router groups
aaa virtual-router	Name and index number of the virtual routers that are members of the virtual router group

Related Topics

- **show configuration category aaa global-attributes** command

Monitoring Configuration Information for AAA Local Authentication

Purpose Display the configuration information for AAA local authentication. You can display information for the following keywords:

- **databases**—Local user databases configured on the router
- **users**—Users configured in the local user databases
- **virtual-router**—Local user database selected by the specified virtual router for local authentication

- For additional information about the **show configuration** command, see *Customizing the Configuration Output* in *JUNOS System Basics Configuration Guide, Chapter 5, Managing the System*.

Action To display the configuration information for AAA local authentication:

```
host1#show configuration category aaa local-authentication databases
! Configuration script being generated on TUE NOV 09 2004 12:50:18 UTC
! Juniper Edge Routing Switch ERX-1400
! Version: 6.1.0 (November 8, 2004 18:31)
! Copyright (c) 1999-2004 Juniper Networks, Inc. All rights reserved.
!
! Commands displayed are limited to those available at privilege level 15
!
! NOTE: This script represents only a subset of the full system
configuration.
! The category displayed is: aaa local-authentication databases
!
hostname host1
aaa new-model
aaa local database default
aaa local database svalLdb10
```

Meaning Table 20 lists the **show configuration category aaa local-authentication** command output fields.

Table 20: show configuration category aaa global-attributes Output Fields

Field Name	Field Description
aaa local database	Name of the local user database; the name default specifies the default local user database
aaa local select database	Local user database that the virtual router uses for local authentication
aaa local username	Unique user entry in the local user database
database	Name of the local user database for the specified username
hostname	Name of the host router
ip-address	IP address parameter for the user entry
ip-address-pool	IP address pool parameter for the user entry
operational virtual-router	Virtual router parameter for the user entry
password	Password used to authenticate the subscriber
secret	Secret used to authenticate the subscriber
virtual-router	Name of virtual router

Related Topics

- **show configuration category aaa local-authentication** command

Monitoring AAA Server Attributes

Purpose Display status of the attributes on the AAA server, including AAA accounting duplication and broadcast.

For additional information about the **show configuration** command, see *Customizing the Configuration Output* in *JUNOS System Basics Configuration Guide, Chapter 5, Managing the System*.

Action To display status of the attributes on the AAA server, including AAA accounting duplication and broadcast:

```
host1#show configuration category aaa server-attributes include-defaults
! Configuration script being generated on MON JAN 10 2005 15:12:02 UTC
! Juniper Edge Routing Switch ERX-1440
! Version: 9.9.9 development-4.0 (January 7, 2005 17:26)
! Copyright (c) 1999-2004 Juniper Networks, Inc. All rights reserved.
!
! Commands displayed are limited to those available at privilege level 15
!
! NOTE: This script represents only a subset of the full system configuration.
! The category displayed is: aaa server-attributes
!
virtual-router default
aaa accounting duplication lac
aaa accounting broadcast group1
aaa duplicate-address-check enable
aaa accounting acct-stop on-aaa-failure enable
aaa accounting acct-stop on-access-deny disable
aaa subscriber limit per-vr 0
aaa intf-desc-format include sub-intf enable
aaa intf-desc-format include adapter enable
aaa accounting immediate-update disable
!
! =====
!
virtual-router lac
no aaa accounting duplication
no aaa accounting broadcast
aaa duplicate-address-check enable
aaa accounting acct-stop on-aaa-failure enable
aaa accounting acct-stop on-access-deny disable
aaa subscriber limit per-vr 0
aaa intf-desc-format include sub-intf enable
aaa intf-desc-format include adapter enable
aaa accounting immediate-update disable
!
! =====
!
virtual-router isp
no aaa accounting duplication
no aaa accounting broadcast
aaa duplicate-address-check enable
aaa accounting acct-stop on-aaa-failure enable
aaa accounting acct-stop on-access-deny disable
aaa subscriber limit per-vr 0
aaa intf-desc-format include sub-intf enable
aaa intf-desc-format include adapter enable
aaa accounting immediate-update disable
```

Meaning Table 21 lists the **show configuration category aaa server-attributes include-defaults** command output fields.

Table 21: show configuration category aaa server-attributes include-defaults Output Fields

Field Name	Field Description
virtual router	Name of the virtual router
aaa accounting duplication	Virtual router used for duplicate accounting
aaa accounting broadcast	Virtual router group used for broadcast accounting
aaa duplicate-address-check	Enabled, disabled
aaa accounting acct-stop on-aaa-failure	Enabled, disabled
aaa accounting acct-stop on-access-deny	Enabled, disabled
aaa subscriber limit per-vr	Enabled, disabled
aaa intf-desc-format include sub-intf	Enabled, disabled
aaa intf-desc-format include adapter	Enabled, disabled
aaa accounting immediate-update	Enabled, disabled

Related Topics

- **show configuration category aaa server-attributes include-defaults** command

Monitoring the COPS Layer Over SRC Connection

Purpose Display information about the COPS layer over which the SRC connection is made.

Action To display information about the COPS layer over which the SRC connection is made:

```
host1#show cops info
General Cops Information:

Sessions Created: 1
Sessions Deleted: 0
Current Sessions: 1
Bytes Received: 680
Packets Received: 17
Bytes Sent: 692
Packets Sent: 21
Keep Alive Received: 12
Keep Alive Sent: 12

Session Information
Remote Ip Address: 10.10.0.223
Remote TCP Port: 4001
Client Type: 16384
Bytes Received: 2224
Packets Received: 5
Bytes Sent: 596
```

```

Packets Sent:      9
REQ Sent:          4
DEC Rcv:           4
RPT Sent:          4
DRQ Sent:          0
SSQ Rcv:           0
OPN Sent:          1
CAT Rcv:           1
CC Sent:           0
CC Rcv:            0
SSC Sent:          0

```

Meaning Table 22 lists the **show cops info** command output fields.

Table 22: show cops info Output Fields

Field Name	Field Description
Session Created	Number of COPS sessions created
Sessions Deleted	Number of COPS sessions deleted
Current Sessions	Number of current COPS sessions
Bytes Received	Number of bytes received on all COPS sessions
Packets Received	Number of packets received on all COPS sessions
Bytes Sent	Number of bytes transmitted on all COPS sessions
Packets Sent	Number of packets transmitted on all COPS sessions
Keep Alive Received	Number of COPS keepalive messages received
Keep Alive Sent	Number of COPS keepalive messages <i>sent</i>
Remote IP Address	IP address of the remote peer
Remote TCP Port	TCP port number of the remote peer
Client Type	Type of client for the session. For this release the client type must be 16640 (SRC client).
Bytes Received	Number of bytes received for this COPS session
Packets Received	Number of packets received for this COPS session
Bytes Sent	Number of bytes sent on this COPS session
Packets Sent	Number of packets sent on this COPS session
REQ Sent	Number of Request packets sent on this COPS session
DEC Rcv	Number of Decision packets received on this COPS session
RPT Sent	Number of Report packets sent on this COPS session
DRQ Sent	Number of Delete Requests sent on this COPS session
SSQ Rcv	Number of Synch Requests received on this COPS session
OPN Sent	Number of Open messages sent on this COPS session
CAT Rcv	Number of Client Accepts packets received on this COPS session

Table 22: show cops info Output Fields (continued)

Field Name	Field Description
CC Sent	Number of Client Closes packets sent on this COPS session
CC Rcv	Number of Client Closes packets received on this COPS session
SSC Sent	Number of Sync Complete packets sent on this COPS session

Related Topics

- `show cops info` command

Monitoring Statistics About the COPS Layer

Purpose Display statistics about the COPS layer over which the SRC connection is made.

Action To display statistics about the COPS layer:

```

host1#show cops statistics
General Cops Information:
  Sessions Created: 0
  Sessions Deleted: 0
  Current Sessions: 0
  Bytes Received: 1108
  Packets Received: 12
  Bytes Sent: 1572
  Packets Sent: 18
  Keep Alive Received: 2
  Keep Alive Sent: 2
Session Information:
  Client Type: 24754
  Bytes Received: 2539032
  Packets Received: 20388
  Bytes Sent: 4386648
  Packets Sent: 51337
  REQ Sent: 21203
  DEC Rcv: 20388
  RPT Sent: 20391
  DRQ Sent: 9743
  SSQ Rcv: 0
  OPN Sent: 0
  CAT Rcv: 0
  CC Sent: 0
  CC Rcv: 0
  SSC Sent: 0

```


Meaning Table 23 lists the **show cops statistics** command output fields.

Table 23: show cops statistics Output Fields

Field Name	Field Description
Session Created	Number of COPS sessions created
Sessions Deleted	Number of COPS sessions deleted
Current Sessions	Number of current COPS sessions
Bytes Received	Number of bytes received on all COPS sessions
Packets Received	Number of packets received on all COPS sessions
Bytes Sent	Number of bytes transmitted on all COPS sessions
Packets Sent	Number of packets transmitted on all COPS sessions
Keep Alive Received	Number of COPS keepalive messages received
Keep Alive Sent	Number of COPS keepalive messages <i>sent</i>
Client Type	Type of client for the session
Bytes Received	Number of bytes received for this COPS session
Packets Received	Number of packets received for this COPS session
Bytes Sent	Number of bytes sent on this COPS session
Packets Sent	Number of packets sent on this COPS session
REQ Sent	Number of Request packets sent on this COPS session
DEC Rcv	Number of Decision packets received on this COPS session
RPT Sent	Number of Report packets sent on this COPS session
DRQ Sent	Number of Delete Requests sent on this COPS session
SSQ Rcv	Number of Synch Requests received on this COPS session
OPN Sent	Number of Open messages sent on this COPS session
CAT Rcv	Number of Client Accepts packets received on this COPS session
CC Sent	Number of Client Closes packets sent on this COPS session
CC Rcv	Number of Client Closes packets received on this COPS session
SSC Sent	Number of Sync Complete packets sent on this COPS session

Related Topics

- **show cops statistics** command

Monitoring Local Address Pool Aliases

Purpose Display information about aliases for the local address pools configured on your router. If you do not specify a particular alias, the router displays all aliases.

Action To display information about local address pool aliases:

```
host1#show ip local alias
```

```
Alias    Pool
-----  ----
alias1   poolA
alias2   poolB
alias3   poolC
poolA    poolD
poolB    poolD
poolC    poolD
```

Meaning Table 24 lists the show **ip local alias** command output fields.

Table 24: show ip local alias Output Fields

Field Name	Field Description
Alias	Name of alias for the local address pool
Pool	Name of the local address pool

Related Topics

- **show ip local alias** command

Monitoring Local Address Pools

Purpose Display information about the local address pools configured on your router. If you do not specify the name of a local address pool, the router displays all local address pools.

Action To display information about local address pools:

```
host1#show ip local pool
```

```
Pool      High  Abated
Thresh    Thresh  Trap  Group
-----  -
poolA      85      75    N

Aliases
-----
alias1

Begin      End      Free    In
-----  -
10.1.1.1   10.1.1.10  10      0
10.1.2.1   10.1.2.10  10      0
10.1.3.1   10.1.3.10  10      0
```

```

Pool      High  Abated
-----  -
poolB      85      75      N

```

Aliases

```

-----
alias2

Begin      End      Free  In
-----  -
10.2.1.1   10.2.1.10  10    0
10.2.2.1   10.2.2.10  10    0

```

```

Pool      High  Abated
-----  -
poolC      85      75      N

```

Aliases

```

-----
alias3

Begin      End      Free  In
-----  -
10.3.1.1   10.3.1.10  10    0

```

```

Pool      High  Abated
-----  -
poolD      85      75      N

```

Aliases

```

-----
poolA
poolB
poolC

Begin      End      Free  In
-----  -
10.4.1.1   10.4.1.255  255   0

```

Meaning Table 25 lists the **show ip local pool** command output fields.

Table 25: show ip local pool Output Fields

Field Name	Field Description
Pool	User-specified name of the address pool
High Thresh	High utilization threshold value
Abated Thresh	Abated utilization threshold value
Trap	Enable SNMP pool utilization traps: Y (yes) or N (no)
Aliases	Aliases for the local address pool
Begin	Starting IP address
End	Ending IP address
Free	Number of addresses available for use
In Use	Number of addresses currently in use

Related Topics

- `show ip local pool` command

Monitoring Local Address Pool Statistics

Purpose Display local address pool statistics. Use the optional **delta** keyword to specify that baselined statistics are to be shown.

Action To display local address pool statistics:

```
host1#show ip local pool statistics
Local Address Pool Statistics
```

Statistic	Values
Requests denied (pool exhaustion)	0

Related Topics

- `show ip local pool statistics` command

Monitoring Shared Local Address Pools

Purpose Display the shared local address pool configurations.

Action To display shared local address pool configuration information:

```
host1#show ip local shared-pool
```

Shared Pool	In Use	Dhcp Pool
shared_poolA	253	dhcp_pool_25
shared_poolB	83	dhcp_pool_25
shared_poolC	99	dhcp_pool_17

Meaning Table 26 lists the `show ip local shared-pool` command output fields.

Table 26: show ip local shared-pool Output Fields

Field Name	Field Description
Shared Pool	Name of the shared local address pool
In Use	Number of addresses allocated
Dhcp Pool	Name of the DHCP address pool

Related Topics

- `show ip local shared-pool` command

Monitoring the Routing Table

Purpose Display the current state of the routing table, including routes not used for forwarding. An Access-P entry in the Type column of the output indicates routes that are downloaded by the RADIUS route-download server.

Action To display information in the routing table:

```
host1#show ip route
Protocol/Route type codes:
  I1- ISIS level 1, I2- ISIS level2,
  I- route type intra, IA- route type inter, E- route type external,
  i- metric type internal, e- metric type external,
  P- periodic download, O- OSPF, E1- external type 1, E2- external type2,
  N1- NSSA external type1, N2- NSSA external type2
  L- MPLS label, V- VRF, *- via indirect next-hop
```

Prefix/Length	Type	Next Hop	Dst/Met	Interface
0.0.0.0/0	Static	10.13.10.1	1/0	FastEthernet6/0/0
192.168.10.0/23	Connect	10.13.10.187	0/0	FastEthernet6/0/0
192.168.21.21/32	Access-P	255.255.255.255	254/2	null0
192.168.22.22/32	Access-P	255.255.255.255	254/2	null0
192.168.23.23/32	Access-P	255.255.255.255	254/2	null0
192.168.24.24/32	Access-P	255.255.255.255	254/2	null0

Meaning Refer to the description of the **show ip route** command in *JUNOS IP, IPv6, and IGP Configuration Guide, Chapter 1, Configuring IP* for additional information about the **show ip route** command.

Related Topics

- **show ip route** command

Monitoring the B-RAS License

Purpose Display the B-RAS license.

Action To display the B-RAS license:

```
host1#show license b-ras
K4bZ16Lr
```

Related Topics

- **show license b-ras** command

Monitoring the RADIUS Server Algorithm

Purpose Display information about the currently configured RADIUS server algorithm.

Action To display the RADIUS server algorithm:

```
host1#show radius algorithm
direct
```

Related Topics

- `show radius algorithm` command

Monitoring RADIUS Override Settings

Purpose Display the current RADIUS override settings.

Action To display the RADIUS override settings:

```
host1:vrXyz7#show radius override
nas-ip-addr: nas-ip-addr
nas-info:    from authentication virtual router
```

Meaning Table 27 lists the `show radius override` command output fields.

Table 27: `show radius override` Output Fields

Field Name	Field Description
nas-ip-addr	Either the NAS-IP-Address [4] attribute is used, or it is overridden with the Tunnel-Client-Endpoint [66] attribute.
nas-info	Either the NAS-IP-Address [4] and NAS-Identifier [32] attributes of the virtual router generating the accounting information are used, or they are overridden with the respective attributes of the authentication virtual router.

Related Topics

- `show radius override` command

Monitoring the RADIUS Rollover Configuration

Purpose Display the configuration of the RADIUS rollover-on-reject feature.

Action To display the RADIUS rollover configuration:

```
host1#show radius rollover-on-reject
rollover-on-reject enabled
```

Meaning RADIUS rollover-on-reject is enabled.

Related Topics

- `show radius rollover-on-reject` command

Monitoring RADIUS Server Information

Purpose Display RADIUS server information.

Use with the optional **accounting**, **authentication**, **dynamic-request**, **route-download**, or **pre-authentication** keywords to limit output to the specific type of server.

Action To display RADIUS server configuration information:

```
host1#show radius servers
```

RADIUS Authentication Configuration						
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret
172.28.30.117	1812	3	3	255	0	radius

RADIUS Accounting Configuration						
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret
172.28.30.117	1813	3	3	255	0	radius

RADIUS Pre-Authentication Configuration						
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret
172.28.30.117	1812	3	3	255	0	radius

RADIUS Route-Download Configuration						
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret
192.168.30.16	1812	3	3	255	0	radius

Meaning Table 28 lists the `show radius servers` command output fields.

Table 28: show radius servers Output Fields

Field Name	Field Description
IP Address	IP address of RADIUS server
Udp Port	Number of the UDP port of the RADIUS server
Retry Count	Maximum number of times that the router retransmits a RADIUS packet to the RADIUS server
Timeout	Interval (in seconds) before the router retransmits a RADIUS packet to the RADIUS server

Table 28: show radius servers Output Fields (continued)

Field Name	Field Description
Maximum Sessions	Number of outstanding requests to the RADIUS server
Dead Time	Amount of time to remove the authentication server or accounting server from the available list when a timeout occurs
Secret	Configured authentication server or accounting server secret

Related Topics

- **show radius servers** command

Monitoring RADIUS Services Statistics

Purpose Use to display statistics for RADIUS services.

Use with the optional **accounting**, **authentication**, **dynamic-request**, **route-download**, or **pre-authentication** keywords to limit output to the specific type of statistics. Use the optional **delta** keyword to specify that baselined statistics are to be shown.

Action To display RADIUS authentication and accounting statistics:

```

host1#show radius statistics
      RADIUS Authentication Statistics
      -----
      Statistic      10.10.121.128
      -----
      UDP Port      1812
      Round Trip Time      0
      Access Requests      0
      Rollover Requests      0
      Retransmissions      0
      Access Accepts      0
      Access Rejects      0
      Access Challenges      0
      Malformed Responses      0
      Bad Authenticators      0
      Requests Pending      0
      Request Timeouts      0
      Unknown Responses      0
      Packets Dropped      0

      RADIUS Accounting Statistics
      -----
      Statistic      10.10.121.128
      -----
      UDP Port      1646
      Round Trip Time      2
      Requests      1
      Start Requests      1
      Interim Requests      0
      Stop Requests      0
      Reject Requests      0
      Rollover Requests      0
  
```



```

Retransmissions      3
Responses            1
Start Responses      1
Interim Responses    0
Stop Responses       0
Reject Responses     0
Malformed Responses  0
Bad Authenticators   0
Requests Pending     0
Request Timeouts     3
Unknown Responses    0
Packets Dropped      0

```

To display RADIUS pre-authentication statistics:

```
host1#show radius pre-authentication statistics
```

```

RADIUS Pre-Authentication Statistics
-----
Statistic      172.28.30.117
-----
UDP Port        1812
Round Trip Time 0
Access Requests 2809
Rollover Requests 0
Retransmissions 56
Access Accepts  2809
Access Rejects  0
Access Challenges 0
Malformed Responses 0
Bad Authenticators 0
Requests Pending 0
Request Timeouts 72
Unknown Responses 0
Packets Dropped 2

```

To display RADIUS route-download statistics:

```
host1#show radius route-download statistics
```

```

RADIUS Route-Download Statistics
-----
Statistic      192.168.30.16
-----
UDP Port        1812
Round Trip Time 0
Access Requests 1613
Rollover Requests 0
Retransmissions 6
Access Accepts  1612
Access Rejects  1
Access Challenges 0
Malformed Responses 0
Bad Authenticators 0
Requests Pending 0
Request Timeouts 6
Unknown Responses 0
Packets Dropped 5

```

Meaning Table 29 lists the **show radius statistics** command output fields.



NOTE: All descriptions apply to the primary, secondary, and tertiary RADIUS authentication and accounting servers.

Table 29: show radius statistics Output Fields

Field Name	Field Description
UDP Port	Number of the UDP port of a RADIUS server
Round Trip Time	Hundreds of seconds from request to response
Access Requests	Number of access requests sent to server
Rollover Requests	Number of requests coming into server as a result of the previous server timing out
Retransmissions	Number of retransmissions
Access Accepts	Number of Access-Accepts received from the server
Access Rejects	Number of Access-Rejects received from the server
Access Challenges	Number of access challenges received from the server
Malformed Responses	Number of responses with attributes having an invalid length or unexpected attributes (such as two attributes when the response is required to have at most one)
Bad Authenticators	Number of responses in which the authenticator is incorrect for the matching request. This can occur if the RADIUS secret for the client and server does not match.
Requests Pending	Number of requests waiting for a response
Request Timeouts	Number of requests that timed out
Unknown Responses	Number of unknown responses. The RADIUS response type in the header is invalid or unsupported.
Packets Dropped	Number of packets dropped either because they are too short or the E-series router receives a response for which there is no corresponding request. For example, if the router sends a request and the request times out, the router removes the request from the list and sends a new request. If the server is slow and sends a response to the first request after the router removes the request, the packet is dropped.
Requests	Total number of accounting requests sent, which is the combined total of Start Requests, Interim Requests, Stop Requests, and Reject Requests
Start Requests	Number of accounting start requests sent; includes Acct-On, Acct-Start, Acct-Link-State, and Acct-Tunnel-Start requests
Interim Requests	Number of interim accounting requests
Stop Requests	Number of accounting stop requests sent; includes Acct-Off, Acct-Stop, Acct-Link-Stop, and Acct-Tunnel-Stop requests

Table 29: show radius statistics Output Fields (continued)

Field Name	Field Description
Reject Requests	Number of accounting reject requests sent; includes Acct-Link-Reject and Acct-Tunnel-Reject requests
Responses	Number of accounting responses received from the server
Start Responses	Number of accounting start responses received; includes Acct-On, Acct-Start, Acct-Link-Start, and Acct-Tunnel-Start responses
Interim Responses	Number of interim accounting responses
Stop Responses	Number of accounting stop responses received; includes Acct-Off, Acct-Stop, Acct-Link-Stop, and Acct-Tunnel-Stop responses
Reject Responses	Number of accounting reject responses received; includes Acct-Link-Reject and Acct-Tunnel-Reject responses

Related Topics

- **show radius statistics** command

Monitoring RADIUS SNMP Traps

Purpose Display the configuration of RADIUS SNMP traps.

Action To display RADIUS SNMP traps configuration information:

```
host1#show radius trap
trap for auth-server-not-responding enabled
trap for no-auth-server-responding disabled
trap for auth-server-responding enabled
trap for acct-server-not-responding enabled
trap for no-acct-server-responding disabled
trap for acct-server-responding disabled
```

Meaning A list of the configured RADIUS-related SNMP traps is displayed.

Related Topics

- **show radius trap** command

Monitoring RADIUS Accounting for L2TP Tunnels

Purpose Display the status for RADIUS accounting for L2TP tunnels.

Action To display RADIUS accounting for L2TP tunnels:

```
host1#show radius tunnel-accounting
disabled
```

Meaning RADIUS accounting is either enabled or disabled.

Related Topics

- `show radius tunnel-accounting` command

Monitoring RADIUS UDP Checksums

Purpose Display information about UDP checksums.

Action To display the status of RADIUS UDP checksums:

```
host1#show radius udp-checksum
enabled
```

Meaning RADIUS checksums status is either enabled or disabled.

Related Topics

- `show radius udp-checksum` command

Monitoring RADIUS Server IP Addresses

Purpose Display the IP address of the RADIUS servers.

Action To display the RADIUS server IP address:

```
host1#show radius update-source-address
192.168.1.228
```

Related Topics

- `show radius update-source-addr` command

Monitoring SRC Client Connection Status

Purpose Display the current status of the SRC client connection to the SAEs. The command output refers to the SRC client by its former name, SSC client.

Action To display the status of the SRC client connection:

```
host1#show ssrc info
The SSC Client is currently unconnected
The SSC Client configured servers are:
Primary: 10.10.2.2:3
Secondary: 0.0.0.0:0
Tertiary: 0.0.0.0:0
Local Source: FastEthernet 0/0, Local Source Address: 10.13.5.61
The configured transport router is: default
```

```

The configured retry timer is (seconds): 90
The connection state is: NoConnection
SSC Client Statistics:
Policy Commands received      0
Policy Commands(List)         0
Policy Commands(Acct)         0
Bad Policy Cmds received      0
Error Policy Cmds received    0
Policy Reports sent           0
Connection Open requests      0
Connection Open completed     0
Connection Closed sent        0
Connection Closed remotely    0
Create Interfaces sent         0
Delete Interfaces sent         0
Active IP Interfaces           2
IP Interface Transitions       0
Synchronizes received         0
Synchronize Complete sent     0
Internal Errors                0
Communication Errors           0
Tokens Seen                    0
Active Tokens                  0
Token Transitions              0
Token Creates Sent             0
Token Deletes Sent             0
Active Addresses               0
Address Transitions            0
Create Addresses Sent          0
Delete Addresses Sent          0
Authentication Successes       0
Authentication Failures        0

```

Meaning Table 30 lists the **show ssc info** command output fields.

Table 30: show ssc info Output Fields

Field Name	Field Description
The SSC client configured servers	IP addresses of the primary, secondary, and tertiary SAEs
Local Source	Fixed source interface for the TCP/COPS connection
Local Source Address	Fixed source address for the TCP/COPS connection
The configured transport router is	Router on which is TCP/COPS connection is established
The configured retry timer is (seconds)	Delay period the client waits for a response from the SAE before submitting request again
The connection state is	Current state of the TCP/COPS connection

Table 30: show sssc info Output Fields (continued)

Field Name	Field Description
SSC Client Statistics	<p>Statistics about the connection between the SRC client and SAE</p> <ul style="list-style-type: none"> ■ Policy Commands received—Number of policy commands received on the SRC client connection ■ Policy Commands(List)—Number of Policy Commands with subtype List ■ Policy Commands(Acct)—Number of Policy Commands with subtype Accounting ■ Bad Policy Cmds received—Number of Policy Commands received with bad policies ■ Error Policy Cmds received—Number of Policy Commands received with errors ■ Policy Reports sent—Number of Policy Reports sent ■ Connection Open requests—Number of connections the SRC client has tried to open with a remote SAE ■ Connection Open completed—Number of connections successfully open to the SAE ■ Connection Closed sent—Number of connections the SRC client has closed ■ Connection Closed remotely—Number of connections that were closed by the remote SAE ■ Create Interfaces sent—Number of create interface indications sent to the SAE ■ Delete Interfaces sent—Number of delete interface indications sent to the SAE ■ Active IP Interfaces—Current number of active IP interfaces the SRC client is aware of ■ IP Interface Transitions—Number of IP interface transitions logged by the SRC client ■ Synchronizes received—Number of synchronization requests the SRC client received from the SAE ■ Synchronize Complete sent—Number of synchronization complete indications sent ■ Internal Errors—Number of internal errors ■ Communication Errors—Number of errors with lower-layer communications (such as socket errors)

Related Topics

- **show sssc info** command

Monitoring SRC Client Connection Statistics

Purpose Display statistics about connection between the SRC client and SAE. The command output refers to the SRC client by its former name, SSC client.

Action To display statistics for the SRC client connection:

```
host1#show sssc statistics
SSC Client Statistics:
  Policy Commands received    0
  Policy Commands(List)      0
  Policy Commands(Acct)      0
  Bad Policy Cmds received   0
  Error Policy Cmds received  0
  Policy Reports sent         3
  Connection attempts         7
  Connection Open requests    7
  Connection Open completed   0
  Connection Closed sent      0
  Connection Closed remotely  5
  Create Interfaces sent      0
  Delete Interfaces sent      3
  Active IP Interfaces        3282
  IP Interface Transitions    3281
  Synchronizes received       0
  Synchronizes rcvd & dropped 0
  Synchronize Complete sent   2
  Internal Errors             0
  Communication Errors        0
  Discovers Seen              15263
  Active Discovers            4911
  Discover Transitions         20704
  Discover Creates Sent        15263
  Discover Deletes Sent        10352
  Active Addresses            3274
  Address Transitions          3280
  Create Addresses Sent        3277
  Delete Addresses Sent        3
```

Meaning Table 31 lists the **show sssc statistics** command output fields.

Table 31: show sssc statistics Output Fields

Field Name	Field Description
Policy Commands received	Number of policy commands received on the SRC client connection
Policy Commands(List)	Number of Policy Commands with subtype List
Policy Commands(Acct)	Number of Policy Commands with subtype Accounting
Bad Policy Cmds received	Number of Policy Commands received with bad policies
Error Policy Cmds received	Number of Policy Commands received with errors
Policy Reports sent	Number of Policy Reports sent
Connection Open requests	Number of connections the SRC client has tried to open with a remote SAE
Connection Open completed	Number of connections successfully open to the SAE

Table 31: show ssc statistics Output Fields (continued)

Field Name	Field Description
Connection Closed sent	Number of connections the SRC client has closed
Connection Closed remotely	Number of connections that were closed by the remote SAE
Create Interfaces sent	Number of create interface indications sent to the SAE
Delete Interfaces sent	Number of delete interface indications sent to the SAE
Active IP Interfaces	Current number of active IP interfaces the SRC client is aware of
IP Interface Transitions	Number of IP interface transitions logged by the SRC client
Synchronizes received	Number of synchronization requests the SRC client received from the SAE
Synchronize Complete sent	Number of synchronization complete indications sent
Internal Errors	Number of internal errors
Communication Errors	Number of errors with lower-layer communications (such as socket errors)

Related Topics

- **show ssc statistics** command

Monitoring the SRC Client Version Number

Purpose Display the SRC client (formerly SDX client) version number.

Action To display the SRC client version number:

```
host1#show ssc version
The SSC Client version is: 4.0
```

Related Topics

- **show ssc version** command

Monitoring Subscriber Information

Purpose Display the active subscribers on the router. If you specify a username, the router displays only the users that match. When you issue the command in the default VR, all users are displayed. When you issue the command in a nondefault VR, only those users attached to that VR are displayed. The following list describes keywords that you can use with the **show subscribers** command:

- You can use the **domain**, **interface**, **port**, **slot**, **username**, or **virtual-router** keywords on all routers to filter the results. If you do not use a keyword, all active users are displayed.
- When you use the **interface** keyword to display detailed subscriber information by interface, you must also specify either the **atm** or **ethernet** keyword, an interface specifier, and optionally a subinterface specifier.
- The output displayed in the interface field depends on the configuration of two commands at the time the subscriber logs in: **aaa intf-desc-format include sub-intf** and **aaa intf-desc-format include adapter** (for the E120 and E320 routers).
 - When the **aaa intf-desc-format include sub-intf disable** command has been issued, the subinterface is stripped from the subscriber's interface field at login and is not displayed in the output. In the default state, or when the **aaa intf-desc-format include sub-intf enable** command has been issued, the subinterface is included in the subscriber's interface field at login, and is displayed in the output.
 - When the **aaa intf-desc-format include adapter disable** command has been issued, the adapter is stripped from the subscriber's interface field at login and is not displayed in the output. In the default state, or when the **aaa intf-desc-format include adapter enable** command has been issued, the adapter is included in the subscriber's interface field at login and is displayed in the output.
 - Even when the subinterface has been stripped from the subscriber's interface field, you can still include the subinterface specifier in the **show subscribers interface** command. Even though the subinterface itself is not displayed, only subscribers on the specified subinterface are displayed.
 - These considerations do not apply when you issue the **summary** keyword. The output displayed in the Interface field of summary versions is not affected by the state of either the **aaa intf-desc-format include sub-intf** command or the **aaa intf-desc-format include adapter** command when the subscriber logs in.
- You can use the **ipv6** keyword to display all IPv6 subscribers or include the IPv6 prefix to limit the display to only IPv6 subscribers on a specific network.
- You can use the **summary** keyword to display only summary information about active subscribers.

Action To display general subscriber information:

```
host1#show subscribers
```

```
Subscriber List
-----
User Name      Type      Addr|Endpt      Virtual
-----
fred           tst       10.10.65.86/radius default
bert           tst       192.168.10.3/user default
User Name      Interface
-----
fred           atm 2/1.42:100.104
bert           FastEthernet 5/2.4
User Name      Login Time      Circuit Id
-----
fred           06/05/12 10:58:42 atm 5/1.3
bert           06/05/12 10:59:08
User Name      Remote Id
-----
fred
bert           (800) 555-1212
```

To display detailed information for subscribers on the specified interface:

```
host1#show subscribers interface ethernet 5/2
```

```
Subscriber List
-----
User Name      Type      Addr|Endpt      Virtual
-----
bert           tst       192.168.10.3/user default
User Name      Interface
-----
bert           FastEthernet 5/2.4
User Name      Login Time      Circuit Id
-----
bert           06/05/12 10:59:08
User Name      Remote Id
-----
bert           (800) 555-0000
```

To display detailed information for subscribers on the specified slot:

```
host1#show subscribers slot 5
```

```
Subscriber List
-----
User Name      Type      Addr|Endpt      Virtual
-----
fred           tst       10.10.65.86/radius default
User Name      Interface
-----
fred           atm 5/1.42:100.104
User Name      Login Time      Circuit Id
-----
fred           06/05/12 10:58:42 atm 5/1.3
User Name      Remote Id
-----
fred
```

To display the number of subscribers on each virtual router, as well as the total and peak subscribers for the chassis:

```
host1#show subscribers summary
Virtual
Router      Subscribers    Ppp      Ip      Tnl      Total
-----
default      1              1        0        0         1
Total Subscribers : 10 (chassis-wide total)
Peak Subscribers : 15 (chassis-wide total)
```

To display the number of subscribers on each port:

```
host1#show subscribers summary port
Interface    Count
-----
3/1          5
2/1          5
Total Subscribers : 10 (chassis-wide total)
Peak Subscribers : 15 (chassis-wide total)
```

To display the number of subscribers by domain name:

```
host1#show subscribers summary domain
Domain Name      Count
-----
abc.com          5
iii.com          5
Total Subscribers : 10 (chassis-wide total)
Peak Subscribers : 15 (chassis-wide total)
```

To display the number of subscribers by interface:

```
host1#show subscribers summary interface
Interface        Count
-----
ATM 3/2.1        1
ETHERNET 5/2.1    2
Total Subscribers : 3 (chassis-wide total)
Peak Subscribers : 6 (chassis-wide total)
```

To display the number of subscribers by slot:

```
host1#show subscribers summary slot
Slot      Count
-----
3          1
5          4
Total Subscribers : 5 (chassis-wide total)
Peak Subscribers : 8 (chassis-wide total)
```

Meaning Table 32 lists the **show subscribers** command output fields.

Table 32: show subscribers Output Fields

Field Name	Field Description
User Name	Name of the subscriber
Type	Type of subscriber: atm, ip, ipsec, ppp, tnl (tunnel), tst (test)
Addr Endpt	IP or IPv6 address and source of the address: l2tp, local, dhcp, radius, user. For local, dhcp, radius, and user endpoints, the address is that of the user. When the endpoint is l2tp, the address is that of the LNS.
Virtual Router	Name of the virtual router context
Interface	Interface specifier over which the subscriber is connected
Login Time	Date, in YY/MM/DD format, and time the subscriber logged in
Circuit Id	User circuit ID value specified by PPPoE
Remote Id	User remote ID value specified by PPPoE
Total Subscribers	Number of active subscribers, chassis-wide
Peak Subscribers	Maximum value of the Total Subscriber field during the time the router has been active, chassis-wide
Subscribers	Number of subscribers; the sum of the Ppp and Ip fields
Ppp	Number of PPPoA and PPPoE users, combined
Ip	Number of DHCP and IP subscriber manager users, combined
Tnl	Number of users tunneled to an LNS
Total	Total number of users per virtual router; the sum of the Ppp, Ip, and Tnl fields
Domain Name	Domain name used by the subscriber
Count	Number of subscribers
Slot	Number of slot in the chassis

Related Topics

- **show subscribers** command

Monitoring Application Terminate Reason Mappings

Purpose Display information about the mappings for application terminate reasons.

Action To display the current terminate reasons that are mapped to a specific Acct-Terminate-Cause-Code:

This example uses the **radius** keyword to display all current terminate reasons mapped to RADIUS Acct-Terminate-Cause codes. The output lists all PPP mappings, followed by L2TP mappings, and then AAA mappings.

```
host1(config)#run show terminate-code radius
```

Apps	Terminate Reason	Description	Radius Code
-----	-----	-----	-----
ppp	authenticate-authenticator-timeout	authenticate authenticator timeout	17
ppp	authenticate-challenge-timeout	authenticate challenge timeout	10
ppp	authenticate-chap-no-resources	authenticate chap no resources	10
ppp	authenticate-chap-peer-authenticator-timeout	authenticate chap peer authenticator timeout	17
ppp	authenticate-deny-by-peer	authenticate deny by peer	17
ppp	authenticate-inactivity-timeout	authenticate inactivity timeout	4
ppp	authenticate-max-requests	authenticate max requests	10
--More--			

To display all terminate reasons that are mapped to a specific terminate code:

This example uses the **radius** keyword and a RADIUS Acct-Terminate-Cause code (**radius 4**) to display all terminate reasons mapped to the specified terminate code.

```
host1(config)#run show terminate-code radius 4
```

Apps	Terminate Reason	Description	Radius Code
-----	-----	-----	-----
ppp	authenticate-inactivity-timeout	authenticate inactivity timeout	4
l2tp	session-timeout-inactivity	session timeout inactivity	4

To display all current mappings for a particular application's terminate reasons:

This example uses **aaa** as the application.

```
host1(config)#run show terminate-code aaa
```

Apps	Terminate Reason	Description	Radius Code
-----	-----	-----	-----
aaa	deny-server-not-available	deny server not available	17
aaa	deny-server-request-timeout	deny server request timed out	17
aaa	deny-authentication-failure	deny authentication failure from server	17
aaa	deny-address-assignment-failure	deny address assignment failure	17
aaa	deny-address-allocation-failure	deny address allocation failure	17
aaa	deny-no-address-allocation-resources	deny insufficient resources for address allocation	17
aaa	deny-unknown-subscriber	deny no such server entry	17
aaa	deny-no-resources	deny no resources available	10
--More--			

To display the mapping for a specific terminate reason for an application:

This example uses **l2tp** as the application and **session-access-interface-down** as the terminate reason.

```

host1#show terminate-code l2tp session-access-interface-down

```

Terminate Reason Description	Radius Code
-----	-----
session access interface down	8

Meaning Table 33 lists the **show terminate-code** command output fields.

Table 33: show terminate-code Output Fields

Field Name	Field Description
Apps	The application generating the terminate reason; AAA, L2TP, PPP, or RADIUS client
Terminate Reason	The application's terminate reason
Description	The terminate reason
Radius Code	The RADIUS Acct-Terminate-Cause code to which the application's terminate reason is mapped

Related Topics

- **show terminate-code** command