



S 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.

scheduler allocate

To guarantee CPU time for processes, use the **scheduler allocate** global configuration command. To restore the default guaranteed CPU time, use the **no** form of this command.

scheduler allocate *interrupt-time process-time*

no scheduler-allocate

Syntax Description	
<i>interrupt-time</i>	Integer (in microseconds) that limits the maximum number of microseconds to spend on fast switching within any one network interrupt context. The range is 500 to 6000 microseconds. The default is 4000 microseconds.
<i>process-time</i>	Integer (in microseconds) that guarantees the minimum number of microseconds to spend at the process level when network interrupts are disabled. The range is 500 to 60000 microseconds. The default is 200 microseconds.

Defaults Approximately five percent of the CPU is available for process tasks.

Command Modes Global configuration

Command History	Release	Modification
	11.2(8.0.1)	New command

Usage Guidelines The normal operation of the network server allows the switching operations to use as much of the central processor as required. If the network is running unusually heavy loads that do not allow the processor the time to handle the routing protocols, give priority to the system process scheduler. Use the **scheduler allocate** command to guarantee processor time.

Examples The following example makes 20 percent of the CPU available for process tasks.

```
Switch(config)# scheduler allocate 2000 500
```

scope

To filter ATM signalling call failures that occur within the switch and on other switches, use the **scope** ATM signalling diagnostics configuration command. To disable this feature, use the **no** form of this command.

scope { **all** | **external** | **internal** }

no scope

Syntax Description	all	Filter call failures that occur within the switch or on other external switches.
	external	Filter call failures that occur on other external switches.
	internal	Filter call failures that occur within the switch.

Defaults **all**

Command Modes ATM signalling diagnostics configuration

Command History	Release	Modification
	11.2(8.0.1)	New command

Examples In the following example, call failures are filtered by failures that occur within the switch.

```
Switch(cfg-atmsig-diag)# scope internal
```

scope map

To specify the mapping from a range of organizational scope values (used at UNI interfaces) to a PNNI scope value (such as in terms of PNNI routing-level indicators), use the **scope map** PNNI node-level subcommand. To set to default a range of organizational scope values, use the **no** form of this command.

scope map *low-org-scope* [*high-org-scope*] **level** *level-indicator*

no scope map *low-org-scope* [*high-org-scope*]

Syntax Description

<i>low-org-scope</i>	Specifies the low end of the range of organizational scope values. The valid range of organizational scope values is from local (1) to global (15).
<i>high-org-scope</i>	Specifies the high end of the range of organizational scope values. The valid range of organizational scope values is from local (1) to global (15). If no value is specified, then the range includes only one entry (for example, <i>high-org-scope</i> equals <i>low-org-scope</i>).
<i>level-indicator</i>	Specifies the PNNI scope value to which the range of organizational scope values is mapped. The range is from 0 to 104.

Defaults

Table Table 17-1 shows the default values specified in the ATM Forum PNNI 1.0 Specifications.

Table 17-1 Organizational Scope-to-Default Level Mappings

<i>org-scope</i> Range	ATM Forum Default Level
1-3	96
4-5	80
6-7	72
8-10	64
11-12	48
13-14	32
15 global	0

Command Modes

PNNI node configuration

Command History

Release	Modification
11.2(5)	New command

Usage Guidelines

The **scope map** command is used to change the values of specific entries. This command is only accepted when the **scope mode** is set to **manual**.

When the organizational scope of a registered address maps to a PNNI level that is lower in the PNNI hierarchy (larger PNNI routing level) than the level of this node, the registered address is not advertised. Similarly, when the connection scope of a setup attempt maps to a PNNI level that is lower in the PNNI hierarchy than the level of this node, then only destinations directly attached to this switch router are considered acceptable.

**Note**

Modifying the node level without altering the scope map table can result in some advertisements being suppressed.

The ATM switch router provides an option to automatically adjust the level changes. In automatic mode, the default scope map table is tied to the level of the node when it is generated.

Note that the default organizational scope of an individual address is global (15), and the default organizational scope of a group address is local (1).

Examples

The following example shows setting the scope mode to **manual** and setting the scope map entries for organizational scope values 1 through 5 to PNNI level 96, using the **scope map** PNNI node-level subcommand.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# node 1
Switch(config-pnni-node)# scope mode manual
Switch(config-pnni-node)# scope map 1 5 level 96
```

Related Commands

Command	Description
scope mode	Specifies the configuration mode of the mapping from organizational scope values (used at UNI interfaces) to PNNI scope (such as PNNI routing-level indicators).
show atm pnni scope	Displays the mapping from organizational scope values—used at UNI interfaces—to PNNI scope (such as PNNI routing level indicators).

scope mode

To specify the configuration mode of the mapping from organizational scope values (used at UNI interfaces) to PNNI scope (such as PNNI routing-level indicators), use the **scope mode** node-level subcommand.

scope mode { **automatic** | **manual** }

Syntax Description

automatic	Generates a default scope mapping table automatically which is tied to the PNNI level of the node. In this mode, no modifications of the scope mapping table entries are allowed.
manual	Allows for manual configuration of the scope mapping table using the scope map command.

Defaults

The default scope mappings for **automatic** are shown in Table 17-2.

Table 17-2 Default Scope Mappings for Automatic Mode

Organizational Scope Range	ATM Forum Default Level	Automatic Mode Level
1-3	96	min(1,96)
4-5	80	min(1,80)
6-7	72	min(1,72)
8-10	64	min(1,64)
11-12	48	min(1,48)
13-14	32	min(1,32)
15(global)	0	0

Command Modes

PNNI node configuration

Command History

Release	Modification
11.2(5)	New command

Usage Guidelines

Use this command to modify the way in which the default scope mapping table is computed.

Using the **automatic** mode ensures that all organizational scope values cover an area at least as wide as this node's peer group, even when the node is at a level higher than 96. As a result, all addresses including those of local scope are advertised across this node's peer group.

For each organizational scope value, the corresponding PNNI level is the minimum of the ATM Forum PNNI 1.0 default value and level 1 of this node.

Note that the scope mapping table is overwritten whenever the scope mode is changed from **manual** to **automatic** (for example, all **scope map** commands for this node are removed).

Examples

The following example shows setting the scope mode to **manual** using the **scope mode PNNI** node-level subcommand.

```
Switch# configure terminal  
Switch(config)# atm router pnni  
Switch(config-atm-router)# node 1  
Switch(config-pnni-node)# scope mode manual
```

Related Commands

Command	Description
scope map	Specifies the mapping from a range of organizational scope values (used at UNI interfaces) to a PNNI scope value (such as PNNI routing-level indicators).
show atm pnni scope	Displays the mapping from organizational scope values—used at UNI interfaces—to PNNI scope (such as PNNI routing level indicators).

scrambling

To allow scrambling to be enabled or disabled from the current port, use the **scrambling** interface configuration command. To disable scrambling, use the **no** form of this command.

scrambling *scramblingmode*

no scrambling *scramblingmode*

Syntax Description	<i>scramblingmode</i> Specify either sts-stream or cell-payload .
---------------------------	---

Defaults	In SONET interfaces, both modes are enabled. In DS3 interfaces, the mode is disabled.
-----------------	---

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.1(4)	New command

Usage Guidelines	The sts-stream scrambling is applicable only to SONET interfaces.
-------------------------	--

Examples	The following example shows how to disable sts-stream and cell-payload scrambling on the physical device associated with ATM 3/0/0.
-----------------	---

```
Switch# configure terminal
Switch(config)# interface atm 3/0/0
Switch(config-if)# no scrambling cell-payload
Switch(config-if)# no scrambling sts-stream
```


segment-target

To specify a target entry in a partially specified PNNI explicit-path, use the **segment-target** PNNI explicit-path configuration command.

```
segment-target {name-string | node-id | node-id-prefix} [port hex-port-id | agg-token
hex-agg-token-id]
```

Syntax Description	
<i>name-string</i>	Name of the PNNI node.
<i>node-id</i>	Full 22-byte node ID for a PNNI node.
<i>node-id-prefix</i>	The first 15 or more bytes of a node ID for a PNNI node.
port <i>hex-port-id</i>	Optionally specifies an exit port to exclude for a PNNI node. Should be specified as a hexadecimal port ID rather than as a port name. The default is to allow any valid exit port.
agg-token <i>hex-agg-token-id</i>	Optionally specifies the exit aggregation token, which is used in place of the port ID for higher-level PNNI LGNs. The default allows any valid exit port.

Defaults See “Syntax Description.”

Command Modes PNNI explicit-path configuration

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

Usage Guidelines



Note See the **atm pnni explicit-path** command for a description of how to edit or delete an existing **segment-target** path entry.

Node IDs can be entered with either the full 22-byte length address, or as a node ID prefix with a length of 15 bytes or more. To specify routes that include higher-level nodes (parent LGNs) for other peer groups, we recommend that you enter exactly 15 bytes so that the address remains valid in the event of a PGL update.

Node IDs appear in the following format:

```
dec: dec: 13-20 hex digits
```

**Note**

To display the node IDs that correspond to named nodes in a network, use either the **show atm pnni identifier** command or the **show atm pnni topology** command with the **node** keyword.

Node names can be entered instead of node IDs. If names are used to identify higher-level LGNs, the resulting explicit paths are not guaranteed to remain valid if the PGL changes in the neighboring peer group. To prevent invalid paths, configure all parent LGNs (for all potential PGL nodes) with the same node name.

An exit port can be specified for any entry. The port should be specified as a hexadecimal port ID rather than as a port name. For excluded entries, only this port is excluded from the path.

**Note**

To display the corresponding hexadecimal port IDs for a node, use either the **show atm pnni identifier** command with the **port** keyword, or the **show atm pnni topology** command with the **node** and **hex-port-id** keywords.

Since the port-id could change if the following neighbor peer group changes PGL leaders, the **aggregation token** is used in place of the port ID for nodes with higher-level LGNs. The LGN aggregation token can only identify the port uniquely if the following entry is the **next-node** entry. Aggregation tokens are not allowed for excluded tokens.

Examples

The following example shows how to perform the following PNNI explicit-path configuration tasks:

- Enter PNNI explicit-path configuration mode
- Add one **next-node**
- Add two **segment-target** nodes (these must appear in their desired routing order.)
- Specify an LGN node by its 15-byte node ID prefix
- Exit PNNI explicit-path configuration mode

```
Switch# configure terminal
Switch(config)# atm pnni explicit-path name boston_2.path1
Switch(cfg-pnni-expl-path)# next-node dallas_2
Switch(cfg-pnni-expl-path)# segment-target dallas_4
Switch(cfg-pnni-expl-path)# segment-target 40:72:47.009181000000106000000000
```

Related Commands

Command	Description
atm pnni explicit-path	Used to enter PNNI explicit path configuration mode to create or modify PNNI explicit paths.
exclude-node	Specifies a node to exclude from all segments of a partially specified ATM PNNI explicit path.
next-node	Specifies the next adjacent entry in a fully-specified ATM PNNI explicit path.
show atm pnni explicit-paths	Displays a summary of explicit paths that have been configured.

service-category

To filter ATM signalling call failures by service category, use the **service-category** ATM signalling diagnostics configuration command. To return the service category to the default, use the **no** form of this command.

service-category { **abr** | **all** | **cbr** | **nrt-vbr** | **rt-vbr** | **ubr** }

no service-category

Syntax Description

abr	Sets the service category to ABR.
all	Sets the service category to ABR, CBR, NRT-VBR, RT-VBR, and UBR.
cbr	Sets the service category to CBR.
nrt-vbr	Sets the service category to NRT-VBR.
rt-vbr	Sets the service category to RT-VBR.
ubr	Sets the service category to UBR.

Defaults

all

Command Modes

ATM signalling diagnostics configuration

Command History

Release	Modification
11.2(8.0.1)	New command

Examples

In the following example, call failures for the ABR and UBR service categories are filtered.

```
Switch# configure terminal
Switch(config)# interface atm 0/0/0
Switch(config-if)# atm signalling diagnostics 1
Switch(cfg-atmsig-diag)# service-category abr ubr
```

sgcp

To enable the operation of the SGCP to interconnect ATM CES interface circuits on a switch router, use the **sgcp** global configuration command. To disable the operation of SGCP on a switch router, use the **no** form of this command.

sgcp

no sgcp

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration

Command History

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

Usage Guidelines

When enabled, SGCP listens on all interfaces for UDP packets that contain SGCP requests or responses. For call setup, SGCP allocates connections to endpoints: CES ATM single time slot circuits. For call teardown, SGCP releases connections between endpoints. The **no** form of the command releases all network connections established for SGCP and all endpoints from connections. It also returns resources allocated to SGCP. The **no** form also stops SGCP from listening for UDP packets. No attempt is made to gracefully release resources.

When SGCP receives a CreateConnection packet for the ATM switch router endpoint, the endpoint name is in the following format:

CBR.x.y.z/c

where *x*, *y*, and *z* are standard ATM switch router interface specifiers (*card/subcard/interface*), and *c* is a CES circuit ID.

For a CreateConnection packet to succeed:

- There must be a CES card in slot *x*, subcard *y*, $0 \leq z \leq 3$:
T1: $1 \leq c \leq 24$
E1: $1 \leq c \leq 31$
- There must be a CES circuit defined with circuit ID *c*, with only a single time slot (time slot = *c*) allocated to it.
- There must be no PVC configured for the CES circuit.

- The CES circuit must not be the destination end of a CES soft PVC.
- The parent CES interface line state (shown by the **show ces interface** command) must be normal.
- The SGCP global operational state (shown by the **show sgcp** command) must be active.

**Note**

For SGCP to operate properly, even with the **sgcp** command in effect, you must not enter the **sgcp graceful-shutdown** command.

Examples

The following example enables SGCP.

```
Switch# configure terminal
Switch(config)# sgcp
```

Related Commands

Command	Description
sgcp call-agent	Sends SGCP response packets to a predetermined IP address and UDP port.
sgcp graceful-shutdown	Used to shut down SGCP operations gracefully.
sgcp request retries	Specifies the number of times the ATM switch sends an SGCP request to the call agent without receiving a response, and before ceasing to retry.
sgcp request timeout	Specifies the time the ATM switch waits after sending an SGCP request to the call agent before considering the request lost.
show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.
show sgcp connection	Displays a global list of SGCP connections or a single interface based on a related keyword.
show sgcp endpoint	Displays CES circuit endpoints that might or might not have connections created.
show sgcp statistics	Displays global statistics pertaining to SGCP activity.

sgcp call-agent

To send SGCP response packets to a predetermined IP address and UDP port, use the **sgcp call-agent** global configuration command. To restore the default behavior of responding to SGCP request packets using the source address in the request packet, use the **no** form of this command.

sgcp call-agent *host* [*udp_port*]

no sgcp call-agent

Syntax Description	Parameter	Description
	<i>host</i>	String representing a DNS name or IP address for the SGCP call agent.
	<i>udp_port</i>	Decimal UDP port number.

Defaults Disabled

Command Modes Global configuration

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

Usage Guidelines Use this command to determine the IP address and UDP port of the call agent for sending requests and responses if the call-agent address is not configured.

- The gateway sends responses to the source IP address and port specified in the UDP packet containing the SGCP request.
- The gateway sends a DeleteConnection request to the source IP address and port specified in the UDP packet of the CreateConnection request that allocated the current connection.

If the address is specified, but no port is specified, SGCP uses the well-known SGCP port 2427.

Examples The following example specifies a call-agent address to use. The default UDP port is used.

```
Switch# configure terminal
Switch(config)# sgcp call-agent 172.69.1.129
```

Related Commands	Command	Description
	sgcp	Enables the operation of the SGCP to interconnect ATM CES interface circuits on a switch router.
	show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.

sgcp graceful-shutdown

To shut down SGCP operation, use the **sgcp graceful-shutdown** global configuration command. To allow SGCP to resume operation, use the **no** form of this command.

sgcp graceful-shutdown

no sgcp graceful-shutdown

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration

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

Usage Guidelines The graceful shutdown configuration is used while SGCP is active. This command stops SGCP operation after attempting to notify the call agent about the release of any connections in progress. The **no sgcp** command operates in a similar manner in that any active network connections established by SGCP are torn down.

The gateway also sends DeleteConnection requests to the call agent for all endpoints allocated to connections. After responses (or retransmission limits, or call agent-initiated DeleteConnection) have been received for all connections, the gateway stops listening to UDP. During this activity, SGCP rejects any requests for new connections.

After you enter the **sgcp graceful-shutdown** command with SGCP enabled, the operational state of SGCP that the **show sgcp** command reflects can be Down or Going Down. The Going Down state is entered only if there are active connections. Once all connections are inactive (not allocated and network connection released), the global operational state is Down. While **sgcp** is outstanding, the **no** form of this command resumes SGCP operation.

The **no** form of this command has no effect when issued while SGCP is not operating.

Examples

```
Switch# configure terminal
Switch(config)# sgcp graceful-shutdown
```

Related Commands	Command	Description
	sgcp	Enables the operation of the SGCP to interconnect ATM CES interface circuits on a switch router.
	show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.

sgcp request retries

To specify the number of times the ATM switch router sends an SGCP request to the call agent without receiving a response and before ceasing to retry, use the **sgcp request retries** global configuration command. To restore the default value, use the **no** form of this command.

sgcp request retries *retryval*

no sgcp request retries

Syntax Description	<i>retryval</i> Decimal number of retries.								
Defaults	Three								
Command Modes	Global configuration								
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(3c)W5(9)</td> <td>New command</td> </tr> </tbody> </table>	Release	Modification	12.0(3c)W5(9)	New command				
Release	Modification								
12.0(3c)W5(9)	New command								
Usage Guidelines	Currently, the ATM switch router sends only DeleteConnection requests to the call agent. When UDP is sending packets, there is no assurance that all packets are received. When the number of specified retries has been exceeded, the response to DeleteConnection appears to the ATM switch as positive.								
Examples	<p>The following example sets the number of request retries to six.</p> <pre>Switch# configure terminal Switch(config)# sgcp request retries 6</pre>								
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>sgcp</td> <td>Enables the operation of the SGCP to interconnect ATM CES interface circuits on a switch router.</td> </tr> <tr> <td>sgcp request timeout</td> <td>Specifies the time the ATM switch waits after sending an SGCP request to the call agent before considering the request lost.</td> </tr> <tr> <td>show sgcp</td> <td>Displays global configuration, operational state, and a summary of connection activity for SGCP.</td> </tr> </tbody> </table>	Command	Description	sgcp	Enables the operation of the SGCP to interconnect ATM CES interface circuits on a switch router.	sgcp request timeout	Specifies the time the ATM switch waits after sending an SGCP request to the call agent before considering the request lost.	show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.
Command	Description								
sgcp	Enables the operation of the SGCP to interconnect ATM CES interface circuits on a switch router.								
sgcp request timeout	Specifies the time the ATM switch waits after sending an SGCP request to the call agent before considering the request lost.								
show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.								

sgcp request timeout

To specify the time the ATM switch router waits after sending an SGCP request to the call agent before considering the request lost, use the **sgcp request timeout** global configuration command. To restore the default value, use the **no** form of this command.

sgcp request timeout *timeval*

no sgcp request timeout

Syntax Description	<i>timeval</i> Time value, in milliseconds.
---------------------------	---

Defaults	500 milliseconds
-----------------	------------------

Command Modes	Global configuration
----------------------	----------------------

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

Usage Guidelines	Currently, the ATM switch router only sends DeleteConnection requests to the call agent.
-------------------------	--

Examples	The following example sets the request timeout to one second.
-----------------	---

```
Switch# configure terminal
Switch(config)# sgcp request timeout 1000
```

Related Commands	Command	Description
		sgcp
	show sgcp	Displays global configuration, operational state, and a summary of connection activity for SGCP.

slip

Use the **slip** EXEC command to attach or detach a SLIP interface.

slip

Syntax Description This command has no keywords or arguments.

Command Modes EXEC

Command History	Release	Modification
	11.1(4)	New command

snmp-server enable traps

To enable the router to send SNMP traps, use the **snmp-server enable traps** global configuration command. To disable SNMP and stop sending traps, use the **no** form of this command.

snmp-server enable traps [*trap-type*] [*trap-option*]

no snmp-server enable traps [*trap-type*] [*trap-option*]

Syntax Description	<p><i>trap-type</i> Type of trap to enable. If no type is specified, all traps are sent (including envmon and repeater). <i>trap-type</i> can have one of the following values:</p> <ul style="list-style-type: none"> • atm-accounting—Enable SNMP ATM accounting traps. • chassis-change—Enable SNMP chassis change traps. • chassis-fail—Enable SNMP chassis fail traps. • config—Enable SNMP configuration traps. • entity—Enable SNMP entity traps. • snmp—Enable SNMP traps. • syslog—Enable SNMP syslog traps.
	<p><i>trap-option</i> Enables authentication.</p> <p>When the snmp keyword is used for <i>trap-type</i>, you can specify the authentication option to enable SNMP Authentication Failure traps.</p> <p>(The snmp-sever enable traps snmp authentication command replaces the snmp-server trap-authentication command.)</p> <p>If no option is specified, all SNMP traps are enabled.</p>

Defaults	<p>No traps are enabled.</p> <p>If you enter this command with no keywords, the default is to enable all trap types.</p>
-----------------	--

Command Modes	Global configuration
----------------------	----------------------

Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(1a)W5(5b)</td> <td>New command</td> </tr> </tbody> </table>	Release	Modification	12.0(1a)W5(5b)	New command
Release	Modification				
12.0(1a)W5(5b)	New command				

Usage Guidelines	<p>Use the snmp-server enable command to specify which SNMP traps the switch router sends, and use the snmp-server host command to specify which host or hosts receive SNMP traps.</p> <p>You must issue a separate snmp-server enable command for each trap type, including envmon and repeater.</p>
-------------------------	--

sonet

To set the mode of operation and control the type of ATM cell used for cell-rate decoupling on the SONET, use the **sonet** interface configuration command. To restore the default operation to OC-3, OC-12, and OC-48c interfaces, use the **no** form of this command.

Catalyst 8540 MSR

```
sonet {stm-1 | sts-3c} | {stm-4c | sts-12c} | {stm-16 | sts-48c}
```

```
no sonet {stm-1 | sts-3c} | {stm-4c | sts-12c} | {stm-16 | sts-48c}
```

Catalyst 8510 MSR and LightStream 1010

```
sonet {stm-1 | sts-3c} | {stm-4c | sts-12c}
```

```
no sonet {stm-1 | sts-3c} | {stm-4c | sts-12c}
```

Syntax Description	stm-1	Synchronous Transport Module level 1. SDH/STM-1 operation (ITU-T specification). ¹
	sts-3c	Synchronous Transport Signal level 3, concatenated (3 x 51.84 Mbps). SONET format that specifies the frame structure for the 155.52 Mbps lines used to carry ATM cells.
	stm-4c	Synchronous Transport Module level 4. SDH/STM-4 operation (ITU-T specification).
	sts-12c	Synchronous Transport Signal level 12, concatenated (12 x 51.84 Mbps). SONET format that specifies the frame structure for the 5184 Mbps lines used to carry ATM cells.
	stm-16	Synchronous Transport Module level 16. SDH/STM-16 operation (ITU-T specification). (Catalyst 8540 MSR).
	sts-48c	Synchronous Transport Signal level 48, concatenated. (48 x 51.84 Mbps) SONET format that specifies the frame structure for the 2488.32 Mbps lines used to carry ATM cells. (Catalyst 8540 MSR).

1. The ITU-T carries out the functions of the former Consultative Committee for International Telegraph and Telephone (CCITT).

Defaults

For OC-3: **sts-3c**.

For OC-12: **sts-12c**.

For OC-48c: **sts-48c**.

Command Modes

Interface configuration

Command History

Release	Modification
11.1(4)	New command

Usage Guidelines

This command applies to all ports except the CPU. Use **stm-1**, **stm-4c** and **stm-16** in applications where the ATM switch router requires idle cells for rate adaptation. An idle cell contains 31 zeros followed by a 1.

Use the appropriate default in applications where the ATM switch router requires unassigned cells for rate adaptation. An unassigned cell contains 32 zeros.

Examples

The following example specifies ATM SONET STM-1.

```
Switch(config-if)# sonet stm-1
```

Related Commands

Command	Description
show controllers	Displays information about a physical port device.
show running-config	Displays the configuration information currently running on the terminal.
sonet overhead	Used to set SONET/SDH overhead bytes.
sonet report	Enables the reporting of selected alarms.
sonet threshold	Used to set the BER threshold values.

sonet overhead

To set SONET/SDH overhead bytes, use the **sonet overhead** interface configuration command. To restore the default value, use the **no** form of this command.

```
sonet overhead { c2 bytes | j0 { bytes | msg line } | j1{ 16byte { exp-msg line | msg line } | 64byte { exp-msg line | msg line } } | s1s0 bits }
```

```
no sonet overhead { c2 bytes | j0 { bytes | msg line } | j1{ 16byte { exp-msg line | msg line } | 64byte { exp-msg line | msg line } } | s1s0 bits }
```

Syntax Description	
c2	Sets path signal label indicator.
<i>bytes</i>	Specifies byte value in the range of 0 to 255.
j0	Sets string or repeating value (applicable only in STM mode).
msg	Specifies string to be transmitted.
<i>line</i>	Specifies text consisting of characters.
j1	Sets 64/16-byte format, 0x0 by default.
16byte	Sets 16-byte format message starting with country code or three alphabetic country code.
exp-msg	Specifies expected message.
64byte	Sets 64-byte format message.
s1s0	Specifies bit S1 and S0 of H1.
<i>bits</i>	Specifies bit value in the range of 0 to 3.

Defaults 64-byte message

Command Modes Interface configuration

Command History	Release	Modification
	12.0(4a)W5(11a)	New command

Usage Guidelines By default, the path trace message is a free format 64-byte string consisting of hostname, interface name, and IP address information. This format is compatible with the default GSR POS j1 message.



Note

This command is only supported on a system with an OC-12 or OC-48c interface module.

Examples The following example sets the **sonet overhead** path signal indicator to 255 bytes on ATM 10/0/0.

```
Switch(config)# int atm 10/0/0
Switch(config-if)# sonet overhead c2 255
```

Related Commands	Command	Description
	show controllers	Displays information about a physical port device.
	sonet	Used to set the mode of operation and control the type of ATM cell used for cell-rate decoupling on the SONET.
	sonet report	Enables the reporting of selected alarms.
	sonet threshold	Used to set the BER threshold values.

sonet report

To enable the reporting of selected alarms, use the **sonet report** interface configuration command. To revert to the default, or to disable selected alarms, use the **no** form of this command.

```
sonet report {slos | slof | lais | lrldi | pais | prdi | plop | sd-ber | sf-ber | b1-tca | b2-tca | b3-tca}
```

```
no sonet report {slos | slof | lais | lrldi | pais | prdi | plop | sd-ber | sf-ber | b1-tca | b2-tca | b3-tca}
```

Syntax Description	
slos	Enables reporting section loss of signal.
slof	Enables reporting section loss of frame.
lais	Enables reporting line alarm indication signal.
lrldi	Enables line remote defect indication.
pais	Enables path alarm indication signal.
prdi	Enables path remote defect indication.
plop	Enables reporting path loss of pointer.
sd-ber	Enables reporting LBIP BER in excess of SD threshold.
sf-ber	Enables reporting LBIP BER in excess of SF threshold.
b1-tca	Enables B1 (selection error) BER threshold crossing alarm.
b2-tca	Enables B2 (line error) BER threshold crossing alarm.
b3-tca	Enables B3 (BIP-8 error) BER threshold crossing alarm.

Defaults By default, alarm reporting is enabled for **slos**, **slof**, **plop**, **sf**, **b1-tca**, **b2-tca**, **b3-tca**.

Command Modes Interface configuration

Command History	Release	Modification
	12.0(4a)W5(11a)	New command

Usage Guidelines This command enables the reporting of the selected alarms listed in the “Syntax Description.”



Note

This command is only supported on a system with an OC-12 or OC-48c interface module.

Examples The following example enables the section loss of signal reporting:

```
Switch(config-if)# sonet report slos
```

Related Commands	Command	Description
	show controllers	Displays information about a physical port device.
	sonet	Used to set the mode of operation and control the type of ATM cell used for cell-rate decoupling on the SONET.
	sonet overhead	Used to set SONET/SDH overhead bytes.
	sonet threshold	Used to set the BER threshold values.

sonet threshold

To set the BER threshold values, use the **sonet threshold** interface configuration command. To disable the threshold values, use the **no** form of this command.

```
sonet threshold {sd-ber | sf-ber | b1-tca | b2-tca | b3-tca} ber
```

```
no sonet threshold {sd-ber | sf-ber | b1-tca | b2-tca | b3-tca}
```

Syntax Description	
sd-ber	Sets signal degrade BER threshold and displays any signal degradation.
sf-ber	Sets signal fail BER threshold and displays any signal failure.
b1-tca	Sets b1 (selection error) BER threshold crossing alarm. This alarm indicates trouble at the section layer of the SONET infrastructure; SONET circuits need to be checked out.
b2-tca	Sets b2 (line error) BER threshold crossing alarm. This alarm indicates trouble at the Line/Multiplexer layer of the SONET infrastructure; SONET network elements in this circuit need to be checked out.
b3-tca	Sets b3 (path BIP error) BER threshold crossing alarm. This alarm indicates trouble at the path layer (end to end) of the SONET infrastructure; SONET network elements in this circuit need to be checked out.
<i>ber</i>	Specifies BER in the range of 3 to 9 (10 to minus <i>n</i>).

Defaults
 For BER thresholds: **sf** = 10e-3, **sd** = 10e-6
 For TCA thresholds: **b1** = 10e-6, **b2** = 10e-6, **b3** = 10e-6

Command Modes Interface configuration

Command History	Release	Modification
	12.0(4a)W5(11a)	New command

Usage Guidelines This command sets or changes the BER and threshold crossing alarms. Any errors in B1 automatically results in B2 (line) and B3 (path) errors.



Note

This command is only supported on systems with OC-12 or OC-48c interface modules.

Examples The following example sets the b3-tca BER threshold crossing alarm to 10.

```
Switch(config-if)# sonet threshold b3-tca 3
```

Related Commands	Command	Description
	show controllers	Displays information about a physical port device.
	sonet	Used to set the mode of operation and control the type of ATM cell used for cell-rate decoupling on the SONET.
	sonet overhead	Used to set SONET/SDH overhead bytes.
	sonet report	Enables the reporting of selected alarms.

sonet tx-ais on-rx-defect

Use the **sonet tx-ais on-rx-defect** command to enable a SONET interface to send an alarm indication signal (AIS) if it detects the receive port has failed. To disable AIS, use the **no** form of this command.

sonet tx-ais on-rx-defect

no sonet tx-ais on-rx-defect

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Interface Configuration

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

Usage Guidelines The **sonet tx-ais on-rx-defect** command should not be enabled on both ATM switch router interfaces connected to the same physical line. Even if no alarm exists, both interfaces will see the alarms signals and never come up.

Examples The following example enables AIS on an ATM interface.

```
Switch# configure terminal
Switch(config)# interface atm 3/0/0
Switch(config-if)# sonet tx-ais on-rx-defect
```

Related Commands	Command	Description
	show controllers	Displays information about a physical port device.

statistics

To turn on the PNNI statistics feature, use the **statistics** ATM router PNNI configuration command. To disable this feature, use the **no** form of this command.

statistics {call}

no statistics {call}

Syntax Description

call Specifies statistics related to route computation for call and party setups.

Defaults

Disabled

Command Modes

ATM router PNNI configuration

Command History

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

Usage Guidelines

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

Examples

The following script shows how to access the **statistics** ATM router PNNI configuration command.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# statistics call
```

Related Commands

Command	Description
show atm pnni	Used to display PNNI statistics.
statistics call	

status

To configure the status of this filter table entry, use the **status** ATM signalling diagnostics configuration command. To disable this feature, use the **no** form of this command.

status [**active** | **inactive** | **delete**]

no status [**active** | **inactive** | **delete**]

Syntax Description	
active	Sets status to active to begin filtering failed connections.
inactive	Sets status to inactive to stop filtering failed connections.
delete	Sets status to delete if the signalling diagnostics filter table entry needs to be deleted.

Defaults	
	Inactive

Command Modes	
	ATM signalling diagnostics configuration

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

Examples	
	The following script shows how to access the status command.

```
Switch# configure terminal
Switch(config)# status active
```

summary-address

To configure summary address prefixes on a PNNI node, use the **summary-address** node-level subcommand. To remove configured summary address prefixes, use the **no** form of this command.

summary-address *address-prefix* [**internal** | **exterior**] [**suppress**]

no summary-address *address-prefix* [**internal** | **exterior**]

Syntax Description

<i>address-prefix</i>	Specifies the summary address prefix. The maximum length of the address prefix is 19 bytes. Each character in the prefix is 4 bits. The length of the prefix must fall on a nibble boundary. In other words, the length of the prefix must be a multiple of 4 bits.
internal	Specifies local knowledge of reachability, including end-system addresses registered via ILMI address registration.
exterior	Specifies knowledge of reachability through remote networks or derived from other protocol exchanges outside the PNNI routing domain.
suppress	Indicates that neither the summary address nor any addresses for which the summary address is the longest matching prefix are advertised.

Defaults

Default summary addresses are controlled by the **auto-summary** command.

The default summary address type is **internal**.

Command Modes

PNNI node configuration

Command History

Release	Modification
11.1(4)	New command

Usage Guidelines

Summary addresses can be used to decrease the amount of information advertised by this PNNI node. Summary addresses should only be configured when all end-system addresses matching the summary address are reachable from this switch (for example, not reachable through PNNI interfaces to other switches).

Summary addresses of type internal only summarize internal addresses reachable from this switch (such as ILMI-registered addresses and internal static routes). Summary addresses of type exterior only summarize exterior addresses reachable from this switch (for example, exterior static routes on IISP or public UNI interfaces).

Suppressed summary addresses can be used to prevent other PNNI nodes from learning of switch connectivity to certain addresses (for example, for back doors).

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

Examples

The following script shows how to access the **summary-address** node-level subcommand.

```
Switch# configure terminal  
Switch(config)# atm router pnni  
Switch(config-atm-router)# node 1  
Switch(config-pnni-node)# summary-address 48.91...
```

Related Commands

Command	Description
atm route	Specifies a static route to a reachable address prefix.
auto-summary	Allows default summary addresses to be generated based on the switch's ATM address.
show atm route	Used to display all local or network-wide reachable address prefixes in this switch's ATM routing table.

sync config (Catalyst 8540 MSR)

To synchronize the configuration between the primary and secondary route processors based on the primary configuration, use the **sync config** main CPU redundancy command. To disable the synchronization, use the **no** form of this command.

sync config { **startup** | **running** | **both** }

no sync config { **startup** | **running** | **both** }

Syntax Description	
startup	Synchronizes the startup configuration.
running	Synchronizes the running configuration.
both	Synchronizes the startup and running configurations.

Defaults	
	both

Command Modes	
	Main CPU redundancy

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

Examples	
	The following example synchronizes the startup configuration of the primary and secondary route processors.

```
Switch# configure terminal
Switch(config)# redundancy
Switch(config-r)# main-cpu
Switch(config-r-mc)# sync config startup
```

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.

sync dynamic-info (Catalyst 8540 MSR)

To synchronize dynamic data between the primary processor and secondary processor, use the **sync dynamic-info** command. To disable synchronization, use the **no** form of this command.

sync dynamic-info

no sync dynamic-info

Syntax Description	None	
Defaults	Enabled.	
Command Modes	Redundancy configuration	
Command History	Release	Modification
	12.1(6)	New command
Usage Guidelines	Dynamic data refers to any states or data structures such as transit SVCs and transit or endpoint soft VCs. The sync dynamic-info command will work only if the sync config running command is enabled. Disabling the sync config running command will automatically disable dynamic-info (if so already enabled) because dynamic-info is not functional without RCSF enabled. You can turn off dynamic-info anytime regardless of the RCSF status.	
Examples	<pre>Switch# configure terminal Switch(config)# redundancy Switch(config-r)# main_cpu Switch(config-r-mc)# sync dynamic-info</pre>	
Related Commands	Command	Description
	sync config (Catalyst 8540 MSR)	To synchronize the configuration between the primary and secondary route processor based on the primary configuration, use the sync config main processor redundancy command. To disable the synchronization, use the no form of this command. This command will synchronize the running configuration.

