



## R Commands

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The commands in this chapter apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. All commands are shown here in alphabetical order regardless of command mode. See the “Command Modes” section to determine the appropriate mode for each command. For more information, refer to the *Cisco MDS 9000 Family Configuration Guide*.

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## radius-server host

To configure RADIUS authentication related parameters, use the **radius** command.

**radius-server host** *server name or ip address* [**accounting**] | [**acct-port** *port number* (**accounting** | **authentication accounting**) | **primary accounting** | **authentication accounting**] | [**auth-port** *port number* (**accounting**) (**acct-port** *port number* | **accounting** | **authentication accounting** | **primary accounting** | **primary authentication**)] | [**authentication accounting**] | [**key** *shared secret*] | [**primary accounting** | **primary authentication**]

**no radius-server host** *server name or ip address* [**accounting**] | [**acct-port** *port number* (**accounting** | **authentication accounting**) | **primary accounting** | **authentication accounting**] | [**auth-port** *port number* (**accounting**) (**acct-port** *port number* | **accounting** | **authentication accounting** | **primary accounting** | **primary authentication**)] | [**authentication accounting**] | [**key** *shared secret*] | [**primary accounting** | **primary authentication**]

### Syntax Description

<i>server name or ip address</i>	Enter RADIUS server's DNS name or its IP address. The maximum character size is 256.
<b>accounting</b>	Use for accounting.
<b>acct-port</b>	RADIUS server's port for accounting.
<b>authentication</b>	Use for authentication.
<b>key</b>	RADIUS shared secret.
<b>primary</b>	Whether this RADIUS server is a primary server or not.

### Defaults

None.

### Command Modes

Configuration mode.

### Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

### Usage Guidelines

None.

### Examples

The following examples provide various scenarios to configure RADIUS authentication.

```
switch# config t
```

```
switch(config)# radius host 10.10.0.0 primary
```

```
switch(config)# radius host 10.10.0.0 key HostKey
```

```
switch(config)# radius host 10.10.0.0 auth-port 2003
```

```
switch(config)# radius host 10.10.0.0 acct-port 2004
```

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```
switch(config)# radius host 10.10.0.0 accounting  
switch(config)# radius host radius1 primary  
switch(config)# radius host radius2 key 0 abcd  
switch(config)# radius host radius3 key 7 1234
```

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# radius-server key

To configure a global RADIUS shared secret, use the **radius-server key** command. Use the **no** form of this command to removed a configured shared secret.

**radius-server key** [0 | 7] *shared secret*

**no radius-server key** [0 | 7] *shared secret*

## Syntax Description

<b>key</b>	Global RADIUS shared secret.
<b>0</b>	Configures a preshared key specified in clear text (indicated by 0) to authenticate communication between the RADIUS client and server. This is the default.
<b>7</b>	Configures a preshared key specified in encrypted text (indicated by 7) to authenticate communication between the RADIUS client and server.
<i>shared secret</i>	Configures a preshared key to authenticate communication between the RADIUS client and server.

## Defaults

None.

## Command Modes

Configuration mode.

## Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

## Usage Guidelines

You need to configure the RADIUS preshared key to authenticate the switch to the RADIUS server. The length of the key is restricted to 65 characters and can include any printable ASCII characters (white spaces are not allowed). You can configure a global key to be used for all RADIUS server configurations on the switch. You can override this global key assignment by explicitly using the **key** option in the **radius-server host** command.

## Examples

The following examples provide various scenarios to configure RADIUS authentication.

```
switch# config t

switch(config)# radius key AnyWord

switch(config)# radius key 0 AnyWord

switch(config)# radius key 7 public
```

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## radius-server retransmit

To specify the number of times that RADIUS servers should try to authenticate a user, use the **radius-server retransmit** command.

**radius-server retransmit** *count*

Syntax Description	<b>retransmit</b>	RADIUS server retransmit count.
	<i>count</i>	Configures the number of times (3) the switch tries to connect to a RADIUS server(s) before reverting to local authentication.

<b>Defaults</b>	None.
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<b>Command Modes</b>	Configuration mode.
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<b>Command History</b>	This command was introduced in Cisco MDS SAN-OS Release 1.0(2).
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<b>Usage Guidelines</b>	By default, a switch retries a RADIUS server connection only once. This number can be configured. The maximum is five retries per server. You can revert the retry number to its default by issuing the <b>no radius-server retransmit</b> command.
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<b>Examples</b>	The following examples provide various scenarios to configure RADIUS authentication.
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```
switch# config t

switch(config)# radius-server retransmit 3
```

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## radius-server timeout

To specify the time between retransmissions to the RADIUS servers, use the **radius-server timeout** command. You can revert the retransmission time to its default by issuing the **no** form of this command.

**radius-server timeout** *seconds*

**no radius-server timeout** *seconds*

<b>Syntax Description</b>	<b>timeout</b>	RADIUS server timeout period in seconds.
	<i>seconds</i>	Specifies the time (in seconds) between retransmissions to the RADIUS server. The default is one (1) second and the valid range is 1 to 60 seconds.

<b>Defaults</b>	None.
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<b>Command Modes</b>	Configuration mode.
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<b>Command History</b>	This command was introduced in Cisco MDS SAN-OS Release 1.0(2).
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<b>Usage Guidelines</b>	None.
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<b>Examples</b>	The following examples provide various scenarios to configure RADIUS authentication.
-----------------	--

```
switch# config t
```

```
switch(config)# radius-server timeout 30
```

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# reload

To reload the entire switch, an active supervisor module, a standby supervisor module, or a specific module, or to force a netboot on a given module, use the **reload** command in EXEC mode.

**reload** [**module** *module-number* **force-dnld**]

## Syntax Description

<b>module</b>	Reloads a specific module or active/standby supervisor module.
<i>module-number</i>	Specifies a module, either 1 or 2.
<b>force-dnld</b>	Reloads, initiates netboot, and forces the download of the latest module firmware version to a specific module.

## Defaults

None.

## Command Modes

EXEC mode.

## Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

## Usage Guidelines

Use the **reload** command to reboot the system, or to reboot a specific module, or to force a netboot on a specific module. The **reload** command used by itself, powers down all the modules and reboots the supervisor modules.

The **reload module** *module-number* command is used if the given slot has a module or standby supervisor module. It then power-cycles that module. If the given slot has an active supervisor module, then it causes the currently active supervisor module to reboot and the standby supervisor module becomes active.

The **reload module** *module-number* **force-dnld** command is similar to the previous command. This command forces netboot to be performed. If the slot contains a module, then the module netboots with the latest firmware and updates its corresponding flash with this image.

## Examples

The following example uses **reload** to reboot the system.

```
switch# reload
This command will reboot the system. (y/n)? y
```

The following example uses **reload** to initiate netboot on a specific module.

```
switch# reload module 8 force-dnld
```

The following example uses **reload** to reboot a specific module.

```
switch# reload module 8
reloading module 8 ...
```

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The following example uses **reload** to reboot an active supervisor module.

```
switch# reload module 5
```

```
This command will cause supervisor switchover. (y/n)? y
```

#### Related Commands

Command	Description
<b>install</b>	Installs a new software image.
<b>copy system:running-config nvram:startup-config</b>	Copies any file from a source to a destination.



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## rmdir

To delete an existing directory from the Flash file system, use the **rmdir** command in EXEC mode.

**rmdir** {**bootflash:** | **slot0:** | **volatile:**} *directory*

Syntax Description	<b>bootflash:</b>	Source or destination location for internal bootflash memory.
	<b>slot0:</b>	Source or destination location for the CompactFlash memory or PCMCIA card.
	<b>volatile:</b>	Source or destination location for volatile file system.
	<i>directory</i>	Name of the directory to remove.

**Defaults** This command has no default settings.

**Command Modes** EXEC

**Command History** This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

**Usage Guidelines** This command is only valid on Flash file systems.

The **rmdir** command deletes an existing directory at the current directory level or at a specified directory level. The directory must be empty to be deleted.

**Examples** The following example deletes the directory called test in the slot0 directory.

```
switch# rmdir slot0:test
```

The following example deletes the directory called test at the current directory level.

```
switch# rmdir test
```

If the current directory is slot0:mydir, this command deletes the slot0:mydir/test directory.

Related Commands	Command	Description
	<b>dir</b>	Displays a list of files on a file system.
	<b>mkdir</b>	Creates a new directory in the Flash file system.

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## role name

To configure and assign users to a new role or to modify the profile for an existing role, use the **role name** command in configuration mode. Use the no form of this command to delete a configured role.

**role name** *name* [**description** *user description*] [**rule** *number* **permit** **clear** **feature** *name* | **permit** **config** **feature** *name* | **permit** **debug** **feature** *name* | **permit** **show** **feature** *name* ] [**rule** *number* **deny** **clear** **feature** *name* | **deny** **config** **feature** *name* | **deny** **debug** **feature** *name* | **deny** **exec** **feature** *name* | **deny** **show** **feature** *name*]

**no role name** *name* [**description** *user description*] [**rule** *number* **permit** **clear** **feature** *name* | **permit** **config** **feature** *name* | **permit** **debug** **feature** *name* | **permit** **show** **feature** *name*] [**rule** *number* **deny** **clear** **feature** *name* | **deny** **config** **feature** *name* | **deny** **debug** **feature** *name* | **deny** **exec** **feature** *name* | **deny** **show** **feature** *name*]

### Syntax Description

<b>role name</b>	Configures RADIUS server.
<b>name</b>	Adds RADIUS server. The maximum size is 32.
<b>description</b>	Add a description for the role. The maximum size is 80.
<b>user description</b>	Add description of users to the role.
<b>exit</b>	Exit from this submode
<b>no</b>	Negate a command or set its defaults
<b>rule</b>	Enter the rule number 1-16.
<b>number</b>	Enter the rule number 1-16.
<b>permit</b>	Remove commands from the role.
<b>deny</b>	Add commands to the role
<b>clear</b>	Clear commands
<b>config</b>	Configuration commands
<b>debug</b>	Debug commands
<b>show</b>	Show commands
<b>feature</b>	Enter the feature name
<b>exec</b>	Exec commands
<b>name</b>	Enter the feature name (Max Size - 32)

### Defaults

None.

### Command Modes

Configuration mode.

### Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

### Usage Guidelines

Roles are assigned rules. Roles are a group of rules defining a user's access to certain commands. Users are

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assigned roles. The rules within roles can be assigned to permit or deny access to the following commands:

**clear** Clear commands  
**config** Configuration commands  
**debug** Debug commandss  
**exec** EXEC commands  
**show** Show commands

These commands can have **permit** or **deny** options within that command line.

### Examples

The following example shows how to assign users to a new role.

```
switch# config t
switch(config)# role name techdocs
switch(config-role)#
switch(config)# no role name techdocs
switch(config)#
switch(config-role)# description Entire Tech. Docs. group
switch(config-role)# no description
switch# config t
switch(config)# role name sangroup
switch(config-role)#
switch(config-role)# rule 1 permit config
switch(config-role)# rule 2 deny config feature fspf
switch(config-role)# rule 3 permit debug feature zone
switch(config-role)# rule 4 permit exec feature fcping
switch(config-role)# no rule 4
```

Role: network-operator

Description: Predefined Network Operator group. This role cannot be modified

Access to Show commands and selected Exec commands

### Related Commands

Command	Description
<b>show role</b>	Displays all roles configured on the switch including the rules based on each role.

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## rscn

To configure a registered state change notification (RSCN), a Fibre Channel service that informs Nx ports about changes in the fabric, use the **rscn** command in configuration mode.

**rscn {multi-pid *value* | supress interface fc *slot-number* }**

<b>Syntax Description</b>	<b>multi-pid</b>	Sends RSCNs in multi-PID format.
	<b>vsan</b>	Configures VSAN information or membership.
	<i>vsan-id</i>	The ID of the VSAN is from 1 to 4093.
	<b>fc</b>	Fiber Channel interface. Slot number range is from 1 to 9.
	<i>slot-number</i>	Specifies a slot number and port number.

**Defaults** None.

**Command Modes** Configuration mode.

**Command History** This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

**Usage Guidelines** None.

**Examples** The following example configures RSCNs in multi-PID format.

```
switch# config t
excal-113(config)# rscn multi-pid vsan 1
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show rscn internal</b>	Displays RSCN internal information.
	<b>show rscn src-table</b>	Displays state change registration table,
	<b>show rscn statistics</b>	Displays RSCN statistics.

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## run-script

To execute the commands specified in a file, use the **run script** command.

**run-script** {**bootflash:** | **slot0:** | **volatile:**} *filename*

<b>Syntax Description</b>	<b>bootflash:</b>	Source or destination location for internal bootflash memory.
	<b>slot0:</b>	Source or destination location for the CompactFlash memory or PCMCIA card.
	<b>volatile:</b>	Source or destination location for volatile file system.
	<i>filename</i>	Name of the file containing the commands.

<b>Defaults</b>	None.
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<b>Command Modes</b>	EXEC mode.
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<b>Command History</b>	This command was introduced in Cisco MDS SAN-OS Release 1.0(2).
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<b>Usage Guidelines</b>	To use this command, be sure to create the file and specify commands in the required order.
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<b>Examples</b>	The following example executes the CLI commands specified in the testfile that resides in the slot0 directory.
-----------------	--

```
switch# show file slot0:testfile
conf t
interface fc 1/1
no shutdown
end
sh interface fc1/1
```

In response to the **run-script** command, this is the file output:

```
switch# run-script slot0:testfile
'conf t'
Enter configuration commands, one per line. End with CNTL/Z.

'interface fc 1/1'

'no shutdown'

'end'

'sh interface fc1/1'
fc1/1 is down (Fcot not present)
  Hardware is Fibre Channel
  Port WWN is 20:01:00:05:30:00:48:9e
  Admin port mode is auto, trunk mode is on
```

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```
vsan is 1
Beacon is turned off
Counter Values (current):
  0 frames input, 0 bytes, 0 discards
  0 runts, 0 jabber, 0 too long, 0 too short
  0 input errors, 0 CRC, 0 invalid transmission words
  0 address id, 0 delimiter
  0 EOF abort, 0 fragmented, 0 unknown class
  0 frames output, 0 bytes, 0 discards
  Received 0 OLS, 0 LRR, 0 NOS, 0 loop inits
  Transmitted 0 OLS, 0 LRR, 0 NOS, 0 loop inits
Counter Values (5 minute averages):
  0 frames input, 0 bytes, 0 discards
  0 runts, 0 jabber, 0 too long, 0 too short
  0 input errors, 0 CRC, 0 invalid transmission words
  0 address id, 0 delimiter
  0 EOF abort, 0 fragmented, 0 unknown class
  0 frames output, 0 bytes, 0 discards
  Received 0 OLS, 0 LRR, 0 NOS, 0 loop inits
  Transmitted 0 OLS, 0 LRR, 0 NOS, 0 loop inits
```