

## 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:

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- Monitoring the NAS-Port-Format RADIUS Attribute on page 247
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## 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 54 lists the **show radius override** command output fields.

**Table 54: 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 <b>radius override nas-ip-addr tunnel-client-endpoint</b> and <b>radius override nas-info</b> commands.
nas-port-id	Displays the current setting for the NAS-Port-Id [87] attribute. Use the <b>radius override nas-port-id remote-circuit-id</b> 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 <b>radius override calling-station-id remote-circuit-id</b> 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 <b>radius override nas-info</b> 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
0ssssppp
```

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
xds1
```

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
12tp-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
```

Attribute Name	Account On	Account Off	Access Request	Account Start	Account 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 55 lists the **show radius attributes-included** command output fields.

**Table 55: 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 253
- **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 56 lists the **show radius dynamic-request statistics** command output fields.

**Table 56: 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 252
- `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
                                Of
                                Authorization
                                Secret
      IP Address      Udp      Disconnect      Change      Secret
      -----      ----      -----      -----      -----
      192.168.2.3      1700      disabled      disabled      <NULL>
      10.10.120.104    1700      disabled      disabled      mysecret

```

**Meaning** Table 57 lists the `show radius server dynamic-request` command output fields.

**Table 57: 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 255
- `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 58 lists the `show radius relay statistics` command output fields.

**Table 58: 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 58: 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 254
- `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   N08pxq
192.168.102.5   255.255.255.255  12BE$56
Udp Port: 1813
```

**Meaning** Table 59 lists the **show radius relay servers** command output fields.

**Table 59: 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 60 lists the **show radius relay udp-checksum** command output fields.

**Table 60: 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

