



## M Commands

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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**

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

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**Note**

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

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

## mac-address

To configure the MAC address associated with an LEC, use the **mac-address** LANE configuration server database command. To remove the MAC address, use the **no** form of this command.

**mac-address** *ieee-address*

<b>Syntax Description</b>	<i>ieee-address</i> 48-bit IEEE MAC address written as a dotted triplet of four-digit hexadecimal numbers.
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<b>Defaults</b>	No MAC layer address is set.
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<b>Command Modes</b>	LANE configuration server database
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	12.0.1	New command

**Examples** The following example shows configuring the MAC address for the LEC where xx.xxxx is an appropriate second half of the MAC address to use.

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# lane database
Switch(lane-config-database)# mac-address 5000.5axx.xxxx
```

## main-cpu (Catalyst 8540 MSR)

To switch to the main-cpu submode of the redundancy mode, use the **main-cpu** redundancy command.

**main-cpu**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Redundancy

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

**Usage Guidelines** After you enter the main-cpu submode, you can use the **auto-sync** command to synchronize the configuration between the primary and secondary route processors based on the primary configuration. In addition, you can use all of the redundancy commands that are applicable to the main CPU.

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

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

Related Commands	Command	Description
	<b>sync config (Catalyst 8540 MSR)</b>	Used to synchronize the configuration between the primary and secondary route processors based on the primary configuration.

# map-class

To enter map-class configuration mode to define parameters that you will use in specifying a request for an SVC (the SETUP message), use the **map-class** global configuration command. To delete this class, use the **no** form of this command.

```
map-class { atm | dialer | frame-relay } class-name
```

```
no map-class { atm | dialer | frame-relay } class-name
```

## Syntax Description

<b>atm</b>	Specifies the ATM map class for an SVC.
<b>dialer</b>	Specifies a class of shared configuration parameters associated with the dialer map for an SVC.
<b>frame-relay</b>	Specifies QoS values for an SVC.
<i>class-name</i>	User-assigned name of the traffic parameters table.

## Defaults

No traffic parameters are defined.

## Command Modes

Global configuration

## Command History

Release	Modification
11.1(4)	New command

## Usage Guidelines

If the map class identified by *class-name* does not already exist, the switch router creates a new one. In either case, this command specifies the map class to which subsequent encapsulation-specific commands apply. Configuration of a map class is allowed only if the subsystem corresponding to the encapsulation is linked.

It is up to the media-specific routing that uses a static map to ensure that the referenced class exists if parameters are required.

Most parameters specified through a map class are used to dictate the contents of the ATD IE present in a SETUP message used to initiate an SVC. These parameters are as follows:

- **forward-peak-cell-rate-clp0**
- **forward-peak-cell-rate-clp1**
- **backward-peak-cell-rate-clp0**
- **backward-peak-cell-rate-clp1**
- **forward-sustainable-cell-rate-clp0**
- **forward-sustainable-cell-rate-clp1**
- **backward-sustainable-cell-rate-clp0**
- **backward-sustainable-cell-rate-clp1**

- **forward-max-burst-size-clp0**
- **forward-max-burst-size-clp1**
- **backward-max-burst-size-clp0**
- **backward-max-burst-size-clp1**

**Note**

The 1-parameters specify the traffic characteristics of the aggregate of CLP-0 and CLP-1 cells; the 0-parameters are CLP-0 only.

When possible, Best Effort is signalled. In UNI 3, a Best Effort Indication is included in the ATD IE only if the contents of the IE consist of forward and backward Peak Cell Rate for CLP 0+1 (and the Best Effort Indication). Therefore, if any of the above parameters other than **forward-peak-cell-rate-clp1** and **backward-peak-cell-rate-clp1** are specified in the map class, Best Effort cannot be signalled.

It is important that Best Effort is signalled, because this causes a switch to interpret the SETUP as a request for a UBR connection. UBR requests do not cause bandwidth to be reserved per-connection.

If Best Effort cannot be signalled (one of the other parameters is specified in the map class), then this causes a switch to interpret the SETUP as a request for VBR-NRT service.

All combinations of parameters are allowed in the definition of map class. The following recommendations can help to specify a correct set of parameters:

- The maximum length of the contents of the ATD IE is 30 bytes. All of the cell-rate and burst parameters require 4 bytes in the IE. This means that no more than 7 of the 4-byte parameters should be specified.
- The allowable combinations of cell-rate and burst-size parameters from the UNI 3 specifications are (per direction):
  - peak-cell-rate0, peak-cell-rate0+1
  - peak-cell-rate0+1, sustained-cell-rate0, max-burst0
  - peak-cell-rate0+1
  - peak-cell-rate0+1, sustained-cell-rate0+1, max-burst0+1
- A clp0+1 parameter should be greater than or equal to the clp0 parameter for the same direction.

If default traffic parameters are used in the initiation of an SVC, a Best Effort ATD IE is used. The forward and backward peak-cell-rate0+1 values are 24-bits set to “1” (0xfffff). This is a unique value used to indicate that default shaping parameters can be applied.

**Examples**

The following example establishes traffic parameters for map-class atmclass1.

```
Switch# configure terminal
Switch(config)# map-class atm atmclass1
ip 172.21.180.121 atm-nsap 12.3456.7890.abcd.0000.00 broadcast class atmclass1
map-class atm atmclass1
atm forward-peak-cell-rate-clp0 8000
atm backward-peak-cell-rate-clp0 8000
main-atm 0
map-group atm atmlist1
```

Related Commands	Command	Description
	<b>show atm map</b>	Displays the list of all configured ATM static maps to remote hosts on an ATM network.

# map-group

To associate an ATM map list to an interface or subinterface for either a PVC or SVC, use the **map-group** interface configuration command. To remove the reference to the map list, use the **no** form of this command.

**map-group** *name*

**no map-group** *name*

<b>Syntax Description</b>	<i>name</i> Name of the map list identified by the <b>map-list</b> command.						
<b>Defaults</b>	No ATM map lists are associated.						
<b>Command Modes</b>	Interface configuration						
<b>Command History</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>11.1(4)</td> <td>New command</td> </tr> </tbody> </table>	Release	Modification	11.1(4)	New command		
Release	Modification						
11.1(4)	New command						
<b>Usage Guidelines</b>	More than one map group can be configured for an interface. This command only applies to interfaces on the route processor card and to terminating connections.						
<b>Examples</b>	<p>In the following example, the map list named <i>atm</i> is associated with the ATM interface.</p> <pre>Switch# configure terminal Switch(config)# interface atm 0 Switch(config-if)# map-group atm</pre>						
<b>Related Commands</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Command</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td><b>main-cpu</b> (Catalyst 8540 MSR)</td> <td>Used to switch to the main-cpu submode of the redundancy mode.</td> </tr> <tr> <td><b>map-list</b></td> <td>Defines an ATM map statement for either a PVC or SVC.</td> </tr> </tbody> </table>	Command	Description	<b>main-cpu</b> (Catalyst 8540 MSR)	Used to switch to the main-cpu submode of the redundancy mode.	<b>map-list</b>	Defines an ATM map statement for either a PVC or SVC.
Command	Description						
<b>main-cpu</b> (Catalyst 8540 MSR)	Used to switch to the main-cpu submode of the redundancy mode.						
<b>map-list</b>	Defines an ATM map statement for either a PVC or SVC.						

# map-list

To define an ATM map statement for either a PVC or SVC, use the **map-list** global configuration command. To delete this list and all associated map statements, use the **no** form of this command.

**map-list** *name*

**no map-list** *name*

<b>Syntax Description</b>	<i>name</i> Name of the map list.
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<b>Defaults</b>	No map statements are defined.
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<b>Command Modes</b>	Global configuration
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Command History	Release	Modification
	11.1(4)	New command

<b>Usage Guidelines</b>	<p>This command only applies to interfaces on the route processor card and to terminating connections. To allow the switch router to propagate routing updates and ARP requests, a static map that maps the protocol address and the ATM address of the next-hop ATM station must be configured. The switch router supports a mapping scheme that identifies the ATM address of remote hosts or switch routers. This address can be specified either as a VCI descriptor for a PVC or an NSAP address for an SVC.</p>
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The **map-list** command specifies the map list to which the subsequent map-list configuration commands apply. These map-list configuration commands identify destination addresses. One map list can contain multiple map entries. A map list can be referenced by more than one interface or subinterface.

<b>Examples</b>	<p>In the following example, to configure ATM static maps for a PVC, a map list named <i>atm</i> is followed by one map statement for protocol addresses being mapped.</p>
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```
Switch# map-list atm
Switch(config-map-list)# ip 172.21.168.112 atm-vc 1 broadcast
```

In the following example for an SVC, a map list named *atm* includes two map statements for protocol addresses being mapped.

```
Switch# map-list atm
Switch(config-map-list)# ip 172.21.97.165 atm-nsap
BC.CDEF.01.234567.890A.BCDE.F012.3456.7890.1234.13
Switch(config-map-list)# ip 172.21.97.166 atm-nsap
BC.CDEF.01.234567.890A.BCDE.F012.3456.7890.1234.12
```



Related Commands	Command	Description
	<b>main-cpu</b> <b>(Catalyst 8540 MSR)</b>	Used to switch to the main-cpu submode of the redundancy mode.
	<b>map-group</b>	Associates an ATM map list to an interface or subinterface for either a PVC or SVC.
	<b>show atm map</b>	Displays the list of all configured ATM static maps to remote hosts on an ATM network.

# max-admin-weight-percentage

To configure the maximum administrative weight percentage used to determine if an alternate route is acceptable, use the **max-admin-weight-percentage** ATM router PNNI configuration command. To remove the constraint on administrative weight for alternate routes, use the **no** form of this command.

**max-admin-weight-percentage** *percentage*

**no max-admin-weight-percentage**

<b>Syntax Description</b>	<i>percentage</i> Specifies the maximum acceptable administrative weight for alternate routes as a percentage of the least administrative weight of any route to the destination.
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<b>Defaults</b>	Infinity (no constraint on administrative weight for alternate routes).
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<b>Command Modes</b>	ATM router PNNI configuration
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.1(4)	New command

<b>Usage Guidelines</b>	<p>This command increases network efficiency by preventing alternate routes that use too many network resources from being specified. The command provides a generalized form of a hop-count limit.</p> <p>This command only takes effect when background route computation is enabled.</p> <p>The maximum acceptable administrative weight is equal to the specified percentage of the least administrative weight of any route to the destination (from the background routing tables). For example, if the least administrative weight to the destination is 5040 and the percentage is 300, the maximum acceptable administrative weight for the call is 5040 x 300/100 or 15120.</p> <p>For more information, refer to the <i>ATM Switch Router Software Configuration Guide</i>.</p>
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<b>Examples</b>	The following script shows how to configure the maximum administrative weight percentage to 300 percent using the <b>max-admin-weight-percentage</b> ATM router PNNI configuration command.
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```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# max-admin-weight-percentage 300
```

Related Commands	Command	Description
	<b>administrative-weight</b>	Configures the mode of default administrative weight assignment for PNNI interfaces.
	<b>atm pnni admin-weight</b>	Specifies the administrative weight of the ATM PNNI interface.
	<b>show atm pnni background routes</b>	Displays the precalculated background route table to other PNNI nodes.
	<b>show atm pnni local-node</b>	Displays information about a PNNI logical node running on the switch router.

# max-diameter

To specify the maximum network diameter, use the **max-diameter** command. To delete the maximum network diameter, use the **no** form of this command.

**max-diameter** *diameter*

**no max-diameter** *diameter*

<b>Syntax Description</b>	<i>diameter</i> The greatest distance between two nodes that are participants in protocol. The units of measurement are hops.
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<b>Defaults</b>	None
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<b>Command Modes</b>	NCDP
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.1(4)	New command

<b>Usage Guidelines</b>	Specifies the maximum network diameter.
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<b>Related Commands</b>	None
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# max-records

To configure the maximum number of records to be collected for a particular signalling diagnostics filter table entry, use the **max-records** ATM signalling diagnostics configuration command. To return the maximum records to the default, use the **no** form of this command.

**max-records** *max-num-records*

**no max-records**

<b>Syntax Description</b>	<i>max-num-records</i> Specifies the number of records to be collected.				
<b>Defaults</b>	20				
<b>Command Modes</b>	ATM signalling diagnostics configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.2(8.0.1)</td> <td>New command</td> </tr> </tbody> </table>	Release	Modification	11.2(8.0.1)	New command
Release	Modification				
11.2(8.0.1)	New command				
<b>Usage Guidelines</b>	<p>This value denotes the number of call failure records to be collected and stored. When the maximum value is reached, the older records are deleted, making way for the newly created records.</p> <p>The collected records are overwritten when the <b>max-records</b> value is reached. If this field is set to -1, the records are not overwritten. Setting this field to -1 requires increased memory consumption for call failure records storage, and can lead to shortages of available system memory.</p>				
<b>Examples</b>	<p>The following example shows setting the maximum number of records to 18.</p> <pre>Switch(config)# <b>max-records 20</b></pre>				

# mdl

To configure and transmit the MDL messages, use the **mdl** interface configuration command. To disable the transmission of MDL messages, use the **no** form of this command.

```
mdl { transmit { path | idle-signal | test-signal } | string { eic | lic | fic | unit | pfi | port | generator } string }
```

```
no mdl { transmit { path | idle-signal | test-signal } | string { eic | lic | fic | unit | pfi | port | generator } string }
```

## Syntax Description

<b>transmit</b> <i>path</i>	Enables transmission of the MDL path message.
<b>transmit</b> <b>idle-signal</b>	Enables transmission of the MDL idle signal message.
<b>transmit</b> <b>test-signal</b>	Enables transmission of the MDL test signal message.
<b>string</b> <b>eic</b> <i>string</i>	Specifies the Equipment Identification Code. Can be up to 10 characters.
<b>string</b> <b>lic</b> <i>string</i>	Specifies the Location Identification Code. Can be up to 11 characters.
<b>string</b> <b>fic</b> <i>string</i>	Specifies the Frame Identification Code. Can be up to 10 characters.
<b>string</b> <b>unit</b> <i>string</i>	Specifies the Unit Identification Code. Can be up to six characters.
<b>string</b> <b>pfi</b> <i>string</i>	Specifies the Facility Identification Code sent in the MDL path message. Can be up to 38 characters.
<b>string</b> <b>port</b> <i>string</i>	Specifies the port number string sent in the MDL idle signal message. Can be up to 38 characters.
<b>string</b> <b>generator</b> <i>string</i>	Specifies the generator number string sent in the MDL test signal message. Can be up to 38 characters.

## Defaults

No MDL message is configured.

## Command Modes

Interface configuration

## Command History

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

## Usage Guidelines

This command first appeared in Cisco IOS Release 11.3.

Use the **show controllers t3** command to display MDL information (received strings). MDL information is displayed only when framing is set to C-bit.



### Note

MDL is supported only when the CDS3 framing is C-bit parity.

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**Examples**

The following examples show several of the **mdl** commands for the Frame Relay port adapter in slot 9.

```
Switch# configure terminal
Switch(config)# controller t3 4/0/0
Switch(config-controller)# mdl string eic Router A
Switch(config-controller)# mdl string lic Test Network
Switch(config-controller)# mdl string fic Building B
Switch(config-controller)# mdl string unit ABC
```

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**Related Commands**

Command	Description
<b>show controllers t3</b>	Displays information about a physical port device, and specifies a channelized DS3 (CDS3) interface.

# min-age

To configure the value of the minimum age of the VC for on-release or periodic collection of accounting records, use the **min-age** ATM accounting file subcommand. To return the min-age value to the default, use the **no** form of this command.

**min-age** *seconds*

**no min-age**

<b>Syntax Description</b>	<i>seconds</i> Specifies the number of seconds.
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<b>Defaults</b>	3600 seconds
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<b>Command Modes</b>	ATM accounting file
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	12.0.1	New command

<b>Usage Guidelines</b>	None
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<b>Examples</b>	None
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<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>atm accounting file</b>	Used to employ accounting file configuration mode and to enable an ATM accounting file.
	<b>collection-modes</b>	Used to initialize the collection mode and specifies at what time accounting data is recorded in the accounting file.
	<b>failed-attempts</b>	Configures the writing of records for initial connection attempts.



# mtu

To adjust the maximum packet size or MTU size, use the **mtu** interface configuration command. To restore the MTU value to its original default value, use the **no** form of this command.

**mtu bytes**

**no mtu**

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<b>Syntax Description</b>	<i>bytes</i> Specifies the desired size, in bytes.
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**Defaults** Table 12-1 lists default MTU values according to media type.

*Table 12-1 Default Media MTU Values*

Media Type	Default MTU
Ethernet	1500
ATM	4470
ARM	

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**Command Modes** Interface configuration

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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.1(4)	New command

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**Usage Guidelines** Each interface has a default maximum packet size or MTU size. This number generally defaults to the largest size possible for that type interface.



**Note**

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Changing the MTU value with the **mtu** interface configuration command can affect values for the protocol-specific versions of the command (**ip mtu** for example). If the value specified with the **ip mtu** interface configuration command is the same as the value specified with the **mtu** command and you change the value for the **mtu** command, the **ip mtu** value automatically matches the new **mtu** value. However, changing the value for the **ip mtu** command has no effect on the value for the **mtu** command.

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**Examples** The following example specifies an MTU of 4470 bytes.

```
Switch# configure terminal
Switch(config)# interface atm 0
Switch(config-if)# mtu 4470
```

Related Commands	Command	Description
	<b>ip mtu</b>	Sets the MTU size of IP packets sent on an interface.

# multiring

To enable collection and use of RIF information on a subinterface, use the **multiring** interface configuration command. To disable the use of RIF information, use the **no** form of this command.

**multiring ip** [**all-routes** | **spanning**]

**no multiring ip** [**all-routes** | **spanning**]

Syntax Description	<b>ip</b>	Protocol type for which to enable multiring.
	<b>all-routes</b>	Uses all-routes explorers.
	<b>spanning</b>	Uses spanning-tree explorers.
Defaults	Disabled	
Command Modes	Interface configuration	
Command History	<b>Release</b>	<b>Modification</b>
	11.1(4)	New command
Usage Guidelines	<p>In source-route bridged or Token Ring switched networks, only packets with RIF are forwarded by intermediate source-route bridges. To ensure that IP datagrams are transmitted across a Token Ring switch or source-route bridge to and from an ATM switch router, use the <b>multiring</b> command.</p> <p>When multiring is enabled, the Token Ring LEC strips the RIF information and caches it in its RIF table for incoming IP/ARP packets. It adds a RIF for subsequent IP/ARP response packets to be sent back across the network. Use the <b>show rif</b> command to display the RIF table entries. To configure static RIF entries, use the <b>rif</b> command.</p>	
Examples	<p>The following example shows how to configure a subinterface with an IP address and Token Ring LANE LEC, and then enable multiring.</p> <pre>Switch# configure terminal Switch(config)# interface atm 0.1 Switch(config-subif)# ip address 1.1.1.2 255.255.255.0 Switch(config-subif)# lane client tokenring cisco Switch(config-subif)# multiring ip</pre>	
Related Commands	<b>Command</b>	<b>Description</b>
	<b>rif</b>	Used to enter static source-route information into the RIF cache.
	<b>show rif</b>	Displays the current contents of the RIF cache.

