



## Frame Relay MIB Enhancements

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The Cisco Frame Relay MIB describes managed objects that let you monitor Frame Relay operations remotely by using Simple Network Management Protocol (SNMP). The Frame Relay MIB Enhancements feature extends the Cisco Frame Relay MIB by adding MIB objects that monitor the following Frame Relay functionality:

- Frame Relay fragmentation
- Frame Relay-ATM Network Interworking (FRF.5)
- Frame Relay-ATM Service Interworking (FRF.8)
- Frame Relay switching
- Input and output rates of individual virtual circuits (VCs)

The Frame Relay MIB Enhancements feature also modifies the **load-interval** command to let you configure the load interval per permanent virtual circuit (PVC). The load interval is the length of time for which data is used to compute load statistics, including input rate in bits and packets per second, output rate in bits and packets per second, load, and reliability. Before the introduction of this feature, the load interval could be configured only for the interface.

### History for the Frame Relay MIB Enhancements Feature

Release	Modification
12.2(4)T	This feature was introduced.
12.2(28)SB	This feature was integrated into Cisco IOS Release 12.2(28)SB.

### Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.



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## Feature Overview

[Table 1](#) describes the MIB tables and objects that are introduced by the Frame Relay MIB Enhancements feature. For a complete description of the MIB, refer to the Cisco Frame Relay MIB file CISCO-FRAME-RELAY-MIB.mib, which is available at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

**Table 1** *MIB Tables and Objects Introduced by the Frame Relay MIB Enhancements Feature*

Table or Object	Description
cfrFragTable	Table of Frame Relay fragmentation information.
cfrFRF5ConnectionTable	Table of Frame Relay-ATM Network Interworking connection information.
cfrFRF8ConnectionTable	Table of Frame Relay-ATM Service Interworking connection information.
cfrSwitchingTable	Table of Frame Relay switching entries.
cfrExtCircuitTxDataRate	Average rate, in bytes per second, at which data is transmitted on a circuit.
cfrExtCircuitTxPktRate	Average number of packets sent per second on a circuit.
cfrExtCircuitRcvDataRate	Average rate, in bytes per second, at which data is received on a circuit.
cfrExtCircuitRcvPktRate	Average number of packets received per second on a circuit.

## Related Documents

For information about configuring Frame Relay using Cisco IOS software, refer to the following documents:

- The chapter “Configuring Frame Relay” in the *Cisco IOS Wide-Area Networking Configuration Guide, Release 12.4*
- The *Cisco IOS Wide-Area Networking Command Reference, Release 12.4T*

For information on configuring SNMP using Cisco IOS software, refer to the following documents:

- The chapter “Configuring SNMP Support” in the *Cisco IOS Network Management Configuration Guide, Release 12.4*
- The *Cisco IOS Configuration Fundamentals Command Reference, Release 12.4T*

## Supported Standards, MIBs, and RFCs

### Standards

No new or modified standards are supported by this feature.

### MIBs

This feature provides enhancements to the Cisco Frame Relay MIB. The MIB file, CISCO-FRAME-RELAY-MIB.my, can be downloaded at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

### RFCs

No new or modified RFCs are supported by this feature.

## Prerequisites

Before you use the Frame Relay MIB, you must configure Frame Relay and SNMP on your devices.

To access the information introduced by the Frame Relay MIB enhancements, you must compile the Cisco Frame Relay MIB in the MIB file called CISCO-FRAME-RELAY-MIB.my into your network management system (NMS) application. You can download this file at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

## Configuration Tasks

See the following sections for configuration tasks for the Frame Relay MIB Enhancements feature. Each task in the list is identified as either required or optional.

- [Setting the Load Interval for a PVC](#) (optional)
- [Verifying the Load Interval](#) (optional)

See the “Prerequisites” section earlier in this document for tasks that must be completed and functionality that must be configured before you can use the Cisco Frame Relay MIB.

## Setting the Load Interval for a PVC

You can change the period of time over which a set of data is used for computing load statistics. Decisions, such as for dial backup, depend on these statistics. If you decrease the load interval, the average statistics are computed over a shorter period of time and are more responsive to bursts of traffic.

To change the length of time for which a set of data is used to compute load statistics for a PVC, use the following steps:

	Command or Action	Purpose
Step 1	Router> <b>enable</b>	Enters privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
Step 2	Router# <b>configure terminal</b>	Enters global configuration mode.
Step 3	Router(config)# <b>interface</b> <i>type number</i>	Configures an interface type and enters interface configuration mode.
Step 4	Router(config-if)# <b>frame-relay interface-dlci</b> <i>dlci</i>	Assigns a specific PVC to a data-link connection identifier (DLCI) and enters Frame Relay DLCI configuration mode.
Step 5	Router(config-fr-dlci)# <b>load-interval</b> <i>seconds</i>	Changes the length of time for which data is used to compute load statistics.  The seconds argument must be a multiple of 30. The range is from 30 to 300 seconds. The default is 300 seconds.

## Verifying the Load Interval

Use the **show running-config** command to verify that you have configured the load interval correctly.

## Configuration Examples

This section provides the following configuration example:

- [Setting the Load Interval for a PVC Example](#)

### Setting the Load Interval for a PVC Example

In the following example, the load interval is set to 60 seconds for a Frame Relay PVC with the DLCI 100:

```
interface serial 1/1
 frame-relay interface-dlci 100
 load-interval 60
```

# Command Reference

This section documents the following modified command only.

- [load-interval](#)

# load-interval

To change the length of time for which data is used to compute load statistics, use the **load-interval** command in interface configuration mode or Frame Relay DLCI configuration mode. To revert to the default setting, use the **no** form of this command.

**load-interval** *seconds*

**no load-interval** *seconds*

## Syntax Description

<i>seconds</i>	Length of time for which data is used to compute load statistics. Value is a multiple of 30, from 30 to 600 (30, 60, 90, 120, and so on). The default is 300 seconds.
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## Command Default

The default load interval is 300 seconds.

## Command Modes

Interface configuration  
Frame Relay DLCI configuration

## Command History

Release	Modification
10.3	This command was introduced.
12.2(4)T	This command was made available in Frame Relay DLCI configuration mode.
12.2(28)SB	This command was made available in Frame Relay DLCI configuration mode.

## Usage Guidelines

To make computations more reactive to short bursts of traffic, you can shorten the length of time over which load averages are computed.

If the load interval is set to 30 seconds, new data is used for load calculations over a 30-second period. This data is used to compute load statistics, including the input rate in bits and packets per second, the output rate in bits and packets per second, the load, and reliability.

Load data is gathered every five seconds. This data is used for a weighted-average calculation in which recent load data has more weight in the computation than older load data. If the load interval is set to 30 seconds, the average is computed for the last 30 seconds of load data.

If you change the calculation interval from the default of five minutes to a shorter period of time, the input and output statistics that are displayed by the **show interface** command or the **show frame-relay pvc** command will be more current and will be based on more nearly instantaneous data, rather than reflecting the average load over a longer period of time.

This command is often used for dial backup purposes to increase or decrease the likelihood of implementation of a backup interface, but it can be used on any interface.

**Examples****Interface Example**

In the following example, the default average of five minutes is changed to a 30-second average. A burst in traffic that would not trigger a dial backup for an interface configured with the default five-minute interval might trigger a dial backup for this interface, which is set for the shorter 30-second interval.

```
Router(config)# interface serial 0
Router(config-if)# load-interval 30
```

**Frame Relay PVC Example**

In the following example, the load interval is set to 60 seconds for a Frame Relay PVC with the DLCI 100:

```
Router(config)# interface serial 1/1
Router(config-if)# frame-relay interface-dlci 100
Router(config-fr-dlci)# load-interval 60
```

**Related Commands**

Command	Description
<b>show interfaces</b>	Displays statistics for all interfaces configured on the router or access server.

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■ load-interval