R Commands

The commands shown in this chapter apply to the Catalyst 8540 MSR, Catalyst 8510 MSR, and LightStream 1010 ATM switch routers. Where an entire command or certain attributes of a command have values specific to a particular switch or switch router, an exception is indicated by the following callouts:

- Catalyst 8540 MSR
- Catalyst 8510 MSR and LightStream 1010

Note Commands that are identical to those documented in the Cisco IOS software documentation have been removed from this chapter.

Note Commands that no longer function as expected in ATM environments have also been removed from this chapter.

Refer to Appendix D of this command reference for a detailed list of commands that have been removed, changed or replaced.

redistribute

To instruct the PNNI to redistribute static routes throughout the PNNI routing domain, use the **redistribute** PNNI node configuration command. To disable redistribution of static routes, use the **no** form of this command.

redistribute *protocol*

no redistribute *protocol*

Syntax Description

protocol	The protocol keyword used for static routes is **atm-static**.

Defaults

Enabled for **atm-static**.

Command Modes

PNNI node configuration

Command History

Release	Modification
11.1(4)	New command

Usage Guidelines

All redistributed routes are advertised in exterior reachable address PTSE with default scope and without metric. All redistributed routes are summarized by the **summary-address** command.

In autoconfiguration mode, PNNI is set to redistribute the configured static routes.

For more information, refer to the *ATM Switch Router Software Configuration Guide*.

Examples

The following script shows how to access the **redistribute** PNNI node configuration command.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# node 1
Switch(config-pnni-node)# redistribute atm-static
```

Related Commands

Command	Description
atm route	Specifies a static route to a reachable address prefix.
show atm route	Displays all local or network-wide reachable address prefixes in this switch's ATM routing table.

redundancy (Catalyst 8540 MSR)

To switch to the redundancy mode, use the **redundancy** global configuration command.

redundancy

Syntax Description

This command has no arguments or keywords.

Command Modes

Global configuration

Command History

Release	Modification
12.0(3c)W5(9)	New command

Usage Guidelines

To enter the main-cpu mode of redundancy mode, use the **main-cpu** command.

Examples

The following example shows how to enter the redundancy mode.

```
Switch# configure terminal
Switch(config)# redundancy
Switch(config-r)#
```

The following example shows how to switch to the main-cpu submode of redundancy mode.

```
Switch(config-r)# main-cpu
Switch(config-r-mc)#
```

Related Commands

Command	Description
main-cpu (Catalyst 8540 MSR)	.
redundancy force-failover main-cpu (Catalyst 8540 MSR)	Forces the primary route processor to allow the secondary route processor to take over and become the primary.
show redundancy (Catalyst 8540 MSR)	Displays all redundancy-related information.
sync config (Catalyst 8540 MSR)	Synchronizes the configuration between the primary and secondary route processors based on the primary configuration.

redundancy force-failover main-cpu (Catalyst 8540 MSR)

To force the primary route processor to allow the secondary route processor to take over and become the primary, use the **redundancy force-failover main-cpu** EXEC command.

redundancy force-failover main-cpu

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
12.0(3c)W5(9)	New command

Usage Guidelines

If the secondary route processor is in ROMMON mode, it becomes the primary route processor but continues in the ROMMON mode, meaning that the IOS software does not automatically open.

The **force-failover main-cpu** command causes the main processor functions of the switch to change to the secondary route processor, if one is installed. If the command is executed when only one route processor is installed, the **force-failover main-cpu** command is ignored and an error message indicating this condition appears.

Caution Any unsaved configuration and all the SVC connections in the former primary route processor are lost after the failover is complete. Only PVC connections are preserved during failover.

If the new primary route processor does not have the same configuration as the previous primary route processor, functionality provided by the additional resources in the former primary route processor is lost after the failover. For example, if the new primary route processor does *not* have a network clock module installed and the old primary did, network clock functionality will not be available after the switchover.

Examples

The following example shows how to make the secondary route processor the primary.

```
Switch# redundancy force-failover main-cpu
```

Related Commands

Command	Description
show redundancy (Catalyst 8540 MSR)	Displays all redundancy-related information.

Note The **show redundancy** command is available on the primary route processor only.

redundancy manual-sync (Catalyst 8540 MSR)

To manually update the configuration on the secondary processor to be identical with the configuration on the primary processor, use the **redundancy manual-sync** EXEC command. Use this command to update the startup configuration, the running configuration, or both.

redundancy manual-sync [**startup-config** | **running-config** | **both**]

Syntax Description

startup-config	Updates the secondary processor with the startup configuration on the primary processor.
running-config	Updates the secondary processor with the running configuration on the primary processor.
both	Updates the secondary processor with both the startup configuration and the running configuration on the primary processor.

Command Modes

EXEC

Command History

Release	Modification
12.0(3c)W5(9)	New command

Usage Guidelines

Normally this command is not required because whenever you exit configuration mode (either using **cntrl-Z** or **end**), the running configuration is updated on the secondary processor. Similarly, the startup configuration is updated whenever you issue the **write memory** command. Use the **redundancy manual-sync (Catalyst 8540 MSR)** command if you see an error and want to manually force a configuration update.

Examples

The following example shows how to update the secondary processor with the startup configuration on the primary processor.

```
Switch# redundancy manual-sync
Switch# startup-config
```

Related Commands

Command	Description
show redundancy (Catalyst 8540 MSR)	Displays all redundancy-related information.

Note The **show redundancy** command is available on the primary route processor only.

redundancy preferred-switch-card-slot (Catalyst 8540 MSR)

If the switch has three switch cards, then by default the switch cards in slots 5 and 7 are the active switch cards and the one in slot 6 is the standby switch card. To change the active switch slots, use the **redundancy preferred-switch-card-slot** EXEC command.

redundancy preferred-switch-card-slot *slot#-1 slot#-2*

Syntax Description

slot#	Slot number in the range of 5 through 7.

Defaults

Slots 5 and 7 are the active slots. Slot 6 is the standby slot.

Command Modes

EXEC

Command History

Release	Modification
12.0(3c)W5(9)	New command

Usage Guidelines

Two unique preferred slots must be specified. If one of the preferred slots selected is not a currently active switch card, you are asked if the system should change the active switch cards to the preferred switch cards. If such a switchover occurs, all the active connections in the system are reinitialized. If you wish to continue, then the preferred switch cards become active and the other switch card becomes the standby. This configuration remains in effect until one of the active switch cards is removed. The preferred switch card configuration is preserved across route processor switchovers but not when the system is power cycled or when both route processors are reloaded to ROM monitor mode.

Examples

The following example shows how to change the preferred active slots to slots 5 and 6.

```
Cougar# redundancy preferred-switch-card-slots 5 6
One of the switch cards selected is not currently
active. This command will cause the switch cards
to reinitialize and all active connections will be reinitialized...
Do you want to continue? [yes/no]: [confirm]
shutting down atm-sec0 port
Waiting for existing connections to be removed...
yDone
The switch card driver will reinitialize now
All the active connections in the switch will
now be reinitialized.



Switch Fabric Driver subsystem initializing ...
found
smid=0
smid=2
smid=4
smid=6
smid=1
smid=3
smid=5
smid=7
nshutting atm-sec0 port
... DONE


Cougar#
```

Related Commands

Command	Description
show redundancy (Catalyst 8540 MSR)	Displays all redundancy-related information.

Note The **show redundancy** command is available on the primary route processor only.

redundancy prepare-for-cpu-removal (Catalyst 8540 MSR)

Prior to removing a route processor from the chassis, precautions must be taken. To be sure that a switch router running IOS is in the proper state, use the **redundancy prepare-for-cpu-removal** EXEC command.

redundancy prepare-for-cpu-removal

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

EXEC

Command History

Release	Modification
12.0(3c)W5(9)	New command

Usage Guidelines

It is safest to have the route processor module in RMON monitor mode before removing it from the chassis. If the switch is running IOS, you can accomplish this using the **reload** command unless the switch is configured to automatically boot IOS again. To ensure that the route processor is in RMON monitor mode, use the **redundancy prepare-for-cpu-removal (Catalyst 8540 MSR)**. After issuing this command the route processor will go to ROM monitor mode and stay there even if the system is configured to automatically boot IOS. At this point it is safe to remove the route processor module from the chassis.

Note Be sure to issue the **redundancy prepare-for-cpu-removal (Catalyst 8540 MSR)** command after connecting to the console port of the route processor module to be removed. If the system has a Y cable, then the Y cable must be removed and a local connection to the route processor being removed must be obtained before issuing the command. Always issue the **redundancy prepare-for-cpu-removal (Catalyst 8540 MSR)** command on a route processor that is in IOS mode, even if it is the secondary route processor.

Examples

The following example shows how to prepare a route processor for removal by putting it into ROM monitor mode.

```
Switch# redundancy prepare-for-cpu-removal
This command will cause this CPU to go to the
rom monitor through a forced crash.
After this cpu goes to the rom monitor prompt, it is
safe to remove it from the chassis
Do you want to continue?[confirm]yPlease DO NOT REBOOT this cpu before removing it
rommon 7 >
```

Related Commands

Command	Description
show redundancy (Catalyst 8540 MSR)	Displays all redundancy-related information.

Note The **show redundancy** command is available on the primary route processor only.

reprogram

To upgrade nonvolatile microcode or programmable logic on a selected card from a flash file, use the **reprogram** EXEC command.

reprogram *flash-file-name* {*slot* | **rommon**} *subcard*

Syntax Description

flash-file-name	Name of the image to download, which can be in the PCMCIA flash or bootflash.
slot	Physical slot number of the controller you want to reprogram. The slot number ranges from 0 to 12 in the Catalyst 8540 MSR and from 0 to 4 in the Catalyst 8510 MSR and LightStream 1010.
rommon	If you select **rommon**, the rommon of the route processorATM switch router on which the command is invoked is reprogrammed with the image in the given file.
subcard	Can indicate a subcard in a slot for half-width cards or daughter cards in full width cards. If you do not specify a subcard number, the motherboard in the given slot is reprogrammed. The subcard number ranges from 0 to 3.

Defaults

The systemboard in the given slot is reprogrammed.

Command Modes

EXEC

Command History

Release	Modification
12.0(1a)W5(5b)	New command

Usage Guidelines

This command causes nonvolatile change to the controller you select. It also resets the selected controller, which causes active connections and configurations to be lost.

If you reprogram a currently-running controller or switch card, power-cycle the switch router after the reprogram completes to make the newly downloaded image active. If you do not perform a power-cycle, the controller continues to run the older image. For secondary controllers or port adapters, you need not perform a power-cycle.

Caution Do not power-cycle the switch router during a reprogram operation because damage can occur to the controller you are reprogramming. If you power-cycle the switch router while reprogramming is in progress, you also might be unable to boot the switch router after the reprogram is complete.

Examples

The following example shows how to reprogram the image on the route processor in slot 3.

```
Switch# reprogram cpu_3_10.exo 3
```

Related Commands

Command	Description
show functional-image-info	Displays information about the in-system programmable device images (FPGA and PLD images) for a given module in the system.

resource-poll-interval

To configure the period of time that PNNI polls resource management to update the values of the interface metrics and attributes, use the **resource-poll-interval** ATM router PNNI configuration command. To return to the default value, use the **no** form of this command.

resource-poll-interval *seconds*

no resource-poll-interval

Syntax Description

seconds	Specifies the interval, in seconds, at which the values of the interface metrics and attributes are updated.

Defaults

5 seconds

Command Modes

ATM router PNNI configuration

Command History

Release	Modification
11.2(5)	New command

Usage Guidelines

The maximum allowable poll interval is 300 seconds. Using this value impacts the number of self-generated PTSEs created by the switch. A larger **resource-poll-interval** can generate a smaller number of PTSE updates, as PNNI polls the interface resource information less frequently. A large **resource-poll-interval** is desirable when reducing the number of self-generated PTSEs caused by interface traffic fluctuation.

Lowering the default allows PNNI to poll the resource manager (for resource information) at a higher frequency. This allows PNNI to track resource information faster, but it costs more in processing time and should be adjusted only when needed.

For more information, refer to the *ATM Switch Router Software Configuration Guide*.

Examples

The following example shows how to change the period of time the interface metrics and attributes are updated using the **resource-poll-interval** ATM router PNNI configuration command.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# resource-poll-interval 30
```

Related Commands

Command	Description
show atm pnni resource-info	Displays information about routing parameters of all PNNI interfaces received from a resource management module.

resume

To switch to another open Telnet, LAT, or PAD session, use the resume EXEC command.

resume [*connection*] [**keyword**]

Syntax Description

connection	The name or number of the connection; the default is the most recent connection.
keyword	One of the options listed in Table 16-1.

Defaults

/noline1

Command Modes

EXEC

Command History

Release	Modification
11.2(5)	New command

Usage Guidelines

Several concurrent sessions can be open and you can switch back and forth between them. The number of sessions that can be open is defined by the **sessions** command.

You can switch between sessions by escaping one session and resuming a previously opened session, as follows:

Step 1 Escape out of the current session by pressing the escape sequence (**Ctrl^** then x [**Ctrl^x**] by default) and return to the EXEC prompt.

Step 2 Enter the **where** command to list the open sessions. All open sessions associated with the current terminal line are displayed.

Step 3 Enter the **resume** command and the session number to make the connection.

You also can resume the previous session by pressing the **Return** key.

The **Ctrl^x**, **where**, and **resume** commands are available with all supported connection protocols.

Table 16-1 lists the Telnet and rlogin resume options.

Table 16-1 Telnet and rlogin resume options

Option	Description
/debug	Displays parameter changes and messages. In the Cisco IOS software, this option displays informational messages whenever the remote host changes an X.3 parameter, or sends an X.29 control packet.
/echo	Performs local echo.

Table 16-1 Telnet and rlogin resume options (continued)

Option	Description
/line	Enables line-mode editing.
/nodebug	Cancels printing of parameter changes and messages.
/noecho	Disables local echo.
/noline1	Disables line mode and enables character-at-a-time mode. (Default)
/nostream	Disables stream processing.
/set parameter:value	Sets X.3 connection options.
/stream	Enables stream processing.

Examples

The following example shows how to escape out of a connection and to resume connection 2.

```
Swift% ^^X
Switch> resume 2
```

You can omit the command name and simply enter the connection number to resume that connection. The following example illustrates how to resume connection 3.

```
Switch> 3
```

Related Commands

Command	Description
session-timeout	Cisco IOS command removed from this manual.
show sessions	Displays information about open Telnet or rlogin connections.
where	Cisco IOS command removed from this manual.

rif

To enter static source-route information into the routing information field (RIF) cache, use the **rif** global configuration command. To remove an entry from the cache, use the **no** form of this command.

rif *mac-addr* [*rif-string*]

no rif *mac-addr* [*rif-string*]

Syntax Description

mac-addr	MAC address of the RIF entry.
rif-string	Series of 4-digit hexadecimal numbers separated by a period (.). This RIF string is inserted into the packets sent to the specified MAC address.

Defaults

No static source-route information is entered.

Command Modes

Global configuration

Command History

Release	Modification
11.3(3a)	New command

Usage Guidelines

If a Token Ring host does not support the use of IEEE 802.2 TEST or XID datagrams as explorer packets, you might need to add static information to the RIF cache.

Using the command **rif** *mac-address* without any other arguments puts an entry into the RIF cache indicating that packets for this MAC address do not have RIF information.

Do not configure a static RIF with any of the all rings type codes. Doing so causes traffic for the configured host to appear on more than one ring and leads to unnecessary congestion.

Examples

The following example shows inserting a RIF cache entry with MAC address 1000.5A12.3456 and RIF 0630.0081.0090.

```
Switch# configure terminal
Switch(config)# rif 1000.5A12.3456 0630.0081.0090
```

Related Commands

Command	Description
multiring	Enables collection and use of RIF information on a subinterface.
show rif	Displays the current contents of the RIF cache.

rif always-forward

To specify that RIFs must always be stored in the forward direction, use the **rif always-forward** global configuration command. To disable forward-direction storing of RIFs, use the **no** form of this command.

rif always-forward

no rif always-forward

Syntax Description

This command has no keyword or arguments.

Defaults

RIFs are not stored in the forward direction.

Command Modes

Global configuration

Command History

Release	Modification
11.3(3a)	New command

Related Commands

Command	Description
rif	Enters static source-route information into the routing information field (RIF) cache.
show rif	Displays the current contents of the RIF cache.

rif timeout

To specify the number of minutes an inactive entry is kept in the RIF cache, use the **rif timeout** global configuration command. To restore the default time, use the **no** form of this command.

rif timeout *minutes*

no rif timeout

Syntax Description

minutes	Number of minutes an inactive RIF entry is kept in the cache. The valid range is 1 to 120.

Defaults

15 minutes

Command Modes

Global configuration

Command History

Release	Modification
11.3(3a)	New command

Usage Guidelines

A RIF entry is refreshed only if a RIF field of an incoming frame is identical to the RIF information of the RIF entry in the cache.

Until a RIF entry is removed from the cache, no new information is accepted for that RIF entry.

Examples

The following example shows changing the timeout to 5 minutes.

```
Switch# configure terminal
Switch(config)# rif timeout 5
```

Related Commands

Command	Description
clear rif-cache	Used to clear the RIF cache.
rif	Enters static source-route information into the routing information field (RIF) cache.
show rif	Displays the current contents of the RIF cache.

rif validate-age

To permit invalidated and aged-out entries to be removed from the RIF cache, use the **rif validate-age** global configuration command. To disable this feature, use the **no** form of this command.

rif validate-age

no rif validate-age

Syntax Description

This command has no keywords or options.

Defaults

Aged entries are removed.

Command Modes

Global configuration

Command History

Release	Modification
11.3(3a)	New command

Related Commands

Command	Description
rif	Enters static source-route information into the routing information field (RIF) cache.
rif timeout	Specifies the number of minutes an inactive entry is kept in the RIF cache.
show rif	Displays the current contents of the RIF cache.

rif validate-enable

To enable RIF validation for entries learned on an interface, use the **rif validate-enable** global configuration command. To disable the specification, use the **no** form of this command.

rif validate-enable

no rif validate-enable

Syntax Description This command has no keywords or arguments.

Defaults RIF validation is enabled.

Command Modes Global configuration

Command History

Release	Modification
11.3(3a)	New command

Usage Guidelines A RIF validation algorithm is used in the following cases:

- To decrease convergence time to a new source route path when an intermediate bridge goes down.
- To keep a valid RIF entry in a RIF cache even if a RIF entry is not refreshed either because traffic is fast or autonomously switched, or because no traffic exists.

A directed IEEE TEST command is sent to the destination MAC address. If a response is received in the time specified by **rif validate-time**, the entry is refreshed and is considered valid. Otherwise, the entry is removed from the cache. To prevent sending too many TEST commands, any entry that has been refreshed in less than 70 seconds is considered valid.

Validation is triggered when any of the follows occurs:

- A RIF entry is found in the cache.
- A RIF field of an incoming frame and the RIF information of the RIF entry is not identical. If, as the result of validation, the entry is removed from the cache, the RIF field of the next incoming frame with the same MAC address is cached.
- The RIF entry is not refreshed for the time specified in the **rif timeout** command.

Note If the RIF entry has been in the RIF cache for six hours, and has not been refreshed for the time specified in the **rif timeout** command, the entry is removed from the cache.

Note This command has no effect on remote entries learned over RSRB.

Related Commands

Command	Description
rif timeout	Specifies the number of minutes an inactive entry is kept in the RIF cache.

rif xid-explorer

To send IEEE XID explorer packets instead of TEST commands to learn RIF information, use the **rif xid-explorer** global configuration command. To disable this specification, use the **no** form of this command.

rif xid-explorer

no rif xid-explorer

Syntax Description

This command has no keywords or arguments.

Defaults

TEST commands are sent.

Command Modes

Global configuration

Command History

Release	Modification
11.3.(3a)	New command

Related Commands

Command	Description
rif	Enters static source-route information into the routing information field (RIF) cache.
show rif	Displays the current contents of the RIF cache.

rsh

To execute a command remotely on a remote rsh host, use the **rsh** privileged EXEC command.

rsh {*ip-address* | *host*} [**/user** *username*] *line*

Syntax Description

ip-address	IP address of the remote host on which to execute the **rsh** command. Either the IP address or the host name is required.
host	Name of the remote host on which to execute the command. Either the host name or the IP address is required.
username	Remote username.
line	Required parameter to be executed remotely.

Defaults

If you do not specify the **/user** keyword and argument, the switch router sends a default remote username. As the default value of the remote username, the switch software sends the username associated with the current TTY process if that name is valid. For example, if the user is connected to the switch router through Telnet and the user was authenticated through the **username** command, the switch router software sends that username as the remote username. If the TTY username is invalid, the switch router software uses the switch router host name as both the remote and local usernames.

Note TTYs are commonly used in Cisco communications servers. The concept of TTY originated with UNIX. For UNIX systems, each physical device is represented in the file system. Terminals are called *TTY devices*, which stands for *teletype*, the original UNIX terminal.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3(3a)	New command

Usage Guidelines

Use the **rsh** command to execute commands remotely. The host on which you remotely execute the command must support the rsh protocol, and the *.rhosts* files on the rsh host must include an entry that permits you to remotely execute commands on that host.

For security reasons, the switch software does not default to a remote login if no command is specified. Instead, the switch router provides Telnet and connect services that you can use rather than **rsh**.

Examples

The following command specifies that user *rusty* attempts to remotely execute the UNIX **ls** command with the **-a** argument on the remote host *mysys.cisco.com*. The command output resulting from the remote execution follows the command example.

```
Switch1# rsh mysys.cisco.com /user rusty ls -a
.
..
.alias
.cshrc
.emacs
.exrc
.history
.login
.mailrc
.newsrc
.oldnewsrc
.rhosts
.twmrc
.xsession
jazz
```

rxspeed (Catalyst 8510 MSR and LightStream 1010)

To set the terminal baud rate receive (from terminal) speed, use the **rxspeed** line configuration command. To set the baud rate to the default, use the **no** form of this command.

rxspeed *bps*

no rxspeed

Syntax Description

bps	Baud rate in bps. Refer to "Usage Guidelines" below for settings.

Defaults

9600 bps

Command Modes

Line configuration

Command History

Release	Modification
11.3(3a)	New command
12.0(3c)W5(9)	Modified: **(Catalyst 8510 MSR and LightStream 1010)** added

Usage Guidelines

This command pertains to the auxiliary port only. Set the speed to match the baud rate of any device you connect to the port. Some baud rates available on devices connected to the port might not be supported on the switch. The switch indicates if the speed you select is not supported.

The following is a list of supported baud rates:

75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400

Examples

The following example sets the auxiliary line receive rate to 2400 bps.

```
Switch# configure terminal
Switch(config)# line aux 0
Switch(config-line)# rxspeed 2400
```

Related Commands

Command	Description
speed	Cisco IOS command removed from this manual.
txspeed	Cisco IOS command removed from this manual.