

Radius Server Commands

This chapter contains the following sections:

- allowed-time-range, on page 2
- clear radius server accounting, on page 3
- clear radius server rejected users, on page 4
- clear radius server statistics, on page 5
- clear radius server unknown nas, on page 6
- privilege-level, on page 7
- radius server accounting-port, on page 8
- radius server authentication-port, on page 9
- radius server enable, on page 10
- radius server group, on page 11
- radius server nas secret, on page 12
- radius server traps accounting, on page 14
- radius server traps authentication success, on page 15
- radius server user, on page 16
- show radius server accounting, on page 17
- show radius server configuration, on page 19
- show radius server group, on page 20
- show radius server rejected users, on page 21
- show radius server statistics, on page 23
- show radius server nas secret, on page 25
- show radius server user, on page 26
- show radius server unknown nas, on page 27
- vlan, on page 28

allowed-time-range

To define the time user can connect, use the **allowed-time-range** command in Radius Server Group Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

allowed-time-range *time-range-name*

no allowed-time-range

Parameters

- ***time-range-name***—Specifies the time range name configured by the time range command.

Command Mode

Radius Server Group Configuration mode

User Guidelines

Use the **allowed-time-range** command, to define the time users can connect.

Use the **no** form of the command, to return to the default.

Example

The following example assigns an periodical time interval:

```
switchxxxxxx(config)# time-range connection-time
switchxxxxxx(config-time-range)# periodic mon 12:00 to wed 12:00
switchxxxxxx(config-time-range)# exit
switchxxxxxx(config)# radius server group developers
switchxxxxxx(config-radser-group)# allowed-time-range connection-time
switchxxxxxx(config-radser-group)# exit
switchxxxxxx(config)#
```

clear radius server accounting

To clear the Radius Accounting cache, use the **clear radius server accounting** command in Privileged EXEC mode.

Syntax

clear radius server accounting

Command Mode

Privileged EXEC mode

User Guidelines

Use the **clear radius server accounting** command, to clear the Radius Accounting cache.

Example

The following example clears the Radius Accounting cache:

```
switchxxxxxx(config)# clear radius server accounting
```

clear radius server rejected users

To clear the Radius Rejected Users cache, use the **clear radius server rejected users** command in Privileged EXEC mode.

Syntax

clear radius server rejected users

Command Mode

Privileged EXEC mode

User Guidelines

Use the **clear radius server rejected users** command, to clear the Radius Rejected Users cache.

Example

The following example clears the Radius Rejected Users cache:

```
switchxxxxxx(config)# clear radius server rejected users
```

clear radius server statistics

To clear the Radius server counters, use the **clear radius server statistics** command in Privileged EXEC mode.

Syntax

clear radius server statistics [*ip-address*]

Parameters

- *ip-address*—Specifies the RADIUS client host IP address. The IP address can be an IPv4, IPv6 or IPv6z address.

Command Mode

Privileged EXEC mode

User Guidelines

Use the **clear radius server statistics** command without parameter to clear the all counters.

Use the **clear radius server statistics** command with parameter to clear the counters of a given NAS.

Example

The following example clears the Radius server counters:

```
switchxxxxxx(config)# clear radius server statistics
```

clear radius server unknown nas

To clear the Radius Unknown NAS cache, use the **clear radius server unknown nas** command in Privileged EXEC mode.

Syntax

clear radius server unknown nas

Command Mode

Privileged EXEC mode

User Guidelines

Use the **clear radius server unknown nas** command, to clear the Radius Unknown NAS cache.

Example

The following example clears the Radius Unknown NAS cache:

```
switchxxxxxx(config)# clear radius server unknown nas
```

privilege-level

To define the user privilege level, use the **privilege-level** command in Radius Server Group Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

privilege-level *level*

no privilege-level

Parameters

- ***level***—Specifies the user privilege level. (Range: 1-15)

Default Configuration

1

Command Mode

Radius Server Group Configuration mode

User Guidelines

Use the **privilege-level** command, to define the privilege level of users of the given group.

Use the **no** form of the command, to return to the default.

A value of privilege level is passed to a Radius client in the Access-Accept message in the Vendor-Specific(26) attribute. The attribute is only passed to login users.

Example

The following example specified privilege level 15 for users of the developers group:

```
switchxxxxxx(config)# radius server group developers
switchxxxxxx(config-radser-group)# privilege-level 15
switchxxxxxx(config-radser-group)# exit
switchxxxxxx(config)#
```

radius server accounting-port

To define the accounting UDP port used for accounting requests, use the **radius server accounting-port** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

radius server accounting-port udp-port

no radius server accounting-port

Parameters

- *udp-port*—Specifies the UDP port number for accounting requests. (Range: 1–59999)

Default Configuration

1813

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server accounting-port** command, to define an UDP port for accounting requests.

Use the **no radius server accounting-port** command, to restore the default UDP accounting port.

Example

The following example defines port 2083 as an accounting UDP port:

```
switchxxxxxx(config)# accounting-port 2083
```

radius server authentication-port

To define the authentication UDP port used for authentication requests, use the **radius server authentication-port** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

radius server authentication-port udp-port

no radius server authentication-port

Parameters

- *udp-port*—Specifies the UDP port number for authentication requests. (Range: 1–59999)

Default Configuration

1812

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server authentication-port** command, to define an UDP port for authentication requests.

Use the **no radius server authentication-port** command, to restore the default UDP authentication port.

Example

The following example defines port 2083 as an authentication UDP port:

```
switchxxxxxx(config)# authentication-port 2083
```

radius server enable

To enable Embedded Radius server, use the **radius server enable** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

radius server enable

no radius server enable

Default Configuration

Disabled

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server enable** command, to enable Embedded Radius server.

Use the **no radius server enable** command, to disable Embedded Radius server.

Example

The following example enables Embedded Radius server:

```
switchxxxxxx(config)# radius server enable
```

radius server group

To enter into Radius Server Group Configuration mode and create this group if it does not exist, use the **radius server group** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

radius server group group-name

no radius server group *[group-name*]

Parameters

- ***group-name***—Specifies a name of the group. (Length: 1–32 characters)

Default Configuration

The group does not exist.

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server group** command, to enter into the Radius Server Group Configuration mode. If this group does not exist it is created automatically.

Use the **no radius server group** group-name command, to delete one group.

Use the **no radius server group** command, to delete all groups.

A group cannot be deleted, if there is a user referencing to this group.

The Radius server supports up to 50 groups.

Example

The following example creates group developers, if it does not exist, and enters into its context:

```
switchxxxxxx(config)# radius server group developers
switchxxxxxx(config-radser-group)#
```

radius server nas secret

To create a secret key, use the **radius server nas secret key** command in Global Configuration mode. To delete the key, use the **no** form of this command.

Syntax

radius server nas secret key key {**default** | *ip-address*}

radius server nas secret ip-address

encrypted radius server nas secret key *encrypted-key* {**default** | *ip-address*}

no radius server nas secret *[***default** | *ip-address*]

Parameters

- ***key***—Specifies the authentication and encryption key for communications between the device and users of the given group. (Range: 0–128 characters)
- ***encrypted-key***—Same as the key-string parameter, but the key is in encrypted form.
- **default**—Specifies the default secret key that will be applied to communicate with NASs that do not have a private key.
- *ip-address*—Specifies the RADIUS client host IP address. The IP address can be an IPv4, IPv6 or IPv6z address.

Default Configuration

The secret key does not exist.

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server nas secret key** key **default** command, to defines a key that will be applied to communicate with NASs that do not have a private key.

Use the **radius server nas secret key** key *ip-address* command, to defines a key that will be applied to communicate with the specified NAS.

Use the **radius server nas secret** ip-address command, to defines that the default secret key will be applied to communicate with the specified NAS.

If a NAS is not defined by this command all messages received from this NAS will be dropped.

The Radius server supports up to 50 NASs.

Use the **no radius server nas secret default** command, to delete the default key.

Use the **no radius server nas secret** ip-address command, to remove the given NAS and its secret key.

Use the **no radius server nas secret** command, to delete all NASs and all secret keys.

Example 1. The following example defines a default secret key:

```
switchxxxxxx(config)# radius server nas secret key qrBut56$#qw default
```

Example 2. The following example defines a default secret key:

```
switchxxxxxx(config)# radius server nas secret key qrBut56$#qw default
```

Example 3. The following example defines a NAS using the default secret key:

```
switchxxxxxx(config)# radius server nas secret 10.05.10.1
```

radius server traps accounting

To enable sending accounting traps, use the **radius server traps accounting** command in Global Configuration mode. To disable the traps, use the **no** form of this command.

Syntax

radius server traps accounting

no radius server traps accounting

Default Configuration

Accounting traps are disabled.

Command Mode

Global Configuration mode

User Guidelines

A rate limit is applied to the traps: not more than one trap of this type can be sent in 10 seconds.

Example

The following example enables sending accounting traps:

```
switchxxxxxx(config)# radius server traps accounting
```

radius server traps authentication success

To enable sending traps when a user is successfully authorized, use the **radius server traps authentication success** command in Global Configuration mode. To disable the traps, use the **no** form of this command.

Syntax

radius server traps authentication success

no radius server traps authentication success

Default Configuration

Success traps are disabled.

Command Mode

Global Configuration mode

User Guidelines

A rate limit is applied to the traps: not more than one trap of this type can be sent in 10 seconds.

Example

The following example enables sending traps when a user is successfully authorized:

```
switchxxxxxx(config)# radius server traps authentication success
```

radius server user

To create a user, use the **radius server user** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

radius server user username user-name **group** group-name **password** *unencrypted-password*

no radius server user *[***username** user-name | **group** group-name]

Parameters

- ***user-name***—Specifies the user name. (Length: 1–32 characters)
- ***group-name***—Specifies the user group name. (Length: 1–32 characters)
- ***unencrypted-****password*—Specifies the user password. (Length: 1–64 characters)

Default Configuration

The user does not exist.

The Radius server supports up to 1024 users.

Command Mode

Global Configuration mode

User Guidelines

Use the **radius server user** command, to create a new user.

Use the **no radius server user username** user-name command to delete one user.

Use the **no radius server user group** group-name command to delete users of the given group.

Use the **no radius server user** command to delete all users.

Example

The following example creates a new user with name bob of group developer with password Aerv#136dSsT:

```
switchxxxxxx(config)# radius server user username bob group developers password Aerv#136dSsT
```

show radius server accounting

To display user accounting information, use the **show radius server accounting** command in Privileged EXEC mode.

Syntax

show radius server accounting *[***username** *user-name*]

Parameters

- ***user-name***—Specifies the user name. (Length: 1–32 characters)

Command Mode

Privileged EXEC mode

User Guidelines

The Radius server saves the last 1024 accounting logs in a cycle file on FLASH.

Use the **show radius server accounting username** *user-name* command, to display accounting information of one user.

Use the **show radius server accounting** command, to display accounting information of all users.

Example 1. The following example displays accounting information of all users:

```
switchxxxxxx# show radius server accounting
29-Jun-14, 16:00, Stop
  User: Bob
  Accounting Session Time: 6 hours,15 minutes
  Authenticated by: local
  NAS Address: 10.23.1.3
  User Address: 160.134.7.8
  Termination Reason: User Request
29-Jun-14, 12:04, Start
  User: Alisa
  Authenticated by: Radius
  NAS Address: 10.23.1.3
  User Address: 00:12:cf:00:1c:25
  NAS Port: 10
29-Jun-14, 12:04, Stop
  User: Alisa
  Accounting Session Time: 2 days,2 hours,10 minutes
  Authenticated by: Radius
  NAS Address: 10.23.1.3
  User Address: 00:12:cf:00:1c:25
  Termination Reason: User Request
*20-Feb-2008, 9:20, Date and Time were updated to 29-Jun-14, 11:00
20-Feb-2014, 9:05, Start
  User: Bob
  Authenticated by: local
  NAS Address: 10.23.1.3
  User Address: 160.134.7.8
*20-Feb-2008, 9:00, Reboot
```

Example 2. The following example displays accounting information of one user Bob:

```
switchxxxxxx# show radius server accounting username Bob:
29-Jun-14, 16:00, Stop
  User: Bob
  Accounting Session Time: 6 hours,15 minutes
  Authenticated by: Radius
  NAS Address: 10.23.1.3
  User Address: 160.134.7.8
  Termination Reason: User Request
*20-Feb-2008, 9:20, Date and Time were updated to 29-Jun-14, 11:00
20-Feb-2014, 9:05, Start
  User: Bob
  Authenticated by: Radius
  NAS Address: 10.23.1.3
  User Address: 160.134.7.8
*20-Feb-2008, 9:00, Reboot
```

show radius server configuration

To display Radius Server global configuration, use the **show radius server configuration** command in Privileged EXEC mode.

Syntax

show radius server configuration

Command Mode

Privileged EXEC mode

User Guidelines

Use the **show radius server configuration** command, to display Radius server global configuration.

Example

The following example displays radius server global configuration:

```
switchxxxxxx# show radius server configuration
Radius Server Status: Enabled
Authentication UDP port: 1812 (default)
Accounting UDP port: 1813 (default)
Authentication failure traps are enabled
Authentication success traps are enabled
Accounting traps are enabled
```

show radius server group

To display a Radius Server group configuration, use the **show radius server group** command in Privileged EXEC mode.

Syntax

show radius server group *[group-name*]

Parameters

- ***group-name***—Specifies a name of the group. (Length: 1–32 characters)

Command Mode

Privileged EXEC mode

User Guidelines

Use the **show radius server group** *group-name* command, to display one group.

Use the **show radius server group** command, to display all groups.

Example

The following example displays radius server groups.

```
switchxxxxxx# show radius server group
Group gr1
  VLAN: 124
  Privilege Level: 15
  Time Range: ConnectionTime
  Group Users: develop, designers
Group gr2
  Privilege Level: 1 (default)
  Group Users: bob
```

show radius server rejected users

To display rejected users, use the **show radius server rejected users** command in Privileged EXEC mode.

Syntax

show radius server rejected users *[***username** *user-name*]

Parameters

- ***user-name***—Specifies the user name. (Length: 1–32 characters)

Command Mode

Privileged EXEC mode

User Guidelines

The Radius server saves the last 1024 rejected authentication requests in a cycle file on FLASH.

The Radius server saves the last 1024 accounting logs in a cycle file on FLASH.

Use the **show radius server rejected users** *user-name* command, to display one rejected user.

Use the **show radius server rejected users** command, to display all rejected users.

Example 1. The following example displays all rejected users:

```
switchxxxxxx# show radius server rejected users
30-Jun-14 16:44
  User Name: Jack
  User Type: Login
  NAS Address: 10.1.1.1
  User Address: 10.23.4.3
  Reason: Unknown user
30-Jun-14 16:04
  User Name: Bob
  User Type: Login
  NAS Address: 10.1.1.1
  User Address: 10.23.4.3
  Reason: Illegal password
*20-Feb-2008, 9:20, Date and Time were updated to 29-Jun-14, 11:00
20-Feb-08 16:24
  User Name: Robert
  User Type: 802.1x
  NAS Address: 10.1.1.1
  NAS Port: 2
  User Address: 00:67:67:96:ac:21
  Reason: Not Supported EAP method
20-Feb-08 14:14
  User Name: Alisa
  User Type: 802.1x
  NAS Address: 10.1.1.1
  NAS Port: 2
  User Address: 00:67:67:96:ac:21
  Reason: Not allowed at this time
*20-Feb-2008, 9:00, Reboot
```

Example 2. The following example displays one rejected user Bob:

```
switchxxxxxx# show radius server rejected users 30-Jun-14 16:04
  User Name: Bob
  User Type: Login
  NAS Address: 10.1.1.1
  User Address: 10.23.4.3
  Reason: Illegal password
*20-Feb-2008, 9:20, Date and Time were updated to 29-Jun-14, 11:00
*20-Feb-2008, 9:00, Reboot
```

show radius server statistics

To display the Radius server counters, use the **show radius server statistics** command in User EXEC mode.

Syntax

show radius server statistics [***ip-address***]

Parameters

- ***ip-address***—Specifies the RADIUS client host IP address. The IP address can be an IPv4, IPv6 or IPv6z address.

Command Mode

User EXEC mode

User Guidelines

Use the **show radius server statistics** command to display the Radius server counters defined in RFC4669 and RFC4671.

Use the **show radius server statistics** command without parameter to display the global counters.

Use the **show radius server statistics** command with parameter to display the counters of the given NAS.

Example 1. The following example displays the Radius server global counters:

```
switchxxxxxx# show radius server statistics
Number of incoming packets on the authentication port: 120
Number of incoming Access-Requests from unknown addresses: 0
Number of duplicate incoming Access-Requests: 3
Number of sent Access-Accepts: 100
Number of sent Access-Rejects: 17
Number of sent Access-Challenges: 0
Number of incoming malformed Access-Requests: 0
Number of incoming Authentication-Requests with Bad Authenticator: 0
Number of incoming Authentication packets with other mistakes: 0
Number of incoming Authentication packets of unknown type: 0
Number of incoming packets on the accounting port: 80
Number of incoming Accounting-Requests from unknown addresses: 12
Number of incoming Accounting-Requests from unknown addresses: 0
Number of incoming duplicate Accounting-Requests: 0
Number of sent Accounting-Responses: 0
Number of incoming malformed Accounting-Requests: 0
Number of incoming Accounting-Requests with Bad Authenticator: 0
Number of incoming Accounting packets with other mistakes: 0
Number of incoming not recorded Accounting-Requests: 0
Number of incoming Accounting packets of unknown type: 0
```

Example 2. The following example displays the Radius server counters of the given SNA: secret keys:

```
switchxxxxxx# show radius server statistics 1.1.1.1
NAS: 1.1.1.1
Number of incoming packets on the authentication port: 120
Number of duplicate incoming Access-Requests: 3
Number of sent Access-Accepts: 100
```

```
Number of sent Access-Rejects: 17
Number of sent Access-Challenges: 0
Number of incoming malformed Access-Requests: 0
Number of incoming Authentication-Requests with Bad Authenticator: 0
Number of incoming Authentication packets with other mistakes: 0
Number of incoming Authentication packets of unknown type: 0
Number of incoming packets on the accounting port: 80
Number of incoming Accounting-Requests from unknown addresses: 0
Number of incoming duplicate Accounting-Requests: 0
Number of sent Accounting-Responses: 0
Number of incoming malformed Accounting-Requests: 0
Number of incoming Accounting-Requests with Bad Authenticator: 0
Number of incoming Accounting packets with other mistakes: 0
Number of incoming not recorded Accounting-Requests: 0
Number of incoming Accounting packets of unknown type: 0
```

show radius server nas secret

To display secret keys, use the **show radius server nas secret** command in Privileged EXEC mode.

Syntax

show radius server nas secret *[***default** | ***ip-address***]

Parameters

- **default**—Specifies the default secret key hat will be applied to communicate with NASs that do not have a private key.
- ***ip-address***—Specifies the RADIUS client host IP address. The IP address can be an IPv4, IPv6 or IPv6z address.

Command Mode

Privileged EXEC mode

User Guidelines

Use the **show radius server nas secret default** command, to display the default secret key.

Use the **show radius server nas secret** ip-address command, to display the given NAS secret key.

Use the **show radius server nas secret** command, to display all secret keys.

Example 1. The following example displays all secret keys:

```
switchxxxxxx# show radius server nas secret
Default Secret Key's MD5:1238af77aaca17568f1298cced1255cc
    NAS Address                 Secret Key’s MD5
-------------------------  --------------------------------
10.1.35.3                  1238af77aaca17568f1298cced165fec
10.2.37.6                  default
3000:1231:1230:9cab:1384   1238af77aaca17568f12988601fcabed
3001:ab11::9cda:0981       1238af77aaca17568f1298bc5476ddad
```

Example 2. The following example displays the default secret key:

```
switchxxxxxx# show radius server nas secret default
Default Secret Key's MD5:1238af77aaca17568f1298cced1255cc
```

Example 3. The following example displays the secret key of one given NAS:

```
switchxxxxxx# show radius server nas secret 10.1.35.3
            NAS ID                  Secret Key’s MD5
-------------------------  --------------------------------
10.1.35.3                  1238af77aaca17568f1298cced165fec
```

show radius server user

To display a Radius Server user configuration, use the **show radius server user** command in Privileged EXEC mode.

Syntax

show radius server user *[***username** *user-name*] | [**group** *group-name*]

Parameters

- ***user-name***—Specifies the user name. (Length: 1–32 characters)
- ***group-name***—Specifies a name of the group. (Length: 1–32 characters)

Command Mode

Privileged EXEC mode

User Guidelines

Use the **show radius server user username** *user-name* command, to display one user.

Use the **show radius server user group** *group-name* command, to display all users of the given group.

Use the **show radius server user** command, to display all users.

Examples

The following example displays one user bob:

```
switchxxxxxx# show radius server user username bob
User bob
  Group: developers
  Password's MD5: 1238af77aaca17568f1298cced1255cc
```

show radius server unknown nas

To display unknown NASes, use the **show radius server unknown nas** command in Privileged EXEC mode.

Syntax

show radius server unknown nas

Command Mode

Privileged EXEC mode

User Guidelines

The Radius server saves the last 100 unknown NASes in a cycle cache.

Example

The following example displays Radius requests received from unknown NASes:

```
switchxxxxxx# show radius server unknown nas
30-Jun-14 16:44 NAS Address: 10.1.1.1
30-Jun-14 16:04 NAS Address: 10.1.1.1
*20-Feb-08, 9:20, Date and Time were updated to 29-Jun-14, 11:00
20-Feb-08 16:24 NAS Address: 10.1.1.1
20-Feb-08 14:14 NAS Address: 10.1.1.1
*20-Feb-08, 9:00, Reboot
```

vlan

To define Radius Assigned VLAN, use the **vlan** command in Radius Server Group Configuration mode. To restore the default configuration, use the **no** form of this command.

Syntax

vlan {**id** *vlan-id* | **name** *vlan-name*}

no vlan

Parameters

- ***vlan-id***—Specifies a VLAN ID. (Range: 1-4094)
- ***vlan-name***—Specifies a name of the VLAN. (Length: 1–32characters)

Default Configuration

No Radius Assigned VLAN.

Command Mode

Radius Server Group Configuration mode

User Guidelines

Use the **vlan** command, to assign the VLAN to a radius client. This Radius Assigned VLAN is passed to a Radius client in the Access-Accept message in the following attributes:

- Tunnel-Type(64)
- Tunnel-Medium-Type(65)
- Tunnel-Private-Group-ID(81)

If a VLAN is not assigned these attributes are not included in the Access-Accept message.

Use the **no** form of the command, to delete VLAN assignment.

Example

The following example assigns VLAN 100 to users of the developers group and VLAN with name management of users of the managers group:

```
switchxxxxxx(config)# radius server group developers
switchxxxxxx(config-radser-group)# vlan id 100
switchxxxxxx(config-radser-group)# exit
switchxxxxxx(config)# radius server group managers
switchxxxxxx(config-radser-group)# vlan name management
switchxxxxxx(config-radser-group)# exit
switchxxxxxx(config)#
```