



F Commands

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

- Catalyst 8540 MSR
- Catalyst 8510 MSR and LightStream 1010



Note

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



Note

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

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

facility-alarm (Catalyst 8540 MSR)

To configure the temperatures so that the ATM switch router declares a major or minor alarm condition, use the **facility-alarm** command. You can configure explicit threshold temperatures (in degrees Celsius [C]) to override the defaults for major and minor alarms. Use the **no** form of this command to disable alarms for that threshold and reset the threshold to the default value.

facility-alarm core-temperature { **major** [*temperature*] | **minor** [*temperature*]}

no facility-alarm core-temperature { **major** [*temperature*] | **minor** [*temperature*]}

Syntax Description

| | |
|-------------------------------------|---|
| major [<i>temperature</i>] | Major alarm threshold temperature threshold in degrees C. The default value is 53 C. |
| minor [<i>temperature</i>] | Minor alarm threshold temperature threshold in degrees C. The default value is 45 C. |

Defaults

major is 53 C.
minor is 45 C.

Command Modes

Global configuration

Command History

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

Usage Guidelines

You cannot disable or adjust the system critical alarms threshold. A “critical” alarm is standard Telco terminology for the alarm just before the system powers itself off.

Examples

The following example shows how to configure facility alarms to 50 C for major alarms, and 38 C for minor alarms.

```
Switch(config)# facility-alarm core-temperature major 50
Switch(config)# facility-alarm core-temperature minor 38
```

Related Commands

| Command | Description |
|---|--|
| clear facility-alarm (Catalyst 8540 MSR) | Clears alarm conditions and resets the alarm contacts. |
| show facility-alarm status (Catalyst 8540 MSR) | Displays the current major and minor alarm status, if any, and displays the configuration of the alarm thresholds. |

failed-attempts

To configure the writing of records for initial connection attempts, use the **failed-attempts** ATM accounting file subcommand. To disable this feature, use the **no** form of this command.

failed-attempts [**none** | [**regular** | **soft**]]

no failed-attempts

| Syntax Description | none | Does not record failed attempts. |
|--------------------|----------------|---|
| | regular | Records regular SVC/SVP numbers that originate or terminate at the switch router interface. |
| | soft | Records soft PVC/PVP numbers that originate or terminate at the switch router interface. |

Defaults **regular** and **soft**

Command Modes ATM accounting file

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

Examples The following example shows entering the ATM accounting file configuration mode and configuring **failed-attempts** to record failed attempts for SVC/SVP connections in the accounting file.

```
Switch(config)# atm accounting file acctng_file1
Switch(config-acct-file)# failed-attempts regular
```

| Related Commands | Command | Description |
|------------------|----------------------------|--|
| | atm accounting file | Enables an ATM accounting file and employs the accounting file configuration mode. |
| | collection-modes | Initializes the collection mode and specifies at what time accounting data is recorded in the accounting file. |
| | min-age | Configures the value of the minimum age of the VC for on-release or periodic collection of accounting records. |

fdl (Catalyst 8510 MSR and LightStream 1010)

To enable the FDL capability provided on the T1 board, use the **fdl** interface configuration command. To restore the default, use the **no** form of this command.

fdl {ansi | att}

no fdl

Syntax Description

| | |
|-------------|--|
| ansi | Enables ANSI mode for FDL queries from the remote end. |
| att | Enables ATT mode for FDL queries from the remote end. |

Defaults

Both **ansi** and **att** are disabled.

Command Modes

Interface configuration

Command History

| Release | Modification |
|-----------------|--------------|
| 12.0(4a)W5(11a) | New command |

Usage Guidelines

The T1 board responds to requests in both ANSI and ATT format, but is only able to gather the remote end data in ANSI format. The T1 board complies to ANSI standard T1.403

FDL packets are used to collect data from the remote end. To enable the FDL capability, it is necessary to know whether the remote end supports FDL functionality.

The mode selected depends upon which mode is supported on the remote end.

Examples

The following example shows how to enable FDL capabilities in both ANSI and ATT mode.

```
Switch(Config)# interface atm 0/1/0
Switch(Config-if)# fdl ansi
Switch(Config)# interface atm 0/1/0
Switch(Config-if)# fdl att
```

The following example shows how to disable FDL capabilities in both ANSI and ATT mode.

```
Switch(Config)# interface atm 0/1/0
Switch(Config-if)# no fdl ansi
Switch(Config)# interface atm 0/1/0
Switch(Config-if)# no fdl att
```

Related Commands

None

format

To format Flash memory, use the **format** privileged EXEC command.

```
format device1: [[device2:] [monlib-filename]]
```



Caution

The following formatting procedure erases all information in the Flash memory. To prevent the loss of important data, proceed carefully.

Syntax Description

| | |
|------------------------|--|
| <i>device1</i> : | Device to format. The colon (:) is required. Valid devices are as follows: <ul style="list-style-type: none"> • bootflash: This device is the internal Flash memory. • slot0: This device is the first PC slot on the route processor card. • slot1: This device is the second PC slot on the route processor card. |
| <i>device2</i> : | Device containing the monlib file to use for formatting <i>device1</i> . The colon (:) is required. Valid devices are as follows: <ul style="list-style-type: none"> • bootflash: This device is the internal Flash memory. • slot0: This device is the first PC slot and is the initial default device. • slot1: This device is the second PC slot on the route processor card. |
| <i>monlib-filename</i> | Name of the ROM monitor library file (monlib file) to use for formatting <i>device1</i> . The default monlib file is the one bundled with the system software. |

Defaults

The default monlib file is the one bundled with the system software.

Command Modes

Privileged EXEC

Command History

| Release | Modification |
|---------|--------------|
| 11.1(4) | New command |

Usage Guidelines

Use the **format** command to format internal Flash memory (bootflash) or your Flash memory cards.

In some cases, you might need to insert a new PCMCIA Flash memory card and load images or backup configuration files onto it. Before you can use a new Flash memory card, you must format it.

Flash memory cards have sectors that can fail. You can reserve certain Flash memory sectors as “spares” for use when other sectors fail. Use the **format** command to specify between 0 and 16 sectors as spares. If you reserve a small number of spare sectors for emergencies, you do not waste space because you can use most of the Flash memory card. If you specify zero spare sectors and some sectors fail, you must reformat the Flash memory card and thereby erase all existing data.

The monlib file is the ROM monitor library. The ROM monitor uses the monlib file to access files in the Flash file system.

In the command syntax, *device1* is the device to format, and *device2* contains the monlib file to use. When you omit the `[[device2:][monlib-filename]]` argument, the system formats *device1* using the monlib file that is bundled with the system software. When you omit *device2* from the `[[device2:][monlib-filename]]` argument, the system formats *device1* using the named monlib file from the device specified by the `cd` command. When you omit *monlib-filename* from the `[[device2:][monlib-filename]]` argument, the system formats *device1* using *device2*'s monlib file. When you specify the whole `[[device2:][monlib-filename]]` argument, the system formats *device1* using the specified monlib file from the specified device. Note that you can specify *device1*'s own monlib file in this argument. When the system cannot find a monlib file, the system terminates the formatting process.

Examples

The following example shows the **format** command that formats a Flash memory card inserted in slot 0 of the route processor card.

```
Switch# format slot0:
Running config file on this device, proceed? [confirm]y
All sectors will be erased, proceed? [confirm]y
Enter volume id (up to 31 characters): <Return>
Formatting sector 1 (erasing)
Format device slot0 completed
```

When the switch returns you to the EXEC prompt, the new Flash memory card is successfully formatted and ready for use.

Related Commands

| Command | Description |
|-------------------------|--|
| copy flash | Copies a file from Flash memory to another destination. |
| dialer-list list | This command or some of its parameters might not function as expected. |

frame-relay bc-default

To configure the committed burst size for ABR or UBR soft VCs terminating on an interface, use the **frame-relay bc-default** interface configuration command. To disable the committed burst size, use the **no** form of this command.

frame-relay bc-default *bc_default*

no frame-relay bc-default

| | | |
|---------------------------|--|---|
| Syntax Description | <i>bc_default</i> Default committed burst size in bits for ABR or UBR soft VCs terminating on this interface. | |
| Defaults | 32768 | |
| Command Modes | Interface configuration | |
| Command History | Release | Modification |
| | 12.0(1a)W5(5b) | New command |
| Usage Guidelines | Use the frame-relay bc-default interface parameter to configure the committed burst size (in bits) on the destination interface of a UBR or ABR soft VC connection. The configured committed burst size is then effective for any subsequent connections. | |
| Examples | The following example shows how to configure the Frame Relay committed burst size to 16384 for serial interface 11/0/0:1. Switch# configure terminal Switch(config)# interface serial 11/0/0:1 Switch(config-if)# frame-relay bc-default 16384 | |
| Related Commands | Command | Description |
| | show frame-relay connection-traffic-table-row | Displays the Frame Relay traffic table. |

frame-relay connection-traffic-table-row

To create a table entry in the Frame Relay connection-traffic table, use the **frame-relay connection-traffic table-row** global configuration command. To delete an entry, use the **no** form of this command.

```
frame-relay connection-traffic table-row [index row-index] cirval bcval pirval [beval]
  {abr | vbr-nrt | ubr} [arrow-index]
```

```
no frame-relay connection-traffic table-row [index row-index]
```

Syntax Description

| | |
|--|--|
| index <i>row-index</i> | Specifies the index of the entry created in the Frame Relay connection-traffic table. A positive integer from 1 to 1073741823. |
| <i>cirval</i> | CIR, in bps. A positive integer from 0 to 2048000. |
| <i>bcval</i> | Bc, in bits. A positive integer from 0 to 32768. |
| <i>pirval</i> | Peak information rate, in bps. A positive integer from 0 to 2048000. |
| <i>beval</i> | Excess burst size, in bits. A positive integer from 0 to 32768. The default is 32768. |
| abr vbr-nrt ubr | Selects the ATM service category for an interworking connection. |
| <i>arrow-index</i> | Specifies the index of the entry created in the ATM connection-traffic table, a positive integer from 1 to 1073741823. |

Defaults

See “Syntax Description.”

Command Modes

Global configuration

Command History

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

Usage Guidelines

When you create a connection traffic table row, the Frame Relay parameters are converted into the ATM equivalent parameters and a row is added to the ATM connection-traffic table. The table index values are shared by the Frame Relay connection table and the ATM connection table. If you specify the index in the command, the index value is available in the ATM connection table.



Note

Since the index value is linked to the ATM connection-traffic table, the index values in the Frame Relay connection-traffic table might not be contiguous.

Examples

The following example shows how to create a table entry with a row index of 150, committed information rate of 1024000, committed burst size of 16334, peak information rate of 1024000, excess burst size of 20, and the **abr** service category with an ATM row index of 250.

```
Switch# configure terminal
Switch(config)# frame-relay connection-traffic-table-row index 150 1024000 16334 1024000
16334 20 abr 250
```

Related Commands

| Command | Description |
|--|---|
| show frame-relay connection-traffic-table-row | Displays the Frame Relay traffic table. |

frame-relay input-queue

To configure discard marking thresholds on a Frame Relay interface in the input direction, use the **frame-relay input queue** interface configuration command. Use the **no** form of the command to revert to default values for the threshold.

```
frame-relay input-queue {abr | ubr | vbr-nrt} {discard-threshold |
marking-threshold} percent
```

```
no frame-relay input-queue {abr | ubr | vbr-nrt} {discard-threshold |
marking-threshold} percent
```

| | | |
|---------------------------|--|--|
| Syntax Description | abr ubr vbr-nrt | Service categories for which the threshold is configured |
| | discard-threshold | Threshold where the cell is discarded. If the queue fills up above this level, any frame arriving from an external device with the DE bit set is discarded by the interface. The default is 87 percent. |
| | marking-threshold | Threshold where the cell is marked for EFCI. If the queue fills up above this level, all frames arriving from an external device have the EFCI bit set as they are converted into cells. For cells entering the Frame Relay interface from the switch fabric, the BECN bit is set in the outgoing frame header. The default is 75 percent. |
| | <i>percent</i> | Threshold number as percent of queue size. |

Defaults See “Syntax Description.”

Command Modes Interface configuration

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

Usage Guidelines This command affects all existing connections on the interface, as well as subsequent connections.

Examples The following example sets the Frame Relay input queue for ABR connects to allow EFCI marking for cells over 75 percent of capacity.

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay input-queue abr marking-threshold 75
```

| Related Commands | Command | Description |
|------------------|--|---|
| | show frame-relay connection-traffic-table-row | Displays the Frame Relay traffic table. |
| | frame-relay output-queue | Configures discard marking thresholds on a Frame Relay interface in the output direction. |

frame-relay intf-type

To configure an interface as DCE or NNI, use the **frame-relay intf-type** interface configuration command. To disable the configuration, use the **no** form of this command.

frame-relay intf-type {dce | nni}

no frame-relay intf-type {dce | nni}

| | | |
|--------------------|------------|--------------------------------|
| Syntax Description | dce | Data communications equipment. |
| | nni | Network-to-Network Interface. |

| | |
|----------|------------|
| Defaults | nni |
|----------|------------|

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

| Command History | Release | Modification |
|-----------------|---------|--------------|
| | 11.1(4) | New command |

Usage Guidelines When you specify DCE, the ATM switch router supports only network-side PVC status management procedures. When you specify NNI, the ATM switch router supports both user-side and network-side PVC status management procedures.



Note

Frame Relay DTE is not supported.

Examples The following example configures serial interface 11/0/0:1 as Frame Relay interface, type DCE.

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay intf-type dce
```

| Related Commands | Command | Description |
|------------------|--|--|
| | show frame-relay interface resource | Displays the current resource allocation on a Frame Relay interface. |

frame-relay lmi-n391dte

To set a full status polling interval, use the **frame-relay lmi-n391dte** interface configuration command. To restore the default interval value, use the **no** form of this command.

frame-relay lmi-n391dte *keep-exchanges*

no frame-relay lmi-n391dte *keep-exchanges*

| Syntax Description | <i>keep-exchanges</i> Number of keep exchanges to be completed before requesting a full status message. The value must be a positive integer from 1 to 255. | | | | |
|-----------------------------|--|---------|--------------|-----------------------------|--|
| Defaults | 6 keep exchanges | | | | |
| Command Modes | Interface configuration | | | | |
| Command History | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(1a)W5(5b)</td> <td>New command</td> </tr> </tbody> </table> | Release | Modification | 12.0(1a)W5(5b) | New command |
| Release | Modification | | | | |
| 12.0(1a)W5(5b) | New command | | | | |
| Usage Guidelines | To set the full status message polling interval, use this command when the interface is configured as NNI. | | | | |
| Examples | <p>The following example shows how to set one out of every four status inquiries to request a full status response from the switch. The remaining three status inquiries request only keepalive exchanges.</p> <pre>Switch# configure terminal Switch(config)# interface serial 11/0/0:1 Switch(config-if)# frame-relay intf-type nni Switch(config-if)# frame-relay lmi-n391dte 4</pre> | | | | |
| Related Commands | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Command</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>show frame-relay lmi</td> <td>Displays LMI specific status for an interface.</td> </tr> </tbody> </table> | Command | Description | show frame-relay lmi | Displays LMI specific status for an interface. |
| Command | Description | | | | |
| show frame-relay lmi | Displays LMI specific status for an interface. | | | | |

frame-relay lmi-n392dce

To set the error threshold on DCE and NNI interfaces, use the **frame-relay lmi-n392dce** interface configuration command. To remove the setting, use the **no** form of this command.

frame-relay lmi-n392dce *threshold*

no frame-relay lmi-n392dce *threshold*

| | |
|---------------------------|--|
| Syntax Description | <i>threshold</i> Error threshold value. The value must be a positive integer from 1 to 10. |
|---------------------------|--|

| | |
|-----------------|------------|
| Defaults | Two errors |
|-----------------|------------|

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

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

| | |
|-------------------------|--|
| Usage Guidelines | N392 errors must occur within the number defined by the N393 event count for the link to be down. Therefore, the threshold value for this command must be less than the count value defined in the frame-relay lmi-n393dce command. |
|-------------------------|--|

| | |
|-----------------|---|
| Examples | The following example configures serial interface 11/0/0:1 with Frame Relay LMI monitoring event count to four. |
|-----------------|---|

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay lmi-n392dce 4
```

| | | |
|-------------------------|--------------------------------|--|
| Related Commands | Command | Description |
| | frame-relay lmi-n393dce | Sets the monitored events count on DCE and NNI interfaces. |
| | show frame-relay lmi | Displays LMI specific status for an interface. |

frame-relay lmi-n392dte

To set the error threshold on DTE or NNI interfaces, use the **frame-relay lmi-n392dte** interface configuration command. To remove the setting, use the **no** form of this command.

frame-relay lmi-n392dte *threshold*

no frame-relay lmi-n392dte *threshold*

| Syntax Description | <i>threshold</i> Error threshold value. This value must be a positive integer from 1 to 10. | | | | |
|-----------------------------|--|---------|--------------|-----------------------------|--|
| Defaults | Three errors | | | | |
| Command Modes | Interface configuration | | | | |
| Command History | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>TBD</td> <td></td> </tr> </tbody> </table> | Release | Modification | TBD | |
| Release | Modification | | | | |
| TBD | | | | | |
| Usage Guidelines | The frame-relay lmi-n392dte and frame-relay lmi-n393dte commands define the condition that causes the link to be declared down. Two “threshold” errors must occur within N393 number of events for the link to be declared down. | | | | |
| Examples | <p>The following example shows how to set the LMI error threshold to six.</p> <pre>Switch# configure terminal Switch(config)# interface serial 1/0/0:1 Switch(config-if)# frame-relay intf-type nni Switch(config-if)# frame-relay lmi-n392dte 6</pre> | | | | |
| Related Commands | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Command</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>show frame-relay lmi</td> <td>Displays LMI specific status for an interface.</td> </tr> </tbody> </table> | Command | Description | show frame-relay lmi | Displays LMI specific status for an interface. |
| Command | Description | | | | |
| show frame-relay lmi | Displays LMI specific status for an interface. | | | | |

frame-relay lmi-n393dce

To set the monitored events count on DCE and NNI interfaces, use the **frame-relay lmi-n393dce** interface configuration command. To remove the setting, use the **no** form of this command.

frame-relay lmi-n393dce *events*

no frame-relay lmi-n393dce *events*

| | |
|---------------------------|--|
| Syntax Description | <i>events</i> Monitored events count value. The value must be a positive integer from 1 to 10. |
|---------------------------|--|

| | |
|-----------------|------------|
| Defaults | Two events |
|-----------------|------------|

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

| | | |
|------------------------|----------------|---------------------|
| Command History | Release | Modification |
| | TBD | |

| | |
|-------------------------|---|
| Usage Guidelines | This command and the frame-relay lmi-n392dce command define the condition that causes the link to be down. In the Cisco implementation, N392 errors must occur within the events count for the link to be down. Therefore, the events value that you define for this command must be greater than the threshold value defined in the frame-relay lmi-n392dce command. |
|-------------------------|---|

| | |
|-----------------|--|
| Examples | The following example shows how to set the LMI monitored event count to three. |
|-----------------|--|

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay intf-type dce
Switch(config-if)# frame-relay lmi-n393dce 3
```

| | | |
|-------------------------|-----------------------------|--|
| Related Commands | Command | Description |
| | show frame-relay lmi | Displays LMI specific status for an interface. |

frame-relay lmi-n393dte

To set the monitored event count on DTE and NNI interfaces, use the **frame-relay lmi-n393dte** interface configuration command. To remove the setting, use the **no** form of this command.

frame-relay lmi-n393dte *events*

no frame-relay lmi-n393dte *events*

| | |
|---------------------------|---|
| Syntax Description | <i>events</i> Monitored events count value. This value must be a positive integer from 1 to 10. |
|---------------------------|---|

| | |
|-----------------|-------------|
| Defaults | Four events |
|-----------------|-------------|

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

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

Usage Guidelines The **frame-relay lmi-n393dte** and the **frame-relay lmi-n392dte** commands define the condition that causes the link to be declared down. N392 errors must occur within the events count for the link to be declared down.



Note

The events value defined in this command must be greater than the threshold value defined in the **frame-relay lmi-n392dte** command.

Examples The following example shows how to set the LMI monitored events count to three.

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay intf-type NNI
Switch(config-if)# frame-relay lmi-n393dte 3
```

| | | |
|-------------------------|-----------------------------|--|
| Related Commands | Command | Description |
| | show frame-relay lmi | Displays LMI specific status for an interface. |

frame-relay lmi-t392dce

To set the polling verification timer on DCE and NNI interfaces, use the **frame-relay lmi-t392dce** interface configuration command. To remove the current setting, use the **no** form of this command.

frame-relay lmi-t392dce *seconds*

no frame-relay lmi-t392dce *seconds*

| Syntax Description | <i>seconds</i> Polling verification timer value, in seconds. This value must be a positive integer from 5 to 30. | | | | |
|-----------------------------|--|---------|--------------|-----------------------------|--|
| Defaults | 15 seconds | | | | |
| Command Modes | Interface configuration | | | | |
| Command History | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>TBD</td> <td></td> </tr> </tbody> </table> | Release | Modification | TBD | |
| Release | Modification | | | | |
| TBD | | | | | |
| Usage Guidelines | The value for the timer must be greater than the DTE or NNI keepalive timer. | | | | |
| Examples | <p>The following example shows how to set a polling verification timer on a DCE or NNI interface set to 20 seconds.</p> <pre>Switch# configure terminal Switch(config)# interface serial 11/0/0:1 Switch(config-if)# frame-relay intf-type dce Switch(config-if)# frame-relay lmi-t392dce 20</pre> | | | | |
| Related Commands | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show frame-relay lmi</td> <td>Displays LMI specific status for an interface.</td> </tr> </tbody> </table> | Command | Description | show frame-relay lmi | Displays LMI specific status for an interface. |
| Command | Description | | | | |
| show frame-relay lmi | Displays LMI specific status for an interface. | | | | |

frame-relay lmi-type

To select the LMI type, use the **frame-relay lmi-type** interface configuration command. To return to the default LMI type, use the **no** form of this command.

frame-relay lmi-type [ansi | cisco | q933a]

no frame-relay lmi-type [ansi | cisco | q933a]

| Syntax Description | ansi Annex D defined by the ANSI standard T1.617. | | | | | | |
|-----------------------------|--|---------|--------------|-----------------------------|--|---------------------------|--|
| cisco | The LMI type defined jointly by Cisco Systems and three other companies. | | | | | | |
| q933a | ITU-T Q.933 Annex A. | | | | | | |
| Defaults | cisco | | | | | | |
| Command Modes | Interface configuration | | | | | | |
| Command History | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>11.4(1)</td> <td>New command</td> </tr> </tbody> </table> | Release | Modification | 11.4(1) | New command | | |
| Release | Modification | | | | | | |
| 11.4(1) | New command | | | | | | |
| Usage Guidelines | The LMI type is set on a per-interface basis. If you want to display the type that is configured, use the show interfaces EXEC command. | | | | | | |
| Examples | <p>The following example shows how to configure an interface for the ANSI LMI type.</p> <pre>Switch# configure terminal Switch(config)# interface serial 11/0/0:1 Switch(config-if)# encapsulation frame-relay ietf Switch(config-if)# frame-relay lmi-type ansi Switch(config-if)# keepalive 15</pre> | | | | | | |
| Related Commands | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Command</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>show frame-relay lmi</td> <td>Displays LMI specific status for an interface.</td> </tr> <tr> <td>show ima interface</td> <td>Displays the IMA interface, IMA group, and ATM layer hardware configuration.</td> </tr> </tbody> </table> | Command | Description | show frame-relay lmi | Displays LMI specific status for an interface. | show ima interface | Displays the IMA interface, IMA group, and ATM layer hardware configuration. |
| Command | Description | | | | | | |
| show frame-relay lmi | Displays LMI specific status for an interface. | | | | | | |
| show ima interface | Displays the IMA interface, IMA group, and ATM layer hardware configuration. | | | | | | |

frame-relay output-queue

To configure discard marking thresholds on a Frame Relay interface in the output direction, use the **frame-relay output-queue** interface configuration command. To restore the default values for the threshold, use the **no** form of this command .

```
frame-relay output-queue {abr |ubr |vbr-nrt} {discard-threshold |marking-threshold}
percentage
```

```
no frame-relay output-queue {abr |ubr |vbr-nrt} {discard-threshold |marking-threshold}
percentage
```

| | | |
|---------------------------|--------------------------|---|
| Syntax Description | abr ubr vbr-nrt | Service categories for which the threshold is configured: <ul style="list-style-type: none"> • ABR • UBR • VBR-NRT |
| | discard-threshold | Threshold where the cell is discarded. If the queue fills above this level, any frame arriving from the switch router with DE bit set is discarded by the interface. The default is 87 percent. |
| | marking-threshold | Threshold where the cell is marked for EFCI. If the queue fills above this level, all frames arriving from the switch router will have the FECN bit set in the frame header as they exit the interface. For cells entering the Frame Relay interface from an external device, the BECN bit is set in the frame header as it enters the switch. The default is 75 percent. |
| | <i>percentage</i> | Percentage number. |

| | |
|-----------------|---------------------------|
| Defaults | See “Syntax Description.” |
|-----------------|---------------------------|

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

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

| | |
|-------------------------|--|
| Usage Guidelines | This command affects all existing connections on the interface, as well as subsequent connections. |
|-------------------------|--|

Examples

The following example shows how to set the Frame Relay output queue for ABR connects to allow EFCI marking for cells over 65 percent of capacity.

```
Switch# configure terminal  
Switch(config)# interface serial 11/0/0:1  
Switch(config-if)# frame-relay output-queue abr marking-threshold 65
```

Related Commands

| Command | Description |
|--|--|
| frame-relay input-queue | Configures discard marking thresholds on a Frame Relay interface in the input direction. |
| show frame-relay interface resource | Displays the current resource allocation on a Frame Relay interface. |

frame-relay overbooking

To set the percentage of CIR overbooking, use the **frame-relay overbooking** command. To disable CIR overbooking, use the **no** form of this command.

frame-relay overbooking *percent*

no frame-relay overbooking

| | |
|---------------------------|---|
| Syntax Description | <i>percent</i> The percent of interface bandwidth from 101 to 1000. |
|---------------------------|---|

| | |
|-----------------|----------|
| Defaults | Disabled |
|-----------------|----------|

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

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

| | |
|-------------------------|---|
| Usage Guidelines | The allowable overbooking on an access link or interface is a number times the access link or interface speed (access rate), for example, 200 percent of the access rate. The total of all CIRs for all Frame Relay PVCs and Frame Relay soft VCs cannot exceed the CIR overbooking factor times the access rate. |
|-------------------------|---|

Once configured and used to admit Frame Relay PVCs and Frame Relay soft VCs on an interface, the CIR overbooking factor can only be adjusted within the upper limit and the level which has been overbooked by the existing connections. Disabling the CIR overbooking factor is allowed only when the total of all CIRs for all Frame Relay PVCs and Frame Relay soft VCs does not exceed the interface access rate.

Configuring the CIR overbooking factor increases the available bit rates for the Frame Relay PVC and soft VC but does not increase the actual bandwidth (access rate) and resources available to the Frame Relay interface.

The CIR of a connection is not allowed to exceed the actual access rate of an interface even if the CIR overbooking factor is configured.



Note

You should have a thorough understanding of network traffic patterns when using the **frame relay overbooking** command. Excess traffic arriving at an overbooked Frame Relay interface might lead to discarded or DE tagged frames.

Examples

The following example configures the Frame Relay serial interface to allow overbooking the CIR to 200 percent.

```
Switch(config)# interface serial 1/1/0:5
Switch(config-if)# encapsulation frame-relay ietf
Switch(config-if)# frame-relay overbooking 200
```

| Related Commands | Command | Description |
|------------------|--|--|
| | show frame-relay interface resource | Displays the current resource allocation on a Frame Relay interface. |

frame-relay pvc

To create a Frame Relay-to-ATM network interworking or service interworking PVC or Frame-Relay-to-Frame Relay cross-connected PVC, use the **frame-relay pvc** interface configuration command. To remove a Frame Relay PVC, use the **no** form of this command.

For Frame Relay-to-ATM network interworking, use the following syntax:

```
frame-relay pvc dcli [upc {pass | tag-drop}] [rx-cttr index] [tx-cttr index] network
  [clp-bit {0 | 1 | map-de}] [de-bit {map-de | map-clp-or-de}] [interface atm
  card/subcard/port vpi vci] [upc {drop | pass | tag}] [pd {off | on}] [rx-cttr index]
  [tx-cttr index]
```

```
no frame-relay pvc dcli
```

For Frame Relay-to-ATM service interworking, use the following syntax:

```
frame-relay pvc dcli [upc {pass | tag-drop}] [rx-cttr index] [tx-cttr index] service
  {transparent | translation} [clp-bit {0 | 1 | map-de}] [de-bit {0 | 1 | map-clp}]
  [efci-bit {0 | map-fecn}] [interface atm card/subcard/port [vci | any-vci]]
  [upc {drop | pass | tag}] [pd {off | on}] [rx-cttr index] [tx-cttr index]
  [encap {aal5mux ip | aal5snap}] [inarp minutes]
```

```
no frame-relay pvc dcli
```



Note

The **any-vci** feature is only available for interface ATM 0.

For Frame Relay-to-Frame Relay cross-connection, use the following syntax:

```
frame-relay pvc dcli [upc {pass | tag-drop}] [rx-cttr index] [tx-cttr index] interface serial
  card/subcard/port:cgn dcli dcli [upc {drop | pass | tag}] [rx-cttr index] [tx-cttr index]
```

```
no frame-relay pvc dcli
```

Syntax Description

| | |
|--|--|
| <i>dcli</i> | Data-link connection identifier, ranging from 16 to 1007, which specifies a PVC in a Frame Relay network. |
| upc <i>upc</i> | Usage parameter control, specified as pass or tag-drop . The default is pass , which derives from the per-interface default value configured through the frame-relay upc-intent command. |
| rx-cttr <i>index</i> | Frame Relay connection-traffic table row index in the received direction. The default is 100. |
| tx-cttr <i>index</i> | Frame Relay connection-traffic table row index in the transmitted direction. The default is 100. |
| network service { transparent translation } | Specifies the interworking function that can be either network interworking, service interworking in transparent mode, or service interworking in translation mode. |

| | |
|--|--|
| clp-bit {0 1 map-de} | <ul style="list-style-type: none"> • Sets the mode of DE/CLP mapping in Frame Relay to the ATM direction. Options 0, 1, or map-DE are allowed for both network interworking and service interworking. The default is map-de. • map-de—Specifies mode 1, described in 4.2.1 of FRF.8: “The DE field in the Q.922 core frame shall be mapped to the ATM CLP field of every cell generated by the segmentation process of the AAL5 PDU containing the information of that frame.” Similarly, it applies to mode 1 of 4.4.1 of FRF.5. • 0 or 1—Specifies mode 2, described in 4.2.1 of FRF.8: “The ATM CLP of every ATM cell generated by the segmentation process of the AAL5 PDU containing the information of that frame shall be set to a constant value (either 0 or 1) configured at service subscription time.” Similarly, it applies to mode 2 of 4.4.1 of FRF.5. |
| de-bit [0 1 map-de map-clp map-clp-or-de] | <p>Sets the mode of CLP/DE mapping in ATM to the Frame Relay direction.</p> <p>For <i>network</i> interworking:</p> <p>Options map-de, or map-clp-or-de are allowed. The default value is map-clp-or-de.</p> <ul style="list-style-type: none"> • map-clp-or-de—Specifies mode 1 described in 4.4.2 of FRF.5: “If one or more ATM cells belonging to a frame has its CLP field set to 1 or if the DE field of the FR-SSCS PDU is set to 1, the IWF shall set the DE field of the Q.922 core frame.” • map-de—Specifies mode 2 described in 4.4.2 of FRF.5: “No mapping is performed from the ATM layer to Q.922 core layer. The FR-SSCS PDU DE field is copied unchanged to the Q.922 core frame DE field, independent of CLP indication(s) received at the ATM layer.” <p>For <i>service</i> interworking:</p> <ul style="list-style-type: none"> • Options 0, 1, or map-clp are allowed. The default value is map-clp. • map-clp—Specifies mode 1, described in 4.2.2 of FRF.8: “If one or more cells belonging to a frame has its CLP field set, the IWF shall set the DE field of the Q.922 Core frame.” • 0 or 1—Specifies mode 2, described in 4.2.2 of FRF.8: “The DE field of the Q.922 Core frame shall be set to a constant value (either 0 or 1) configured at service subscription time.” |
| <i>card/subcard/port</i> | Card, subcard, and port number for the ATM interface. |
| <i>vpi</i> | VPI of this PVC, from 0 to 255. The VPI is an 8-bit field in the header of the ATM cell. The VPI value is unique only on an interface, not throughout the ATM network (it has local significance only). |

| | |
|--|--|
| <i>vci</i> | VCI of this PVC. The range is normally 32 to 16383, but can be expanded from 5 to 16383 in manual-well-known-vc mode. The VCI is a 16-bit field in the header of the ATM cell. The VCI value is unique only on a single interface, not throughout the ATM network (it has local significance only). |
| pd { off on } | Specifies the intelligent packet discard option as on or off . The default is off . |
| efci-bit { 0 map-fecn } | Sets the mode of FECN/EFCI mapping in Frame Relay to the ATM direction. The default value is 0. |
| <i>card/subcard/port:cgn</i> | Card, subcard, port number, and channel group number for the serial interface. |
| encap { aal5mux ip aal5snap } | AAL encapsulation type applies only to <i>terminating</i> connections. (For service interworking connections only.) <ul style="list-style-type: none"> • aal5mux ip—A MUX-type virtual connection. (For <i>transparent</i> mode only.) • aal5snap—LLC/SNAP precedes the protocol datagram. This is the only encapsulation supported for Inverse ARP. (For <i>translation</i> mode only.) |
| inarp <i>minutes</i> | Specifies how often Inverse ARP datagrams are sent on this virtual connection and applies only to <i>terminating</i> connections. (For service interworking <i>translation</i> mode only.) The default value is 15 minutes. |

Defaults

See “Syntax Description.”

Command Modes

Interface configuration

Command History

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

Usage GuidelinesYou can set the **upc** option to **tag** or **drop** only under the following conditions:

- The ATM interface in UNI is on the network side.
- The ATM interface is not the route processor port (ATM 0) or a logical port (VP tunnel).
- The connection is not the leaf of a point-to-multipoint connection.
- Refer to the **frame-relay connection-traffic-table-row** command for information on configuring the connection-traffic table specified by index.

Examples

The following example creates a service translation cross-connection between Frame Relay interface 11/0/0:1 on PVC 66 and ATM interface 10/0/0 100 250.

```
Switch# configure terminal
Switch(config)# interface serial 11/0/0:1
Switch(config-if)# frame-relay pvc 66 rx-cttr 5 tx-cttr 5 service translation interface
atm 10/0/0 100 250
```

Related Commands

| Command | Description |
|----------------|--|
| show vc | Displays active virtual circuits (PVCs, SVCs, and soft VCs). |

frame-relay soft-vc

To create Frame Relay soft PVCs on the switch router, use the **frame-relay soft-vc** interface configuration command. You can use this command to create soft PVCs between two Frame Relay connections or between a Frame Relay connection and an ATM connection.

To create a soft PVC between two Frame Relay connections, use the following syntax:

```
frame-relay soft-vc dlci_a dest-address address [dlci dlci_b] [upc upc]
  [rx-cttr index] [tx-cttr index] [retry-interval [first retry-interval]
  [maximum max-retry-interval]] [network [clp-bit {0 | 1 | map-de}]
  [de-bit {0 | 1 | map-de | map-clp-or-de}]
  [explicit-path precedence {name path-name | identifier path-id}
  [upto partial-entry-index]] [only-explicit]
```

To create a soft PVC between a Frame Relay connection and an ATM connection, use the following syntax:

```
frame-relay soft-vc dlci_a dest-address address vc vpi_b vci_b [upc upc]
  [rx-cttr index] [tx-cttr index] [pd {on | off}]
  [retry-interval [first retry-interval] [maximum max-retry-interval]]
  [network | service [transparent | translation] [efci-bit {0 | map-feen}]
  [clp-bit {0 | 1 | map-de}] [de-bit {0 | 1 | map-de | map-clp-or-de}]
  [explicit-path precedence {name path-name | identifier path-id}
  [upto partial-entry-index]] [only-explicit]
```

For existing Frame Relay soft PVCs, you can enable or disable the connection and use the **redo-explicit** keyword to respectify the explicit-path configuration.

```
frame-relay soft-vc dlci_a [enable | disable]
  [redo-explicit [explicit-path precedence {name path-name | identifier path-id}
  [upto partial-entry-index]] [only-explicit]
```

To remove Frame Relay soft PVCs, use the **no** form of this command.

```
no frame-relay soft-vc dlci-a
```

| Syntax Description | | |
|------------------------------------|--|---|
| <i>dlci_a</i> | | Specifies the data-link connection identifier, ranging from 16 to 1007, which specifies a PVC in a Frame Relay network. |
| dest-address <i>address</i> | | Specifies the destination address. |
| dlci <i>dlci_b</i> | | Specifies the data-link connection identifier, ranging from 16 to 1007, which specifies a PVC in a Frame Relay network. |
| <i>vbi_b</i> | | ATM virtual path identifier. |
| <i>vci_b</i> | | ATM virtual channel identifier. |
| upc <i>upc</i> | | Usage parameter control, specified as pass tag-drop . It gets its default value from the per-interface default value configured with the frame-relay upc-intent command. |

| | |
|--|---|
| rx-cttr <i>index</i> | <p>Connection traffic table row index in the received direction. The default is 100.</p> <p>The cttr should be configured before using the atm pvc command. Refer to the atm connection-traffic-table-row command for information on configuring the rx-cttr.</p> |
| tx-cttr <i>index</i> | <p>Connection traffic table row index in the transmitted direction. The default is 100.</p> <p>The cttr should be configured before using the atm pvc command. Refer to the atm connection-traffic-table-row command for information on configuring the tx-cttr.</p> |
| pd { on off } | Specifies the intelligent packet discard option as on or off . The default is off . |
| retry-interval | Configures retry interval timers for a soft PVC. |
| first <i>retry-interval</i> | <p>Retry interval for the first retry after the first failed attempt, specified in milliseconds.</p> <p>If the first retry after the first failed attempt also fails, the subsequent attempts are made at intervals computed using the first <i>retry-interval</i>, as follows:</p> $(2^{**} (k-1)) * \mathbf{first\ retry-interval}$ <p>Where the value of <i>k</i> is 1 for the first retry after the first failed attempt and is incremented by 1 for every subsequent attempt.</p> <p>Range is from 100 to 3600000 milliseconds; the default is 5000 milliseconds.</p> |
| maximum <i>retry-interval</i> | <p>The maximum retry interval between any two attempts, specified in seconds.</p> <p>Once the retry interval is computed in the first <i>retry-interval</i> and becomes equal to or greater than the maximum <i>retry-interval</i> configured, the subsequent retries are done at regular intervals of maximum <i>retry-interval</i> seconds until the call is established.</p> <p>Range is from 1 to 65535 seconds; the default is 60.</p> |
| network [clp-bit { 0 1 map-de }] [de-bit { 0 1 map-de map-clp-or-de }] | <p>Specifies the interworking function, which can be either network or service interworking.</p> <p>For soft PVCs that originate from a Frame Relay interface and end on a Frame Relay interface, the default is network interworking.</p> <p>For soft PVCs that originate from a Frame Relay interface and end on an ATM interface, the default is service interworking.</p> |
| clp-bit | Sets the mode of DE/CLP mapping in the Frame Relay to ATM direction. Values 0 , 1 , or map-de are allowed for both network interworking and service interworking. The default is map-de . |
| de-bit | <p>Sets the mode of DE/CLP mapping in ATM to Frame Relay direction.</p> <ul style="list-style-type: none"> For network interworking, values map-de or map-clp-or-de are allowed. The default value is map-clp-or-de. For service interworking, values 0, 1, or map-clp are allowed. The default is map-clp. |

| | |
|---|--|
| [network service transparent translation]] | Specifies the interworking function, which can be either network interworking or service interworking in transparent mode, or service interworking in translation mode. |
| efci-bit {0 map-fecn} | For service interworking only. Sets the mode of FECN/EFCI mapping in the Frame Relay-to-ATM direction. The default value is 0 . Values 0 or map-fecn are allowed. |
| enable | Enables the soft connection, and allows it to be set up. This is the default for the initial soft connection configuration. However, if the frame-relay soft-vc command is reentered for an existing connection, the default is to remain in the current enabled or disabled state. |
| disable | Disables the soft connection, which prevents it from being set up initially, or tears down an existing connection. |
| explicit-path | The PNNI explicit path that is manually configured for routing a soft PVC, using the atm pnni explicit-path command. |
| <i>precedence</i> | The precedence number by which ATM PNNI explicit paths are assigned, from 1 to 3. Up to three explicit paths can be assigned to a soft PVC. |
| name <i>path-name</i> | The name of the ATM PNNI explicit path for routing soft PVCs. |
| identifier <i>path-id</i> | The name of the ATM PNNI explicit path for routing soft PVCs. |
| upto <i>partial-entry-index</i> | Allows a subset of a longer explicit path to be used, so that all included nodes after the specified entry-index are disregarded. If the destination is reachable at any next node or segment target, the remaining included nodes in the explicit path are disregarded automatically. |
| <i>only-explicit</i> | If one or more explicit paths have been specified and the explicit path fails, the soft connection remains down until it is retried at its next retry interval. If this option is not specified, the system uses the standard on-demand routing instead of waiting for the next retry interval. |
| redo-explicit | Applies only to existing soft connections and allows explicit paths to be respecified without tearing down connections. Existing connections are unaffected unless a reroute takes place, and then they use the newer explicit-path configuration. |

Defaults See "Syntax Description."

Command Modes Interface configuration

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

Usage Guidelines

Obtain the destination port address before configuring a soft PVC by using the **show atm interface** or **show atm addresses** command on the destination switch.

The following list identifies reasons why the creation of a soft PVC is unsuccessful:

- There is a VPI or VCI collision at the source or destination switch.
- The source or destination interface is not up (or autoconfiguration is not complete).
- The specified destination address is not correct.

Up to three explicit paths can be assigned to a soft VC, using precedence numbers 1 through 3. The precedence 1 explicit path is considered the primary path and is tried first. If it fails, then the next precedence path is tried. Explicit paths can be specified either by **name** or by **identifier**.

The explicit-path options can be changed without tearing down an existing Frame Relay soft PVC. Use the **redo-explicit** form of the command to respecify all of the explicit-path options.

After configuring a Frame Relay soft PVC, use the **show vc** command on the source node (specifying the serial interface and DLCI) to verify that the soft PVC has succeeded and to see the explicit path taken.

**Note**

The show configuration displayed for soft connections with explicit paths is always shown as two separate lines, with the **redo-explicit** keyword on the second line, even if it was originally configured using a single command line.

Examples

The following example shows how to create a soft PVC between two Frame Relay connections.

```
Switch# configure terminal
Switch(config-if)# frame-relay soft-vc 50 dest-address
47.0091.8100.0000.00e0.1e79.8803.4000.0c81.8020.00 dlci 50 upc pass
```

The following example shows how to create a soft PVC between a Frame Relay connection and an ATM connection.

```
Switch# configure terminal
Switch(config-if)# frame-relay soft-vc 60 dest-address
47.0091.8100.0000.0060.3e5b.7201.4000.0c80.8000.00 vc 0 100
```

The following example shows these connections via the **show vc** command.

```
Switch# show vc interface serial3/0/0:1
```

| Interface | Conn-Id | Type | X-Interface | X-Conn-Id | Encap | Status |
|---------------|---------|--------|---------------|-----------|-------|--------|
| Serial3/0/0:1 | 50 | SoftVC | Serial3/0/0:2 | 50 | | UP |
| Serial3/0/0:1 | 55 | PVC | Serial3/0/0:2 | 55 | | UP |
| Serial3/0/0:1 | 60 | SoftVC | ATM1/1/1 | 0/35 | | UP |
| Serial3/0/0:1 | 66 | PVC | Serial3/0/0:2 | 66 | | UP |

In the **show vc** example above, the Frame Relay-to-Frame Relay connection originates from Serial 3/0/0:1 and terminates at Serial 3/0/0:2. The Frame Relay-to-ATM connection originates from Serial 3/0/0:1 and goes out through ATM 1/1/1 and ends on an ATM interface on an adjacent switch.

The following example shows how to manually configure an explicit path between two Frame Relay connections. In this example, if the explicit path fails, standard routing is used.

```
Switch# configure terminal
Switch(config)# interface atm 0/1/3
Switch(config-if)# frame-relay soft-vc 100 dest-address
47.0091.8100.0000.1061.705b.d900.4000.0c81.9000.00 dlcI 100 explicit-path 1 name
chicago.path1
```

The following example shows how to use the **redo-explicit** keyword to modify an existing explicit-path configuration to add a second alternate explicit path and to prevent standard routing from being used should both explicit paths fail. Note that the system prompts you to confirm the changes.

```
Switch(config)# interface atm 0/1/3
Switch(config-if)# frame-relay soft-vc 100 redo-explicit explicit-path 1 name
chicago.path1 explicit-path 2 name chicago.path2 only-explicit
Modify with new explicit path options [yes], or abort changes [no]? [yes/no]:y
```

The following example shows how to remove all explicit paths from an existing Frame Relay soft PVC by using the **redo-explicit** keyword, with no other options specified. The path will not be changed until a reroute occurs.

```
Switch(config)# interface atm 0/1/3
Switch(config-if)# frame-relay soft-vc 100 redo-explicit
Modify with new explicit path options [yes], or abort changes [no]? [yes/no]:y
```

Related Commands

| Command | Description |
|---|--|
| atm pnni explicit-path | Used to enter PNNI explicit path configuration mode to create or modify PNNI explicit paths. |
| atm route-optimization (interface) | Enables and configures soft PVC route optimization on an ATM interface. |
| atm route-optimization (EXEC) | Initiates route optimization immediately for a specific interface or specific soft VC. |
| atm soft-vc | Used to create a soft PVC on the switch router. |
| atm soft-vp | Used to create a soft PVP on the switch router. |
| show atm pnni explicit-paths | Displays a summary of explicit paths that have been configured. |
| show atm vc | Displays the ATM layer connection information about the virtual connection. |
| show vc | Displays active virtual circuits (PVCs, SVCs, and soft VCs). |

frame-relay upc-intent

To configure the UPC to be programmed for the soft VCs terminating on an interface, and to configure the default value for the **upc** option in the **frame-relay pvc** command, use the **frame-relay upc-intent** interface configuration command. To assign the default value, use the **no** form of this command.

frame-relay upc-intent { **pass** | **tag-drop** }

no frame-relay upc-intent

| Syntax Description | pass tag-drop Usage parameter control, specified as pass or tag-drop . | | | | |
|----------------------------|--|---------|--------------|----------------------------|---|
| Defaults | Pass | | | | |
| Command Modes | Interface configuration | | | | |
| Command History | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(1a)W5(5b)</td> <td>New command</td> </tr> </tbody> </table> | Release | Modification | 12.0(1a)W5(5b) | New command |
| Release | Modification | | | | |
| 12.0(1a)W5(5b) | New command | | | | |
| Usage Guidelines | This command determines the UPC to use for SVCs and for the destination leg of soft VCs. If you want to configure policing, you can apply it once for traffic entering a network. | | | | |
| Examples | <p>The following example shows how to set the intended UPC for SVCs on an interface to tag-drop.</p> <pre>Switch# configure terminal Switch(config)# interface serial 11/0/0:1 Switch(config-if)# frame-relay upc-intent tag-drop</pre> | | | | |
| Related Commands | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show running-config</td> <td>Displays the configuration information currently running on the terminal.</td> </tr> </tbody> </table> | Command | Description | show running-config | Displays the configuration information currently running on the terminal. |
| Command | Description | | | | |
| show running-config | Displays the configuration information currently running on the terminal. | | | | |

framing (controller)

To specify the type of framing used by the port on a Frame Relay port adapter, use the **framing** controller configuration command. To restore the default framing type, use the **no** form of this command.

For the channelized DS3 (CDS3) Frame Relay port adapter, use the following syntax:

framing {c-bit | m23}

no framing {c-bit | m23}

For the channelized E1 (CE1) Frame Relay port adapter, use the following syntax:

framing {crc | no-crc4}

no framing {crc | no-crc4}

| Syntax Description | Command | Description |
|--------------------|--------------------|--|
| | c-bit m23 | Specifies that either C-bit framing or M23 framing is used for the CDS3 Frame Relay controller. |
| | no-crc4 | Specifies CRC-4 E1 framing for the CE1 Frame Relay controller. To select E1 framing without CRC-4 generation, use the no-crc4 option. |

| Defaults | Default Value |
|---------------------------------|----------------|
| CDS3 Frame Relay port adapters: | m23 |
| CE1 Frame Relay port adapters: | no-crc4 |

| Command Modes | Mode |
|---------------|--------------------------|
| | Controller configuration |

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

| Usage Guidelines | Guidelines |
|------------------|---|
| | The DS3 port adapter has a similar command, but the Frame Relay port adapter does not support the same command options. |

| Examples | Example |
|----------|---|
| | The following example shows how to set the framing for the CE1 Frame Relay port adapter to no CRC4. <pre>Switch# configure terminal Switch(config)# controller e1 11/0/0 Switch(config-controller)# framing no-crc4</pre> |

| Related Commands | Command | Description |
|------------------|----------------------------|---|
| | show controllers e1 | Displays information about a physical port device and specifies a channelized E1 interface. |

framing (interface)

To select the frame type for the data line, use the **framing** interface configuration command. To restore the default values, use the **no** form of this command.

framing *framingmode*

no framing *framingmode*

| | |
|---------------------------|--|
| Syntax Description | <p><i>framingmode</i> Specifies <i>framingmode</i> as follows:</p> <ul style="list-style-type: none"> • For DS3: m23adm m23plcp cbitadm cbitplcp • For E3: g832adm g751adm g751plcp • For E1: crc4adm crc4plcp pcm30adm pcm30plcp • For E1 IMA: cleare1 crc4adm pcm30adm • For T1: esfplcp sfplcp sfadm esfadm • For T1 IMA: esfadm sfadm • For OC-12: stm-4c sts-12c |
|---------------------------|--|

| | |
|-----------------|---|
| Defaults | <p>For DS3: cbitplcp</p> <p>For E3: g832adm</p> <p>For E1: pcm30adm</p> <p>For E1 IMA: no-crc4</p> <p>For T1: esfplcp</p> <p>For T1 IMA: esf</p> <p>For OC-12: sts-12c</p> |
|-----------------|---|

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

| Command History | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(4a)W5(11a)</td> <td>Modified: Formerly interface configuration</td> </tr> </tbody> </table> | Release | Modification | 12.0(4a)W5(11a) | Modified: Formerly interface configuration |
|------------------------|--|---------|--------------|-----------------|---|
| Release | Modification | | | | |
| 12.0(4a)W5(11a) | Modified: Formerly interface configuration | | | | |

| | |
|-------------------------|--|
| Usage Guidelines | <p>In the DS3 environment, the framing (interface) subcommand allows selection of DS3 framing mode to M23 ADM, M23 PLCP, C-Bit ADM, or C-Bit PLCP.</p> <p>In the E3 environment, the framing (interface) subcommand allows selection of E3 framing mode to G.751 PLCP, G.751 ADM, or G.832 ADM.</p> <p>In the E1 environment, the framing (interface) subcommand allows selection of E1 framing mode to ADM with CRC, PLCP with CRC, PCM 30 ADM, PCM 30 PCLP.</p> |
|-------------------------|--|

In the E1 IMA environment, the **framing (interface)** subcommand allows selection of E1 IMA framing mode to clear channel, ADM with CRC, PCM 30 ADM.

In the T1 environment, the **framing (interface)** subcommand allows selection of T1 framing mode to ESF PLCP, SF PLCP, SF ADM, ESF ADM.

In the T1 IMA environment, the **framing (interface)** subcommand allows selection of T1 IMA framing mode to SF ADM, ESF ADM.

In the OC-12 environment, the **framing (interface)** subcommand allows selection of OC-12 framing mode to SONET (STS-12c), SDH (STM-4c).

**Note**

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

Examples

The following example shows how to select **g751plcp** as the frame type.

```
Switch(config-if)# framing g751plcp
```

Related Commands

| Command | Description |
|-------------------------|--|
| show controllers | Displays information about a physical port device. |
| sonet overhead | Sets SONET/SDH overhead bytes. |