Chapter 8

Monitoring RADIUS

This chapter describes how to monitor the RADIUS attributes, RADIUS dynamic-request server, and RADIUS relay.

RADIUS topics are described in the following sections:

Monitoring Override Settings of RADIUS IETF Attributes

Purpose Display the current override setting for RADIUS IETF attributes. You can monitor the NAS-IP-Address [4], NAS-Port-Id [87], Calling-Station-Id [31], and NAS-Identifier [32] attributes.

Action To display the current setting for all configured RADIUS attributes:

```
host1#show radius override
nas-ip-addr:          nas-ip-addr
nas-port-id:           nas-port-id
calling-station-id:   calling-station-id
nas-info:              from current virtual router

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

Meaning Table 31 lists the **show radius override** command output fields.

Table 31: show radius override Output Fields

Field Name	Field Description
nas-ip-addr	Displays the current setting for the NAS-IP-Address [4] attribute. These settings can be changed with the **radius override nas-ip-addr tunnel-client-endpoint** and **radius override nas-info** commands.
nas-port-id	Displays the current setting for the NAS-Port-Id [87] attribute. Use the **radius override nas-port-id remote-circuit-id** command to override the standard NAS-Port-Id attribute with the PPPoE remote circuit ID transmitted from the DSLAM.
calling-station-id	Displays the current setting for the Calling-Station-Id [31] attribute. Use the **radius override calling-station-id remote-circuit-id** command to override the standard Calling-Station-Id attribute with the PPPoE remote circuit ID transmitted from the DSLAM.
nas-info	Displays the current setting for the NAS-Identifier [32] attribute. This setting can be changed with the **radius override nas-info** command, which is used for AAA broadcast accounting.

Related Topics

- **show radius override** command

Monitoring the NAS-Port-Format RADIUS Attribute

Purpose Display information for the NAS-Port attribute.

Action To display the setting for the NAS-Port attribute:

```
host1#show radius nas-port-format
Osssppp
```

To display information about the NAS-Port attribute on an ATM interface on an E320 router:

```
host1#show radius nas-port-format extended atm
extended atm field-width slot 5 adapter 0 port 4 vpi 4 vci 12
```

To display the status of NAS-Port attribute settings for PPPoE interfaces:

```
host1#show radius pppoe nas-port-format
unique
```

To display the status of the S-VLAN ID setting for the NAS-Port attribute for VLAN interfaces:

```
host1#show radius vlan nas-port-format
vlan stacked
```

Related Topics

- **show radius nas-port-format** command
- **show radius nas-port-format extended** command
- **show radius pppoe nas-port-format** command
- **show radius vlan nas-port-format** command

Monitoring the Calling-Station-Id RADIUS Attribute

Purpose Display the format and delimiter used for the Calling-Station-Id [31] attribute.

Action To display the format configured for the Calling-Station-Id [31] attribute:

```
host1#show radius calling-station-format
fixed-format-adapter-new-field
```

To display the delimiter used in the Calling-Station-Id for authenticated ATM PPP users:

```
host1#show radius calling-station-delimiter
&
```

Related Topics

- **show radius calling-station-format** command
- **show radius calling-station-delimiter** command

Monitoring the NAS-Identifier RADIUS Attribute

Purpose Display information about the NAS-Identifier value.

Action To display information about the NAS-Identifier value:

```
host1#show radius nas-identifier
fox
```

Related Topics

- **show radius nas-identifier** command

Monitoring the Format of the Remote-Circuit-ID for RADIUS

Purpose Display the format configured for the PPPoE remote circuit ID value captured from a DSLAM.

The default format is agent-circuit-ID. If the PPPoE remote circuit ID value is configured to include any or all of the agent-circuit-id, agent-remote-id, and nas-identifier components, the display lists the components included and the order in which they appear.

If the PPPoE remote circuit ID value is configured to use the format for the **dsl-forum-1** keyword of the **radius remote-circuit-id-format** command, the display indicates that this format is in effect.

Action To display the format configured for the PPPoE remote circuit ID value captured from a DSLAM:

```
host1#show radius remote-circuit-id-format
nas-identifier agent-circuit-id agent-remote-id
```

Related Topics

- [32] NAS-Identifier
- **show radius remote-circuit-id-format** command

Monitoring the Delimiter Character in the Remote-Circuit-ID for RADIUS

Purpose Display the delimiter character configured to set off components in the PPPoE remote circuit ID value captured from a DSLAM. The default delimiter character is #.

Action To display the delimiter character:

```
host1#show radius remote-circuit-id-delimiter
!
```

Related Topics

- **show radius remote-circuit-id-delimiter** command

Monitoring the Acct-Session-Id RADIUS Attribute

Purpose Display the format used for the Acct-Session-Id attribute.

Action To display the format used for the Acct-Session-Id attribute:

```
host1#show radius acct-session-id-format
decimal
```

Related Topics

- **show radius acct-session-id-format** command

Monitoring the DSL-Port-Type RADIUS Attribute

Purpose Display the DSL port type for NAS-Port-Type attribute for ATM and Ethernet users.

Action To display the DSL port type for NAS-Port-Type attribute for ATM users:

```
host1#show radius dsl-port-type
xdsl
```

To display the NAS-Port-Type attribute for Ethernet interfaces:

```
host1#show radius ethernet-port-type
virtual
```

Related Topics

- **show radius dsl-port-type** command
- **show radius ethernet-port-type** command

Monitoring the Connect-Info RADIUS Attribute

Purpose Display the format for the Connect-Info attribute.

Action To display the format for the Connect-Info attribute:

```
host1(config)#show radius connect-info-format
l2tp-connect-speed-rx-when-equal
```

Related Topics

- **show radius connect-info-format** command

Monitoring the NAS-Port-ID RADIUS Attribute

Purpose Display whether the router includes or excludes the subinterface number or adapter in the interface description that the router passes to RADIUS for inclusion in the NAS-Port-Id attribute.

Action To display information about the interface description for the NAS-Port-ID:

```
host1#show aaa intf-desc-format
exclude sub-interface
include adapter
```

Related Topics

- **show aaa intf-desc-format** command

Monitoring Included RADIUS Attributes

Purpose Display the RADIUS attributes that are included in and excluded from Acct-On, Acct-Off, Access-Request, Acct-Start, and Acct-Stop messages.

Action To display the list of included RADIUS attributes:

```
host1#show radius attributes-included
                          Account   Account    Access    Account    Account
      Attribute Name        On        Off     Request     Start      Stop
--------------------------  -------   -------  --------  --------  --------
acct-authentic              enabled   enabled  n/c       n/c       n/c
acct-delay-time             enabled   enabled  n/c       n/c       n/c
acct-link-count             n/c       n/c      n/c       enabled   enabled
acct-multi-session-id       n/c       n/c      disabled  enabled   enabled
acct-session-id             enabled   enabled  enabled   n/c       n/c
acct-terminate-cause        n/c       enabled  n/c       n/c       n/c
acct-tunnel-connection      n/c       n/c      enabled   enabled   enabled
ascend-num-in-multilink     n/c       n/c      disabled  disabled  disabled
called-station-id           n/c       n/c      enabled   enabled   enabled
calling-station-id          n/c       n/c      enabled   enabled   enabled
class                       n/c       n/c      n/c       enabled   enabled
connect-info                n/c       n/c      enabled   enabled   enabled
dhcp-options                n/c       n/c      disabled  disabled  disabled
dhcp-mac-address            n/c       n/c      disabled  disabled  disabled
dhcp-gi-address             n/c       n/c      disabled  disabled  disabled
dsl-forum-attributes        n/c       n/c      disabled  disabled  disabled
egress-policy-name(vsa)     n/c       n/c      n/c       enabled   enabled
event-timestamp             enabled   enabled  n/c       enabled   enabled
framed-compression          n/c       n/c      n/c       enabled   enabled
framed-interface-id         n/c       n/c      n/c       disabled  disabled
framed-ip-address           n/c       n/c      n/c       enabled   enabled
framed-ip-netmask           n/c       n/c      n/c       enabled   enabled
framed-ipv6-prefix          n/c       n/c      n/c       disabled  disabled
ingress-policy-name(vsa)    n/c       n/c      n/c       enabled   enabled
input-gigapkts(vsa)         n/c       n/c      n/c       n/c       enabled
input-gigawords             n/c       n/c      n/c       n/c       enabled
interface-description       n/c       n/c      enabled   enabled   enabled
l2c-downstream-data(vsa)    n/c       n/c      disabled  disabled  disabled
l2c-upstream-data(vsa)      n/c       n/c      disabled  disabled  disabled
l2cd-acc-loop-cir-id(vsa)   n/c       n/c      disabled  disabled  disabled
```

```
l2cd-acc-aggr-cir-id-bin(vsa)  n/c       n/c       disabled   disabled   disabled
l2cd-acc-aggr-cir-id-asc(vsa)  n/c       n/c       disabled   disabled   disabled
l2cd-act-data-rate-up(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-act-data-rate-dn(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-min-data-rate-up(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-min-data-rate-dn(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-att-data-rate-up(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-att-data-rate-dn(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-max-data-rate-up(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-max-data-rate-dn(vsa)     n/c       n/c       disabled   disabled   disabled
l2cd-min-lp-data-rate-up(vsa)  n/c       n/c       disabled   disabled   disabled
l2cd-min-lp-data-rate-dn(vsa)  n/c       n/c       disabled   disabled   disabled
l2cd-max-interlv-delay-up(vsa) n/c       n/c       disabled   disabled   disabled
l2cd-act-interlv-delay-up(vsa) n/c       n/c       disabled   disabled   disabled
l2cd-max-interlv-delay-dn(vsa) n/c       n/c       disabled   disabled   disabled
l2cd-act-interlv-delay-dn(vsa) n/c       n/c       disabled   disabled   disabled
l2cd-dsl-line-state(vsa)       n/c       n/c       disabled   disabled   disabled
l2cd-dsl-type(vsa)             n/c       n/c       disabled   disabled   disabled
l2tp-ppp-disconnect-cause      n/c       n/c       n/c        n/c        disabled
mlppp-bundle-name              n/c       n/c       enabled    enabled    enabled
nas-identifier                 enabled   enabled   enabled    enabled    enabled
nas-port                       n/c       n/c       enabled    enabled    enabled
nas-port-id                    n/c       n/c       enabled    enabled    enabled
nas-port-type                  n/c       n/c       enabled    enabled    enabled
output-gigapkts(vsa)           n/c       n/c       n/c        n/c        enabled
output-gigawords               n/c       n/c       n/c        n/c        enabled
pppoe-description(vsa)         n/c       n/c       enabled    enabled    enabled
profile-service-descr(vsa)     n/c       n/c       disabled   disabled   disabled
tunnel-assignment-id           n/c       n/c       n/c        enabled    enabled
tunnel-client-auth-id          n/c       n/c       enabled    enabled    enabled
tunnel-client-endpoint         n/c       n/c       enabled    enabled    enabled
tunnel-interface-id            n/c       n/c       disabled   disabled   disabled
tunnel-medium-type             n/c       n/c       enabled    enabled    enabled
tunnel-preference              n/c       n/c       n/c        enabled    enabled
tunnel-server-attributes       n/c       n/c       disabled   disabled   disabled
tunnel-server-auth-id          n/c       n/c       enabled    enabled    enabled
tunnel-server-endpoint         n/c       n/c       enabled    enabled    enabled
tunnel-type                    n/c       n/c       enabled    enabled    enabled
```

Meaning Table 32 lists the **show radius attributes-included** command output fields.

Table 32: show radius attributes-included Output Fields

Field Name	Field Description
Attribute Name	Name of the RADIUS attribute
Account On	Include status of the attribute in Acct-On messages: enabled, disabled, not configurable (n/c)
Account Off	Include status of the attribute in Acct-Off messages: enabled, disabled, n/c
Access Request	Include status of the attribute in Access Request messages: enabled, disabled, n/c
Account Start	Include status of the attribute in Acct-Start messages: enabled, disabled, n/c
Account Stop	Include status of the attribute in Acct-Stop messages: enabled, disabled, n/c

Related Topics

- **show radius attributes-included** command

Monitoring Ignored RADIUS Attributes

Purpose Display the RADIUS attributes that are ignored in Access-Accept messages.

Action To display the RADIUS attributes that are ignored:

```
host1#show radius attributes-ignored
attribute framed-ip-netmask ignored from RADIUS server
attribute atm-category (vsa) ignored from RADIUS server
attribute atm-mbs (vsa) accepted from RADIUS server
attribute atm-pcr (vsa) ignored from RADIUS server
attribute atm-scr (vsa) accepted from RADIUS server
attribute egress-policy-name (vsa) accepted from RADIUS server
attribute ingress-policy-name (vsa) accepted from RADIUS server
attribute virtual-router accepted from RADIUS server
```

Related Topics

- **show radius attributes-ignored** command

Setting the Baseline for RADIUS Dynamic-Request Server Statistics

You can set a statistics baseline for packet mirroring-related RADIUS statistics. To show baseline statistics, use the **delta** keyword with the **show radius dynamic-request statistics** command.

To set a baseline for RADIUS statistics for packet mirroring:

- Issue the **baseline radius dynamic-request** command:

  host1#**baseline radius dynamic-request**

There is no **no** version.

Related Topics

- Monitoring RADIUS Dynamic-Request Server Statistics on page 239
- **baseline radius dynamic-request** command

Monitoring RADIUS Dynamic-Request Server Statistics

Purpose Display RADIUS dynamic-request server statistics.

Action To display RADIUS dynamic-request statistics:

```
host1#show radius dynamic-request statistics

       RADIUS Request Statistics
       -------------------------
          Statistic             10.10.3.4
-----------------------------   -------
UDP Port                        1700
Disconnect Requests             0
Disconnect Accepts              0
Disconnect Rejects              0
Disconnect No Session ID        0
Disconnect Bad Authenticators   0
Disconnect Packets Dropped      0
CoA Requests                    0
CoA Accepts                     0
CoA Rejects                     0
CoA No Session ID               0
CoA Bad Authenticators          0
CoA Packets Dropped             0
No Secret                       0
Unknown Request                 0

Invalid Addresses Received  :0
```

Meaning Table 33 lists the **show radius dynamic-request statistics** command output fields.

Table 33: show radius dynamic-request statistics Output Fields

Field Name	Field Description
Udp Port	Port on which the router listens for RADIUS server
Disconnect or CoA Requests	RADIUS-initiated disconnect or CoA requests received
Disconnect or CoA Accepts	RADIUS-initiated disconnect or CoA requests accepted
Disconnect or CoA Rejects	RADIUS-initiated disconnect or CoA requests rejected
Disconnect or CoA No Session ID	RADIUS-initiated disconnect or CoA messages rejected because the request did not include a session ID attribute
Disconnect or CoA Bad Authenticators	RADIUS-initiated disconnect or CoA messages rejected because the calculated authenticator in the authenticator field of the request did not match
Disconnect or CoA Packets Dropped	RADIUS-initiated disconnect or CoA packets dropped because of queue overflow
No Secret	Messages rejected because a secret was not present in the authenticator field
Unknown Requests	Packets received with an invalid RADIUS code for RADIUS disconnect or change of authorization
Invalid Addresses Received	Number of invalid addresses received

Related Topics

- Setting the Baseline for RADIUS Dynamic-Request Server Statistics on page 238
- **show radius statistics** command

Monitoring the Configuration of the RADIUS Dynamic-Request Server

Purpose Display the configuration of the RADIUS dynamic-request server.

Action To display the configuration of the RADIUS dynamic-request server:

```
host1#show radius dynamic-request servers

                RADIUS Request Configuration
                ----------------------------
                                          Change
                 Udp                        Of
 IP Address      Port   Disconnect   Authorization   Secret
-------------    ----   ----------   -------------   ------
192.168.2.3      1700   disabled     disabled        <NULL>
10.10.120.104    1700   disabled     disabled        mysecret
```

Meaning Table 34 lists the **show radius server dynamic-request** command output fields.

Table 34: show radius server dynamic-request Output Fields

Field Name	Field Description
IP address	IP address of the RADIUS server
Udp Port	Port on which the router listens for RADIUS server
Disconnect	Status of RADIUS-initiated disconnect feature
Change of Authorization	Status of change of authorization feature
Secret	Secret used to connect to RADIUS server

Related Topics

- **show radius servers** command

Setting a Baseline for RADIUS Relay Statistics

You can set a baseline for RADIUS relay statistics. To show baseline statistics, use the **delta** keyword with the **show radius relay** command.

To set a baseline for RADIUS relay statistics:

- Issue the **baseline radius relay** command:

  host1#**baseline radius relay**

There is no **no** version.

Related Topics

- Monitoring RADIUS Relay Server Statistics on page 241
- **baseline radius relay** command

Monitoring RADIUS Relay Server Statistics

Purpose Display RADIUS relay server statistics.

Action To show RADIUS relay server statistics that were baselined:

```
host1#show radius relay statistics delta

RADIUS Relay Authentication Server Statistics
---------------------------------------------
    Statistic        Total
------------------   -----
Access Requests      1000
Access Accepts       1000
Access Challenges    0
Access Rejects       0
Pending Requests     0
Duplicate Requests   0
Malformed Requests   0
Bad Authenticators   0
Unknown Requests     0
Dropped Packets      0
Invalid Requests     0
Statistics baseline set FRI APR 02 2004 19:01:52 UTC

RADIUS Relay Accounting Server Statistics
-----------------------------------------
     Statistic         Total
-------------------   -----
Accounting Requests    1000
    Start              1000
    Stop               0
    Interim            0
Accounting Responses   1000
    Start              1000
    Stop               0
    Interim            0
Pending Requests       0
Duplicate Requests     0
Malformed Requests     0
Bad Authenticators     0
Unknown Requests       0
Dropped Packets        0
Invalid Requests       0
Statistics baseline set FRI APR 02 2004 19:01:52 UTC
```

Meaning Table 35 lists the **show radius relay statistics** command output fields.

Table 35: show radius relay statistics Output Fields

Field Name	Field Description
Access Requests	Number of access requests received
Access Accepts	Number of access accepts received

Table 35: show radius relay statistics Output Fields (continued)

Field Name	Field Description
Access Challenges	Number of access challenges received
Access Rejects	Number of access rejects received
Pending Requests	Number of access requests waiting for a response
Duplicate Requests	Number of duplicate requests received while the previous request is pending
Malformed Requests	Requests with attributes having an invalid length or unexpected attributes
Bad Authenticators	Authenticator in the response is incorrect for the matching request; can occur if the secret for the RADIUS relay server and the WAP does not match
Unknown Requests	Packets received from nonconfigured clients
Dropped Packets	Packets dropped because of queue overflow
Invalid Requests	Number of invalid requests received
Accounting Requests	Number of accounting requests received, broken down by type of request
Accounting Responses	Number of accounting responses, broken down by type of request

Related Topics

- Setting a Baseline for RADIUS Relay Statistics on page 240
- **show radius relay statistics** command

Monitoring the Configuration of the RADIUS Relay Server

Purpose Display information about the RADIUS relay server configuration.

Action To display the RADIUS relay server configuration:

```
host1#show radius relay servers

RADIUS Relay Authentication Server Configuration
------------------------------------------------
 IP Address         IP Mask        Secret
-------------   ---------------   ---------
10.10.8.15      255.255.255.255   newsecret
192.168.102.5   255.255.255.255   999Y2K
Udp Port: 1812

RADIUS Relay Accounting Server Configuration
--------------------------------------------
 IP Address         IP Mask       Secret
-------------   ---------------   -------
10.10.1.0       255.255.255.0     NO8pxq
192.168.102.5   255.255.255.255   12BE$56
Udp Port: 1813
```

Meaning Table 36 lists the **show radius relay servers** command output fields.

Table 36: show radius relay servers Output Fields

Field Name	Field Description
IP Address	Address of the RADIUS relay server
IP Mask	Mask of the RADIUS relay server
Secret	Secret used for exchanges between the RADIUS relay server and client
Udp Port	Router's port on which the RADIUS relay server listens

Related Topics

- **show radius relay servers** command

Monitoring the Status of RADIUS Relay UDP Checksums

Purpose Display status of RADIUS relay UDP checksums.

Action To display the status of UDP checksums:

```
host1(config)#show radius relay udp-checksum
udp-checksums enabled
```

Meaning Table 37 lists the **show radius relay udp-checksum** command output fields.

Table 37: show radius relay udp-checksum Output Fields

Field Name	Field Description
udp-checksums	Status of UDP checksums: enabled or disabled

Related Topics

- **show radius relay udp-checksum** command