

# atm txbuff

To set the maximum number of transmit buffers for simultaneous packet fragmentation, use the **atm txbuff** interface configuration command. The **no** form of this command restores the default value.

**atm txbuff** *number*

**no atm txbuff**

<b>Syntax Description</b>	<i>number</i>	Maximum number of packet fragmentations that the AIP can perform simultaneously, between 0 and 512.				
<b>Defaults</b>	256					
<b>Command Modes</b>	Interface configuration					
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>10.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	10.0	This command was introduced.	
Release	Modification					
10.0	This command was introduced.					
<b>Usage Guidelines</b>	This command is supported on the AIP for Cisco 7500 series routers. This command is not supported on the ATM port adapter for Cisco 7200 and 7500 series routers, nor is it supported on Cisco 4500 and Cisco 4700 routers.					
<b>Examples</b>	The following example configures the AIP to perform up to 300 packet fragmentations simultaneously: <pre>atm txbuff 300</pre>					

# atm uni-version

To specify the User-Network Interface (UNI) version (3.0 or 3.1) the router should use when ILMI link autodetermination is unsuccessful or ILMI is disabled, use the **atm uni-version** interface configuration command. To restore the default value to 3.0, use the **no** form of this command.

**atm uni-version** *version-number*

**no atm uni-version** *version-number*

## Syntax Description

*version-number* UNI version selected on an interface. Valid values are 3.0 and 3.1.

## Defaults

Version 3.0

## Command Modes

Interface configuration

## Command History

Release	Modification
11.2	This command was introduced.

## Usage Guidelines

Normally, when the ILMI link autodetermination is enabled on the interface and is successful, the router accepts the UNI version returned by ILMI. If the ILMI link autodetermination is unsuccessful or ILMI is disabled, the UNI version defaults to 3.0. You can override the default UNI version by using this command to enable UNI 3.1 signaling support. The **no** form of the command sets the UNI version to one returned by ILMI if ILMI is enabled and the link autodetermination process is successful. Otherwise, the UNI version reverts to 3.0.

## Examples

The following example specifies UNI version 3.1 signaling port on the ATM interface 2/0:

```
interface atm 2/0
 atm uni-version 3.1
```

# atm vc-per-vp

To set the maximum number of VCIs to support per VPI, use the **atm vc-per-vp** interface configuration command. The **no** form of this command restores the default value.

**atm vc-per-vp** *number*

**no atm vc-per-vp**

<b>Syntax Description</b>	<p><i>number</i> Maximum number of VCIs to support per VPI. On the AIP for Cisco 7500 series routers, valid values are: 16, 32, 64, 128, 256, 512, or 1024.</p> <p>On the ATM port adapter for Cisco 7200 series and Cisco 7500 series routers, valid values are: 16, 32, 64, 128, 256, 512, 1024, or 2048.</p> <p>On the NPM for Cisco 4500 and Cisco 4700 routers, valid values are: 32, 64, 128, 256, 512, 1024, 2048, 4096, or 8192.</p>				
<b>Defaults</b>	1024				
<b>Command Modes</b>	Interface configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>10.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	10.0	This command was introduced.
Release	Modification				
10.0	This command was introduced.				
<b>Usage Guidelines</b>	<p>This command controls the memory allocation in the AIP, ATM port adapter, or NPM to deal with the VCI table.</p> <p>An invalid VCI causes a warning message to be displayed.</p>				
<b>Examples</b>	<p>The following example sets the maximum number of VCIs per VPI to 512:</p> <pre>atm vc-per-vp 512</pre>				
<b>Related Commands</b>	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>pvc</b></td> <td>Configures the PVC interface.</td> </tr> </tbody> </table>	Command	Description	<b>pvc</b>	Configures the PVC interface.
Command	Description				
<b>pvc</b>	Configures the PVC interface.				

# atm vp-filter

To set the AIP filter register, use the **atm vp-filter** interface configuration command. The **no** form of this command restores the default value.

**atm vp-filter** *hexvalue*

**no atm vp-filter**

<b>Syntax Description</b>	<i>hexvalue</i> Value in hexadecimal format.				
<b>Defaults</b>	0x7B				
<b>Command Modes</b>	Interface configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>10.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	10.0	This command was introduced.
Release	Modification				
10.0	This command was introduced.				

**Usage Guidelines**

This command is supported on Cisco 7500 series routers, but not on Cisco 4500 and Cisco 4700 routers. This command is not supported on ATM port adapters.

This command allows you to specify a VPI or range of VPIs to be used for AAL3/4 processing. All other VPIs map to AAL5 processing. If only AAL5 processing is required, you can either let the virtual path filter default or set it to an arbitrary VPI so that AAL5 processing is performed on all VPIs.

This command configures the hexadecimal value used in the virtual path filter register in the reassembly operation. The virtual path filter comprises 16 bits. The virtual path filter register uses the most significant bits (bits 15 through 8, the left half of the filter) as mask bits, and uses bits 7 through 0 (the right half of the filter) as compare bits.

When a cell is received, the right half of the filter is exclusively NORed with the binary value of the incoming VPI. The result is then ORed with the left half of the filter (the mask). If the result is all 1s, then reassembly is done using the VCI/MID table (AAL3/4 processing). Otherwise, reassembly is done using the VPI-VCI pair table (AAL5 processing).

**Examples**

In the following example, all incoming cells are reassembled using AAL3/4 processing:

```
atm vp-filter ff00
```

In the following example, all incoming cells with the virtual path equal to 0 are reassembled using AAL3/4 processing; all other cells are reassembled using AAL5 processing:

```
atm vp-filter 0
```

In the following example, all incoming cells with the most significant bit of the virtual path set are reassembled using AAL3/4 processing; all other cells are reassembled using AAL5 processing:

```
atm vp-filter 7f80
```

# broadcast

To configure broadcast packet duplication and transmission for an ATM PVC, SVC, or VC class, use the **broadcast** command in the appropriate command mode. Use the **no** form of this command to disable transmission of broadcast packets for your ATM PVC, SVC, or VC class. Use the **default** form of this command to restore the default behavior according to the description in the “Usage Guidelines” section below.

**broadcast**

**no broadcast**

**default broadcast**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Disabled. For classical IP SVCs, broadcast is enabled.

## Command Modes

Interface-ATM-VC configuration (for ATM PVCs and SVCs). VC-class configuration (for a VC class)

## Command History

Release	Modification
11.3	This command was introduced.

## Usage Guidelines

If broadcasting and multipoint signaling is enabled on an SVC, a multipoint SVC will be created to handle the SVC.



### Note

If you use the **protocol** command to configure broadcasting for an ATM PVC, SVC, or VC class, this configuration takes precedence over any previous configuration using the **broadcast** command.

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

- Configuration of the **broadcast** command in a VC class assigned to the PVC or SVC itself.
- Configuration of the **broadcast** command in a VC class assigned to the PVC's or SVC's ATM subinterface.
- Configuration of the **broadcast** command in a VC class assigned to the PVC's or SVC's ATM main interface.
- Global default: Disabled. For classical IP SVCs, broadcast is enabled.

---

**Examples**

The following command enables the transmission of broadcast packets on an ATM PVC named router5:

```
pvc router 5 1/32  
  broadcast
```

---

**Related Commands**

Command	Description
<b>protocol</b>	Configures the selected protocol type.

# ces aal1 clock

To configure the AAL1 timing recovery clock for the CBR interface, use the **ces aal1 clock** interface configuration command. To return the clock to the default, use the **no** form of this command.

**ces aal1 clock** { **adaptive** | **srts** | **synchronous** }

**no ces aal1 clock**

Syntax Description		
<b>adaptive</b>	Adjusts output clock on a received AAL1 on first-in, first-out basis. Use in unstructured mode.	
<b>srts</b>	Sets the clocking mode to synchronous residual time stamp.	
<b>synchronous</b>	Configures the timing recovery to synchronous for structured mode.	

**Defaults** **synchronous**

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines** The clock mode must be **synchronous** for structured mode. In unstructured mode, use **adaptive** when a network-derived clock is not available.

Use **srts** when a network-derived clock is available but devices attached to the CES port use a different clock reference. The **srts** keyword samples the incoming clock, subtracts from the network clock, and sends the remainder in an AAL1 header. The clock is reconstructed during output by adding the residual to the network reference.

Use **synchronous** for all other modes.

**Examples** The following command sets the AAL1 timing recovery clock to adaptive mode:

```
interface cbr 4/0
ces aal1 clock adaptive
```

Related Commands	Command	Description
	<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
	<b>ces dsx1 clock source</b>	Configures a transmit clock source for the CBR interface.
	<b>network-clock-select (ATM)</b>	Establishes the sources and priorities of the requisite clocking signals for an ATM-CES port adapter.

# ces aal1 service

To configure the type of circuit emulation service used on the CBR interface, use the **ces aal1 service** interface configuration command. To return the type of service to unstructured, use the **no** form of the command.

```
ces aal1 service {structured | unstructured}
```

```
no ces aal1 service
```

Syntax Description	structured	Sets the type of service to structured (cross-connect).
	unstructured	Sets the type of service to unstructured (clear-channel).

Defaults	<b>unstructured</b>
----------	---------------------

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

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines**

The **structured** keyword means that each time slot is an independent entity grouped into circuits, where each circuit has an independent PVC.

The **unstructured** keyword reduces the incoming serial data on the receiving end of the ATM network. The keyword also sets the service to single circuit, single PVC, where all time slots are carried.

**Examples**

The following example changes the mode for the **ces aal1 service** command to structured.

```
interface cbr 4/0
  ces aal1 service structured
```

Related Commands	Command	Description
	<b>ces aal1 clock</b>	Configures the AAL1 timing recovery clock for the CBR interface.
	<b>ces circuit</b>	Configures the connection attributes for the CBR interface.
	<b>ces dsx1 clock source</b>	Configures a transmit clock source for the CBR interface.
	<b>ces dsx1 framing</b>	Selects the frame type for the data line on the CBR interface.
	<b>ces dsx1 lbo</b>	Configures cable length for the CBR interface.
	<b>ces dsx1 linecode</b>	Selects the linecode type for the CBR interface.
	<b>ces dsx1 loopback</b>	Enables a loopback for the CBR interface.

Command	Description
<b>ces dsx1 signalmode robbedbit</b>	Enables the signal mode as robbed bit on a CBR interface.
<b>ces pvc</b>	Configures the destination port for the circuit on the CBR interface.
<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
<b>show ces interface cbr</b>	Displays detailed CBR port information.
<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces circuit

To configure the connection attributes for the CBR interface, use the **ces circuit** interface configuration command. To return the connection attributes to the default or to enable the circuit, use the **no** form of this command.

**ces circuit** *circuit-number* [**cas**] [**cdv range**] [**circuit-name name**] [**on-hook-detection hex-number**] [**partial-fill range**] [**shutdown**] [**timeslots range**]

**no ces circuit** *circuit-number* [**cas**] [**cdv range**] [**circuit-name name**] [**on-hook-detection hex-number**] [**partial-fill range**] [**shutdown**] [**timeslots range**]

Syntax Description		
<i>circuit-number</i>		Selects the circuit identification. For unstructured service, use 0. For T1 structured service, the range is 1 through 24. For E1 structure service, the range is 1 through 31.
<i>cas</i>		(Optional) Enables channel associated signaling for structured service only. The default is <b>no cas</b> .
<b>cdv range</b>		(Optional) Enables the peak-to-peak cell delay variation requirement. The range for CDV is 1 through 65535 milliseconds. The default is 2000 milliseconds.
<b>circuit-name name</b>		(Optional) Sets the ASCII name for the CES-IWF circuit. The string for the circuit name is 0 through 255. The default is CBRx/x:0.
<b>on-hook-detection hex-number</b>		(Optional) Enables detection of whether the circuit is on-hook. Hex values are 0 through F to indicate a 2- or 4-bit AB[CD] pattern to detect on-hook. The AB[CD] bits are determined by the manufacturer of the voice/video telephony device that is generating the CBR traffic.
<b>partial-fill range</b>		(Optional) Enables the partial AAL1 cell fill service for structured service only. The range is 0 through 47. The default is 47.
<i>shutdown</i>		(Optional) Marks the CES-IWF circuit administratively down. The default is <b>no shutdown</b> .
<b>timeslots range</b>		(Optional) Configures the time slots for the CES-IWF circuit for structured service only. The range is 1 through 24 for T1. The range is 1 through 31 for E1.

**Defaults** No circuit is configured.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines**

For unstructured service, the circuit number is 0. For T1 structured service, the circuit number is 1 through 24. For E1 structured service, the time slots are 1 through 31.

Channel-associated signaling (CAS) provides information about the time slot (on or off the hook) and is updated once per multiframe.

With both the CAS and on-hook detection features enabled, these features work together to enable an ingress node in an ATM network to monitor on-hook and off-hook conditions for a specified 1 x 64 structured CES circuit. As implied by the notation “1 x 64,” the on-hook detection (or bandwidth-release) feature is supported only in a structured CES circuit that involves a single time slot at each end of the connection.

The time slot configured for the structured CES circuit at the ingress node (time slot 2) can be different from the DS0 time slot configured at the egress node (time slot 4). Only one such time slot can be configured at each end of the circuit when the on-hook detection feature is used.

When you invoke the on-hook feature, the ingress ATM-CES port adapter monitors the ABCD bits in the incoming CBR bit stream to detect on-hook and off-hook conditions in the circuit. In an “off-hook” condition, all the bandwidth provisioned for the specified CES circuit is used for transporting ATM AAL1 cells across the network from the ingress node to the egress node.

In an on-hook condition, the network periodically sends dummy ATM cells from the ingress node to the egress node to maintain the connection. However, these dummy cells consume only a fraction of the circuit’s reserved bandwidth, leaving the rest of the bandwidth available for use by other network traffic. This bandwidth-release feature enables the network to make more efficient use of its resources.

When the CAS feature is enabled for a CES circuit, the bandwidth of the DS0 channel is limited to 56 kbps for user data, because CAS functions consume 8 kbps of channel bandwidth for transporting the ABCD signaling bits. These signaling bits are passed transparently from the ingress node to the egress node as part of the ATM AAL1 cell stream.

In summary, when the optional CAS and on-hook detection features are enabled, the following conditions apply:

- The permanent virtual connection (PVC) provisioned for the CES circuit always exists.
- The bandwidth for the CES circuit is always reserved.
- During an on-hook state, most of the bandwidth reserved for the CES circuit is not in use. (Dummy cells are sent from the ingress node to the egress node to maintain the connection.) Therefore, this bandwidth becomes available for use by other network traffic, such as available bit rate (ABR) traffic.
- During an off-hook state, all the bandwidth reserved for the CES circuit is dedicated to that circuit.

**Examples**

The following example sets the structured service CDV range to 5000 milliseconds and enables the interface.

```
interface cbr 4/0
  ces circuit 3 cdv 5000
  ces circuit 3 no shutdown
```

**Related Commands**

Command	Description
<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
<b>show ces interface cbr</b>	Displays detailed CBR port information.

Command	Description
<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces dsx1 clock source

To configure a transmit clock source for the CBR interface, use the **ces dsx1 clock source** interface configuration command. To return the clock source to the default, use the **no** form of this command.

**ces dsx1 clock source {loop-timed | network-derived}**

**no ces dsx1 clock source**

Syntax Description	loop-timed	Configures the transmit clock to loop (RX-clock to TX-clock).
	network-derived	Configures the transmit clock to be derived from the network.

**Defaults** network-derived

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Examples** The following example sets the clock source to loop-timed.

```
interface cbr 4/0
ces dsx1 clock source loop-timed
```

Related Commands	Command	Description
	<b>ces aal1 clock</b>	Configures the AAL1 timing recovery clock for the CBR interface.
	<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
	<b>network-clock-select (ATM)</b>	Establishes the sources and priorities of the requisite clocking signals for an ATM-CES port adapter.
	<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
	<b>show ces interface cbr</b>	Displays detailed CBR port information.
	<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces dsx1 framing

To select the frame type for the data line on the CBR interface, use the **ces dsx1 framing** interface configuration command. To return the frame type to the default, use the **no** form of this command.

T1

```
ces dsx1 framing { esf | sf }
```

```
no ces dsx1 framing
```

E1

```
ces dsx1 framing { e1_crc_mfCASlt | e1_crc_mf_lt | e1_lt | e1_mfCAS_lt }
```

```
no ces dsx1 framing
```

Syntax Description	esf	Configures the line type to extended super frame for T1.
	sf	Configures the line type to super frame for T1.
	e1_crc_mfCASlt	Configures the line type to E1 CRC with channel-associated signaling (CAS) enabled.
	e1_crc_mf_lt	Configures the line type to E1 CRC with CAS disabled.
	e1_lt	Configures the line type to E1 with CAS disabled.
	e1_mfCAS_lt	Configures the line type to E1 with CAS enabled.

**Defaults** esf (for T1) or e1\_lt (for E1)

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines** Use this command in configurations where the router communicates with the data line. The service provider determines which framing type is required for your circuit.

**Examples** The following example sets the data line type to super frame.

```
interface cbr 4/0
  ces dsx1 framing sf
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
<b>show ces interface cbr</b>	Displays detailed CBR port information.
<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

---

# ces dsx1 lbo

To configure cable length for the CBR interface, use the **ces dsx1 lbo** interface configuration command. To return the cable length to the default, use the **no** form of this command.

**ces dsx1 lbo** *length*

**no ces dsx1 lbo**

<b>Syntax Description</b>	<i>length</i>	Sets the cable length. Values are (in feet): <b>0_110</b> , <b>110_200</b> , <b>220_330</b> , <b>330_440</b> , <b>440_550</b> , <b>550_660</b> , <b>660_above</b> , and <b>square_pulse</b> .
<b>Defaults</b>	0_110 feet	
<b>Command Modes</b>	Interface configuration	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.1	This command was introduced.
<b>Usage Guidelines</b>	Set the cable length to the desired number of feet on your system.	
<b>Examples</b>	The following example sets the cable length to 440 feet: <pre>interface cbr 4/0 ces dsx1 lbo 440_550</pre>	
<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>atm lbo</b>	Specifies the cable length (line build-out) for the ATM interface.
	<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
	<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
	<b>show ces interface cbr</b>	Displays detailed CBR port information.
	<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
	<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces dsx1 linecode

To select the linecode type for the CBR interface, use the **ces dsx1 linecode** interface configuration command. To return the linecode to the default, use the **no** form of this command.

T1

```
ces dsx1 linecode {ami | b8zs}
```

```
no ces dsx1 linecode
```

E1

```
ces dsx1 linecode {ami | hdb3}
```

```
no ces dsx1 linecode
```

## Syntax Description

<b>ami</b>	Specifies the alternate mark inversion (AMI) as the linecode type. Valid for T1 and E1 interfaces.
<b>b8zs</b>	Specifies B8ZS as the linecode type. Valid for T1 interfaces. This is the default for T1.
<b>hdb3</b>	Specifies HDB3 as the linecode type. Valid for E1 interfaces. This is the default for E1.

## Defaults

b8zs (for T1) or hdb3 (for E1)

## Command Modes

Interface configuration

## Command History

Release	Modification
11.1	This command was introduced.

## Usage Guidelines

Use this command in configurations where the switch communicates with the data line. The service provider determines which linecode type is required for your circuit.

## Examples

The following example specifies B8ZS as the linecode type:

```
interface cbr 4/0
  ces dsx1 linecode b8zs
```

## Related Commands

Command	Description
<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
<b>show ces interface cbr</b>	Displays detailed CBR port information.

Command	Description
<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces dsx1 loopback

To enable a loopback for the CBR interface, use the **ces dsx1 loopback** interface configuration command. To disable the loopback, use the **no** form of this command.

```
ces dsx1 loopback {line | noloop | payload}
```

```
no ces dsx1 loopback {line | noloop | payload}
```

Syntax Description	Parameter	Description
	<b>line</b>	Sets the received signal to be looped at the line (does not penetrate the line).
	<b>noloop</b>	Sets the interface to no loop.
	<b>payload</b>	Sets the received signal to be looped through the device and returned.

**Defaults** No loopback

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines** This command is useful when testing the circuit emulation port adapter module.

**Examples** The following example sets a payload loopback:

```
interface cbr 4/0
  ces dsx1 loopback payload
```

Related Commands	Command	Description
	<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
	<b>loopback (ATM)</b>	Configures the ATM interface into loopback mode.
	<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
	<b>show ces interface cbr</b>	Displays detailed CBR port information.
	<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
	<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# ces dsx1 signalmode robbedbit

To enable the signal mode as robbed bit on a CBR interface, use the **ces dsx1 signalmode robbedbit** interface configuration command. To return the signal mode to the default, use the **no** form of this command.

**ces dsx1 signalmode robbedbit**

**no ces dsx1 signalmode robbedbit**

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

**Defaults** No signal mode is enabled.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

**Usage Guidelines** A T1 frame consists of 24 time slots (DS0) that send at a rate of 64 kbps. T1 defines the ability to send signaling in-band on individual time slots by removing the low bit of each byte for signaling in robbedbit mode. This procedure allows 8 kbps for signaling and leaves 56 kbps for data.

In structured mode, you can send the T1 signaling information across the network. This means that after you enable **robbedbit** signaling mode on the port, and enable CAS on individual circuits that need this type of service, you are robbing bits from the DS0. The system then puts the bits in the specified format to be sent across the network and reinserts them at the passive side on the CES-IWF connection.

**Examples** The following example enables channel associated signaling and robbed bit signaling:

```
interface cbr 4/0
  ces circuit 1 cas
  ces dsx1 signalmode robbedbit
```

Related Commands	Command	Description
	<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
	<b>ces circuit</b>	Configures the connection attributes for the CBR interface.
	<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
	<b>show ces interface cbr</b>	Displays detailed CBR port information.
	<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
	<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

## ces pvc

To configure the destination port for the circuit on the CBR interface, use the **ces pvc** interface configuration command. To remove the destination port on the circuit, use the **no** form of this command.

**ces pvc** *circuit-number* **interface atm** *slot/port* **vpi** *number* **vci** *number*

**no ces pvc** *circuit-number* **interface atm** *slot/port* **vpi** *number* **vci** *number*

### Syntax Description

<i>circuit-number</i>	Selects the circuit identification. The range is 0 to 24. For unstructured service, use 0. For T1 structure service, the range is 1 through 24. For E1 structure service, the range is 1 through 31.
<b>interface atm</b> <i>slot/port</i>	Slot and port number of the ATM interface. Used to create a hard PVC. Only a hard PVC can be configured for the CBR interfaces on the ATM-CES port adapter.
<b>vpi</b> <i>number</i>	Virtual path identifier of the destination PVC. Range is 0 through 255.
<b>vci</b> <i>number</i>	Virtual channel identifier of the destination PVC. Range is 1 through 16383.

### Defaults

No destination port is configured.

### Command Modes

Interface configuration

### Command History

Release	Modification
11.1	This command was introduced.

### Usage Guidelines

Use the **interface** option to create a hard PVC. Use the **dest-atm-addr** option to create a soft PVC. Soft PVCs are not supported on Cisco 7200 series routers.

You must configure both sides of the CES circuits because at the source (the active side in CES-IWF), the time slots are not recognized at the destination (the passive side).

Each CES circuit has an ATM address. When configuring the source PVC, you need the destination ATM address.

### Examples

The following example shows setting a hard PVC. In this example, the destination of ATM port 0 in slot 1 is assigned to circuit 31 on CBR port 0 in slot 4.

```
interface cbr 4/0
  ces pvc 31 interface atm 1/0 vpi 0 vci 512
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>ces aal1 service</b>	Configures the type of CES used on the CBR interface.
<b>show ces circuit</b>	Displays detailed circuit information for the CBR interface.
<b>show ces interface cbr</b>	Displays detailed CBR port information.
<b>show ces status</b>	Displays the status of the ports on the ATM-CES port adapter.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# class

To assign a VC class to an ATM main interface, subinterface, PVC, or SVC, use the **class** command in the appropriate command mode. Use the **no** form of this command to remove a VC class.

**class** *vc-class-name*

**no class** *vc-class-name*

<b>Syntax Description</b>	<i>vc-class-name</i> VC class name you are assigning to your ATM interface, subinterface, PVC, or SVC.				
<b>Defaults</b>	No VC class is assigned.				
<b>Command Modes</b>	Interface configuration (for ATM main and subinterfaces). Interface-ATM-VC configuration (for ATM PVCs and SVCs)				
<b>Command History</b>	<table border="1"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Release</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">11.3</td> <td style="border-bottom: 1px solid black;">This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	11.3	This command was introduced.
Release	Modification				
11.3	This command was introduced.				
<b>Usage Guidelines</b>	Use this command to assign a previously defined set of parameters to an ATM main interface, subinterface, PVC, or SVC. This set of parameters is defined in a VC class.				
<b>Examples</b>	<p>The following example assigns a VC class named atm-ubr to a PVC named router5. This VC class may contain UBR settings that were configured using the <b>ubr</b> command.</p> <pre>pvc router5 1/32  class atm-ubr</pre> <p>The following example assigns a VC class named atm-svc-parameters to an SVC named lion. This VC class may contain ATM SVC default parameters.</p> <pre>svc lion 47.0091.81.000000.0040.0B0A.2501.ABC1.3333.3333.05  class atm-svc-parameters</pre>				

# clear atm arp

To clear Address Resolution Protocol (ARP) entries for an ATM interface that is configured as an ARP server, use the **clear atm arp** command in EXEC mode.

```
clear atm arp atm-interface {ip-address | *}
```

Syntax Description		
	<i>atm-interface</i>	ATM interface number (for example, 3/0).
	<i>ip-address</i>	Clears the ARP entry for the specified IP address.
	*	Clears all ARP entries on the interface.

**Defaults** No default behavior or values.

**Command Modes** EXEC

Command History	Release	Modification
	11.2	This command was introduced.

**Usage Guidelines** Use this command to clear ARP entries for an ATM interface. Use the asterisk (\*) to delete all of the ARP entries for the interface, or specify the IP address of a particular entry to be deleted.

If an ARP entry for an existing virtual circuit (VC) is deleted, the ARP server will immediately try to get another entry for that VC.

**Examples** The following example shows how to delete the ARP entry for 172.20.173.28:

```
Router# clear atm arp 3/0 172.20.173.28
```

# dxi map

To map a protocol address to a given VPI and VCI, use the **dxi map** interface configuration command. Use the **no** form of this command to remove the mapping for that protocol and protocol address.

**dxi map** *protocol protocol-address vpi vci* [**broadcast**]

**no dxi map** *protocol protocol-address*

<b>Syntax Description</b>	<i>protocol</i>	One of the following bridging or protocol keywords: <b>apollo</b> , <b>appletalk</b> , <b>bridge</b> , <b>clns</b> , <b>decnet</b> , <b>ip</b> , <b>novell</b> , <b>vines</b> , or <b>xns</b> .
	<i>protocol-address</i>	Protocol-specific address.
	<i>vpi</i>	Virtual path identifier in the range 0 to 15.
	<i>vci</i>	Virtual circuit identifier in the range 0 to 63.
	<b>broadcast</b>	(Optional) Broadcasts should be forwarded to this address.

**Defaults** No map definition is established.

**Command Modes** Interface configuration

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

**Usage Guidelines** This command is used in configurations where the router is intended to communicate with an ATM network through an ATM data service unit (ADSU). Given the circuit identifier parameters (VPI and VCI) for the ATM permanent virtual circuit (PVC), the router computes and uses the DXI frame address (DFA) that is used for communication between the router and the ADSU.

The **dxi map** command can be used only on a serial interface or HSSI configured for ATM-DXI encapsulation.

**Examples** The following example converts all IP packets intended for the host with IP address 172.21.170.49 into ATM cells identified with a VPI of 2 (binary 0000 0010) and a VCI of 46 (binary 0000 0000 0010 1110) by the ADSU:

```
interface serial 0
  dxi map ip 172.21.170.49 2 46 broadcast
```

Using the mapping defined in Annex A of the ATM DXI Specification, the router uses the VPI and VCI information in this example to compute a DFA of 558 (binary 1000101110). The ADSU will use the DFA of the incoming frame to extract the VPI and VCI information when formulating ATM cells.

Related Commands	Command	Description
	<b>dxi pvc</b>	Configures multiprotocol or single protocol ATM-DXI encapsulation.
	<b>encapsulation atm-dxi</b>	Enables ATM-DXI encapsulation.

## dxi pvc

To configure multiprotocol or single protocol ATM-DXI encapsulation, use the **dxi pvc** interface configuration command. The **no** form of this command disables multiprotocol ATM-DXI encapsulation.

**dxi pvc** *vpi vci* [**snap** | **nlpid** | **mux**]

**no dxi pvc** *vpi vci* [**snap** | **nlpid** | **mux**]

Syntax Description	
<i>vpi</i>	ATM network virtual path identifier (VPI) of this PVC, in the range from 0 through 15. The VPI is a 4-bit field in the header of the ATM DXI frame. The VPI value is unique only on a single interface, not throughout the ATM network, because it has local significance only.  Both <i>vpi</i> and <i>vci</i> cannot be specified as 0; if one is 0, the other cannot be 0.
<i>vci</i>	ATM network virtual channel identifier (VCI) of this PVC, in the range from 0 to 63. The VCI is a 6-bit field in the header of the ATM DXI frame. The VCI value is unique only on a single interface, not throughout the ATM network, because it has local significance only.  Both <i>vpi</i> and <i>vci</i> cannot be specified as 0; if one is 0, the other cannot be 0.
<b>snap</b>	(Optional) LLC/SNAP encapsulation based on the protocol used in the packet. This keyword defines a PVC that can carry multiple network protocols. This is the default.
<b>nlpid</b>	(Optional) RFC 1294/1490 encapsulation. This option is provided for backward compatibility with the default encapsulation in earlier versions of the Cisco IOS software.
<b>mux</b>	(Optional) MUX encapsulation; the carried protocol is defined by the <b>dxi map</b> command when the PVC is set up. This keyword defines a PVC that carries only one network protocol.

**Defaults** LLC/SNAP encapsulation.

**Command Modes** Interface configuration

Command History	Release	Modification
	10.3	This command was introduced.

**Usage Guidelines** This command can be used only on a serial interface or HSSI that is configured with ATM-DXI encapsulation.

Select the **nlpid** option if software earlier than Cisco IOS Release 10.3 was loaded on this router, and the router was configured for the default encapsulation, which was **nlpid** before Release 10.3.

---

**Examples**

The following example configures ATM-DXI MUX encapsulation on serial interface 1. The PVC identified by a VPI of 10 and a VCI of 10 can carry a single protocol. Then the protocol to be carried on this PVC is defined by the **dxi map** command.

```
interface serial 1
  dxi pvc 10 10 mux
  dxi map ip 172.21.176.45 10 10 broadcast
```

The following example configures ATM-DXI NLPID encapsulation on serial interface 1. The PVC identified by a VPI of 11 and a VCI of 12 can carry multiprotocol traffic that is encapsulated with a header described in RFC 1294/1490.

```
interface serial 1
  dxi pvc 11 12 nlpid
```

---

**Related Commands**

Command	Description
<b>dxi map</b>	Maps a protocol address to a given VPI and VCI.
<b>encapsulation atm-dxi</b>	Enables ATM-DXI encapsulation.
<b>show dxi pvc</b>	Displays the PVC statistics for a serial interface.

# encapsulation aal5

To configure the ATM adaptation layer (AAL) and encapsulation type for an ATM PVC, SVC, or VC class, use the **encapsulation aal5** command in the appropriate command mode. Use the **no** form of this command to remove an encapsulation from a PVC, SVC, or VC class.

**encapsulation aal5** *encap* [**virtual-template** *number*]

**no encapsulation aal5** *encap* [**virtual-template** *number*]



## Note

To configure ILMI, QSAAL, or SMDS encapsulations for an ATM PVC, use the **pvc** command.

## Syntax Description

<i>encap</i>	<p>ATM adaptation layer (AAL) and encapsulation type. When <b>mux</b> is specified, a protocol is required. Possible values for <i>encap</i> are as follows:</p> <p><b>ciscoPPP</b>—For Cisco PPP over ATM. Supported on ATM PVCs only.</p> <p><b>mux apollo</b>—For a multiplex (MUX)-type virtual circuit using the Apollo protocol.</p> <p><b>mux appletalk</b>—For a MUX-type virtual circuit using the AppleTalk protocol.</p> <p><b>mux decnet</b>—For a MUX-type virtual circuit using the DECnet protocol.</p> <p><b>mux frame</b>—For a MUX-type virtual circuit for Frame Relay-ATM Internetworking on the Cisco MC3810.</p> <p><b>mux ip</b>—For a MUX-type virtual circuit using the IP protocol.</p> <p><b>mux ipx</b>—For a MUX-type virtual circuit using the IPX protocol.</p> <p><b>mux vines</b>—For a MUX-type virtual circuit using the VINES protocol.</p> <p><b>mux voice</b>—For a MUX-type virtual circuit for voice over ATM on the Cisco MC3810.</p> <p><b>mux xns</b>—For a MUX-type virtual circuit using the XNS protocol.</p> <p><b>nlpid</b>—Allows ATM interfaces to interoperate with High-Speed Serial Interfaces (HSSIs) that are using an ATM data service unit (ADSU) and running ATM-Data Exchange Interface (DXI). Supported on ATM PVCs only.</p> <p><b>snap</b>—The only encapsulation supported for Inverse ARP. Logical Link Control/Subnetwork Access Protocol (LLC/SNAP) precedes the protocol datagram.</p>
<b>virtual-template</b> <i>number</i>	(This argument is required for <b>ciscoPPP</b> encapsulation only). Specifies the number used to identify the virtual template.

**Defaults**

The global default encapsulation is **snap**. See the “Usage Guidelines” section for other default characteristics.

**Command Modes**

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

**Command History**

Release	Modification
11.3	This command was introduced.

**Usage Guidelines**

Use of one of the **mux** encapsulation options to dedicate the specified PVC to a single protocol; use the **snap** encapsulation option to multiplex two or more protocols over the same PVC. Whether you select **mux** or **snap** encapsulation might depend on practical considerations, such as the type of network and the pricing offered by the network. If the network’s pricing depends on the number of PVCs set up, **snap** might be the appropriate choice. If pricing depends on the number of bytes transmitted, **mux** might be the appropriate choice because it has slightly less overhead.

When configuring Cisco PPP over ATM, specify the **ciscoPPP** encapsulation for the *encap* argument and specify the virtual template *number*.

It is possible to implicitly create a virtual template when configuring Cisco PPP over ATM. In other words, if the parameters of the virtual template are not explicitly defined before configuring the ATM PVC, the PPP interface will be brought up using default values from the virtual template identified. However, some parameters (such as an IP address) take effect only if they are specified before the PPP interface comes up. Therefore, we recommend that you explicitly create and configure the virtual template before configuring the ATM PVC to ensure such parameters take effect.

If you specify virtual template parameters after the ATM PVC is configured, you should issue a **shutdown** command followed by a **no shutdown** command on the ATM subinterface to restart the interface, causing the newly configured parameters (such as an IP address) to take effect.

If the **encapsulation aal5** command is not explicitly configured on an ATM PVC or SVC, the VC inherits the following default configuration (listed in order of next highest precedence):

- Configuration of the **encapsulation aal5** command in a VC class assigned to the PVC or SVC itself.
- Configuration of the **encapsulation aal5** command in a VC class assigned to the PVC’s or SVC’s ATM subinterface.
- Configuration of the **encapsulation aal5** command in a VC class assigned to the PVC’s or SVC’s ATM main interface.
- Global default: *encap* = **snap**.

**Examples**

The following example configures an ATM PVC with VPI 0 and VCI 33 for a MUX-type encapsulation using IP:

```
pvc 0/33
 encapsulation mux ip
```

# encapsulation atm-dxi

Use the **encapsulation atm-dxi** interface configuration command to enable ATM-DXI encapsulation. The **no** form of this command disables ATM-DXI.

**encapsulation atm-dxi**

**no encapsulation atm-dxi**

---

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

---

**Defaults** HDLC

---

**Command Modes** Interface configuration

---

Command History	Release	Modification
	10.0	This command was introduced.

---



---

**Examples** The following example configures ATM-DXI encapsulation on serial interface 1:

```
interface serial 1
 encapsulation atm-dxi
```

---

Related Commands	Command	Description
	<b>dxi map</b>	Maps a protocol address to a given VPI and VCI.

---

# idle-timeout

To configure the idle timeout parameter for tearing down an ATM SVC connection, use the **idle-timeout** command in the appropriate command mode. Use the **no** form of this command to disable the timeout parameter.

**idle-timeout** *seconds* [*minimum-rate*]

**no idle-timeout** *seconds* [*minimum-rate*]

Syntax Description	<i>seconds</i>	Number of seconds that the SVC is idle, after which the ATM SVC is disconnected.
	<i>minimum-rate</i>	(Optional) Minimum traffic rate in kilobits per second (Kbps) required on an ATM SVC to maintain the SVC connection.

**Defaults** 300 seconds

**Command Modes** Interface-ATM-VC configuration (for an ATM PVC or SVC). VC-class configuration (for a VC class)

Command History	Release	Modification
	11.3	This command was introduced.

**Usage Guidelines** If within the idle timeout period, both the input and output traffic rates are below the *minimum-rate*, the SVC connection is torn down. The input and output traffic rates are set using the **ubr**, **ubr+**, or **vbr-nrt** command.

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

- Configuration of the **idle-timeout** command in a VC class assigned to the SVC itself.
- Configuration of the **idle-timeout** command in a VC class assigned to the SVC's ATM subinterface.
- Configuration of the **idle-timeout** command in a VC class assigned to the SVC's ATM main interface.
- Global default: *seconds* = The value set using the interface configuration **idle-timeout** command (see the *Cisco IOS Release 12.0 Catalyst 8540 MSR Command Reference* publication). If the **idle-timeout** is not configured, the default is 300 seconds; *minimum-rate* = 0 Kbps.

**Examples** The following example configures an ATM SVC connection inactive after an idle period of 300 seconds. The SVC connection is also configured so that it is considered inactive if the traffic rate is less than 5 Kbps:

```
idle-timeout 300 5
```

Related Commands	Command	Description
	<b>ubr</b>	Selects UBR QoS and configures the output peak cell rate for an ATM PVC, SVC, or VC class.
	<b>ubr+</b>	Selects UBR QoS and configures the output peak cell rate and output minimum guaranteed cell rate for an ATM PVC, SVC, or VC class.
	<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, or VC class.

# ilmi manage

To enable ILMI management on an ATM PVC, use the **ilmi manage** command in the appropriate command mode. Use the **no** form of this command to disable ILMI management.

**ilmi manage**

**no ilmi manage**

---

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

---

**Defaults** ILMI management is disabled.

---

**Command Modes** Interface-ATM-VC configuration (for an ATM PVC). VC-class configuration (for a VC class)

---

Release	Modification
11.3 T	This command was introduced.

---

---

**Usage Guidelines** If the **ilmi manage** command is not explicitly configured on an ATM PVC, the PVC inherits the following default configuration (listed in order of next highest precedence):

- Configuration of the **ilmi manage** command in a VC class assigned to the PVC itself.
- Configuration of the **ilmi manage** command in a VC class assigned to the PVC's ATM subinterface.
- Configuration of the **ilmi manage** command in a VC class assigned to the PVC's ATM main interface.
- Global default: ILMI management is disabled.

---

**Examples** The following example enables ILMI management on the ATM PVC with VPI 0 and VCI 60. The ILMI PVC is assigned the name routerA and the VPI and VCI are 0 and 16, respectively.

```
interface atm 0/0
  pvc routerA 0/16 ilmi
  exit
interface atm 0/0.1 multipoint
  pvc 0/60
  ilmi manage
```

# inarp

To configure the Inverse ARP time period for an ATM PVC or VC class, use the **inarp** command in the appropriate command mode. Use the **no** form of this command to store the default Inverse ARP time period behavior.

**inarp** *minutes*

**no inarp** *minutes*

## Syntax Description

<i>minutes</i>	Number of minutes for the Inverse ARP time period.
----------------	--

## Defaults

15 minutes.

## Command Modes

Interface-ATM-VC configuration (for an ATM PVC). VC-class configuration (for a VC class)

## Command History

Release	Modification
11.3	This command was introduced.

## Usage Guidelines

This command is only supported for **snap** encapsulation when Inverse ARP is enabled. Refer to the **encapsulation aal5** command for configuring **snap** encapsulation and the **protocol** command for enabling Inverse ARP.

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

- Configuration of the **inarp** command in a VC class assigned to the PVC itself.
- Configuration of the **inarp** command in a VC class assigned to the PVC's ATM subinterface.
- Configuration of the **inarp** command in a VC class assigned to the PVC's ATM main interface.
- Global default: *minutes* = 15 minutes. This assumes that Inverse ARP is enabled.

## Examples

The following example sets the Inverse ARP time period for 10 minutes:

```
inarp 10
```

## Related Commands

Command	Description
<b>encapsulation aal5</b>	Configures the AAL and encapsulation type for an ATM PVC, SVC, or VC class.
<b>protocol</b>	Configures the selected protocol type.

# interface atm

To configure an ATM interface type and enter interface configuration mode, use the **interface atm** global configuration command.

Cisco 7500 series with AIP; Cisco 7200 series with ATM, ATM-CES, and enhanced ATM port adapters; Cisco 2600 and 3600 series with 1-port ATM-25 network module

```
interface atm slot/0
```

Cisco 7500 series with ATM and enhanced ATM port adapter

```
interface atm slot/port-adapter/0
```

Cisco 4500 and 4700 series with NPM

```
interface atm number
```

Cisco 7500 series with AIP; Cisco 7200 series with ATM, ATM-CES, and enhanced ATM port adapters; Cisco 2600 and 3600 series with 1-port ATM-25 network module (subinterface, global configuration)

```
interface atm slot/0 subinterface-number {multipoint | point-to-point}
```

Cisco 7500 series with ATM and enhanced ATM port adapter (subinterface, global configuration)

```
interface atm slot/port-adapter/0.subinterface-number {multipoint | point-to-point}
```

Cisco 4500 and 4700 series with NPM (subinterface, global configuration)

```
interface atm number.subinterface-number {multipoint | point-to-point}
```

## Syntax Description

<i>slot</i>	On the Cisco 7000 series routers with RSP7000 and Cisco 7200 series, specifies the backplane slot number. On the 7000, value can be <b>0</b> , <b>1</b> , <b>2</b> , <b>3</b> , or <b>4</b> . On the Cisco 7010, value can be <b>0</b> , <b>1</b> , or <b>2</b> . The slots are numbered from left to right. On the Cisco 7505, the slot number can be 0, 1, 2, or 3 from bottom to top. On the Cisco 7507, the slot number can be 0 and 1 (CyBus0) and 4 through 6 (Cybus1), from left to right. On the Cisco 7513, the slot numbers are 0 through 5 (CyBus 0) and 8 through 12 (CyBus 1), from left to right.
<i>/0</i>	ATM port number. Because the AIP and all ATM port adapters have a single ATM interface, the port number is always 0.
<i>port-adapter</i>	ATM port adapter number for the ATM port adapter or enhanced ATM port adapter on Cisco 7500 series routers. The value can be 0 or 1.
<i>number</i>	On Cisco 4500 and Cisco 4700 routers, specifies the NPM number. The numbers are assigned at the factory at the time of installation or when added to a system, and can be displayed with the <b>show interfaces</b> command.
<i>.subinterface-number</i>	Subinterface number in the range 1 to 4294967293.
<b>multipoint   point-to-point</b>	Specifies a multipoint or point-to-point subinterface.

## ■ interface atm

---

**Defaults**      None

---

**Command Modes**      Global configuration

---

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

---

---

**Examples**      The following example assigns an IP network address and network mask to the ATM interface in slot 1 on port 0 of a Cisco 7500 series router:

```
interface atm 1/0
ip address 1.1.1.1.255.255.255.0
```

---

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interfaces atm</b>	Displays information about the ATM interface.

---

# interface cbr

To specify the T1 or E1 constant bit rate interface on an ATM-CES port adapter, and enter interface configuration mode, use the **interface cbr** global configuration command.

**interface cbr** *slot/port*

## Syntax Description

<i>slot</i>	Backplane slot number.
<i>port</i>	Interface port number.

## Defaults

None

## Command Modes

Global configuration

## Command History

Release	Modification
11.1	This command was introduced.

## Usage Guidelines

The ATM-CES port adapter has four T1 (1.544 Mbps) or four E1 (2.048 Mbps) ports (75- or 120-ohm) that can support both structured (N x 64 kbps) and unstructured ATM Forum-compliant circuit emulation services (CES), and one port that supports an OC-3 (155 Mbps) single-mode intermediate reach interface or a T3 (45 Mbps) or E3 (34 Mbps) standards-based ATM interface.

## Examples

The following example specifies the first T1 or E1 port on the ATM-CES port adapter in slot 1:

```
interface cbr 1/0
```

## Related Commands

Command	Description
<b>show ces interface cbr</b>	Displays detailed CBR port information.
<b>show interface cbr</b>	Displays the information about the CBR interface on the ATM-CES port adapter.

# loopback (ATM)

To place the ATM interface into loopback mode, use the following form of 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	cell	(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.

# mid

To set the range of message identifier (MID) values on a 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
```

# 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** global configuration command. 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

None

## 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**

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

