

# lane auto-config-atm-address

To specify that the configuration server ATM address is computed by the Cisco automatic method, use the **lane auto-config-atm-address** command in interface configuration mode. To remove the previously assigned ATM address, use the **no** form of this command.

```
lane [config] auto-config-atm-address
```

```
no lane [config] auto-config-atm-address
```

## Syntax Description

<b>config</b>	(Optional) When the <b>config</b> keyword is used, this command applies only to the LAN Emulation Configuration Server (LECS). This keyword indicates that the LECS should use the auto computed LECS address.
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## Defaults

No specific ATM address is set.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.0	This command was introduced.

## Usage Guidelines

When the **config** keyword is not present, this command causes the LANE server and LANE client on the subinterface to use the automatically assigned ATM address for the configuration server.

When the **config** keyword is present, this command assigns the automatically generated ATM address to the configuration server (LECS) configured on the interface. Multiple commands that assign ATM addresses to the LANE configuration server can be issued on the same interface to assign different ATM addresses to the configuration server. Commands that assign ATM addresses to the LANE configuration server include **lane auto-config-atm-address**, **lane config-atm-address**, and **lane fixed-config-atm-address**.

For a discussion of Cisco's method of automatically assigning ATM addresses, refer to the "Configuring LAN Emulation" chapter in the *Cisco IOS Switching Services Configuration Guide*.

## Examples

The following example shows how to associate the LANE configuration server with the database named `network1` and specifies that the configuration server's ATM address will be assigned by the Cisco automatic method:

```
Router(config)# lane database network1
Router(lane-config-dat)# name eng server-atm-address
39.020304050607080910111213.0800.AA00.1001.02
Router(lane-config-dat)# name mkt server-atm-address
39.020304050607080910111213.0800.AA00.4001.01
```

```
Router(config)# interface atm 1/0
```

```
Router(config-if)# lane config database network1
Router(config-if)# lane config auto-config-atm-address
```

The following example shows how to cause the LANE server and LANE client on the subinterface to use the automatically assigned ATM address to communicate with the configuration server:

```
Router(config)# interface atm 2/0.1
Router(config-if)# ip address 172.16.0.4 255.255.255.0
Router(config-if)# lane client ethernet
Router(config-if)# lane server-bus ethernet eng
Router(config-if)# lane auto-config-atm-address
```

#### Related Commands

Command	Description
<b>lane config-atm-address</b>	Specifies the ATM address of the configuration server explicitly.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>lane fixed-config-atm-address</b>	Specifies that the fixed configuration server ATM address assigned by the ATM Forum will be used.

# lane bus-atm-address

To specify an ATM address—and thus override the automatic ATM address assignment—for the broadcast and unknown server on the specified subinterface, use the **lane bus-atm-address** command in interface configuration mode. To remove the ATM address previously specified for the broadcast and unknown server on the specified subinterface and thus revert to the automatic address assignment, use the **no** form of this command.

**lane bus-atm-address** *atm-address-template*

**no lane bus-atm-address** [*atm-address-template*]

<b>Syntax Description</b>	<i>atm-address-template</i>	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the end-system identifier (ESI) bytes, or the selector byte of the automatically assigned ATM address.
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**Defaults** For the broadcast and unknown server, the default is automatic ATM address assignment.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.

**Usage Guidelines** When applied to a broadcast and unknown server, this command overrides automatic ATM address assignment for the broadcast and unknown server. When applied to a LANE client, this command gives the client the ATM address of the broadcast and unknown server. The client will use this address rather than sending LAN Emulation Address Resolution Protocol (LE ARP) requests for the broadcast address. When applied to a selected interface, but with a different ATM address from what was used previously, this command replaces the broadcast and unknown server's ATM address.

## ATM Addresses

A LANE ATM address has the same syntax as a network service access point (NSAP) (but it is not a network-level address). It consists of the following:

- A 13-byte prefix that includes the following fields defined by the ATM Forum:
  - AFI (Authority and Format Identifier) field (1 byte)
  - DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes)
  - DFI field (Domain Specific Part Format Identifier) (1 byte)
  - Administrative Authority field (3 bytes)
  - Reserved field (2 bytes)
  - Routing Domain field (2 bytes)

- Area field (2 bytes)
- A 6-byte ESI
- A 1-byte selector field

### Address Templates

LANE ATM address templates can use two types of wildcards: an asterisk (\*) to match any single character (nibble), and an ellipsis (...) to match any number of leading, middle, or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

The values of the digits that are replaced by wildcards come from the automatic ATM assignment method.

In LANE, a *prefix template* explicitly matches the prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

In the Cisco implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the selector field corresponds to the specific subinterface of the interface.

### Examples

The following example shows how to use an ESI template to specify the part of the ATM address corresponding to the interface; the remaining values in the ATM address come from automatic assignment:

```
Router(config-if)# lane bus-atm-address ...0800.200C.1001.**
```

The following example shows how to use a prefix template to specify the part of the ATM address corresponding to the switch; the remaining values in the ATM address come from automatic assignment:

```
Router(config-if)# lane bus-atm-address 45.000014155551212f.00.00...
```

### Related Commands

Command	Description
<b>lane server-bus</b>	Enables a LANE server and a broadcast and unknown server on the specified subinterface with the ELAN ID.

# lane client flush

To enable the flush mechanism of a LAN Emulation Client (LEC), use the **lane client flush** command in global configuration mode. To disable the flush mechanism of a LEC, use the **no** form of this command.

**lane client flush**

**no lane client flush**

## Syntax Description

This command contains no arguments or keywords.

## Defaults

All the LECs perform the LANE LE\_FLUSH process by default.

## Command Modes

Global configuration

## Command History

Release	Modification
12.1(2)T	This command was introduced.

## Usage Guidelines

In Cisco IOS Release 12.1(3)T and later releases, the **lane client flush** command will be hidden and will not be visible in the configuration.

Configuring the **no lane client flush** command on a Cisco networking device is recommended to prevent the initial packet drops during the establishment of LANE data direct virtual connection (VCC).

Use the **no lane client flush** command to keep LANE clients from sending LE\_FLUSH messages to the remote LANE client. This configuration also allows the LANE clients to process the LE\_FLUSH messages from the remote LANE clients.



### Note

Configuring the **no lane client flush** command on a Cisco networking device does not guarantee the orderly delivery of incoming packets. There is a chance of receiving out-of-order packets at the destination during the establishment of a LANE data direct VCC.

## Examples

The following example shows how to disable the flush mechanism of a LEC:

```
Router(config)# no lane client flush
```

## Related Commands

Command	Description
<b>lane client</b>	Activates a LANE client on the specified subinterface.
<b>lane client-atm-address</b>	Specifies an ATM address—and thus overrides the automatic ATM address assignment—for the LANE client on the specified subinterface.

# lane client mpoa client name

To bind a LAN Emulation Client (LEC) to the named Multiprotocol over ATM client (MPC), use the **lane client mpoa client name** command in interface configuration mode. To unbind the named MPC from a LEC, use the **no** form of this command.

**lane client mpoa client name** *mpc-name*

**no lane client mpoa client name** *mpc-name*

## Syntax Description

*mpc-name* Name of the specific MPC.

## Defaults

No LEC is bound to a named MPC.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Usage Guidelines

When you enter this command, the named MPC is bound to a LEC. The named MPC must exist before this command is accepted. If you enter this command before a LEC is configured (not necessarily running), a warning message is issued.

## Examples

The following example shows how to bind a LEC on a subinterface to the MPC:

```
Router(config-if)# lane client mpoa client name ip_mpc
```

# lane client mpoa server name

To bind a LAN Emulation Client (LEC) with the named Multiprotocol over ATM server (MPS), use the **lane client mpoa server name** command in interface configuration mode. To unbind the server, use the **no** form of this command.

**lane client mpoa server name** *mps-name*

**no lane client mpoa server name** *mps-name*

## Syntax Description

<i>mps-name</i>	Name of the specific MPS.
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## Defaults

No LEC is bound to a named MPS.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Usage Guidelines

This command binds a LEC to the named MPS. The specified MPS must exist before this command is accepted. If this command is entered when a LEC is not already configured (not necessarily running), a warning message will be issued.

## Examples

The following example shows how to bind a LANE client with the MPS named MYMPS:

```
Router(config-if)# lane client mpoa server name MYMPS
```

# lane client

To activate a LAN Emulation (LANE) client on the specified subinterface, use the **lane client** command in interface configuration mode. To remove a previously activated LANE client on the subinterface, use the **no** form of this command.

**lane client** {**ethernet**} [*elan-name*]

**no lane client** {**ethernet**} [*elan-name*]

## Syntax Description

<b>ethernet</b>	Identifies the emulated LAN (ELAN) attached to this subinterface as an Ethernet ELAN.
<i>elan-name</i>	(Optional) Name of the ELAN. This argument is optional because the client obtains its ELAN name from the configuration server. The maximum length of the name is 32 characters.

## Defaults

No LANE clients are enabled on the interface.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.0	This command was introduced.
12.3(2)T	The <b>tokenring</b> keyword was removed.

## Usage Guidelines

If a **lane client** command has already been used on the subinterface for a different ELAN, then the client initiates termination procedures for that ELAN and joins the new ELAN.

If you do not provide an *elan-name* value, the client contacts the server to find which ELAN to join. If you do provide an ELAN name, the client consults the configuration server to ensure that no conflicting bindings exist.

## Examples

The following example shows how to enable an Ethernet LANE client on an interface:

```
Router(config-if)# lane client ethernet
```

## Related Commands

Command	Description
<b>lane client-atm-address</b>	Specifies an ATM address—and thus overrides the automatic ATM address assignment—for the LANE client on the specified subinterface.

# lane client-atm-address

To specify an ATM address—and thus override the automatic ATM address assignment—for the LAN Emulation (LANE) client on the specified subinterface, use the **lane client-atm-address** command in interface configuration mode. To remove the ATM address previously specified for the LANE client on the specified subinterface and thus revert to the automatic address assignment, use the **no** form of this command.

**lane client-atm-address** *atm-address-template*

**no lane client-atm-address** [*atm-address-template*]

<b>Syntax Description</b>	<i>atm-address-template</i>	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the end-system identifier (ESI) bytes, or the selector byte of the automatically assigned ATM address.
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<b>Defaults</b>	Automatic ATM address assignment
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<b>Command Modes</b>	Interface configuration
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.0	This command was introduced.

<b>Usage Guidelines</b>	Use of this command on a selected subinterface, but with a different ATM address from what was used previously, replaces the ATM address of the LANE client.
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## ATM Addresses

A LANE ATM address has the same syntax as a network service access point (NSAP) (but it is not a network-level address). It consists of the following:

- A 13-byte prefix that includes the following fields defined by the ATM Forum:
  - AFI (Authority and Format Identifier) field (1 byte)
  - DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes)
  - DFI field (Domain Specific Part Format Identifier) (1 byte)
  - Administrative Authority field (3 bytes)
  - Reserved field (2 bytes)
  - Routing Domain field (2 bytes)
  - Area field (2 bytes)
- A 6-byte ESI
- A 1-byte selector field

### Address Templates

LANE ATM address templates can use two types of wildcards: an asterisk (\*) to match any single character (nibble), and an ellipsis (...) to match any number of leading, middle, or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the ATM address prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

The Cisco implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the selector field corresponds to the specific subinterface of the interface.

For a discussion of Cisco's method of automatically assigning ATM addresses, refer to the "Configuring LAN Emulation" chapter in the *Cisco IOS Switching Services Configuration Guide*.

### Examples

The following example shows how to use an ESI template to specify the part of the ATM address corresponding to the interface; the remaining parts of the ATM address come from automatic assignment:

```
Router(config-if)# lane client-atm-address...0800.200C.1001.**
```

The following example shows how to use a prefix template to specify the part of the ATM address corresponding to the switch; the remaining parts of the ATM address come from automatic assignment:

```
Router(config-if)# lane client-atm-address 47.00001415551212f.00.00...
```

### Related Commands

Command	Description
lane client	Activates a LANE client on the specified subinterface.

# lane config database

To associate a named configuration table (database) with the configuration server on the selected ATM interface, use the **lane config database** command in interface configuration mode. To remove the association between a named database and the configuration server on the specified interface, use the **no** form of this command.

**lane config database** *database-name*

**no lane config database**

<b>Syntax Description</b>	<i>database-name</i>	Name of the LAN emulation (LANE) database.
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<b>Defaults</b>	No configuration server is defined, and no database name is provided.
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<b>Command Modes</b>	Interface configuration
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.0	This command was introduced.

<b>Usage Guidelines</b>	<p>This command is valid only on a major interface, not a subinterface, because only one LANE Configuration Server (LECS) can exist per interface.</p> <p>The named database must exist before the <b>lane config database</b> command is used. Refer to the <b>lane database</b> command for more information.</p> <p>Multiple <b>lane config database</b> commands cannot be used multiple times on the same interface. You must delete an existing association by using the <b>no</b> form of this command before you can create a new association on the specified interface.</p> <p>Activating a LANE configuration server requires the <b>lane config database</b> command and one of the following commands: <b>lane fixed-config-atm-address</b>, <b>lane auto-config-atm-address</b>, or <b>lane config-atm-address</b>.</p>
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<b>Examples</b>	<p>The following example shows how to associate the LECS with the database named network1 and to specify that the configuration server's ATM address will be assigned by the Cisco automatic method:</p>
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```
Router(config)# lane database network1
Router(lane-config-dat)# name eng server-atm-address
39.020304050607080910111213.0800.AA00.1001.02
Router(lane-config-dat)# name mkt server-atm-address
39.020304050607080910111213.0800.AA00.4001.01
Router(config)# interface atm 1/0
Router(config-if)# lane config database network1
Router(config-if)# lane config auto-config-atm-address
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>lane auto-config-atm-address</b>	Specifies that the configuration server ATM address is computed by the Cisco automatic method.
<b>lane config-atm-address</b>	Specifies the ATM address of the configuration server explicitly.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>lane fixed-config-atm-address</b>	Specifies that the fixed configuration server ATM address assigned by the ATM Forum will be used.

# lane config-atm-address

To specify a configuration server's ATM address explicitly, use the **lane config-atm-address** command in interface configuration mode. To remove an assigned ATM address, use the **no** form of this command.

**lane** [**config**] **config-atm-address** *atm-address-template*

**no lane** [**config**] **config-atm-address** *atm-address-template*

## Syntax Description

<b>config</b>	(Optional) When the <b>config</b> keyword is used, this command applies only to the LANE Configuration Server (LECS). This keyword indicates that the LECS should use the 20-byte address that you explicitly entered.
<i>atm-address-template</i>	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the end-system identifier (ESI) bytes, or the selector byte of the automatically assigned ATM address.

## Defaults

No specific ATM address or method is set.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.0	This command was introduced.

## Usage Guidelines

If the **config** keyword is not present, this command causes the LAN Emulation (LANE) server and LANE client on the subinterface to use the specified ATM address for the configuration server.

When the **config** keyword is present, this command adds an ATM address to the configuration server configured on the interface. A LECS can listen on multiple ATM addresses. Multiple commands that assign ATM addresses to the LECS can be issued on the same interface to assign different ATM addresses to the LECS.

### ATM Addresses

A LANE ATM address has the same syntax as an NSAP (but it is not a network-level address). It consists of the following:

- A 13-byte prefix that includes the following fields defined by the ATM Forum:
  - AFI (Authority and Format Identifier) field (1 byte)
  - DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes)
  - DFI field (Domain Specific Part Format Identifier) (1 byte)
  - Administrative Authority field (3 bytes)
  - Reserved field (2 bytes)

- Routing Domain field (2 bytes)
- Area field (2 bytes)
- A 6-byte ESI
- A 1-byte selector field

### Address Templates

LANE ATM address templates can use two types of wildcards: an asterisk (\*) to match any single character (nibble), and an ellipsis (...) to match any number of leading, middle, or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the ATM address prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

In our implementation of LANE, the prefix corresponds to the switch prefix, the ESI corresponds to a function of the ATM interface's MAC address, and the selector field corresponds to the specific subinterface of the interface.

For a discussion of the Cisco method of automatically assigning ATM addresses, refer to the "Configuring LAN Emulation" chapter in the *Cisco IOS Switching Services Configuration Guide*.

### Examples

The following example shows how to associate the LANE configuration server with the database named network1 and to explicitly specify the configuration server's ATM address:

```
Router(config)# lane database network1
Router(lane-config-dat)# name eng server-atm-address
39.020304050607080910111213.0800.AA00.1001.02
Router(lane-config-dat)# name mkt server-atm-address
39.020304050607080910111213.0800.AA00.4001.01

Router(config)# interface atm 1/0
Router(config-if)# lane config database network1
Router(config-if)# lane config config-atm-address
39.020304050607080910111213.0800.AA00.3000.00
```

The following example shows how to cause the LANE server and LANE client on the subinterface to use the explicitly specified ATM address to communicate with the configuration server:

```
Router(config)# interface atm 2/0.1
Router(config-if)# ip address 172.16.0.4 255.255.255.0
Router(config-if)# lane client ethernet
Router(config-if)# lane server-bus ethernet eng
Router(config-if)# lane config-atm-address 39.020304050607080910111213.0800.AA00.3000.00
```

### Related Commands

Command	Description
<b>lane auto-config-atm-address</b>	Specifies that the configuration server ATM address is computed by the Cisco automatic method.
<b>lane config database</b>	Associates a named configuration table (database) with the configuration server on the selected ATM interface.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>lane fixed-config-atm-address</b>	Specifies that the fixed configuration server ATM address assigned by the ATM Forum will be used.

# lane database

To create a named configuration database that can be associated with a configuration server, use the **lane database** command in global configuration mode. To delete the database, use the **no** form of this command.

**lane database** *database-name*

**no lane database** *database-name*

## Syntax Description

<i>database-name</i>	Database name (32 characters maximum).
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## Defaults

No name is provided.

## Command Modes

Global configuration

## Command History

Release	Modification
11.0	This command was introduced.

## Usage Guidelines

Use of the **lane database** command places you in database configuration mode, in which you can use the **client-atm-address name**, **default name**, **mac-address name**, **name restricted**, **name unrestricted**, **name new-name**, and **name server-atm-address** commands to create entries in the specified database. When you are finished creating entries, type **^Z** or **exit** to return to global configuration mode.

## Examples

The following example shows how to create the database named network1 and associates it with the configuration server on interface ATM 1/0:

```
Router(config)# lane database network1
Router(lane-config-dat)# name eng server-atm-address
39.020304050607080910111213.0800.AA00.1001.02
Router(lane-config-dat)# name mkt server-atm-address
39.020304050607080910111213.0800.AA00.4001.01
Router(lane-config-dat)# default-name eng

Router(config)# interface atm 1/0
Router(config-if)# lane config database network1
Router(config-if)# lane config auto-config-atm-address
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>client-atm-address name</b>	Adds a LANE client address entry to the configuration database of the configuration server.
	<b>default-name</b>	Provides an ELAN name in the database of the configuration server for those client MAC addresses and client ATM addresses that do not have explicit ELAN name bindings.
	<b>lane config database</b>	Associates a named configuration table (database) with the configuration server on the selected ATM interface.
	<b>mac-address</b>	Sets the MAC-layer address of the Cisco Token Ring.
	<b>name</b>	Assigns a name to the internal adapter.
	<b>name server-atm-address</b>	Specifies or replaces the ATM address of the LANE server for the ELAN in the configuration database of the configuration server.

# lane fixed-config-atm-address

To specify that the fixed configuration server ATM address assigned by the ATM Forum will be used, use the **lane fixed-config-atm-address** command in interface configuration mode. To specify that the fixed ATM address will not be used, use the **no** form of this command.

**lane [config] fixed-config-atm-address**

**no lane [config] fixed-config-atm-address**

## Syntax Description

<b>config</b>	(Optional) When the <b>config</b> keyword is used, this command applies only to the LANE Configuration Server (LECS). This keyword indicates that LECS should use the well-known, ATM Forum LEC address.
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## Defaults

No specific ATM address or method is set.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.0	This command was introduced.

## Usage Guidelines

When the **config** keyword is not present, this command causes the LAN emulation (LANE) server and LANE client on the subinterface to use that ATM address, rather than the ATM address provided by the ILMI, to locate the configuration server.

When the **config** keyword is present, and the LECS is already up and running, be aware of the following scenarios:

- If you configure the LECS with only the well-known address, the LECS will not participate in the SSRP, will act as a standalone master, and will listen only on the well-known LECS address. This scenario is ideal if you want a standalone LECS that does not participate in SSRP, and you would like to listen to only the well-known address.
- If only the well-known address is already assigned, and you assign at least one other address to the LECS (additional addresses are assigned using the **lane auto-config-atm-address** command or the **lane config-atm-address** command), the LECS will participate in the SSRP and act as the master or slave based on the normal SSRP rules. This scenario is ideal if you would like the LECS to participate in SSRP, and you would like to make the master LECS listen on the well-known address.
- If the LECS is participating in SSRP, has more than one address (one of which is the well-known address), and all the addresses but the well-known address are removed, the LECS will declare itself the master and stop participating in SSRP completely.
- If the LECS is operating as an SSRP slave, and it has the well-known address configured, it will not listen on the well-known address unless it becomes the master.
- If you want the LECS to assume the well-known address only when it becomes the master, configure the LECS with the well-known address and at least one other address.

When you use this command with the **config** keyword, and the LECS is a master, the master will listen on the fixed address. If you use this command when an LECS is not a master, the LECS will listen on this address when it becomes a master. If you do not use this command, the LECS will not listen on the fixed address.

Multiple commands that assign ATM addresses to the LECS can be issued on the same interface in order to assign different ATM addresses to the LECS. Commands that assign ATM addresses to the LECS include **lane auto-config-atm-address**, **lane config-atm-address**, and **lane fixed-config-atm-address**. The **lane config database** command and at least one command that assigns an ATM address to the LECS are required to activate a LECS.

## Examples

The following example shows how to associate the LECS with the database named network1 and how to specify that the configuration server's ATM address is the fixed address:

```
Router(config)# lane database network1
Router(lane-config-dat)# name eng server-atm-address
39.020304050607080910111213.0800.AA00.1001.02
Router(lane-config-dat)# name mkt server-atm-address
39.020304050607080910111213.0800.AA00.4001.01

Router(config)# interface atm 1/0
Router(config-if)# lane config database network1
Router(config-if)# lane config fixed-config-atm-address
```

The following example shows how to cause the LANE server and LANE client on the subinterface to use the fixed ATM address to communicate with the configuration server:

```
Router(config)# interface atm 2/0.1
Router(config-if)# ip address 172.16.0.4 255.255.255.0
Router(config-if)# lane client ethernet
Router(config-if)# lane server-bus ethernet eng
Router(config-if)# lane fixed-config-atm-address
```

## Related Commands

Command	Description
<b>lane auto-config-atm-address</b>	Specifies that the configuration server ATM address is computed by the Cisco automatic method.
<b>lane config-atm-address</b>	Specifies the ATM address of the configuration server explicitly.
<b>lane config database</b>	Associates a named configuration table (database) with the configuration server on the selected ATM interface.

# lane fssrp

To enable the special LANE features such that LANE components (such as the LANE Configuration Server, the LANE client, the LANE server, and the BUS) become aware of the Fast Simple Server Redundancy Protocol (FSSRP), use the **lane fssrp** command in interface configuration mode. To disable the LANE FSSRP configuration, use the **no** form of this command.

**lane fssrp**

**no lane fssrp**

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

**Defaults** FSSRP is not enabled by default.

**Command Modes** Interface configuration

Command History	Release	Modification
	12.0(4c)W5(10a)	This command was introduced.

**Usage Guidelines** You must execute this command on all ATM interfaces to enable FSSRP capability for all LANE components on that interface and hence all its subinterfaces.

**Examples** The following example shows how to enable FSSRP on an ATM interface:

```
Router(config-if)# lane fssrp
```

Related Commands	Command	Description
	<b>lane client</b>	Activates a LANE client on the specified subinterface.
	<b>lane server</b>	Activates a LANE server on the specified subinterface.
	<b>show lane client</b>	Generates additional FSSRP information about a LANE client.
	<b>show lane config</b>	Displays global LANE information for the configuration server configured on an interface.

# lane global-lecs-address

To specify a list of LAN Emulation Configuration Server (LECS) addresses to use when the addresses cannot be obtained from the Interim Local Management Interface (ILMI), use the **lane global-lecs-address** command in interface configuration mode. To remove a LECS address from the list, use the **no** form of this command.

**lane global-lecs-address** *address*

**no lane global-lecs-address** *address*

## Syntax Description

<i>address</i>	Address of the LECS. You cannot use the well-known LECS address.
----------------	--

## Defaults

No addresses are configured. The router obtains LECS addresses from the ILMI.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.2	This command was introduced.

## Usage Guidelines

Use this command when your ATM switches do not support the ILMI list of LECS addresses and you want to configure Simple Server Redundancy. This command will simulate the list of LECS addresses, as if they had been obtained from the ILMI. Use this command with a different address for each LECS. The order they are used determines their priority. You should enter the addresses in the same order as you would on the ATM switch.



### Note

You must configure the same list of addresses on each interface that contains a LAN emulation (LANE) entity.

If your switches do support ILMI, this command forces the router to use the addresses specified and will not use the ILMI to obtain the LECS addresses.

Because the well-known LECS address is always used as a last resort LECS address, you cannot use the address in this command.

# lane le-arp

To add a static entry to the LAN Emulation Address Resolution Protocol (LE ARP) table of the LANE client configured on the specified subinterface, use the **lane le-arp** command in interface configuration mode. To remove a static entry from the LE ARP table of the LANE client on the specified subinterface, use the **no** form of this command.

```
lane le-arp {mac-address | route-desc segment segment-number bridge bridge-number}
           atm-address
```

```
no lane le-arp {mac-address | route-desc segment segment-number bridge bridge-number}
           atm-address
```

Syntax Description		
<i>mac-address</i>		MAC address to bind to the specified ATM address.
<b>route-desc segment</b> <i>segment-number</i>		LANE segment number. The segment number ranges from 1 to 4095.
<b>bridge</b> <i>bridge-number</i>		Bridge number that is contained in the route descriptor. The bridge number ranges from 1 to 15.
<i>atm-address</i>		ATM address.

**Defaults** No static address bindings are provided.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.

**Usage Guidelines** This command adds or removes a static entry binding a MAC address or segment number and bridge number to an ATM address. It does not add or remove dynamic entries. Removing the static entry for a specified ATM address from a LE ARP table does not release data direct VCCs established to that ATM address. However, clearing a static entry clears any fast-cache entries that were created from the MAC address-to-ATM address binding.

Static LE ARP entries are neither aged nor removed automatically.

To remove dynamic entries from the LE ARP table of the LANE client on the specified subinterface, use the **clear lane le-arp** command.

**Examples** The following example shows how to add a static entry to the LE ARP table:

```
Router(config-if)# lane le-arp 0800.aa00.0101 47.000014155551212f.00.00.0800.200c.1001.01
```

The following example shows how to add a static entry to the LE ARP table binding segment number 1, bridge number 1 to the ATM address:

```
Router(config-if)# lane le-arp route-desc segment 1 bridge 1  
39.020304050607080910111213.00000CA05B41.01
```

---

**Related Commands**

---

<b>Command</b>	<b>Description</b>
<b>clear lane le-arp</b>	Forces a LANE server to drop a client and allow the LANE configuration server to assign the client to another ELAN.

---

# lane server-atm-address

To specify an ATM address—and thus override the automatic ATM address assignment—for the LAN emulation (LANE) server on the specified subinterface, use the **lane server-atm-address** command in interface configuration mode. To remove the ATM address previously specified for the LANE server on the specified subinterface and thus revert to the automatic address assignment, use the **no** form of this command.

**lane server-atm-address** *atm-address-template*

**no lane server-atm-address** [*atm-address-template*]

<b>Syntax Description</b>	<i>atm-address-template</i>	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the end-system identifier (ESI) bytes, or the selector byte of the automatically assigned ATM address.
---------------------------	-----------------------------	---

<b>Defaults</b>	For the LANE server, the default is automatic address assignment; the LANE client finds the LANE server by consulting the configuration server.
-----------------	---

<b>Command Modes</b>	Interface configuration
----------------------	-------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.0	This command was introduced.

<b>Usage Guidelines</b>	<p>This command also instructs the LANE client configured on this subinterface to reach the LANE server by using the specified ATM address instead of the ATM address provided by the configuration server.</p> <p>When used on a selected subinterface, but with a different ATM address than was used previously, this command replaces the ATM address of the LANE server.</p>
-------------------------	---

## ATM Addresses

A LANE ATM address has the same syntax as an network service access point (NSAP) (but it is not a network-level address). It consists of the following:

- A 13-byte prefix that includes the following fields defined by the ATM Forum:
  - AFI (Authority and Format Identifier) field (1 byte)
  - DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes)
  - DFI field (Domain Specific Part Format Identifier) (1 byte)
  - Administrative Authority field (3 bytes)
  - Reserved field (2 bytes)
  - Routing Domain field (2 bytes)

- Area field (2 bytes)
- A 6-byte ESI
- A 1-byte selector field

### Address Templates

LANE ATM address templates can use two types of wildcards: an asterisk (\*) to match any single character (nibble), and an ellipsis (...) to match any number of leading, middle, or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the prefix, but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field, but uses wildcards for the prefix and selector.

In the Cisco implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the selector field corresponds to the specific subinterface of the interface.

For a discussion of the Cisco method of automatically assigning ATM addresses, refer to the “Configuring LAN Emulation” chapter of the *Cisco IOS Switching Services Configuration Guide*.

### Examples

The following example shows how to use an ESI template to specify the part of the ATM address corresponding to the interface; the remaining parts of the ATM address come from automatic assignment:

```
Router(config-if)# lane server-atm-address ...0800.200C.1001.**
```

The following example shows how to use a prefix template to specify the part of the ATM address corresponding to the switch; the remaining part of the ATM address come from automatic assignment:

```
Router(config-if)# lane server-atm-address 45.000014155551212f.00.00...
```

### Related Commands

Command	Description
<b>lane server-bus</b>	Enables a LANE server and a BUS on the specified subinterface with the ELAN ID.

# lane server-bus

To enable a LAN emulation (LANE) server and a broadcast and unknown server (BUS) on the specified subinterface with the emulated LAN (ELAN) ID, use the **lane server-bus** command in interface configuration mode. To disable a LANE server and BUS on the specified subinterface, use the **no** form of this command.

```
lane server-bus {ethernet} elan-name [elan-id id]
```

```
no lane server-bus {ethernet} elan-name [elan-id id]
```

Syntax Description		
<b>ethernet</b>		Identifies the ELAN attached to this subinterface as an Ethernet ELAN.
<i>elan-name</i>		Name of the ELAN. The maximum length of the name is 32 characters.
<b>elan-id</b>		(Optional) Identifies the ELAN.
<i>id</i>		(Optional) Specifies the ELAN ID of the LAN emulation client (LEC).

**Defaults** No LAN type or ELAN name is provided.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.
	12.0	This command was modified to support the <b>elan-id</b> keyword.
	12.3(2)T	The <b>tokenring</b> keyword was removed from this command.

**Usage Guidelines** The LANE server and the BUS are located on the same router.

If a **lane server-bus** command has already been used on the subinterface for a different ELAN, the server initiates termination procedures with all clients and comes up as the server for the new ELAN.

To participate in MPOA, a LEC must have an ELAN ID. This command enables the LEC to get the ELAN ID from the LES when the LEC bypasses the LECS phase.



**Caution**

If an ELAN ID is supplied, make sure that it corresponds to the same ELAN ID value specified in the LECS for the same ELAN.

The LEC can also obtain the ELAN ID from the LECS by using the **name elan-id** command.

---

**Examples**

The following example shows how to enable a LANE server and BUS for an Ethernet ELAN named MYELAN:

```
Router(config-if)# lane server-bus ethernet myelan
```

---

**Related Commands**

Command	Description
<b>lane server-atm-address</b>	Specifies an ATM address and thus overrides the automatic ATM address assignment for the LANE server on a specified subinterface.
<b>name elan-id</b>	Configures the ELAN ID of an ELAN in the LECS database to participate in MPOA.

# loopback (ATM)

To configure the ATM interface into loopback mode, use the **loopback** interface configuration command. To remove the loopback, use the **no** form of this command.

**loopback** [cell | line | payload]

**no loopback** [cell | line | payload]

Syntax Description	
<b>cell</b>	(Optional) Places the interface into external loopback at cell level.
<b>line</b>	(Optional) Places the interface into external loopback at the line.
<b>payload</b>	(Optional) Places the interface into external loopback at the payload level.

**Defaults** line

**Command Modes** Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.
	11.1	The following keywords were removed: <ul style="list-style-type: none"> <li>• <b>diagnostic</b></li> <li>• <b>test</b></li> </ul>

**Usage Guidelines** This command is useful for testing because it loops all packets from the ATM interface back to the interface as well as directing the packets to the network.

Use the **loopback line** command to check that the PA-A3 port adapter is working by looping the receive data back to the transmit data.

**Examples** The following example loops all packets back to the ATM interface:

```
interface atm 4/0
 loopback
```

Related Commands	Command	Description
	<b>ces dsx1 loopback</b>	Enables a loopback for the CBR interface.

# loopback

To loop packets back to the interface for testing, use the **loopback** interface configuration command with or without an optional keyword. To remove the loopback, use the **no** form of this command.

## Cisco 2600 and 3600 Series

```
loopback [line | local | payload | remote]
```

```
no loopback [line | local | payload | remote]
```

## Cisco 7100, 7200, and 7500 Series

For T1 lines:

```
loopback {diagnostic | local {payload | line} | remote {iboc | esf {payload | line}}}
```

For E1 lines:

```
loopback {diagnostic | local {payload | line}}
```

```
no loopback
```

### Syntax Description

<b>line</b>	Places the interface into external loopback mode at the line.
<b>local</b>	Places the interface into local loopback mode.
<b>payload</b>	Places the interface into external loopback mode at the payload level.
<b>remote</b>	Keeps the local end of the connection in remote loopback mode.
<b>diagnostic</b>	Loops the outgoing transmit signal back to the receive signal.
<b>iboc</b>	Sends an in-band code to the far-end receiver to cause it to go into line loopback.
<b>esf</b>	Specifies the FDL loopbacks. FDL should be configured on the link.

### Defaults

The **line** keyword is the default.  
Loopback is disabled by default.

### Command Modes

Interface configuration

### Command History

Release	Modification
10.0	This command was introduced.
11.3 MA	This command was modified for the Cisco MC3810.
12.0(5)XK	Support for the Cisco 2600 and 3600 series routers was added.
12.0(5)T	Support for the Cisco 2600 and 3600 series routers was integrated into Cisco IOS Release 12.0(5)T.
12.0(5)XE	Support for the Cisco 720 0 and 7500 series routers was added.

Release	Modification
12.0(7)XE1	Support for the Cisco 7100 series routers was added.
12.1(5)T	Support for Cisco 7100, 7200, and 7500 series routers was integrated into Cisco IOS Release 12.1(5)T.

### Usage Guidelines

You can use a loopback test on lines to detect and distinguish equipment malfunctions caused either by line and channel service unit/digital service unit (CSU/DSU) or by the interface. If correct data transmission is not possible when an interface is in loopback mode, the interface is the source of the problem.

The local loopback does not generate any packets automatically. Instead, the **ping** command is used.

### Examples

The following example sets up local loopback diagnostics:

```
interface atm 1/0
 loopback local
```

## mac-address (ATM)

To configure the MAC address on ATM permanent virtual circuits (PVCs) in a broadband access (BBA) group for using a different MAC address for PPP over Ethernet over ATM (PPPoEoA), use the **mac-address** command in BBA group configuration mode. To remove a MAC address, use the **no** form of this command.

```
mac-address { autoselect | mac-address }
```

```
no mac-address { autoselect | mac-address }
```

### Syntax Description

<b>autoselect</b>	Automatically selects the MAC address based on the ATM interface.
<i>mac-address</i>	MAC address (MAC value) to be used on ATM interfaces, entered as a series of three hexadecimal numbers presented in dotted notation. Example: 0100.CCCC.CCCD.

### Defaults

No MAC address change. Any change in the usage of MAC addresses will not happen unless this command is explicitly configured.

### Command Modes

BBA group configuration mode

### Command History

Release	Modification
12.3(11)T	This command was introduced.

### Usage Guidelines

Except for using a different MAC address, this command does not change the way PPPoE works.

Use the **mac-address** command to configure the MAC address on ATM PVCs in a BBA group so there will be a different MAC address for PPPoEoA.

If a PPP over Ethernet (PPPoE) profile is not specified by using the **group** option, PPPoE sessions will be established using values from the global PPPoE profile. PPPoE profiles must be configured using the **bba-group pppoe** command.

### Examples

The following example configures the MAC address on an ATM PVC in a BBA group using values from the global PPPoE profile by specifying the MAC address:

```
Router(config)# bba-group pppoe global
Router(config-bba-group)# virtual-template 1
Router(config-bba-group)# mac-address 1.1.3
```

The following example configures the MAC address automatically on an ATM PVC in a BBA group using group profile by using the **autoselect** option:

```
Router(config)# bba-group pppoe vpn1
Router(config-bba-group)# virtual-template 1
Router(config-bba-group)# mac-address autoselect
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>bba-group pppoe</b>	Creates a PPPoE profile on the BBA group.
<b>protocol pppoe</b>	Establishes PPPoE sessions on PVCs.

## map-class atm

This command is no longer supported.

# mid

To set the range of message identifier (MID) values on a permanent virtual circuit (PVC), use the **mid** interface-ATM-VC configuration command. To remove MID value range settings, use the **no** form of this command.

**mid** *midlow midhigh*

**no mid** *midlow midhigh*

Syntax Description		
	<i>midlow</i>	Starting MID number for this PVC. This can be set between 0 and 1023.
	<i>midhigh</i>	Ending MID number for this PVC. This can be set between 0 and 1023.

**Defaults** 0

**Command Modes** Interface-ATM-VC configuration

Command History	Release	Modification
	11.3(2)T	This command was introduced.

**Usage Guidelines** This command is only available when SMDS encapsulation is configured on a PVC. Use this command to assign different ranges of message identifiers to different PVCs.

**Examples** In the following example, the **atm mid-per-vc** command limits the maximum number of message identifiers to 32 for each VC on the ATM interface. Using the **mid** command, the selected range of numbers that are available for the message identifiers on PVC 1/40 is 0 to 31. For PVC 2/50, the range is 32 to 63.

```
interface atm 2/0
 atm mid-per-vc 32
 pvc 1/40 smds
 mid 0 31
 pvc 2/50 smds
 mid 32 63
```

# mpoa client config name

To define a Multiprotocol over ATM (MPOA) client (MPC) with a specified name, use the **mpoa client config name** command in global configuration mode. To delete the MPC, use the **no** form of this command.

**mpoa client config name** *mpc-name*

**no mpoa client config name** *mpc-name*

## Syntax Description

<i>mpc-name</i>	Specifies the name of an MPC.
-----------------	-------------------------------

## Defaults

No MPC is defined.

## Command Modes

Global configuration

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Usage Guidelines

When you configure or create an MPC, you automatically enter the MPC configuration mode. From here, you can enter subcommands to define or change MPC variables specific only to this MPC. Note that the MPC is not functional until it is attached to a hardware interface.

## Examples

The following example shows how to create or modify the MPC named ip\_mpc:

```
Router(config)# mpoa client config name ip_mpc
```

## Related Commands

Command	Description
<b>atm-address</b>	Overrides the control ATM address of an MPC or MPS.
<b>shortcut-frame-count</b>	Specifies the maximum number of times a packet can be routed to the default router within shortcut-frame time before an MPOA resolution request is sent.
<b>shortcut-frame-time</b>	Sets the shortcut-setup frame time (in seconds) for the MPC.

# mpoa client name

To attach a Multiprotocol over ATM (MPOA) client (MPC) to a major ATM interface, use the **mpoa client name** command in interface configuration mode. To break the attachment, use the **no** form of this command.

**mpoa client name** *mpc-name*

**no mpoa client name** *mpc-name*

## Syntax Description

<i>mpc-name</i>	Specifies the name of an MPC.
-----------------	-------------------------------

## Defaults

No MPC is attached to an ATM interface.

## Command Modes

Interface configuration

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Usage Guidelines

The **mpoa client name** command provides an interface to the MPC through which the MPC can set up and receive calls.

When you enter this command on a major interface that is up and operational, the named MPC becomes operational. Once the MPC is fully operational, it can register its ATM address.

## Examples

The following example shows how to attach the MPC named ip\_mpc to an interface:

```
Router(config)# interface atm 1/0
Router(config-if)# mpoa client name ip_mpc
```

## mpoa server config name

To define a Multiprotocol over ATM (MPOA) server (MPS) with the specified name, use the **mpoa server config name** command in global configuration mode. To delete an MPS, use the **no** form of this command.

**mpoa server config name** *mps-name*

**no mpoa server config name** *mps-name*

### Syntax Description

<i>mps-name</i>	Name of the MPOA server.
-----------------	--------------------------

### Defaults

No MPS is defined.

### Command Modes

Global configuration

### Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

### Usage Guidelines

This command defines an MPS with the specified name. The MPS does not actually start functioning until it is attached to a specific hardware interface. Once that attachment is complete, the MPS starts functioning. When you configure or create an MPS, you automatically enter the MPS configuration mode.

You can define the MPS variables specific to an MPS only after that MPS has been defined with a specified name. After this command is entered, further commands can be used to change MPS variables that are specific only to this MPS.

### Examples

The following example shows how to define the MPS named MYMPS:

```
Router(config)# mpoa server config name MYMPS
```

# mpoa server name trigger ip-address

To originate a Multiprotocol over ATM (MPOA) trigger for the specified IP address to the specified MPOA client from the specified Multiprotocol over ATM server (MPS), use the **mpoa server name trigger ip-address** command in interface configuration mode.

```
mpoa server name mps-name trigger ip-address ip-address [mpc-address mpc-address]
```

Syntax Description		
<i>mps-name</i>		Specifies the name of the MPOA server.
<i>ip-address</i>		Specifies the IP address.
<b>mpc-address</b> <i>mpc-address</i>		(Optional) Specifies the MPOA client (MPC) address to which the trigger should be sent. If the address is not specified, a trigger will be sent to all clients.

Command Modes	
	Interface configuration

Command History	Release	Modification
	11.3(3a)WA4(5)	This command was introduced.

Usage Guidelines	
	This command sends an MPOA trigger for the specified IP address to the specified MPOA client from the specified MPOA server. If an MPOA client is not specified, it is triggered to all MPOA clients.

Examples	
	The following example shows how to send an MPOA trigger for the specified IP address 128.9.0.7 to all known MPOA clients from the MPOA server named MYMPS:

```
Router(config)# interface atm 1/0
Router(config-if)# mpoa server name MYMPS trigger ip-address 128.9.0.7
```

## mpoa server name

To attach a Multiprotocol over ATM (MPOA) server (MPS) to a major ATM interface, use the **mpoa server name** command in interface configuration mode. To break the attachment, use the **no** form of this command.

**mpoa server name** *mps-name*

**no mpoa server name** *mps-name*

### Syntax Description

<i>mps-name</i>	Name of the MPOA server.
-----------------	--------------------------

### Defaults

No MPS is attached to an ATM interface.

### Command Modes

Interface configuration

### Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

### Usage Guidelines

This command attaches an MPS to a specific (major) interface. At this point, the MPS can obtain its autogenerated ATM address and an interface through which it can communicate to the neighboring MPOA devices. Only when an MPS is both defined globally and attached to an interface is it considered to be operational. Although multiple different servers may share the same hardware interface, an MPS can be attached to only a single interface at any one time. The specified MPS must already be defined when this command is entered.

### Examples

The following example attaches the MPS named MYMPS to an ATM interface:

```
Router(config)# interface atm 1/0
Router(config-if)# mpoa server name MYMPS
```

## name elan-id

To configure the emulated LAN (ELAN) ID of an ELAN in the LAN Emulation Configuration Server (LECS) database to participate in Multiprotocol over ATM (MPOA), use the **name elan-id** command in LANE database configuration mode. To disable the ELAN ID of an ELAN in the LECS database to participate in MPOA, use the **no** form of this command.

**name** *name* **elan-id** *id*

**no name** *name* **elan-id** *id*

### Syntax Description

<i>name</i>	Specifies the name of the ELAN.
<i>id</i>	Specifies the identification number of the ELAN.

### Defaults

No ELAN ID is configured.

### Command Modes

LANE database configuration

### Command History

Release	Modification
12.0	This command was introduced.

### Usage Guidelines

To participate in MPOA, a LAN Emulation Client (LEC) must have an ELAN ID. The LEC obtains the ELAN ID from the LECS. In case the LEC bypasses the LECS phase, the LEC can get the ELAN ID from the LES when the **name elan-id** command is used.

### Examples

The following example shows how to set the ELAN ID to 10 for an ELAN named MYELAN:

```
Router(lane-config-dat)# name MYELAN elan-id 10
```

### Related Commands

Command	Description
<b>lane server-bus</b>	Enables a LANE server and a broadcast and unknown server on the specified subinterface with the ELAN ID.

## name local-seg-id

To specify or replace the ring number of the emulated LAN (ELAN) in the configuration server's configuration database, use the **name local-seg-id** command in database configuration mode. To remove the ring number from the database, use the **no** form of this command.

**name** *elan-name* **local-seg-id** *segment-number*

**no name** *elan-name* **local-seg-id** *segment-number*

### Syntax Description

<i>elan-name</i>	Name of the ELAN. The maximum length of the name is 32 characters.
<i>segment-number</i>	Segment number to be assigned to the ELAN. The number ranges from 1 to 4095.

### Defaults

No ELAN name or segment number is provided.

### Command Modes

LANE database configuration

### Command History

Release	Modification
11.3	This command was introduced.

### Usage Guidelines

This command is ordinarily used for Token Ring LANE.  
 The same LANE ring number cannot be assigned to more than one ELAN.  
 The **no** form of this command deletes the relationships.

### Examples

The following example shows how to specify a ring number of 1024 for the ELAN named red:

```
Router(lane-config-dat)# name red local-seg-id 1024
```

### Related Commands

Command	Description
<b>default-name</b>	Provides an ELAN name in the database of the configuration server for those client MAC addresses and client ATM addresses that do not have explicit ELAN name bindings.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>mac-address</b>	Sets the MAC-layer address of the Cisco Token Ring.

# name preempt

To set the emulated LAN (ELAN) preempt, use the **name preempt** command in LANE database configuration mode. To disable preemption, use the **no** form of this command.

**name** *elan-name* **preempt**

**no name** *elan-name* **preempt**

## Syntax Description

<i>elan-name</i>	Specifies the name of the ELAN.
------------------	---------------------------------

## Defaults

Preemption is disabled by default.

## Command Modes

LANE database configuration

## Command History

Release	Modification
11.3	This command was introduced.

## Usage Guidelines

Prior to Cisco IOS Release 11.3, when the primary LAN Emulation Server (LES) failed, the Cisco Simple Server Redundancy Protocol (SSRP) switched over to a secondary LES. But when a LES that is ranked higher in the list came back up, the SSRP protocol switched the active LES to the new LES, which had a higher priority. This forced the network to flap multiple times. We have prevented the network flapping by staying with the currently active master LES regardless of the priority. If a higher priority LES comes back online, SSRP will not switch to that LES.

LES preemption is off by default. The first LES that comes on becomes the master. Users can revert to the old behavior (of switching to the higher-priority LES all the time) by specifying the **name elan-name preempt** command in the LECS database.

## Examples

The following example shows how to set the ELAN preempt for the ELAN named MYELAN:

```
Router(lane-config-dat)# name MYELAN preempt
```

## name server-atm-address

To specify or replace the ATM address of the LAN Emulation (LANE) server for the emulated LAN (ELAN) in the configuration server's configuration database, use the **name server-atm-address** command in database configuration mode. To remove it from the database, use the **no** form of this command.

**name** *elan-name* **server-atm-address** *atm-address* [**restricted** | **un-restricted**] [**index number**]

**no name** *elan-name* **server-atm-address** *atm-address* [**restricted** | **un-restricted**] [**index number**]

### Syntax Description

<i>elan-name</i>	Name of the ELAN. Maximum length is 32 characters.
<i>atm-address</i>	LANE server's ATM address.
<b>restricted</b>   <b>un-restricted</b>	(Optional) Membership in the named ELAN is restricted to the LANE clients explicitly defined to the ELAN in the configuration server's database.
<b>index number</b>	(Optional) Priority number. When specifying multiple LANE servers for fault tolerance, you can specify a priority for each server. 0 is the highest priority.

### Defaults

No emulated LAN name or server ATM address is provided.

### Command Modes

Database configuration

### Command History

Release	Modification
11.0	This command was introduced.
11.2	The following keywords were added: <ul style="list-style-type: none"> <li>• <b>un-restricted</b></li> <li>• <b>index</b></li> </ul>

### Usage Guidelines

ELAN names must be unique within one named LANE configuration database.

Specifying an existing ELAN name with a new LANE server ATM address adds the LANE server ATM address for that ELAN for redundant server operation or simple LANE service replication. This command can be used multiple times.

The **no** form of this command deletes the relationships.

### Examples

The following example shows how to configure the example3 database with two restricted and one unrestricted ELANs. The clients that can be assigned to the eng and mkt ELANs are specified using the **client-atm-address** commands. All other clients are assigned to the man ELAN.

```
Router(config)# lane database example3
```

```

Router(lane-config-dat)# name eng server-atm-address
39.000001415555121101020304.0800.200c.1001.02 restricted
Router(lane-config-dat)# name man server-atm-address
39.000001415555121101020304.0800.200c.1001.01
Router(lane-config-dat)# name mkt server-atm-address
39.000001415555121101020304.0800.200c.4001.01 restricted
Router(lane-config-dat)# client-atm-address 39.000001415555121101020304.0800.200c.1000.02
name eng
Router(lane-config-dat)# client-atm-address 39.0000001415555121101020304.0800.200c.2000.02
name eng
Router(lane-config-dat)# client-atm-address 39.000001415555121101020304.0800.200c.3000.02
name mkt
Router(lane-config-dat)# client-atm-address 39.000001415555121101020304.0800.200c.4000.01
name mkt
Router(lane-config-dat)# default-name man
Router(lane-config-dat)# exit

```

### Related Commands

Command	Description
<b>client-atm-address name</b>	Adds a LANE client address entry to the configuration database of the configuration server.
<b>default-name</b>	Provides an ELAN name in the database of the configuration server for those client MAC addresses and client ATM addresses that do not have explicit ELAN name bindings.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>mac-address</b>	Sets the MAC-layer address of the Cisco Token Ring.

# network-clock-select (ATM)

To establish the sources and priorities of the requisite clocking signals for an ATM-CES port adapter, use the **network-clock-select** command in global configuration mode. To remove the clock source, use the **no** form of this command.

**network-clock-select** *priority* { **cbr** | **atm** } *slot/port*

**no network-clock-select** *priority* { **cbr** | **atm** } *slot/port*

## Syntax Description

<i>priority</i>	Priority of the clock source. Values are 1 (high priority) to 4 (low priority).
<b>cbr</b>	Specifies a CBR interface to supply the clock source.
<b>atm</b>	Specifies an ATM interface to supply the clock source.
<i>slot</i>	Backplane slot number.
<i>port</i>	Interface port number.

## Defaults

No default behavior or values

## Command Modes

Global configuration

## Command History

Release	Modification
11.1	This command was introduced.

## Usage Guidelines

To support synchronous or synchronous residual time stamp (SRTS) clocking modes on the CBR interface, you must specify a primary reference source to synchronize the flow of CBR data from its source to its destination.

You can specify up to four clock priorities. The highest priority active interface in the router supplies primary reference source to all other interfaces that require network clock synchronization services. The fifth priority is the local oscillator on the ATM-CES port adapter.

Use the **show network-locks** command to display currently configured clock priorities on the router.

## Examples

The following example defines two clock priorities on the router:

```
network-clock-select 1 cbr 2/0
network-clock-select 2 atm 2/0
```

## Related Commands

Command	Description
<b>ces aal1 clock</b>	Configures the AAL1 timing recovery clock for the CBR interface.

<b>Command</b>	<b>Description</b>
<b>ces dsx1 clock source</b>	Configures a transmit clock source for the CBR interface.
<b>show network-clocks</b>	Displays which ports are designated as network clock sources.

# network-id

To specify the network ID of a Multiprotocol over ATM (MPOA) server (MPS), use the **network-id** command in MPS configuration mode. To revert to the default value (default value is 1), use the **no** form of this command.

**network-id** *id*

**no network-id**

## Syntax Description

<i>id</i>	Specifies the network ID of the MPOA server.
-----------	--

## Defaults

The default value for the network ID is 1.

## Command Modes

MPS configuration

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Usage Guidelines

Specifies the network ID of this MPS. This value is used in a very similar way the NHRP network ID is used. It is for partitioning nonbroadcast multiaccess (NBMA) clouds artificially by administration.

## Examples

The following example shows how to set the network ID to 5:

```
Router (mpoa-server-config) # network-id 5
```

## oam ais-rdi

To configure an ATM permanent virtual circuit (PVC) to be brought down after a specified number of Operation, Administration, and Maintenance (OAM) alarm indication signal/remote defect indication (AIS/RDI) cells have been received on the PVC or brought up if no OAM AIS/RDI cells have been received in a specified interval, use the **oam ais-rdi** command in ATM VC configuration or VC class configuration mode. To return OAM AIS/RDI behavior to the default, use the **no** form of this command.

**oam ais-rdi** [*down-count* [*up-count*]]

**no oam ais-rdi** [*down-count* [*up-count*]]

Syntax Description		
	<i>down-count</i>	(Optional) Number of consecutive OAM AIS/RDI cells received before the PVC is brought down. The range is from 1 to 60. The default is 1.
	<i>up-count</i>	(Optional) Number of seconds after which a PVC will be brought up if no OAM AIS/RDI cells are received. The range is from 3 to 60. The default is 3.

Defaults	
	Down count: 1 Up count: 3

Command Modes	
	ATM VC configuration VC class configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced.

Usage Guidelines	
	<p>The default values for the OAM AIS/RDI down count and up count are used in the following situations:</p> <ul style="list-style-type: none"> <li>• If the <b>oam ais-rdi</b> command has not been entered</li> <li>• If the <b>oam ais-rdi</b> command is entered without the <i>up-count</i> or <i>down-count</i> argument</li> <li>• If the <b>no oam ais-rdi</b> command is entered</li> </ul> <p>If the <b>oam ais-rdi</b> command is entered without the <i>up-count</i> or <i>down-count</i> argument, the command will not appear in the <b>show running-config</b> command output.</p>

---

**Examples**

In the following example, PVC 0/400 will be brought down after 25 consecutive OAM AIS/RDI cells have been received on the PVC. The PVC will be brought up when no OAM AIS/RDI cells have been received for 5 seconds.

```
interface ATM2/0/0
 ip address 172.2.222.20 255.255.255.0
 no ip route-cache cef
 no ip route-cache distributed
 no atm ilmi-keepalive
 pvc 0/400
  protocol ip 172.2.223.21
  oam-pvc manage 30
  oam ais-rdi 25 5
```

## oam retry cc

To set the frequency at which ATM Operation, Administration, and Maintenance (OAM) F5 continuity check (CC) activation and deactivation requests are sent to a device at the other end of a segment or permanent virtual circuit (PVC), use the **oam retry cc** command in ATM virtual circuit configuration mode. To remove the retry settings, use the **no** form of this command.

```
oam retry cc {end | segment} [activation-count [deactivation-count [retry-frequency]]]
```

```
no oam retry cc {end | segment} [activation-count [deactivation-count [retry-frequency]]]
```

Syntax Description	end	End-to-end continuity check.
	segment	Segment continuity check.
	<i>activation-count</i>	(Optional) Maximum number of times the activation request will be sent before the receipt of an acknowledgment. The range is from 3 to 600. The default is 3.
	<i>deactivation-count</i>	(Optional) Maximum number of times the deactivation request will be sent before the receipt of an acknowledgment. The range is from 3 to 600. The default is 3.
	<i>retry-frequency</i>	(Optional) Interval between retries, in seconds. The default is 30 seconds.

Defaults	Activation count: 3 Deactivation count: 3 Retry frequency: 30 seconds
----------	---

Command Modes	ATM virtual circuit configuration
---------------	-----------------------------------

Command History	Release	Modification
	12.2(13)T	This command was introduced.

**Examples** The following example shows how to configure ATM OAM F5 CC support over the segment and configure the router to function as the source. The frequency at which CC activation and deactivation requests will be sent over the segment is also configured.

```
interface atm 0
 ip address 10.0.0.3 255.255.255.0
 pvc 0/40
   oam-pvc manage cc segment direction source
   oam retry cc segment 10 10 30
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>oam-pvc manage cc deny</b>	Configures ATM OAM F5 CC management.
<b>oam-pvc manage cc deny</b>	Disables ATM OAM F5 CC support and configures the PVC to deny CC activation requests.

## oam retry

To configure parameters related to Operation, Administration, and Maintenance (OAM) management for an ATM permanent virtual circuit (PVC), switched virtual circuit (SVC), VC class, or VC bundle, or label-controlled ATM (LC-ATM) VC, use the **oam retry** command in the appropriate command mode. To remove OAM management parameters, use the **no** form of this command.

**oam retry** *up-count down-count retry-frequency*

**no oam retry**

### Syntax Description

<i>up-count</i>	Number of consecutive end-to-end F5 OAM loopback cell responses that must be received in order to change a connection state to up. This argument does not apply to SVCs.
<i>down-count</i>	Number of consecutive end-to-end F5 OAM loopback cell responses that are not received in order to change the state to down or tear down an SVC connection.
<i>retry-frequency</i>	The frequency (in seconds) at which end-to-end F5 OAM loopback cells are transmitted when a change in the up/down state is being verified. For example, if a PVC is up and a loopback cell response is not received after the <i>frequency</i> (in seconds) argument is specified using the <b>oam-pvc</b> command, loopback cells are sent at the <i>retry-frequency</i> to verify whether the PVC is down.

### Defaults

#### ATM PVCs and SVCs

up-count: 3  
down-count: 5  
retry-frequency: 1 second

#### LC-ATM VCs

up-count: 2  
down-count: 2  
retry-frequency: 2 seconds

### Command Modes

Interface-ATM-VC configuration (for an ATM PVC or SVC)  
VC-class configuration (for a VC class)  
Bundle configuration mode (for a VC bundle)  
PVC range configuration (for an ATM PVC range)  
PVC-in-range configuration (for an individual PVC within a PVC range)  
Control-VC configuration (for an LC-ATM VC)

### Command History

Release	Modification
11.3 T	This command was introduced.
12.0(3)T	This command was modified to allow configuration parameters related to OAM management for ATM VC bundles.

Release	Modification
12.1(5)T	This command was implemented in PVC range and PVC-in-range configuration modes.
12.3(2)T	This command was implemented in control-VC configuration mode.

### Usage Guidelines

The following guidelines apply to PVCs, SVCs, and VC classes. They do not apply to LC-ATM VCs.

- For ATM PVCs, SVCs, or VC bundles, if the **oam retry** command is not explicitly configured, the VC inherits the following default configuration (listed in order of precedence):
  - Configuration of the **oam retry** command in a VC class assigned to the PVC or SVC itself.
  - Configuration of the **oam retry** command in a VC class assigned to the PVC's or SVC's ATM subinterface.
  - Configuration of the **oam retry** command in a VC class assigned to the PVC's or SVC's ATM main interface.
  - Global default: *up-count* = 3, *down-count* = 5, *retry-frequency* = 1 second. This set of defaults assumes that OAM management is enabled using the **oam-pvc** or **oam-svc** command. The *up-count* and *retry-frequency* arguments do not apply to SVCs.
- To use this command in bundle configuration mode, enter the bundle command to create the bundle or to specify an existing bundle before you enter this command.
- If you use the **oam retry** command to configure a VC bundle, you configure all VC members of that bundle. VCs in a VC bundle are further subject to the following inheritance rules (listed in order of precedence):
  - VC configuration in bundle-vc mode
  - Bundle configuration in bundle mode (with the effect of assigned VC-class configuration)
  - Subinterface configuration in subinterface mode

### Examples

The following example shows how to configure the OAM management parameters with an up count of 3, a down-count of 3, and the retry frequency set at 10 seconds:

```
Router(cfg-mpls-atm-cvc)# oam retry 3 3 10
```

### Related Commands

Command	Description
<b>broadcast</b>	Configures broadcast packet duplication and transmission for an ATM VC class, PVC, SVC, or VC bundle.
<b>class-int</b>	Assigns a VC class to an ATM main interface or subinterface.
<b>class-vc</b>	Assigns a VC class to an ATM PVC, SVC, or VC bundle member.
<b>encapsulation</b>	Sets the encapsulation method used by the interface.
<b>inarp</b>	Configures the Inverse ARP time period for an ATM PVC, VC class, or VC bundle.
<b>oam-bundle</b>	Enables end-to-end F5 OAM loopback cell generation and OAM management for a virtual circuit class that can be applied to a virtual circuit bundle.

<b>Command</b>	<b>Description</b>
<b>oam-pvc</b>	Enables end-to-end F5 OAM loopback cell generation and OAM management for an ATM PVC or virtual circuit class.
<b>oam-svc</b>	Enables end-to-end F5 OAM loopback cell generation and OAM management for an ATM SVC or virtual circuit class.
<b>protocol (ATM)</b>	Configures a static map for an ATM PVC, SVC, VC class, or VC bundle. Enables Inverse ARP or Inverse ARP broadcasts on an ATM PVC by either configuring Inverse ARP directly on the PVC, on the VC bundle, or in a VC class (applies to IP and IPX protocols only).
<b>ubr</b>	Configures UBR QoS and specifies the output peak cell rate for an ATM PVC, SVC, VC class, or VC bundle member.
<b>ubr+</b>	Configures UBR QoS and specifies the output peak cell rate and output minimum guaranteed cell rate for an ATM PVC, SVC, VC class, or VC bundle member.
<b>vbr-nrt</b>	Configures the VBR-NRT QoS and specifies output peak cell rate, output sustainable cell rate, and output maximum burst cell size for an ATM PVC, SVC, VC class, or VC bundle member.

# oam-pvc manage cc deny

To disable ATM Operation, Administration, and Maintenance (OAM) F5 continuity check (CC) support and configure a permanent virtual circuit (PVC) to deny CC activation requests, use the **oam-pvc manage cc deny** command in ATM virtual circuit configuration mode. To reenable OAM F5 CC support and allow CC activation requests, use the **no** form of this command.

**oam-pvc manage cc {end | segment} deny**

**no oam-pvc manage cc {end | segment} deny**

Syntax Description	end	End-to-end continuity checking.
	segment	Segment continuity checking.

**Defaults** If the peer device sends the activation message, F5 CC management will be enabled on the PVC.

**Command Modes** ATM virtual circuit configuration

Command History	Release	Modification
	12.2(13)T	This command was introduced.

**Usage Guidelines** Use the **oam-pvc manage cc deny** command to configure a permanent virtual circuit (PVC) to respond to activation requests from a peer device with “activation denied” messages. The **oam-pvc manage cc deny** command prevents ATM OAM F5 CC management from being activated on the PVC.

Use the **no oam-pvc manage cc** command to send a deactivation request to the peer device. The **no oam-pvc manage cc** command will disable ATM OAM F5 CC management on the PVC until the PVC receives an activation request. When the PVC receives an activation request, ATM OAM F5 CC management will be reenabled.

**Examples** The following example shows how to disable ATM OAM F5 CC support and configure the VC to deny CC activation requests:

```
interface atm 0
 ip address 10.0.0.3 255.255.255.0
 pvc 0/40
  oam-pvc manage cc segment deny
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>oam-pvc manage cc deny</b>	Configures ATM OAM F5 CC management.
<b>oam retry cc</b>	Sets the frequency at which ATM OAM F5 CC activation and deactivation requests are sent to the device at the other end of a segment or PVC.

## oam-pvc manage cc

To configure ATM Operation, Administration, and Maintenance (OAM) F5 continuity check (CC) management, use the **oam-pvc manage cc** command in ATM virtual circuit configuration mode. To disable OAM F5 continuity checking, use the **no** form of this command.

```
oam-pvc manage cc {end | segment} [direction {both | sink | source}] [keep-vc-up [end aisrdi failure | seg aisrdi failure]]
```

```
no oam-pvc manage cc {end | segment} [deactivate-down-vc] [direction {both | sink | source}] [keep-vc-up [end aisrdi failure | seg aisrdi failure]]
```

Syntax Description		
<b>end</b>	End-to-end continuity checking. Monitoring occurs on the entire VC between two ATM end stations.	
<b>segment</b>	Segment continuity checking. Monitoring occurs on a VC segment between a router and a first-hop ATM switch.	
<b>direction</b>	(Optional) Direction of CC cell transmission.	
<b>both</b>	(Optional) Specifies that CC cells transmit toward and away from the activator.	
<b>sink</b>	(Optional) Specifies that CC cells transmit toward the activator. This is the default direction.	
<b>source</b>	(Optional) Specifies that CC cells transmit away from the activator.	
<b>keep-vc-up</b>	(Optional) Specifies that VC will be kept in the UP state when CC cells detect connectivity failure.	
<b>end aisrdi failure</b>	(Optional) Specifies that if end alarm indication signals/remote defect indications (AIS/RDI) cells are received, the VC will not be brought down because of segment CC failure.	
<b>seg aisrdi failure</b>	(Optional) Specifies that if segment AIS/RDI cells are received, the VC will not be brought down because of end CC failure or loopback failure.	
<b>deactivate-down-vc</b>	(Optional) Specifies that an OAM F5 CC deactivation message will be sent when the VC is operationally down and in the CC active state. This keyword is available only when the <b>no</b> form of this command is used.	

**Defaults** The default direction is **sink**.

**Command Modes** ATM virtual circuit configuration

Command History	Release	Modification
	12.2(13)T	This command was introduced.

**Usage Guidelines** ATM OAM F5 continuity checking enables OAM to support the use of F5 segment and end-to-end CC cells to detect connectivity failures.

It is not necessary to enter a CC configuration on the router at the other end of a segment. The router on which CC management has been configured sends a CC activation request to the router at the other end of the segment, directing it to act as either a source or a sink.

Use the **oam-pvc manage cc deny** command to configure a permanent virtual circuit (PVC) to respond to activation requests from a peer device with “activation denied” messages. The **oam-pvc manage cc deny** command prevents ATM OAM F5 CC management from being activated on the PVC.

Use the **no oam-pvc manage cc** command to send a deactivation request to the peer device. The **no oam-pvc manage cc** command will disable ATM OAM F5 CC management on the PVC until the PVC receives an activation request. When the PVC receives an activation request, ATM OAM F5 CC management will be reenabled.

The **no oam-pvc manage cc {end | segment} deactivate-down-vc** command does not disable ATM OAM F5 CC support. This command causes OAM F5 CC deactivation messages to be sent over the VC when the VC goes down.

To enable the SNMP notifications that support ATM OAM F5 continuity checking, use the **snmp-server enable traps atm pvc extension** command.

## Examples

### ATM OAM F5 CC Support on a PVC Configuration Example

The following example shows how to configure ATM OAM F5 CC support over the segment and configure the router to function as the source. The frequency at which CC activation and deactivation requests will be sent over the segment is also configured.

```
interface atm 0
 ip address 10.0.0.3 255.255.255.0
 pvc 0/40
  oam-pvc manage cc segment direction source
  oam retry cc segment 10 10 30
```

### Deactivation of ATM OAM F5 CC upon VC Failure Example

The following example shows how to configure OAM to send a CC deactivation request across the segment when PVC 0/1 goes down:

```
interface atm 0
 ip address 10.0.0.3 255.255.255.0
 pvc 0/40
  no oam-pvc manage cc segment deactivate-down-vc
```

## Related Commands

Command	Description
<b>debug atm oam cc</b>	Displays ATM OAM F5 CC management activity.
<b>oam-pvc manage cc deny</b>	Disables ATM OAM F5 CC support and configures the PVC to deny CC activation requests.
<b>oam retry cc</b>	Sets the frequency at which ATM OAM F5 CC activation and deactivation requests are sent to the device at the other end of a segment or PVC.
<b>show atm pvc</b>	Displays all ATM PVCs and traffic information.

<b>Command</b>	<b>Description</b>
<b>vpn service</b>	Enables the sending of extended ATM PVC SNMP notifications and SNMP notifications for ATM OAM F5 CC, ATM OAM F5 AIS/RDI, and loopback failures.
<b>snmp-server enable traps atm pvc extension mibversion</b>	Specifies the MIB that supports extended ATM PVC SNMP notifications or the MIB that supports SNMP notifications for ATM OAM F5 CC management, ATM OAM F5 AIS/RDI management, and F5 loopback failure management.

## oam-pvc

To enable end-to-end F5 Operation, Administration, and Maintenance (OAM) loopback cell generation and OAM management for an ATM permanent virtual circuit (PVC), virtual circuit (VC) class, or label-controlled ATM (LC-ATM) VC, use the **oam-pvc** command in the appropriate command mode. To disable generation of OAM loopback cells and OAM management, use the **no** form of this command.

### ATM VC or VC Class

**oam-pvc [manage] [frequency]**

**no oam-pvc [manage]**

### LC-ATM VC

**oam-pvc manage [frequency]**

**no oam-pvc manage**

### Loopback Mode Detection

**oam-pvc manage [frequency] loop-detection**

**no oam-pvc manage loop-detection**

Syntax	Description
<b>manage</b>	(Optional for ATM VCs or VC classes; required for LC-ATM VCs) Enables OAM management. The default is disabled.
<i>frequency</i>	(Optional) Time delay between transmitting OAM loopback cells. For ATM VCs or VC classes and loopback mode detection, the range of values is from 0 to 600 seconds. The default is 10 seconds. For LC-ATM VCs, the range of values is from 0 to 255 seconds. The default is 5 seconds.
<b>loop-detection</b>	Enables automatic detection of whether the physically connected ATM switch is in loopback mode. The default is disabled.

**Command Default** Disabled.

**Command Modes** Interface-ATM-VC configuration (for an ATM PVC or Loopback Mode Detection)  
 VC-class configuration (for a VC class)  
 PVC-in-range configuration (for an individual PVC within a PVC range)  
 Control-VC configuration (for enabling OAM management on an LC-ATM VC)

Command History	Release	Modification
	11.3	This command was introduced.
	12.1(5)T	This command was implemented in PVC-in-range configuration mode.

Release	Modification
12.3(2)T	This command was implemented for LC-ATM VCs.
12.0(30)S	The <b>loop-detection</b> keyword was added.

### Usage Guidelines

If OAM management is enabled, further control of OAM management is configured using the **oam retry** command.

### ATM VCS or VC Classes

If the **oam-pvc** command is not explicitly configured on an ATM PVC, the PVC inherits the following default configuration (listed in order of precedence):

- Configuration of the **oam-pvc** command in a VC class assigned to the PVC itself.
- Configuration of the **oam-pvc** command in a VC class assigned to the PVC's ATM subinterface.
- Configuration of the **oam-pvc** command in a VC class assigned to the PVC's ATM main interface.
- Global default: End-to-end F5 OAM loopback cell generation and OAM management are disabled, but if OAM cells are received, they are looped back. The default value for the *frequency* argument is 10 seconds.

### Loopback Mode Detection

When a PVC traverses an ATM cloud and OAM is enabled, the router sends a loopback cell to the other end and waits for a response to determine whether the circuit is up. If an intervening router within the ATM cloud is in loopback mode, however, the router considers the circuit to be up, when in fact the other end is not reachable.

When enabled, the Loopback Mode Detection Through OAM feature detects when an intervening router is in loopback mode, in which case it sets the OAM state to NOT\_VERIFIED. This prevents traffic from being routed on the PVC for as long as any intervening router is detected as being in loopback mode.

### Examples

The following example shows how to enable end-to-end F5 OAM loopback cell transmission and OAM management on an ATM PVC with a transmission frequency of 3 seconds:

```
Router(cfg-mpls-atm-cvc) # oam-pvc manage 3
```

The following example shows how to enable end-to-end F5 OAM loopback cell transmission and OAM management on an LC-ATM interface with a transmission frequency of 2 seconds:

```
Router(config)# interface Switch1.10 mpls
Router(config-subif)# ip unnumbered Loopback0
Router(config-subif)# mpls atm control-vc 0 32
Router(cfg-mpls-atm-cvc) # oam-pvc manage 2
```

The following example shows how to create a PVC and enable loopback detection:

```
Router(config)# interface ATM1/0
Router(config-if)# pvc 4/100
Router(config-if-atm-vc) # oam-pvc manage loop-detection
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>ilmi manage</b>	Enables ILMI management on an ATM PVC.
<b>oam retry</b>	Configures parameters related to OAM management for an ATM PVC, SVC, VC class, or LC-ATM VC.
<b>show atm pvc</b>	Displays all ATM PVCs and traffic information.

## oam-range

To enable end-to-end F5 Operation, Administration, and Maintenance (OAM) loopback cell generation and OAM management for an ATM permanent virtual circuit (PVC) range, use the **oam-range** command in PVC range configuration mode. To disable generation of OAM loopback cells and OAM management, use the **no** form of this command.

**oam-range** [**manage**] [*frequency*]

**no oam-range** [**manage**] [*frequency*]

### Syntax Description

<b>manage</b>	(Optional) Enables OAM management.
<i>frequency</i>	(Optional) Time delay (0 to 600 seconds) between transmissions of OAM loopback cells.

### Defaults

10 seconds

### Command Modes

PVC range configuration

### Command History

Release	Modification
12.1(5)T	This command was introduced.

### Usage Guidelines

If OAM management is enabled, further control of OAM management is configured using the **oam retry** command.

If the **oam-range** command is not explicitly configured for an ATM PVC range, the range inherits the following default configuration (listed in order of precedence):

- Configuration of the **oam-range** command in a VC class assigned to the range.
- Configuration of the **oam-range** command in a VC class assigned to the ATM subinterface for the range.
- Configuration of the **oam-range** command in a VC class assigned to the ATM main interface for the range.
- Global default: End-to-end F5 OAM loopback cell generation and OAM management are disabled, but if OAM cells are received, they are looped back. The default value for the *frequency* argument is 10 seconds.

### Examples

The following example enables end-to-end F5 OAM loopback cell transmission and OAM management on an ATM PVC range called "range1" with a transmission frequency of 11 seconds:

```
interface atm 6/0.1
 range range1 pvc 7/101 7/103
  oam-range manage 11
  oam retry 8 9 10
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>ilmi manage</b>	Enables ILMI management on an ATM PVC.
<b>oam-pvc</b>	Enables end-to-end F5 OAM loopback cell generation and OAM management for an ATM PVC or VC class.
<b>oam retry</b>	Configures parameters related to OAM management for ATM PVC, SVC, or VC class.

## oam-svc

To enable end-to-end F5 Operation, Administration, and Maintenance (OAM) loopback cell generation and OAM management for an ATM switched virtual circuit (SVC) or virtual circuit (VC) class, use the **oam-svc** command in the appropriate command mode. To disable generation of OAM loopback cells and OAM management, use the **no** form of this command.

**oam-svc** [**manage**] [*frequency*]

**no oam-svc** [**manage**] [*frequency*]

### Syntax Description

**manage** (Optional) Enable OAM management.

*frequency* (Optional) Time delay (0 to 600 seconds) between transmitting OAM loopback cells.

### Defaults

10 seconds

### Command Modes

Interface-ATM-VC configuration (for an ATM SVC)  
VC-class configuration (for a VC class)

### Command History

Release	Modification
11.3	This command was introduced.

### Usage Guidelines

If OAM management is enabled, further control of OAM management is configured using the **oam retry** command.



#### Note

Generally, ATM signalling manages ATM SVCs. Configuring the **oam-svc** command on an SVC verifies the inband integrity of the SVC.

If the **oam-svc** command is not explicitly configured on an ATM SVC, the SVC inherits the following default configuration (listed in order of precedence):

- Configuration of the **oam-svc** command in a VC class assigned to the SVC itself.
- Configuration of the **oam-svc** command in a VC class assigned to the SVC's ATM subinterface.
- Configuration of the **oam-svc** command in a VC class assigned to the SVC's ATM main interface.
- Global default: End-to-end F5 OAM loopback cell generation and OAM management are disabled, but if OAM cells are received, they are looped back. The default value for *frequency* is 10 seconds.

### Examples

The following example enables end-to-end F5 OAM loopback cell transmission and OAM management on an ATM SVC with a transmission frequency of 3 seconds:

```
oam-svc manage 3
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>oam retry</b>	Configures parameters related to OAM management for an ATM PVC, SVC, or VC class.

---

# partial-fill

To configure the number of AAL1 user octets per cell for the ATM circuit emulation service (CES) on the OC-3/STM-1 Circuit Emulation Service network module, use the **partial-fill** command in interface-CES-VC mode. To delete the CES partial-fill value, use the **no** form of this command.

**partial-fill** *octet*

**no partial-fill** *octet*

<b>Syntax Description</b>	<i>octet</i>	Number of user octets per cell for the CES. Possible values of octet range from 1 to 47.
---------------------------	--------------	--

<b>Defaults</b>	No partial-fill
-----------------	-----------------

<b>Command Modes</b>	Interface-CES-VC configuration
----------------------	--------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	12.1(2)T	This command was introduced.

**Usage Guidelines** The **partial-fill** command applies to CES switched virtual circuits (SVCs) and permanent virtual circuits (PVCs) configured on Cisco 2600 series and Cisco 3600 series routers that have OC-3/STM-1 ATM CES network modules.

**Examples** The following example sets the CES partial cell fill to 50 octets per cell for SVC “ces1”:

```
interface atm 1/0
  svc ces1 nsap 47.00.00.....01.01.00 ces
  partial fill 40
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>svc</b>	Creates an ATM SVC and specifies the destination NSAP address on a main interface or subinterface.

# ping atm interface atm

To perform an ATM Operation Administration Maintenance (OAM) ping on a specific permanent virtual circuit (PVC), use the **ping atm interface atm** command in privileged EXEC mode.

```
ping atm interface atm interface-number vpi-value vci-value [end-loopback [repeat [timeout]]] |
seg-loopback [repeat [timeout]]]
```

## Syntax Description

<b>atm interface_number</b>	ATM interface name.
<i>vpi-value</i>	Virtual path identifier. Range: 0 to 255.
<i>vci-value</i>	Virtual channel identifier. Range: 0 to 65535.
<b>end-loopback</b>	(Optional) Send ATM end loopback cells. This is the default.
<b>seg-loopback</b>	(Optional) Send ATM segment loopback cells.
<i>repeat</i>	(Optional) Number of ping packets that are sent to the destination address. Range: 1 to 1000. Default: 5.
<i>timeout</i>	(Optional) Timeout interval, in seconds. Range: 1 to 30. Default: 2.

## Defaults

End loopback  
Repeats: 5  
Timeout interval: 2 seconds

## Command Modes

Privileged EXEC

## Command History

Release	Modification
11.4	This command was introduced on the LightStream 1010.
12.0(21)S	Support for this command was integrated into Cisco IOS Release 12.0(21)S.
12.2(13)T	Support for this command was integrated into Cisco IOS Release 12.2(13)T.
12.2(25)S	Support for this command was integrated into Cisco IOS Release 12.2(25)S.

## Usage Guidelines

The **ping atm interface atm** command sends an OAM packet and indicates when a response is received. It can be used either in normal mode or in interactive mode. The **ping atm interface atm** command provides two ATM OAM ping options:

- End loopback—Verifies end-to-end PVC integrity.
- Segment loopback—Verifies PVC integrity to the neighboring ATM device.

## Examples

In the following example, an ATM OAM ping with a 15-second timeout verifies end-to-end connectivity for PVC 0/500 in the normal mode:

```
Router# ping atm interface atm1/1.1 0 500 end-loopback 30 15
```

Type escape sequence to abort.

```
Sending 30, 53-byte end-to-end OAM echoes, timeout is 15 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (30/30), round-trip min/avg/max = 1/1/4 ms
```

In the following example, an ATM OAM ping verifies connectivity to the first-hop ATM switch on PVC 1/100 in the normal mode:

```
Router# ping atm interface atm1/1.1 0 500 seg-loopback 30 10

Type escape sequence to abort.
Sending 30, 53-byte segment OAM echoes, timeout is 10 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (30/30), round-trip min/avg/max = 1/1/4 ms
```

Table 2 describes the output of the ping atm interface atm command.

**Table 2** ping atm Field Descriptions

Field	Description
Success rate is 100 percent	Percentage of packets successfully echoed back to the router. Anything less than 80 percent is usually considered problematic.
round-trip min/avg/max = 1/1/4 ms	Round-trip travel time intervals for the OAM loopback cells, including minimum/average/maximum (in milliseconds).
!!!!!!	Each exclamation point (!) indicates receipt of a reply. A period (.) indicates that an OAM response cell was not received within the timeout interval.

The following example verifies connectivity to the neighboring ATM device for the ATM PVC with the virtual path identifier (VPI) / virtual channel identifier (VCI) value 0/500 in the interactive mode:

```
Router# ping

Protocol [ip]:atm

ATM Interface:atm1/1.1

VPI value [0]:0

VCI value [1]:500

Loopback - End(0), Segment(1) [0]:1

Repeat Count [5]:
Timeout [2]:

Type escape sequence to abort.
Sending 5, 53-byte segment OAM echoes, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
```

Table 3 describes the ping fields shown in the display.

**Table 3** ping Field Descriptions for ATM

Field	Description
Protocol [ip]:	Prompt for a supported protocol.
ATM Interface:	Prompt for the ATM interface.
VPI value [0]:	Prompt for the virtual path identifier. Default: 0.
VCI value [1]:	Prompt for the virtual channel identifier. Default: 1.
Loopback - End(0), Segment(1) [0]:	Prompt to specify end loopback, which verifies end-to-end PVC integrity, or segment loopback, which verifies PVC integrity to the neighboring ATM device. Default: end loopback.
Repeat Count [5]:	Number of ping packets that will be sent to the destination. Default: 5.
Timeout [2]:	Timeout interval, in seconds. Default: 2.

**Related Commands**

Command	Description
<b>debug atm oam</b>	Displays information about ATM OAM events.
<b>show atm pvc</b>	Displays the OAM status information.
<b>show atm oam auto-detect</b>	Displays ATM Operations and Maintenance (OAM) autodetect statistics.

## protocol (ATM)

To configure a static map for an ATM permanent virtual circuit (PVC), switched virtual circuit (SVC), or VC class or to enable Inverse Address Resolution Protocol (ARP) or Inverse ARP broadcasts on an ATM PVC, use the **protocol** command in the appropriate mode. To remove a static map or disable Inverse ARP, use the **no** form of this command.

```
protocol protocol {protocol-address | inarp} [[no] broadcast]
```

```
no protocol protocol {protocol-address | inarp} [[no] broadcast]
```

### Syntax Description

<i>protocol</i>	Choose one of the following values: <b>aarp</b> —AppleTalk ARP <b>appletalk</b> —AppleTalk <b>arp</b> —IP ARP <b>bridge</b> —bridging <b>bstun</b> —block serial tunnel <b>cdp</b> —Cisco Discovery Protocol <b>clns</b> —ISO Connectionless Network Service (CLNS) <b>clns_es</b> —ISO CLNS end system <b>clns_is</b> —ISO CLNS intermediate system <b>cmns</b> —ISO CMNS <b>compressedtcp</b> —Compressed TCP <b>decnet</b> —DECnet <b>decnet_node</b> —DECnet node <b>decnet_prime_router</b> —DECnet prime router <b>decnet_router-l1</b> —DECnet router L1 <b>decnet_router-l2</b> —DECnet router L2 <b>dls</b> —data link switching <b>ip</b> —IP <b>ipx</b> —Novell IPX <b>llc2</b> —llc2 <b>pad</b> —packet assembler/disassembler (PAD) links <b>ppoe</b> —PPP over Ethernet <b>qlc</b> —Qualified Logical Link Control protocol <b>rsrb</b> —remote source-route bridging <b>snapshot</b> —snapshot routing support <b>stun</b> —serial tunnel
<i>protocol-address</i>	Destination address that is being mapped to a PVC.
<b>inarp</b>	(Valid only for IP and IPX protocols on PVCs) Enables Inverse ARP on an ATM PVC. If you specify a <i>protocol-address</i> instead of <b>inarp</b> , Inverse ARP is automatically disabled for that protocol.
<b>[no] broadcast</b>	(Optional) <b>broadcast</b> indicates that this map entry is used when the corresponding protocol sends broadcast packets to the interface. Pseudobroadcasting is supported. The <b>broadcast</b> keyword of the <b>protocol</b> command takes precedence if you previously configured the <b>broadcast</b> command on the ATM PVC or SVC.

**Defaults**

Inverse ARP is enabled for IP and IPX if the protocol is running on the interface and no static map is configured.

**Command Modes**

Interface-ATM-VC configuration (for an ATM PVC or SVC)  
 VC-class configuration (for a VC class)  
 PVC range configuration (for an ATM PVC range)  
 PVC-in-range configuration (for an individual PVC within a PVC range)

**Command History**

Release	Modification
11.3	This command was introduced.
12.1(5)T	The <b>ip</b> and <b>ipx</b> options were made available in PVC range and PVC-in-range configuration modes.
12.2(13)T	The <b>apollo</b> , <b>vines</b> , and <b>xns</b> arguments were removed because Apollo Domain, Banyan VINES, and Xerox Network Systems are no longer supported in the Cisco IOS software.

**Usage Guidelines****Command Application**

Use this command to perform either of the following tasks:

- Configure a static map for an ATM PVC, SVC, or VC class.
- Enable Inverse ARP or Inverse ARP broadcasts on an ATM PVC or PVC range by configuring Inverse ARP directly on the PVC, in the PVC range, or in a VC class (applies to IP and IPX protocols only).

PVC range and PVC-in-range configuration modes support only the protocols that do not require static map configuration. Those protocol options are **ip** and **ipx**.

**Default Configurations**

If the **protocol** command is not explicitly configured on an ATM PVC or SVC, the VC inherits the following default configuration (listed in order of precedence):

- Configuration of the **protocol ip inarp** or **protocol ipx inarp** command in a VC class assigned to the PVC or SVC itself.
- Configuration of the **protocol ip inarp** or **protocol ipx inarp** command in a VC class assigned to the ATM subinterface of the PVC or SVC.
- Configuration of the **protocol ip inarp** or **protocol ipx inarp** command in a VC class assigned to the ATM main interface of the PVC or SVC.
- Global default: Inverse ARP is enabled for IP and IPX if the protocol is running on the interface and no static map is configured.

**Examples**

The following example creates a static map on a VC, indicates that 10.68.34.237 is connected to this VC, and sends ATM pseudobroadcasts:

```
protocol ip 10.68.34.237 broadcast
```

The following example enables Inverse ARP for IPX and does not send ATM pseudobroadcasts:

```
protocol ipx inarp no broadcast
```

The following example removes a static map from a VC and restores the default behavior for Inverse ARP (Refer to the “Default” section described above):

```
no protocol ip 10.68.34.237
```

## pvc

To create or assign a name to an ATM permanent virtual circuit (PVC), to specify the encapsulation type on an ATM PVC, and to enter ATM virtual circuit configuration mode, use the **pvc** command in interface configuration mode or subinterface configuration mode. To remove an ATM PVC from an interface, use the **no** form of this command.

```
pvc [name] vpi/vci [ces | ilmi | qsaal | smds | l2transport]
```

```
no pvc [name] vpi/vci [ces | ilmi | qsaal | smds | l2transport]
```

Syntax Description	
<i>name</i>	(Optional) The name of the PVC or map. The name can be up to 15 characters long.
<i>vpi</i>	<p>ATM network virtual path identifier (VPI) for this PVC. The absence of the “/” and a <i>vpi</i> value causes the <i>vpi</i> value to default to 0.</p> <p>The range of valid values is 0 to 255 except for the following routers:</p> <ul style="list-style-type: none"> <li>• Cisco 4500 and 4700 routers: 0 to 1 less than the quotient of 8192 divided by the value set by the <b>atm vc-per-vp</b> command.</li> <li>• Cisco 2600 and 3600 series routers using Inverse Multiplexing for ATM (IMA): 0 to 15, 64 to 79, 128 to 143, and 192 to 207.</li> <li>• The arguments <i>vpi</i> and <i>vci</i> cannot both be set to 0; if one is 0, the other cannot be 0.</li> </ul>
<i>vci</i>	<p>ATM network virtual channel identifier (VCI) for this PVC. This value ranges from 0 to 1 less than the maximum value set for this interface by the <b>atm vc-per-vp</b> command. Typically, lower values from 0 to 31 are reserved for specific traffic (for example, F4 OAM, SVC signaling, ILMI, and so on) and should not be used.</p> <p>The VCI is a 16-bit field in the header of the ATM cell. The VCI value is unique only on a single link, not throughout the ATM network, because it has local significance only.</p> <p>The arguments <i>vpi</i> and <i>vci</i> cannot both be set to 0; if one is 0, the other cannot be 0.</p>
<b>ces</b>	(Optional) Circuit Emulation Service encapsulation. This keyword is available on the OC-3/STM-1 ATM Circuit Emulation Service network module and on AIM-ATM and AIM-ATM-VOICE-30 network modules only.
<b>ilmi</b>	(Optional) Sets up communication with the Interim Local Management Interface (ILMI); the associated <i>vpi</i> and <i>vci</i> values ordinarily are 0 and 16, respectively.
<b>qsaal</b>	(Optional) A signaling-type PVC used for setting up or tearing down SVCs; the associated <i>vpi</i> and <i>vci</i> values ordinarily are 0 and 5, respectively.
<b>smds</b>	(Optional) Encapsulation for SMDS networks. If you are configuring an ATM PVC on the ATM Interface Processor (AIP), you must configure AAL3/4SMDS using the <b>atm aal aal3/4</b> command before specifying <b>smds</b> encapsulation. If you are configuring an ATM network processor module (NPM), the <b>atm aal aal3/4</b> command is not required. SMDS encapsulation is not supported on the ATM port adapter.
<b>l2transport</b>	(Optional) Specifies that the PVC is switched and not terminated.

**Defaults**

No PVC is defined. When a PVC is defined, the global default of the **encapsulation** command applies (**aal5snap**).

**Command Modes**

Interface configuration  
Subinterface configuration

**Command History**

Release	Modification
11.3 T	This command was introduced.
12.1(2)T	The ranges for the VPI were increased for Cisco 2600 and Cisco 3600 series routers using Inverse Multiplexing for ATM (IMA).  The <b>ces</b> keyword was added for configuring CES encapsulation when using the OC-3/STM-1 ATM Circuit Emulation Service network module on Cisco 2600 and Cisco 3600 series routers.
12.1(5)XM	This command was extended to the merged Simple Gateway Control Protocol (SGCP)/Media Gateway Control Protocol (MGCP) software.
12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.
12.0(23)S	The <b>l2transport</b> keyword was added.
12.2(14)S	This command was integrated into Cisco IOS Release 12.2(14)S.
12.2(15)T	This command was integrated into Cisco IOS Release 12.2(15)T.
12.3(8)T	The <b>ces</b> keyword was added to AIM-ATM and AIM-ATM-VOICE-30 network modules.

**Usage Guidelines****Creating and Configuring PVCs**

The **pvc** command replaces the **atm pvc** command. Use the **pvc** command to configure a single ATM VC only, not a VC that is a bundle member. We recommend that you use the **pvc** command in conjunction with the **encapsulation** and **random-detect attach** commands instead of the **atm pvc** command.

The **pvc** command creates a PVC and attaches it to the VPI and VCI specified. Both the *vpi* and *vci* arguments cannot be simultaneously specified as 0; if one is 0, the other cannot be 0.

When configuring an SVC, use the **pvc** command to configure the PVC that handles SVC call setup and termination. In this case, specify the **qsaal** keyword. See the second example that follows.

**ATM PVC Names**

Once you specify a name for a PVC, you can reenter ATM virtual circuit configuration mode by simply entering the **pvc name** command. You can remove a PVC and any associated parameters by entering **no pvc name** or **no pvc vpi/vci**.

**Note**

After configuring the parameters for an ATM PVC, you must exit the ATM virtual circuit configuration mode in order to create the PVC and enable the settings.

**Encapsulation Types on ATM PVCs**

Specify CES, ILMI, QSAAL, or SMDS as the encapsulation type on an ATM PVC. (To configure other encapsulations types, see the **encapsulation** command.)

Configuring CES encapsulation on a PVC is equivalent to creating a constant bit rate (CBR) class of service.

### Rate Queues

The Cisco IOS software dynamically creates rate queues as necessary to satisfy the requests of the **pvc** commands.

### Default Configurations

If **ilmi**, **qsaal**, or **smds** encapsulation is not explicitly configured on the ATM PVC, the PVC inherits the following default configuration (listed in order of precedence):

- Configuration of the **encapsulation** command in a VC class assigned to the PVC itself.
- Configuration of the **encapsulation** command in a VC class assigned to the ATM subinterface of the PVC.
- Configuration of the **encapsulation** command in a VC class assigned to the ATM main interface of the PVC.
- Global default: The global default value of the **encapsulation** command applies (**aal5snap**).

### Examples

The following example creates a PVC with VPI 0 and VCI 16, and communication is set up with the ILMI:

```
pvc cisco 0/16 ilmi
exit
```

The following example creates a PVC used for ATM signaling for an SVC. It specifies VPI 0 and VCI 5:

```
pvc cisco 0/5 qsaal
exit
```

The following example configures the PVC called “cisco” to use class-based weighted fair queueing (CBWFQ). It attaches a policy map called “policy1” to the PVC. The classes that make up “policy1” determine the service policy for the PVC:

```
pvc cisco 0/5
 service-policy output policy1
 vbr-nrt 2000 2000
 encaps aal5snap
```

### Related Commands

Command	Description
<b>atm vc-per-vp</b>	Sets the maximum number of VCIs to support per VPI.
<b>pvc-bundle</b>	Adds a PVC to a bundle as a member of the bundle.

# retry (SVC)

To configure a router to periodically attempt to bring up an active switched virtual circuit (SVC) connection after the initial call setup failed, use the **retry** command in interface-CES-VC configuration mode. To disable the retry mechanism, use the **no** form of this command.

**retry** *timeout-value* [*retry-limit*] [*first-retry-interval*]

**no** **retry**

## Syntax Description

<i>timeout-value</i>	Number of seconds between attempts to bring up the connection. The range is from 1 to 86400 seconds.
<i>retry-limit</i>	(Optional) Number of attempts the router will make to bring up the connection. The range is from 0 to 65535. The default value of 0 indicates no limit.
<i>first-retry-interval</i>	(Optional) Number of seconds the router will wait after the first call attempt failed before trying the call again. The default is 10 seconds.

## Defaults

There is no default *timeout-value*.  
*retry-limit*: 0  
*first-retry-interval*: 10 seconds

## Command Modes

Interface-CES-VC configuration

## Command History

Release	Modification
12.1(2)T	This command was introduced.

## Usage Guidelines

This command is used on Cisco 2600 series and 3600 series routers that have OC-3/STM-1 ATM CES network modules.

The **retry** command applies only to active SVCs.

## Examples

In the following example, the router is configured to make up to 20 attempts to bring up a connection on SVC “ces1”. The interval between attempts is set at 10 seconds.

```
interface atm 1/0
  svc ces1 nsap 47.0091.81.000000.0040.0B0A.2501.ABC1.3333.3333.05 ces
  retry 10 20
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<code>ces</code>	Configures CES on a router port and enters CES configuration mode.
	<code>svc</code>	Creates an ATM SVC and specifies the destination NSAP address on a main interface or subinterface.

