



## CHAPTER 3

# Cisco ASR 9000 Series Routers MIB Specifications

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This chapter describes the Management Information Base (MIB) on the Cisco ASR 9000 Series router. Each MIB description lists any constraints on how the MIB or its object identifiers (OIDs) are implemented on the Cisco ASR 9000 Series router.

Unless noted otherwise, the Cisco ASR 9000 Series router implementation of a MIB follows the standard MIB that has been defined. Any MIB table or object not listed in the table is implemented as defined in the standard MIB definition.

This chapter includes the following sections:

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- [Cisco ASR 9000 Series Routers MIB Categories, page 3-12](#)
- [MIB Version String Description, page 3-12](#)

## Cisco ASR 9000 Series Routers MIBs

Each MIB description lists relevant constraints about the MIB's implementation on the Cisco ASR 9000 Series router platform. Any objects not listed in a table are implemented as defined in the MIB. For detailed MIB descriptions, see the standard MIB.



### Note

- Not all MIBs included in a Cisco IOS XR Software release are fully supported by the router. Some MIBs are not supported at all. Other MIBs might work, but they have not been tested on the router. In addition, some MIBs are deprecated but cannot be removed from the software. When a MIB is included in the image, this does not necessarily mean it is supported by the Cisco ASR 9000 Series Router platform.
- Certain MIBs return a numeric value along with the MIB object. These numerical values are shown in parentheses in the Cisco ASR 9000 Series Aggregation Services Routers MIB Specifications Guide. For example, the CISCO-ENHANCED-FRU-CONTROL-MIB, returns a MIB object compMemPoolType of value processorMemory and an actual value 2. This is shown as processorMemory(2).

To determine which MIBs are included in other releases, see the [“Downloading and Compiling MIBs” section on page 2-7](#).

# Cisco ASR 9000 Series Routers MIB Categories

The MIBs in the Cisco ASR 9000 Series Image on the Cisco ASR 9000 Series router are categorized into three types:

- Supported MIBs
- Unsupported MIBs

## Supported MIBs

The MIB exists in the image, the code is implemented.

## Unsupported MIBs

The MIB exists in the image but is not supported. These MIBs are not supported for the Cisco ASR 9000 Series routers.

# MIB Version String Description

The MIB version string indicates the date and time that the module was most recently modified. The format is YYMMDDHHMMZ or YYYYMMDDHHMMZ, where:

- YY is the last two digits of the year (only years between 1900 and 1999).
- YYYY is all four digits of the year (any year).
- MM is the month (01 through 12).
- DD is the day of the month (01 through 31).
- HH is hours (00 through 23).
- MM is minutes (00 through 59).
- Z (the ASCII character Z) denotes Coordinated Universal Time (UTC, formerly Greenwich Mean Time, GMT). This datatype stores the date and time fields YEAR, MONTH, DAY, HOUR, MINUTE, SECOND, TIMEZONE\_HOUR, and TIMEZONE\_MINUTE.



**Note** For example, 9502192015Z and 199509122015Z represent 8:15 GMT on 19 February 1995. Years after 1999 use the four-digit format. Years 1900-1999 may use the two or four digit format.



**Note** In the following table, you might see the term *Revision not available*. This term refers to the MIB module that does not have a recorded time stamp indicating the latest modification.

## MIBs in the Cisco ASR 9000 Series Routers

Table 3-1 lists the MIBs in the Cisco ASR 9000 Series routers:

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers*

| MIB                                                                                                                                                                                | midb process   | Supported                                                                                                                      | Unsupported | Not in Image |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| <b>ATM-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>       | mibd-interface | 9810191200Z<br>9810191200Z<br>9810191200Z<br>9810191200Z<br>9810191200Z                                                        |             |              |
| <b>ATM-FORUM-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | —              | Revision not available<br>Revision not available<br>Revision not available<br>Revision not available<br>Revision not available |             |              |
| <b>ATM2-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | mibd-interface | 200309230000Z<br>200309230000Z<br>200309230000Z<br>200309230000Z<br>200309230000Z                                              |             |              |
| <b>BGP4-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd-route     | RFC 4273<br>RFC 4273<br>RFC 4273<br>RFC 4273<br>RFC 4273                                                                       |             |              |
| <b>BRIDGE-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>    | mibd-interface | RFC 4188<br>RFC 4188<br>RFC 4188<br>RFC 4188<br>RFC 4188                                                                       |             |              |
| <b>CISCO-AAA-SERVER-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> </ul>                                                         | mibd-interface |                                                                                                                                |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                               | mib process    | Supported                                                                         | Unsupported | Not in Image |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                           |                | 200311170000Z                                                                     |             |              |
| <b>CISCO-ATM-EXT-MIB<sup>1</sup></b>                                                                                                              | mibd-interface |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                | 200301060000Z<br>200301060000Z<br>200301060000Z<br>200301060000Z<br>200301060000Z |             |              |
| <b>CISCO-ATM-QOS-MIB<sup>1</sup></b>                                                                                                              | mibd-interface |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                | 200206100000Z<br>200206100000Z<br>200206100000Z<br>200206100000Z<br>200206100000Z |             |              |
| <b>CISCO-BGP4-MIB</b>                                                                                                                             | mibd-route     |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                | 200302240000Z<br>200302240000Z<br>200302240000Z<br>200302240000Z<br>200302240000Z |             |              |
| <b>CISCO-BGP-POL-ICY-ACCOUNTING-MIB</b>                                                                                                           | mibd-interface |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                | 200207260000Z<br>200207260000Z<br>200207260000Z<br>200207260000Z<br>200207260000Z |             |              |
| <b>CISCO-BULK-FILE-MIB<sup>1</sup></b>                                                                                                            | mibd-infra     |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                | 200206100000Z<br>200206100000Z<br>200206100000Z<br>200207260000Z<br>200206100000Z |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                            | mib process    | Supported                                                                         | Unsupported | Not in Image |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <b>CISCO-CDP-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                         | mibd-interface | 9812100000Z<br>9812100000Z<br>9812100000Z<br>9812100000Z<br>9812100000Z           |             |              |
| <b>CISCO-CLASS-BASED-QOS-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-interface | 200901260000Z<br>200901260000Z<br>200901260000Z<br>200901260000Z<br>200901260000Z |             |              |
| <b>CISCO-CONFIG-COPY-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                 | mibd-infra     | 200504060000Z<br>200504060000Z<br>200504060000Z<br>200504060000Z<br>200504060000Z |             |              |
| <b>CISCO-CONFIG-MAN-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd-infra     | 200704270000Z<br>200704270000Z<br>200704270000Z<br>200704270000Z<br>200704270000Z |             |              |
| <b>CISCO-CONTEXT-MAP-PING-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>            | mibd-infra     | 200811220000Z<br>200811220000Z<br>200811220000Z<br>200811220000Z<br>200811220000Z |             |              |
| <b>CISCO-DS3-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> </ul>                                                                            | mibd-interface | 200205210000Z<br>200205210000Z                                                    |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                              | mib process | Supported                                                                         | Unsupported | Not in Image |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                                          |             | 200205210000Z<br>200205210000Z<br>200205210000Z                                   |             |              |
| <b>CISCO-ENHANCED-IMAGE-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>    | mibd-entity | 200501060000Z<br>200501060000Z<br>200501060000Z<br>200501060000Z<br>200501060000Z |             |              |
| <b>CISCO-ENHANCED-MEM-POOL-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-entity | 200812050000Z<br>200812050000Z<br>200812050000Z<br>200812050000Z<br>200812050000Z |             |              |
| <b>CISCO-ENTITY-ASSET-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | mibd-entity | 200309180000Z<br>200309180000Z<br>200309180000Z<br>200309180000Z<br>200309180000Z |             |              |
| <b>CISCO-ENTITY-FRU-CONTROL-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> </ul>                     | mibd-entity | 200810080000Z<br>200810080000Z<br>200810080000Z<br>200810080000Z                  |             |              |
| <b>CISCO-ENTITY-REDUNDANCY-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-entity | 200510010000Z                                                                     |             |              |
| <b>CISCO-ENTITY-SENSOR-MIB<sup>1</sup></b>                                                                                                                                                       | mibd-entity |                                                                                   |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                        | <b>midb process</b> | <b>Supported</b>                                                                  | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200711120000Z<br>200711120000Z<br>200711120000Z<br>200711120000Z<br>200711120000Z |                    |                     |
| <b>CISCO-ENTITY-STATE-EXT-MIB<sup>1</sup></b>                                                                                                     | mibd-infra          |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 201006160000Z<br>201006160000Z<br>201006160000Z<br>201006160000Z<br>201006160000Z |                    |                     |
| <b>CISCO-FLASH-MIB<sup>1</sup></b>                                                                                                                | mibd-infra          |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200906030000Z<br>200906030000Z<br>200906030000Z<br>200906030000Z<br>200906030000Z |                    |                     |
| <b>CISCO-FLOW-CLONE-MIB</b>                                                                                                                       | mibd-entity         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 201010190000Z<br>201010190000Z<br>201010190000Z<br>201010190000Z<br>201010190000Z |                    |                     |
| <b>CISCO-FLOW-MONITOR-MIB</b>                                                                                                                     | mibd-entity         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 201104190000Z<br>201104190000Z<br>201104190000Z<br>201104190000Z<br>201104190000Z |                    |                     |
| <b>CISCO-FRAME-RELAY-MIB<sup>1</sup></b>                                                                                                          | mibd-interface      |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> </ul>                      |                     | 200010130000Z<br>200010130000Z<br>200010130000Z<br>200010130000Z                  |                    |                     |

**Table 3-1** MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                               | midb process    | Supported                                                                         | Unsupported | Not in Image |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul>                                                                                     |                 | 200010130000Z                                                                     |             |              |
| <b>CISCO-FTP-CLIENT-MIB<sup>1</sup></b>                                                                                                           | mibd-infra      |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                 | 200603310000Z<br>200603310000Z<br>200603310000Z<br>200603310000Z<br>200603310000Z |             |              |
| <b>CISCO-HSRP-EXT-MIB</b>                                                                                                                         | mibd-interface  |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                 | 9808030000Z<br>9808030000Z<br>9808030000Z<br>9808030000Z<br>9808030000Z           |             |              |
| <b>CISCO-HSRP-MIB</b>                                                                                                                             | mibd-interface  |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                 | 9808030000Z<br>9808030000Z<br>9808030000Z<br>9808030000Z<br>9808030000Z           |             |              |
| <b>CISCO-IETF-BFD-MIB</b>                                                                                                                         | mibd-route      |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                 | 200804240000Z<br>200804240000Z<br>200804240000Z<br>200804240000Z<br>200804240000Z |             |              |
| <b>CISCO-IETF-FRR-MIB</b>                                                                                                                         | mibd-route      |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                 | 200804291200Z<br>200804291200Z<br>200804291200Z<br>200804291200Z<br>200804291200Z |             |              |
| <b>CISCO-IETF-MPLS-TE-P2MP-STD-MIB</b>                                                                                                            | mibd-inter-face |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> </ul>                                                                |                 | 200909300000Z<br>200909300000Z                                                    |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                        | <b>mib process</b> | <b>Supported</b>                                                                  | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                           |                    | 200909300000Z<br>200909300000Z<br>200909300000Z                                   |                    |                     |
| <b>CISCO-IETF-IPMROUTE-MIB</b>                                                                                                                    | mibd-inter-face    |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200608240000Z<br>200608240000Z<br>200608240000Z<br>200608240000Z<br>200608240000Z |                    |                     |
| <b>CISCO-IETF-MSDP-MIB</b>                                                                                                                        | mibd-inter-face    |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200605190000Z<br>200605190000Z<br>200605190000Z<br>200605190000Z<br>200605190000Z |                    |                     |
| <b>CISCO-IETF-PIM-MIB</b>                                                                                                                         | —                  |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> </ul>                      |                    | 200502220000Z<br>200502220000Z<br>200502220000Z<br>200502220000Z                  |                    |                     |
| <b>CISCO-IETF-PIM-EXT-MIB</b>                                                                                                                     | mibd-inter-face    |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200608250000Z<br>200608250000Z<br>200608250000Z<br>200608250000Z<br>200608250000Z |                    |                     |
| <b>CISCO-IETF-PW-MIB</b>                                                                                                                          | mibd-inter-face    |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200512200000Z<br>200512200000Z<br>200512200000Z<br>200512200000Z<br>200512200000Z |                    |                     |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                              | midb process    | Supported                                                                         | Unsupported | Not in Image |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <b>CISCO-IETF-PW-ENET-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd-inter-face | 200209221200Z<br>200209221200Z<br>200209221200Z<br>200209221200Z<br>200209221200Z |             |              |
| <b>CISCO-IETF-PW-FR-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                    | mibd-inter-face | 200312160000Z<br>200312160000Z<br>200312160000Z<br>200312160000Z<br>200312160000Z |             |              |
| <b>CISCO-IETF-PW-MPLS-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd-inter-face | 200302261200Z<br>200302261200Z<br>200302261200Z<br>200302261200Z<br>200302261200Z |             |              |
| <b>CISCO-IETF-VPLS-BGP-EXT-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>             | mibd-inter-face | 200810240000Z<br>200810240000Z<br>200810240000Z<br>200810240000Z<br>200810240000Z |             |              |
| <b>CISCO-IETF-VPLS-GENERIC-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-inter-face | 200710221200Z<br>200710221200Z<br>200710221200Z<br>200710221200Z<br>200710221200Z |             |              |
| <b>CISCO-IETF-VPLS-LDP-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> </ul>                                                                                         | mibd-inter-face | 200711221200Z                                                                     |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                        | <b>mibd process</b> | <b>Supported</b>                                                                  | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                      |                     | 200711221200Z<br>200711221200Z<br>200711221200Z<br>200711221200Z                  |                    |                     |
| <b>CISCO-IF-EXTENSION-MIB<sup>1</sup></b>                                                                                                         | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200707230000Z<br>200707230000Z<br>200707230000Z<br>200707230000Z<br>200707230000Z |                    |                     |
| <b>CISCO-IP-CBR-MET-RICS-MIB</b>                                                                                                                  | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200906110000Z<br>200906110000Z<br>200906110000Z<br>200906110000Z<br>200906110000Z |                    |                     |
| <b>CISCO-IP-TAP-MIB</b>                                                                                                                           | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200403110000Z<br>200403110000Z<br>200403110000Z<br>200403110000Z<br>200403110000Z |                    |                     |
| <b>CISCO-IP-STAT-MIB</b>                                                                                                                          | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200112202300Z<br>200112202300Z<br>200112202300Z<br>200112202300Z<br>200112202300Z |                    |                     |
| <b>CISCO-IPSEC-MIB</b>                                                                                                                            | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> </ul>                                           |                     | 200008071139Z<br>200008071139Z<br>200008071139Z                                   |                    |                     |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                   | midb process   | Supported                                                                         | Unsupported | Not in Image |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                                                    |                | 200008071139Z<br>200008071139Z                                                    |             |              |
| <b>CISCO-IPSEC-FLOW-MONITOR-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-interface | 200710240000Z<br>200710240000Z<br>200710240000Z<br>200710240000Z<br>200710240000Z |             |              |
| <b>CISCO-LICENSE-MGMT-MIB</b><br>1 <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>  | mibd-infra     | 200107310000Z<br>200107310000Z<br>200107310000Z<br>200107310000Z<br>200107310000Z |             |              |
| <b>CISCO-MLD-SNOOPING-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>       | mibd-interface | 201007020000Z<br>201007020000Z<br>201007020000Z<br>201007020000Z<br>201007020000Z |             |              |
| <b>CISCO-NETSYNC-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>            | mibd-interface | 201010150000Z                                                                     |             |              |
| <b>CISCO-NTP-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                | mibd-interface | 200607310000Z<br>200607310000Z<br>200607310000Z<br>200607310000Z<br>200607310000Z |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                  | midb process        | Supported     | Unsupported | Not in Image |
|--------------------------------------|---------------------|---------------|-------------|--------------|
| <b>CISCO-OAM-MIB</b>                 |                     |               |             |              |
| • Release 3.7                        | mibd-inter-<br>face | 200602170000Z |             |              |
| • Release 3.9                        |                     | 200602170000Z |             |              |
| • Release 4.0                        |                     | 200602170000Z |             |              |
| • Release 4.2                        |                     | 200602170000Z |             |              |
| • Release 4.3                        |                     | 200602170000Z |             |              |
| <b>CISCO-PTP-MIB</b>                 | mibd-inter-<br>face |               |             |              |
| • Release 3.7                        |                     |               |             |              |
| • Release 3.9                        |                     |               |             |              |
| • Release 4.0                        |                     |               |             |              |
| • Release 4.2                        |                     |               |             |              |
| • Release 4.3                        |                     | 201101280000Z |             |              |
| <b>CISCO-P2P-IF-MIB</b>              | mibd-inter-<br>face |               |             |              |
| • Release 3.7                        |                     | 200808120000Z |             |              |
| • Release 3.9                        |                     | 200808120000Z |             |              |
| • Release 4.0                        |                     | 200808120000Z |             |              |
| • Release 4.2                        |                     | 200808120000Z |             |              |
| • Release 4.3                        |                     | 200808120000Z |             |              |
| <b>CISCO-PIM-MIB</b>                 | mibd-inter-<br>face |               |             |              |
| • Release 3.7                        |                     | 200011020000Z |             |              |
| • Release 3.9                        |                     | 200011020000Z |             |              |
| • Release 4.0                        |                     | 200011020000Z |             |              |
| • Release 4.2                        |                     | 200011020000Z |             |              |
| • Release 4.3                        |                     | 200011020000Z |             |              |
| <b>CISCO-PING-MIB</b>                | mibd-route          |               |             |              |
| • Release 3.7                        |                     | 200108280000Z |             |              |
| • Release 3.9                        |                     | 200108280000Z |             |              |
| • Release 4.0                        |                     | 200108280000Z |             |              |
| • Release 4.2                        |                     | 200108280000Z |             |              |
| • Release 4.3                        |                     | 200108280000Z |             |              |
| <b>CISCO-PROCESS-MIB<sup>1</sup></b> | mibd-entity         |               |             |              |
| • Release 3.7                        |                     | 200910120000Z |             |              |
| • Release 3.9                        |                     | 200910120000Z |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                        | midb process    | Supported                                                                         | Unsupported | Not in Image |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                                    |                 | 200910120000Z<br>200910120000Z<br>200910120000Z                                   |             |              |
| <b>CISCO-RF-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>          | mibd-infra      | 200803180000Z<br>200803180000Z<br>200803180000Z<br>200803180000Z<br>200803180000Z |             |              |
| <b>CISCO-RTTMON-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd_entity     | 200803240000Z<br>200803240000Z<br>200803240000Z<br>200803240000Z<br>200803240000Z |             |              |
| <b>CISCO-SELEC-TIVE-VRF-DOWNLOAD-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-infra      | 201106220000Z<br>201106220000Z<br>201106220000Z<br>201106220000Z<br>201106220000Z |             |              |
| <b>CISCO-SONET-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>       | mibd-inter-face | 200303070000Z<br>200303070000Z<br>200303070000Z<br>200303070000Z<br>200303070000Z |             |              |
| <b>CISCO-SUBSCRIBER-SESSION-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | mibd-infra      | 201208080000Z                                                                     |             |              |
| <b>CISCO-SYSLOG-MIB</b>                                                                                                                                                                    | mibd-infra      |                                                                                   |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                        | <b>midb process</b> | <b>Supported</b>                                                                  | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200512030000Z<br>200512030000Z<br>200512030000Z<br>200512030000Z<br>200512030000Z |                    |                     |
| <b>CISCO-SYSTEM-MIB</b>                                                                                                                           | mibd-infra          |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200709160000Z<br>200709160000Z<br>200709160000Z<br>200709160000Z<br>200709160000Z |                    |                     |
| <b>CISCO-TAP2-MIB</b>                                                                                                                             | mibd-route          |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200809100000Z<br>200809100000Z<br>200809100000Z<br>200809100000Z<br>200809100000Z |                    |                     |
| <b>CISCO-TCP-MIB</b>                                                                                                                              | mibd-route          |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200111120000Z<br>200111120000Z<br>200111120000Z<br>200111120000Z<br>200111120000Z |                    |                     |
| <b>CISCO-VPDN-MGMT-MIB</b>                                                                                                                        | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 200906160000Z                                                                     |                    |                     |
| <b>CISCO-VLAN-IFT-ABLE-RELATIONSHIP-MIB</b>                                                                                                       | mibd-inter-face     |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                     | 9904010530Z<br>9904010530Z<br>9904010530Z<br>9904010530Z<br>9904010530Z           |                    |                     |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                        | midb process    | Supported                                                                         | Unsupported | Not in Image |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <b>DISMAN-EXPRESSION-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>             | mibd-inter-face | 200010160000Z<br>200010160000Z<br>200010160000Z<br>200010160000Z<br>200010160000Z |             |              |
| <b>DOT3-OAM-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                      | mibd-inter-face | 200706140000Z<br>200706140000Z<br>200706140000Z<br>200706140000Z<br>200706140000Z |             |              |
| <b>DS1-MIB (RFC 2495)<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>    | mibd-inter-face | 9808011830Z<br>9808011830Z<br>9808011830Z<br>9808011830Z<br>9808011830Z           |             |              |
| <b>DS3-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>               | mibd-inter-face | 200205210000Z<br>200205210000Z<br>200205210000Z<br>200205210000Z<br>200205210000Z |             |              |
| <b>ENTITY-MIB (RFC 2737)<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-entity     | RFC 2737<br>RFC 2737<br>RFC 2737<br>RFC 2737<br>RFC 2737                          |             |              |
| <b>ENTITY-STATE-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> </ul>                                                                                 | mibd-entity     | 200511220000Z<br>200511220000Z                                                    |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                      | mib process     | Supported                                                                         | Unsupported | Not in Image |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                                  |                 | 200511220000Z<br>200511220000Z<br>200511220000Z                                   |             |              |
| <b>ETHERLIKE-MIB (RFC 2665, 3635)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>  | mibd-entity     | 200309190000Z<br>200309190000Z<br>200309190000Z<br>200309190000Z<br>200309190000Z |             |              |
| <b>EVENT-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                       | mibd-infra      | RFC 2981<br>RFC 2981<br>RFC 2981<br>RFC 2981<br>RFC 2981                          |             |              |
| <b>EXPRESSION-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | mibd-infra      | 200511240000Z<br>200511240000Z<br>200511240000Z<br>200511240000Z<br>200511240000Z |             |              |
| <b>FRAME-RELAY-DTE-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-inter-face | 9705010229Z<br>9705010229Z<br>9705010229Z<br>9705010229Z<br>9705010229Z           |             |              |
| <b>IEEE8021-CFM-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                | mibd-inter-face | 200706100000Z<br>200706100000Z<br>200706100000Z<br>200706100000Z<br>200706100000Z |             |              |

**Table 3-1** MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                    | midb process    | Supported                                                                         | Unsupported | Not in Image |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <b>IEEE8023-LAG-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>              | mibd-inter-face | 200006270000Z<br>200006270000Z<br>200006270000Z<br>200006270000Z<br>200006270000Z |             |              |
| <b>IETF-TCP-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | mibd-inter-face | 200402040000Z<br>200402040000Z<br>200402040000Z<br>200402040000Z<br>200402040000Z |             |              |
| <b>IETF-UDP-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | mibd-inter-face | 200410180000Z<br>200410180000Z<br>200410180000Z<br>200410180000Z<br>200410180000Z |             |              |
| <b>IF-MIB (RFC 2863)<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | mibd-inter-face | RFC 2233<br>RFC 2233<br>RFC 2233<br>RFC 2233<br>RFC 2233                          |             |              |
| <b>IMA-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                       | mibd-inter-face | 200303260000Z<br>200303260000Z<br>200303260000Z<br>200303260000Z<br>200303260000Z |             |              |
| <b>IP-FORWARD-MIB</b>                                                                                                                                                                  | mibd-route      |                                                                                   |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                    | <b>midb process</b> | <b>Supported</b> | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------|---------------------|------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 3.7</li> </ul> |                     | RFC 2096         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.9</li> </ul> |                     | RFC 4292         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.0</li> </ul> |                     | RFC 2096         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.2</li> </ul> |                     | RFC 4292         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul> |                     | RFC 2096         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul> |                     | RFC 4292         |                    |                     |
| <b>IP-MIB</b>                                                 | mibd-inter-face     |                  |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> </ul> |                     | RFC 2011         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.9</li> </ul> |                     | RFC 2011         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.0</li> </ul> |                     | RFC 2011         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.2</li> </ul> |                     | RFC 2011         |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul> |                     | RFC 2011         |                    |                     |
| <b>IPV6-MIB</b>                                               | mibd-inter-face     |                  |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> </ul> |                     | 9802052155Z      |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.9</li> </ul> |                     | 9802052155Z      |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.0</li> </ul> |                     | 9802052155Z      |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.2</li> </ul> |                     | 9802052155Z      |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul> |                     | 9802052155Z      |                    |                     |
| <b>IPV6-FORWARD-MIB</b>                                       | mibd-inter-face     |                  |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> </ul> |                     | 200402091200Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.9</li> </ul> |                     | 200402091200Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.0</li> </ul> |                     | 200402091200Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.2</li> </ul> |                     | 200402091200Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul> |                     | 200402091200Z    |                    |                     |
| <b>IPV6-MLD-MIB</b>                                           | mibd-inter-face     |                  |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> </ul> |                     | 200101250000Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.9</li> </ul> |                     | 200101250000Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.0</li> </ul> |                     | 200101250000Z    |                    |                     |
| <ul style="list-style-type: none"> <li>Release 4.2</li> </ul> |                     | 200101250000Z    |                    |                     |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                        | <b>mib process</b> | <b>Supported</b>                                                                  | <b>Unsupported</b> | <b>Not in Image</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>Release 4.3</li> </ul>                                                                                     |                    | 200101250000Z                                                                     |                    |                     |
| <b>ISIS-MIB</b>                                                                                                                                   | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200604040000Z<br>200604040000Z<br>200604040000Z<br>200604040000Z<br>200604040000Z |                    |                     |
| <b>MAU-MIB</b>                                                                                                                                    | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200704210000Z<br>200704210000Z<br>200704210000Z<br>200704210000Z<br>200704210000Z |                    |                     |
| <b>MFR-MIB</b>                                                                                                                                    | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200011300000Z<br>200011300000Z<br>200011300000Z<br>200011300000Z<br>200011300000Z |                    |                     |
| <b>MGMD-STD-MIB</b>                                                                                                                               | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200302240000Z<br>200302240000Z<br>200302240000Z<br>200302240000Z<br>200302240000Z |                    |                     |
| <b>MPLS-L3VPN-STD-MIB</b>                                                                                                                         | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |                    | 200601230000Z<br>200601230000Z<br>200601230000Z<br>200601230000Z<br>200601230000Z |                    |                     |
| <b>MPLS-LDP-GENERIC-STD-MIB</b>                                                                                                                   | mibd-route         |                                                                                   |                    |                     |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> </ul>                                           |                    | 200406030000Z<br>200406030000Z<br>200406030000Z                                   |                    |                     |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                               | midb process | Supported                                                                         | Unsupported | Not in Image |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                |              | 200406030000Z<br>200406030000Z                                                    |             |              |
| <b>MPLS-LDP-STD-MIB</b>                                                                                                                           | mibd-route   |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200406030000Z<br>200406030000Z<br>200406030000Z<br>200406030000Z<br>200406030000Z |             |              |
| <b>MPLS-LSR-STD-MIB</b>                                                                                                                           | mibd-route   |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200406030000Z<br>200406030000Z<br>200406030000Z<br>200406030000Z<br>200406030000Z |             |              |
| <b>MPLS-TE-STD-MIB</b>                                                                                                                            | mibd-route   |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | RFC 3812<br>RFC 3812<br>RFC 3812<br>RFC 3812<br>RFC 3812                          |             |              |
| <b>NOTIFICATION-LOG-MIB</b>                                                                                                                       | mibd-infra   |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200011270000Z<br>200011270000Z<br>200011270000Z<br>200011270000Z<br>200011270000Z |             |              |
| <b>OSPF-MIB</b>                                                                                                                                   | mibd-route   |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200611100000Z<br>200611100000Z<br>200611100000Z<br>200611100000Z<br>200611100000Z |             |              |
| <b>OSPF-TRAP-MIB</b>                                                                                                                              | —            |                                                                                   |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> </ul>                                           |              | 200611100000Z<br>200611100000Z<br>200611100000Z                                   |             |              |

**Table 3-1** MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                               | midb process | Supported                                                                                                                      | Unsupported | Not in Image |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                |              | 200611100000Z<br>200611100000Z                                                                                                 |             |              |
| <b>OSPFV3-MIB</b>                                                                                                                                 | mibd-route   |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200709171200Z<br>200709171200Z<br>200709171200Z<br>200709171200Z<br>200709171200Z                                              |             |              |
| <b>RADIUS-ACC-CLIENT-MIB<sup>1</sup></b>                                                                                                          | mibd-infra   |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200300000000Z<br>200300000000Z<br>200300000000Z<br>200300000000Z<br>200300000000Z                                              |             |              |
| <b>RADIUS-AUTH-CLIENT-MIB<sup>1</sup></b>                                                                                                         | mibd-infra   |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 200300000000Z<br>200300000000Z<br>200300000000Z<br>200300000000Z<br>200300000000Z                                              |             |              |
| <b>RFC1213-MIB<sup>1</sup></b>                                                                                                                    | —            |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | Revision not available<br>Revision not available<br>Revision not available<br>Revision not available<br>Revision not available |             |              |
| <b>RFC 2011-MIB</b>                                                                                                                               | —            |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> |              | 9411010000Z<br>9411010000Z<br>9411010000Z<br>9411010000Z<br>9411010000Z                                                        |             |              |
| <b>RFC 2465-MIB</b>                                                                                                                               | —            |                                                                                                                                |             |              |
| <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> </ul>                                           |              | 9802052155Z<br>9802052155Z<br>9802052155Z                                                                                      |             |              |

Table 3-1 MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                    | midb process    | Supported                                                                                                                      | Unsupported | Not in Image |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                                                                     |                 | 9802052155Z<br>9802052155Z                                                                                                     |             |              |
| <b>RSVP-MIB<sup>1</sup></b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>          | mibd-inter-face | 9808251820Z<br>9808251820Z<br>9808251820Z<br>9808251820Z<br>9808251820Z                                                        |             |              |
| <b>SNMP-COMMUNITY-MIB (RFC 2576)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | snmpd           | 200210140000Z<br>200210140000Z<br>200210140000Z<br>200210140000Z<br>200210140000Z                                              |             |              |
| <b>SNMP-FRAMEWORK-MIB (RFC 2571)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | snmpd           | 200210140000Z<br>200210140000Z<br>200210140000Z<br>200210140000Z<br>200210140000Z                                              |             |              |
| <b>SNMP-RESEARCH-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>             | snmpd           | Revision not available<br>Revision not available<br>Revision not available<br>Revision not available<br>Revision not available |             |              |
| <b>SNMP-MPD-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                  | snmpd           | 9905041636Z<br>9905041636Z<br>9905041636Z<br>9905041636Z<br>9905041636Z                                                        |             |              |
| <b>SNMP-NOTIFICATION-MIB (RFC 2573)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> </ul>                                                                                  | snmpd           | 9808040000Z                                                                                                                    |             |              |

**Table 3-1** MIBs in the Cisco ASR 9000 Series Routers (continued)

| MIB                                                                                                                                                                                 | midb process | Supported                                                                         | Unsupported | Not in Image |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|-------------|--------------|
| <ul style="list-style-type: none"> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>                                                        |              | 9808040000Z<br>9808040000Z<br>9808040000Z<br>9808040000Z                          |             |              |
| <b>SNMP-TARGET-MIB (RFC 2573)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul> | snmpd        | 9808040000Z<br>9808040000Z<br>9808040000Z<br>9808040000Z<br>9808040000Z           |             |              |
| <b>SNMP-USM-AES-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>           | snmpd        | 200406140000Z<br>200406140000Z<br>200406140000Z<br>200406140000Z<br>200406140000Z |             |              |
| <b>SNMP-USM-MIB (RFC 2574)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>    | snmpd        | 9901200000Z<br>9901200000Z<br>9901200000Z<br>9901200000Z<br>9901200000Z           |             |              |
| <b>SNMP-VACM-MIB</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>              | snmpd        | RFC 2575<br>RFC 2575<br>RFC 2575<br>RFC 2575<br>RFC 2575                          |             |              |
| <b>SNMPv2-MIB (RFC 1907)</b> <ul style="list-style-type: none"> <li>Release 3.7</li> <li>Release 3.9</li> <li>Release 4.0</li> <li>Release 4.2</li> <li>Release 4.3</li> </ul>      | snmpd        | RFC 1904<br>RFC 1904<br>RFC 1904<br>RFC 1904<br>RFC 1904                          |             |              |
| <b>SNMPv2-TM</b>                                                                                                                                                                    | snmpd        |                                                                                   |             |              |

**Table 3-1** *MIBs in the Cisco ASR 9000 Series Routers (continued)*

| <b>MIB</b>                                                                                                                                                  | <b>mibb process</b> | <b>Supported</b>                                                                                                               | <b>Unsupported</b> | <b>Not in Image</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | Revision not available<br>Revision not available<br>Revision not available<br>Revision not available<br>Revision not available |                    |                     |
| <b>SONET-MIB (RFC 2558)<sup>1</sup></b>                                                                                                                     | mibb-interface      |                                                                                                                                |                    |                     |
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | 200308110000Z<br>200308110000Z<br>200308110000Z<br>200308110000Z<br>200308110000Z                                              |                    |                     |
| <b>TCP-MIB</b>                                                                                                                                              | mibb-route          |                                                                                                                                |                    |                     |
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | 200502180000Z<br>200502180000Z<br>200502180000Z<br>200502180000Z<br>200502180000Z                                              |                    |                     |
| <b>UDP-MIB</b>                                                                                                                                              | mibb-route          |                                                                                                                                |                    |                     |
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | 200505200000Z<br>200505200000Z<br>200505200000Z<br>200505200000Z<br>200505200000Z                                              |                    |                     |
| <b>USM-TARGET-TAG-MIB</b>                                                                                                                                   | —                   |                                                                                                                                |                    |                     |
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | Revision not available<br>Revision not available<br>Revision not available<br>Revision not available<br>Revision not available |                    |                     |
| <b>VRRP-MIB</b>                                                                                                                                             | —                   |                                                                                                                                |                    | Y                   |
| <ul style="list-style-type: none"> <li>• Release 3.7</li> <li>• Release 3.9</li> <li>• Release 4.0</li> <li>• Release 4.2</li> <li>• Release 4.3</li> </ul> |                     | 200003030000Z<br>200003030000Z<br>200003030000Z<br>200003030000Z                                                               |                    |                     |

1. These MIBs may have a different behavior on a per-platform basis.

## MIB Notification Names in the Cisco ASR 9000 Series Routers

Table 3-2 lists the Notification Names associated with MIBs in the Cisco ASR 9000 Series Routers:

**Table 3-2 MIB Notification Names in the Cisco ASR 9000 Series Routers**

| MIB                                 | Notification Name                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>BGP4-MIB</b>                     | bgpEstablished,<br>bgpBackwardTransition                                                                                           |
| <b>BRIDGE-MIB</b>                   | newRoot,<br>topologyChange                                                                                                         |
| <b>CISCO-BGP4-MIB</b>               | cbgpFsmStateChange,<br>cbgpBackwardTransition,<br>cbgpPrefixThresholdExceeded,<br>cbgpPrefixThresholdClear                         |
| <b>CISCO-BULK-FILE-MIB</b>          | cbfDefineFileCompletion                                                                                                            |
| <b>CISCO-CONFIG-COPY-MIB</b>        | ccCopyCompletion                                                                                                                   |
| <b>CISCO-CONFIG-MAN-MIB</b>         | ciscoConfigManEvent                                                                                                                |
| <b>CISCO-ENTITY-FRU-CONTROL-MIB</b> | cefcModuleStatusChange,<br>cefcPowerStatusChange,<br>cefcFRUInserted,<br>cefcFRURemoved,<br>cefcFanTrayStatusChange                |
| <b>CISCO-ENTITY-SENSOR-MIB</b>      | entSensorThresholdNotification                                                                                                     |
| <b>CISCO-FLASH-MIB</b>              | ciscoFlashCopyCompletionTrap,<br>ciscoFlashDeviceInsertedNotif,<br>ciscoFlashDeviceRemovedNotif,<br>ciscoFlashMiscOpCompletionTrap |
| <b>CISCO-IETF-PW-MIB</b>            | cpwVcDown,<br>cpwVcUp                                                                                                              |
| <b>CISCO-RF-MIB</b>                 | ciscoRFSwactNotif,<br>ciscoRFProgressionNotif                                                                                      |
| <b>CISCO-SONET-MIB</b>              | ciscoSonetSectionStatusChange,<br>ciscoSonetPathStatusChange,<br>ciscoSonetLineStatusChange                                        |
| <b>CISCO-SYSLOG-MIB</b>             | clogMessageGenerated                                                                                                               |
| <b>DS1-MIB (RFC 2495)</b>           | dsx1LineStatusChange                                                                                                               |
| <b>ENTITY-MIB (RFC 2737)</b>        | entConfigChange                                                                                                                    |
| <b>EVENT-MIB</b>                    | mteTriggerFired,<br>mteTriggerRising,<br>mteTriggerFalling,<br>mteTriggerFailure,<br>mteEventSetFailure                            |

**Table 3-2** MIB Notification Names in the Cisco ASR 9000 Series Routers (continued)

| MIB                               | Notification Name   |
|-----------------------------------|---------------------|
| <a href="#">IEEE8021-CFM-MIB</a>  | dot1agCfmFaultAlarm |
| <a href="#">IF-MIB (RFC 2863)</a> | linkDown,<br>linkUp |

## ATM-MIB

The ATM-MIB describes ATM and AAL5-related objects for managing ATM interfaces, ATM virtual links, ATM cross-connects, AAL5 entities, and AAL5 connections.

[Table 3-3](#) lists the tables associated with this MIB.

**Table 3-3** ATM-MIB Tables and Descriptions

| Name                      | Description                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| atmInterfaceConfTable     | This table contains ATM local interface configuration parameters, one entry per ATM interface port.                                                                                                                 |
| atmInterfaceDs3PlcpTable  | This table contains ATM interface DS3 PLCP parameters and state variables, one entry per ATM interface port.                                                                                                        |
| atmInterfaceTCtable       | This table contains ATM interface TC Sublayer parameters and state variables, one entry per ATM interface port.                                                                                                     |
| atmTrafficDescrParamTable | This table contains information on ATM traffic descriptor type and the associated parameters.                                                                                                                       |
| atmVplTable               | VPL table. A bi directional VPL is modeled as one entry in this table. This table can be used for PVCs, SVCs, and Soft PVCs. Entries are not present in this table for the VPIs used by entries in the atmVclTable. |
| atmVclTable               | VCL table. A bi directional VCL is modeled as one entry in this table. This table can be used for PVCs, SVCs, and Soft PVCs.                                                                                        |
| atmVpCrossConnectTable    | ATM VP Cross Connect table for PVCs. An entry in this table models two cross-connected VPLs. Each VPL must have its atmConnKind set to pvc(1).                                                                      |
| atmVcCrossConnectTable    | ATM VC Cross Connect table for PVCs. An entry in this table models two cross-connected VCLs. Each VCL must have its atmConnKind set to pvc(1).                                                                      |
| aal5VccTable              | This table contains AAL5 VCC performance parameters.                                                                                                                                                                |

## MIB Constraints

[Table 3-4](#) lists the constraints that the router places on objects in the ATM-MIB.

**Table 3-4 ATM-MIB Constraints**

| <b>MIB Object</b>               | <b>Notes</b>  |
|---------------------------------|---------------|
| atmVpCrossConnectAdminStatus    | Not supported |
| atmVpCrossConnectRowStatus      | Not supported |
| atmVcCrossConnectAdminStatus    | Not supported |
| atmVcCrossConnectRowStatus      | Not supported |
| atmTrafficDescrType             | Not supported |
| atmTrafficDescrParam1           | Not supported |
| atmTrafficDescrParam2           | Not supported |
| atmTrafficDescrParam3           | Not supported |
| atmTrafficDescrParam4           | Not supported |
| atmTrafficDescrParam5           | Not supported |
| atmTrafficDescrRowStatus        | Not supported |
| atmServiceCategory              | Not supported |
| atmTrafficFrameDiscard          | Not supported |
| atmVclReceiveTrafficDescrIndex  | Not supported |
| atmVclTransmitTrafficDescrIndex | Not supported |
| atmVclRowStatus                 | Not supported |
| atmVclCastType                  | Not supported |
| atmVclConnKind                  | Not supported |
| atmInterfaceMaxVpcs             | Not supported |
| atmInterfaceMaxVccs             | Not supported |
| atmInterfaceMaxActiveVpiBits    | Not supported |
| atmInterfaceMaxActiveVciBits    | Not supported |
| atmInterfaceIlmiVpi             | Not supported |
| atmInterfaceIlmiVci             | Not supported |
| atmInterfaceMyNeighborIpAddress | Not supported |
| atmInterfaceMyNeighborIfName    | Not supported |
| atmInterfaceSubscrAddress       | Not supported |
| atmVplReceiveTrafficDescrIndex  | Not supported |
| atmVplTransmitTrafficDescrIndex | Not supported |
| atmVplRowStatus                 | Not supported |
| atmVplCastType                  | Not supported |
| atmVplConnKind                  | Not supported |

## ATM-FORUM-MIB

The ATM-FORUM-MIB is one of the ATM Forum's ILMI MIBs, supporting the UNI 4.0 specification.

Table 3-5 lists the tables associated with this MIB:

**Table 3-5 ATM-FORUM-MIB Tables and Descriptions**

| Name              | Description                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| atmfPortTable     | Table of physical layer status and parameter information for the physical interface of ATM Interface.                                                                                                                                                                                                                |
| atmfAtmLayerTable | Table of ATM layer status and parameter information for the ATM Interface.                                                                                                                                                                                                                                           |
| atmfAtmStatsTable | This group is deprecated and should not be implemented except as required for backward compatibility with version 3.1 of the UNI specification.                                                                                                                                                                      |
| atmfVpcTable      | Table of status and parameter information on the virtual path connections which cross this ATM Interface. There is one entry in this table for each permanent virtual path connection.                                                                                                                               |
| atmfVpcAbrTable   | Table of operational parameters related to the ABR virtual path connections which cross this ATM Interface. There is one entry in this table for each ABR virtual path connection. Each virtual path connection represented in this table must also be represented by an entry in the atmfVpcTable.                  |
| atmfVccTable      | Table of status and parameter information on the virtual channel connections which are visible at this ATM Interface. There is one entry in this table for each permanent virtual channel connection, including reserved VCCs that are supported; that is, signaling, OAM flows, and ILMI, but not unassigned cells. |
| atmfVccAbrTable   | Table of operational parameters related to the ABR virtual channel connections which cross this ATM Interface. There is one entry in this table for each ABR virtual channel connection. Each virtual channel connection represented in this table must also be represented by an entry in the atmfVccTable.         |

## ATM2-MIB

The ATM2-MIB supplements the ATM-MIB as defined in RFC 2515.

Table 3-6 lists the tables associated with this MIB.

**Table 3-6 ATM2-MIB Tables and Descriptions**

| Name                      | Description                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| atmSvcVpCrossConnectTable | ATM SVPC Cross-Connect table. A bi directional VP cross-connect between two switched VPLs is modeled as one entry in this table. A Soft PVPC cross-connect, between a soft permanent VPL and a switched VPL, is also modeled as one entry in this table.                                                                                                                                                   |
| atmSvcVcCrossConnectTable | ATM SVCC Cross-Connect table. A bi directional VC cross-connect between two switched VCLs is modeled as one entry in this table. A Soft PVCC cross-connect, between a soft permanent VCL and a switched VCL, is also modeled as one entry in this table.                                                                                                                                                   |
| atmSigStatTable           | This table contains ATM interface signaling statistics, one entry per ATM signaling interface.                                                                                                                                                                                                                                                                                                             |
| atmSigSupportTable        | This table contains ATM local interface configuration parameters, one entry per ATM signaling interface.                                                                                                                                                                                                                                                                                                   |
| atmSigDescrParamTable     | Table contains signaling capabilities of VCLs except the Traffic Descriptor. Traffic descriptors are described in the atmTrafficDescrParamTable.                                                                                                                                                                                                                                                           |
| atmIfRegisteredAddrTable  | This table contains a list of ATM addresses that can be used for calls to and from a given interface by a switch or service. The ATM addresses are either registered by the endsystem via ILMI or statically configured. This table does not expose PNNI reachability information. ILMI registered addresses cannot be deleted using this table. This table only applies to switches and network services. |
| atmVclAddrTable           | This table provides a mapping between the atmVclTable and the ATM called <i>party/calling party address</i> . This table can be used to retrieve the calling party and called <i>party ATM address</i> pair for a given VCL. Note that there can be more than one pair of calling party and called party ATM addresses for a VCL in a point to multi-point call.                                           |
| atmAddrVclTable           | This table provides an alternative way to retrieve the atmVclTable. This table can be used to retrieve the indexing to the atmVclTable by an ATM address.                                                                                                                                                                                                                                                  |
| atmVplStatTable           | This table contains all statistics counters per VPL. It is used to monitor the usage of the VPL in terms of incoming cells and outgoing cells.                                                                                                                                                                                                                                                             |
| atmVplLogicalPortTable    | Indicates whether the VPL is an ATM Logical Port interface (ifType = 80).                                                                                                                                                                                                                                                                                                                                  |
| atmVclStatTable           | This table contains all statistics counters per VCL. It is used to monitor the usage of the VCL in terms of incoming cells and outgoing cells.                                                                                                                                                                                                                                                             |
| atmAal5VclStatTable       | This table provides a collection of objects providing AAL5 configuration and performance statistics of a VCL.                                                                                                                                                                                                                                                                                              |
| atmVclGenTable            | General Information for each VC.                                                                                                                                                                                                                                                                                                                                                                           |

**Table 3-6** *ATM2-MIB Tables and Descriptions (continued)*

| Name                         | Description                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| atmInterfaceExtTable         | This table contains ATM interface configuration and monitoring information not defined in the atmInterfaceConfTable from the ATM-MIB. This includes the type of connection setup procedures, ILMI information, and information on the VPI/VCI range.                                                                                                                                     |
| atmIlmiSrvRegTable           | This table contains a list of all the ATM network services known by this device. The characteristics of these services are made available through the ILMI, using the ILMI general-purpose service registry MIB. These services may be made available to all ATM interfaces (atmIlmiSrvRegIndex = 0) or to some specific ATM interfaces only (atmIlmiSrvRegIndex = ATM interface index). |
| atmIlmiNetworkPrefixTable    | Table specifying per-interface network prefix(es) supplied by the network side of the UNI during ILMI address registration. When no network prefixes are specified for a particular interface, one or more network prefixes based on the switch address(es) may be used for ILMI address registration.                                                                                   |
| atmVpCrossConnectXTable      | This table contains one row per VP Cross-Connect represented in the atmVpCrossConnectTable.                                                                                                                                                                                                                                                                                              |
| atmVcCrossConnectXTable      | This table contains one row per VC Cross-Connect represented in the atmVcCrossConnectTable.                                                                                                                                                                                                                                                                                              |
| atmCurrentlyFailingPVplTable | Table indicating all VPLs for which there is an active row in the atmVplTable having an atmVplConnKind value of <b>pvc</b> and an atmVplOperStatus with a value other than <b>up</b> .                                                                                                                                                                                                   |
| atmCurrentlyFailingPVclTable | Table indicating all VCLs for which there is an active row in the atmVclTable having an atmVclConnKind value of <b>pvc</b> and an atmVclOperStatus with a value other than <b>up</b> .                                                                                                                                                                                                   |

## MIB Constraints

Table 3-7 lists the constraints that the router places on objects in the ATM2-MIB.

**Table 3-7** *ATM2-MIB Constraints*

| MIB Object                  | Notes         |
|-----------------------------|---------------|
| atmSigDescrParamAalType     | Not supported |
| atmSigDescrParamAalSscsType | Not supported |
| atmSigDescrParamBhliType    | Not supported |
| atmSigDescrParamBhliInfo    | Not supported |
| atmSigDescrParamBbcConnConf | Not supported |
| atmSigDescrParamBlliLayer2  | Not supported |

**Table 3-7 ATM2-MIB Constraints**

| <b>MIB Object</b>                | <b>Notes</b>  |
|----------------------------------|---------------|
| atmSigDescrParamBlliLayer3       | Not supported |
| atmSigDescrParamBlliPktSize      | Not supported |
| atmSigDescrParamBlliSnapId       | Not supported |
| atmSigDescrParamBlliOuiPid       | Not supported |
| atmVpCrossConnectUserName        | Not supported |
| atmVcCrossConnectUserName        | Not supported |
| atmSwitchAddressAddress          | Not supported |
| atmSwitchAddressRowStatus        | Not supported |
| atmVplLogicalPortDef             | Not supported |
| atmInterfaceConfMaxSvpcVpi       | Not supported |
| atmInterfaceConfMaxSvccVpi       | Not supported |
| atmInterfaceConfMinSvccVci       | Not supported |
| atmIntfSigVccRxTrafficDescrIndex | Not supported |
| atmIntfSigVccTxTrafficDescrIndex | Not supported |
| atmIntfPvcNotificationInterval   | Not supported |
| atmIntfPvcFailuresTrapEnable     | Not supported |
| atmIntfConfigType                | Not supported |
| atmIntfConfigSide                | Not supported |
| atmIntfIlmiAdminStatus           | Not supported |
| atmIntfIlmiEstablishConPollIntvl | Not supported |
| atmIntfIlmiCheckConPollIntvl     | Not supported |
| atmIntfIlmiConPollInactFactor    | Not supported |
| atmIntfIlmiPublicPrivateIndctr   | Not supported |
| atmIlmiSrvRegATMAddress          | Not supported |
| atmIlmiSrvRegParm1               | Not supported |
| atmIlmiSrvRegRowStatus           | Not supported |
| atmIlmiNetPrefixRowStatus        | Not supported |
| atmSvcVpCrossConnectRowStatus    | Not supported |
| atmSvcVcCrossConnectRowStatus    | Not supported |
| atmIfRegAddrOrgScope             | Not supported |
| atmVclAddrType                   | Not supported |
| atmVclAddrRowStatus              | Not supported |
| atmSigSupportClgPtyNumDel        | Not supported |
| atmSigSupportClgPtySubAddr       | Not supported |
| atmSigSupportCldPtySubAddr       | Not supported |
| atmSigSupportHiLyrInfo           | Not supported |

**Table 3-7 ATM2-MIB Constraints**

| MIB Object                 | Notes         |
|----------------------------|---------------|
| atmSigSupportLoLyrInfo     | Not supported |
| atmSigSupportBlliRepeatInd | Not supported |
| atmSigSupportAALInfo       | Not supported |

## BGP4-MIB

The BGP4-MIB (RFC 1657) provides access to information related to the implementation of the Border Gateway Protocol (BGP). The MIB provides:

- BGP configuration information
- Information about BGP peers and messages exchanged with them
- Information about advertised networks

[Table 3-8](#) lists the tables associated with this MIB.

**Table 3-8 BGP4-MIB Tables and Descriptions**

| Name                 | Description                                                                                                                                                                     |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| bgpPeerTable         | BGP peer table. This table contains one entry per BGP peer and information about the connections with BGP peers.                                                                |
| bgpRcvdPathAttrTable | BGP Received Path Attribute Table contains information about paths to destination networks received from all peers running BGP version 3 or fewer. This table is not supported. |
| bgp4PathAttrTable    | BGP-4 Received Path Attribute Table contains information about paths to destination networks received from all BGP4 peers.                                                      |

## MIB Constraints

[Table 3-9](#) lists the constraints that the router places on objects in the BGP4-MIB.

**Table 3-9 BGP4-MIB Constraints**

| MIB Object                  | Notes         |
|-----------------------------|---------------|
| bgpRcvdPathAttrTable        | Not supported |
| bgpPeerAdminStatus          | Not supported |
| bgpPeerConnectRetryInterval | Not supported |
| bgpPeerHoldTimeConfigured   | Not supported |
| bgpPeerKeepAliveConfigured  | Not supported |

**Table 3-9 BGP4-MIB Constraints**

| MIB Object                           | Notes         |
|--------------------------------------|---------------|
| bgpPeerMinASOriginationInterval      | Not supported |
| bgpPeerMinRouteAdvertisementInterval | Not supported |

## BRIDGE-MIB

The BRIDGE-MIB contains objects to manage Media Access Control (MAC) bridges between Local Area Network (LAN) segments, as defined by the IEEE 802.1D-1990 standard. This MIB is extracted from RFC 1493 and is intended for use with network management protocols in TCP/IP based internets.


**Note**

To access bridge domain data, the corresponding SNMP context must be used (i.e. v2 community or v3 group mapped to context).

Table 3-10 lists the tables associated with this MIB.

**Table 3-10 BRIDGE-MIB Tables and Descriptions**

| Name               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dot1dBasePortTable | Table that contains generic information about every port that is associated with this bridge. Transparent, source-route, and srt ports are included.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| dot1dStpPortTable  | Table that contains port-specific information for the Spanning Tree Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| dot1dTpFdbTable    | Table that contains information about unicast entries for which the bridge has forwarding and filtering information. This information is used by the transparent bridging function in determining how to propagate a received frame.                                                                                                                                                                                                                                                                                                                                         |
| dot1dTpPortTable   | Table that contains information about every port that is associated with this transparent bridge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| dot1dStaticTable   | Table containing filtering information configured into the bridge by (local or network) management specifying the set of ports to which frames received from specific ports and containing specific destination addresses are allowed to be forwarded. The value of zero in this table, as the port number from which frames with a specific destination address are received, is used to specify all ports for which there is no specific entry in this table for that particular destination address. Entries are valid for unicast and for group and broadcast addresses. |

## MIB Constraints

Table 3-11 lists the constraints that the router places on objects in the BRIDGE-MIB. For detailed definitions of MIB objects, see the MIB. This MIB only supports managing two types of bridges (CE and VPLS bridges).


**Note**

Set Operation on BRIDGE-MIB objects is not supported.

**Table 3-11** *BRIDGE-MIB Constraints*

| MIB Object               | Notes                          |
|--------------------------|--------------------------------|
| dot1dStp Subtree Objects | Not supported for VPLS Bridges |
| newRoot                  | Not supported for VPLS Bridges |
| TCN Traps                | Not supported for VPLS Bridges |
| dot1dStpPortPathCost32   | Not supported                  |
| dot1dStaticAddress       | Not supported                  |
| dot1dStaticReceivePort   | Not supported                  |
| dot1dStaticAllowedToGoTo | Not supported                  |
| dot1dStaticStatus        | Not supported                  |
| dot1dStpPortPriority     | Not supported                  |
| dot1dStpPortEnable       | Not supported                  |
| dot1dStpPortPathCost     | Not supported                  |
| dot1dStpPortPriority     | Not supported                  |
| dot1dStpPortEnable       | Not supported                  |
| dot1dStpPortPathCost32   | Not supported                  |
| dot1dTpAgingTime         | Not supported                  |
| dot1dStpPriority         | Not supported                  |
| dot1dStpBridgeMaxAge     | Not supported                  |
| dot1dStpBridgeHelloTime  | Not supported                  |
| dot1dStpBridgeHelloTime  | Not supported                  |

## CISCO-AAA-SERVER-MIB

The MIB module for monitoring communications and status of AAA Server operation.

[Table 3-12](#) lists the tables associated with this MIB.

**Table 3-12 CISCO-AAA-SERVER-MIB Tables and Descriptions**

| Name               | Description                                                                                                                    |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| casConfigTable     | This table shows current configurations for each AAA server, allows existing servers to be removed and new ones to be created. |
| casStatisticsTable | This table shows statistics for each AAA server.                                                                               |

## CISCO-ATM-EXT-MIB

The CISCO-ATM-EXT-MIB is an extension to the Cisco ATM MIB module for managing ATM implementations.

[Table 3-13](#) lists the tables associated with this MIB.

**Table 3-13 CISCO-ATM-EXT-MIB Tables and Descriptions**

| Name             | Description                                                                                                        |
|------------------|--------------------------------------------------------------------------------------------------------------------|
| cAal5VccExtTable | This table contains AAL5 VCC performance parameters beyond that provided by cAal5VccEntry.                         |
| catmxVclOamTable | This table contains VCL <sup>1</sup> Oam configuration and state information. This table augments the atmVclTable. |

1. VCL = Virtual Channel Link

## MIB Constraints

[Table 3-11](#) lists the constraints that the router places on objects in the BRIDGE-MIB. For detailed definitions of MIB objects, see the MIB. This MIB only supports managing two types of bridges (CE and VPLS bridges).



### Note

Set Operation on BRIDGE-MIB objects is not supported.

**Table 3-14 CISCO-ATM-EXT-MIB Constraints**

| MIB Object                | Notes         |
|---------------------------|---------------|
| catmxVclOamLoopbackFreq   | Not supported |
| catmxVclOamRetryFreq      | Not supported |
| catmxVclOamUpRetryCount   | Not supported |
| catmxVclOamDownRetryCount | Not supported |
| catmxVclOamEndCCActCount  | Not supported |

**Table 3-14** *CISCO-ATM-EXT-MIB Constraints*

| MIB Object                 | Notes         |
|----------------------------|---------------|
| catmxVclOamEndCCDeActCount | Not supported |
| catmxVclOamEndCCRetryFreq  | Not supported |
| catmxVclOamSegCCActCount   | Not supported |
| catmxVclOamSegCCDeActCount | Not supported |
| catmxVclOamSegCCRetryFreq  | Not supported |
| catmxVclOamManage          | Not supported |

## CISCO-ATM-QOS-MIB

The CISCO-ATM-QOS-MIB is created to provide ATM QoS information in the following areas:

- Traffic shaping on a per-VC basis
- Traffic shaping on a per-VP basis
- Per-VC queuing or buffering

Although the initial requirements of the MIB are driven to support the GSR TAZ line card, CISCO-ATM-QOS-MIB is designed as a generic MIB to support ATM interfaces cross all platforms.

[Table 3-15](#) lists the tables associated with this MIB.

**Table 3-15** *CISCO-ATM-QOS-MIB Tables and Descriptions*

| Name                       | Description                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------------------|
| caqVccParamsTable          | This table is defined to provide QoS information for each active ATM VC existing on the interface. |
| caqVpcParamsTable          | This table is defined to provide QoS information for each active ATM VP existing on the interface. |
| caqQueuingParamsTable      | This table provides queuing related information for a VC existing on an ATM interface.             |
| caqQueuingParamsClassTable | This table provides queuing information for all queuing classes associating with a VC.             |

## MIB Constraints

[Table 3-16](#) lists the constraints that the router places on objects in the CISCO-ATM-QOS-MIB.

**Table 3-16** *CISCO-ATM-QOS-MIB Constraints*

| MIB Object          | Notes         |
|---------------------|---------------|
| caqVccParamsType    | Not supported |
| caqVccParamsPcrIn0  | Not supported |
| caqVccParamsPcrIn01 | Not supported |

**Table 3-16 CISCO-ATM-QOS-MIB Constraints**

| MIB Object           | Notes         |
|----------------------|---------------|
| caqVccParamsPcrOut0  | Not supported |
| caqVccParamsPcrOut01 | Not supported |
| caqVccParamsScrIn0   | Not supported |
| caqVccParamsScrIn01  | Not supported |
| caqVccParamsScrOut0  | Not supported |
| caqVccParamsScrOut01 | Not supported |
| caqVccParamsBcsIn0   | Not supported |
| caqVccParamsBcsIn01  | Not supported |
| caqVccParamsBcsOut0  | Not supported |
| caqVccParamsBcsOut01 | Not supported |
| caqVccParamsMcrIn    | Not supported |
| caqVccParamsMcrOut   | Not supported |
| caqVccParamsInvRdf   | Not supported |
| caqVccParamsInvRif   | Not supported |
| caqVccParamsCdv      | Not supported |
| caqVccParamsIcr      | Not supported |
| caqVccParamsTbe      | Not supported |
| caqVccParamsFrtt     | Not supported |
| caqVccParamsNrm      | Not supported |
| caqVccParamsInvTrm   | Not supported |
| caqVccParamsInvCdf   | Not supported |
| caqVccParamsAdtf     | Not supported |

## CISCO-BGP4-MIB

The CISCO-BGP4-MIB provides access to information related to the implementation of the Border Gateway Protocol (BGP). The MIB provides:

- BGP configuration information
- Information about BGP peers and messages exchanged with them
- Information about advertised networks

[Table 3-17](#) lists the tables associated with this MIB.

**Table 3-17** CISCO-BGP4-MIB Tables and Descriptions

| Name                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cbgpRouteTable                | This table contains information about routes to destination networks from all BGP4 peers. Because BGP4 can carry routes for multiple Network Layer protocols, this table has the AFI <sup>1</sup> of the Network Layer protocol as the first index. Further for a given AFI, routes carried by BGP4 are distinguished based on SAFI. Hence, that is used as the second index. Conceptually there is a separate Loc-RIB maintained by the BGP speaker for each combination of AFI and SAFI supported by it. |
| cbgpPeerTable                 | BGP peer table. This table contains, one entry per BGP peer, information about the connections with BGP peers.                                                                                                                                                                                                                                                                                                                                                                                             |
| cbgpPeerCapsTable             | This table contains the capabilities that are supported by a peer. Capabilities of a peer are received during BGP connection establishment. Values corresponding to each received capability are stored in this table. When a new capability is received, this table is updated with a new entry. When an existing capability is not received during the latest connection establishment, the corresponding entry is deleted from the table.                                                               |
| cbgpPeerAddrFamilyTable       | This table contains information related to address families supported by a peer. Supported address families of a peer are known during BGP connection establishment. When a new supported address family is known, this table is updated with a new entry. When an address family is not supported any more, corresponding entry is deleted from the table.                                                                                                                                                |
| cbgpPeerAddrFamilyPrefixTable | This table contains prefix related information related to address families supported by a peer. Supported address families of a peer are known during BGP connection establishment. When a new supported address family is known, this table is updated with a new entry. When an address family is not supported any more, corresponding entry is deleted from the table.                                                                                                                                 |

1. AFI = Address Family Identifiers

## MIB Constraints

Table 3-18 lists the constraints that the router places on objects in the CISCO-BGP4-MIB.

**Table 3-18** CISCO-BGP4-MIB Constraints

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| cbgpNotifsEnable              | Not supported |
| cbgpPeer2AdminStatus          | Not supported |
| cbgpPeer2ConnectRetryInterval | Not supported |

**Table 3-18 CISCO-BGP4-MIB Constraints**

| MIB Object                             | Notes         |
|----------------------------------------|---------------|
| cbgpPeer2HoldTimeConfigured            | Not supported |
| cbgpPeer2KeepAliveConfigured           | Not supported |
| cbgpPeer2MinASOriginationInterval      | Not supported |
| cbgpPeer2MinRouteAdvertisementInterval | Not supported |
| cbgpPeer2PrefixAdminLimit              | Not supported |
| cbgpPeer2PrefixThreshold               | Not supported |
| cbgpPeerPrefixAdminLimit               | Not supported |
| cbgpPeerPrefixThreshold                | Not supported |

## CISCO-BGP-POLICY-ACCOUNTING-MIB

The CISCO-BGP-POLICY-ACCOUNTING-MIB describes BGP policy based accounting information. Support is provided for both source and destination IP address based statistics for ingress and egress traffic.


**Note**

CISCO-BGP-POLICY-ACCOUNTING-MIB support is in the context of IPv4 traffic. This MIB is not supported for IPv6.

[Table 3-19](#) lists the tables associated with this MIB.

**Table 3-19 CISCO-BGP-POLICY-ACCOUNTING-MIB Tables and Descriptions**

| Name         | Description                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| cbpAcctTable | cbpAcctTable provides statistics about ingress and egress traffic on an interface. This data could be used for purposes like billing. |

## CISCO-BULK-FILE-MIB

The CISCO-BULK-FILE-MIB contains objects to create and delete SNMP data bulk files for file transfer.

[Table 3-20](#) lists the tables associated with this MIB.

**Table 3-20 CISCO-BULK-FILE-MIB Tables and Descriptions**

| Name                 | Description                                         |
|----------------------|-----------------------------------------------------|
| cbfDefineFileTable   | Table of bulk file definition and creation controls |
| cbfDefineObjectTable | Table of objects to go in bulk files                |
| cbfStatusFileTable   | Table of bulk file status                           |

## MIB Constraints

Table 3-21 lists the constraints that the router places on objects in the CISCO-BULK-FILE-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-21 CISCO-BULK-FILE-MIB Constraints**

| MIB Object                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Notes                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>cbfDefineFileTable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                             |
| • cbfDefinedFileStorage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Only <i>ephemeral</i> type of file storage is supported.                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Note</b> The ephemeral bulk file created can be moved to a remote FTP server using CISCO-FTP-CLIENT-MIB. |
| • cbfDefinedFileFormat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Only <i>bulkBinary</i> and <i>bulkASCII</i> file formats are supported.                                     |
| <p>The cbfDefienFileTable has objects that are required for defining a bulk file and for controlling its creation. The cbfDefineObjectTable has information regarding the contents (SNMP data) that go into the bulk file.</p> <p>When an entry in the cbfDefineFileTable and its corresponding entries in the cbfDefineObjectTable are active, then cbfDefineFileNow can then be set to create. This causes a bulkFile to be created as defined in cbfDefineFileTable and it will also create an entry in the cbfStatusFileTable.</p> |                                                                                                             |

## CISCO-CDP-MIB

The CISCO-CDP-MIB module manages the Cisco Discovery Protocol in Cisco devices.

Table 3-22 lists the tables associated with this MIB.

**Table 3-22 CISCO-CDP-MIB Tables and Descriptions**

| Name                 | Description                                                                                                                                                                                                                                                                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cdpInterfaceTable    | (conceptual) Table containing the status of CDP on the device interfaces.                                                                                                                                                                                                                                                                           |
| cdpInterfaceExtTable | This table contains the additional CDP configuration on the interface of the device. This table is not supported.                                                                                                                                                                                                                                   |
| cdpCacheTable        | (conceptual) Table containing the cached information obtained via receiving CDP messages.                                                                                                                                                                                                                                                           |
| cdpCtAddressTable    | (conceptual) Table containing the list of network-layer addresses of a neighbor interface, as reported in the Address TLV of the most recently received CDP message. The first address included in the Address TLV is saved in cdpCacheAddress. This table contains the remainder of the addresses in the Address TLV. This table is not supported. |

## MIB Constraints

Table 3-23 lists the constraints that the router places on objects in the CISCO-CDP-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-23 CISCO-CDP-MIB Constraints**

| MIB Object                  | Notes         |
|-----------------------------|---------------|
| <b>cdpInterfaceExtTable</b> | Not supported |
| <b>cdpCtAddressTable</b>    | Not supported |

## CISCO-CLASS-BASED-QOS-MIB

The CISCO-CLASS-BASED-QOS-MIB provides read access to Quality of Service (QoS) configuration information and statistics for Cisco platforms that support the modular Quality of Service command-line interface (modular QoS CLI).

To understand how to navigate the CISCO-CLASS-BASED-QOS-MIB tables, it is important to understand the relationship among different QoS objects. QoS objects consists of:

- Match statement – Specific match criteria to identify packets for classification purposes.
- Class map – A user-defined traffic class that contains one or more match statements used to classify packets into different categories.
- Feature action – Action taken on classified traffic. Features include police, traffic shaping, queueing, random detect, and packet marking. After the traffic is classified actions are applied to packets matching each traffic class.
- Policy map – A user-defined policy that associates QoS feature actions to user-defined class maps as policy maps can have multiple class maps.
- Service policy – A policy map that has been attached to an interface.

The MIB uses the following indices to identify QoS features:

- cbQosObjectsIndex – Identifies each QoS feature on the router.
- cbQoSConfigIndex n- Identifies a type of QoS configuration. This index is shared by QoS objects that have identical configurations.
- cbQosPolicyIndex – Uniquely identifies a service policy.

QoS MIB information is stored in:

- Configuration instances – Includes all class maps, policy maps, match statements, and feature action configuration parameters. Might have multiple identical instances. Multiple instances of the same QoS feature share a single configuration object, which is identified by cbQosConfigIndex.
- Runtime Statistics instances—Includes summary counts and rates by traffic class before and after any configured QoS policies are enforced. In addition, detailed feature-specific statistics are available for select Policy Map features. Each has a unique run-time instance. Run-time instances of QoS objects are each assigned a unique identifier (cbQosObjectsIndex) to distinguish among multiple objects with matching configurations.

## MIB Tables

Table 3-24 lists the tables in a CISCO-CLASS-BASED-QOS-MIB:

**Table 3-24 CISCO-CLASS-BASED-QOS-MIB Tables**

| <b>MIB Table</b>           | <b>Description</b>                                                                                                                                                                                                                                     |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cbQosQueueingClassCfgTable | Specifies the configuration information for a weighted queue limit action for each IP precedence.                                                                                                                                                      |
| cbQosMeasureIPSLACfgTable  | Specifies the configuration information for measure type IPSLA action. The measure action maps to the policy class to a specific IPSLAs auto group. Use this table to retrieve the measure action configuration information.                           |
| cbQosServicePolicyTable    | Describes the logical interfaces , media types, and the corresponding policy-maps attached.                                                                                                                                                            |
| cbQosInterfacePolicyTable  | Describes the service policies attached to the main and sub-interfaces.                                                                                                                                                                                |
| cbQosFrameRelayPolicyTable | Describes the service policies attached to the Frame Relay DLCIs.                                                                                                                                                                                      |
| cbQosATMPVCPolicyTable     | Describes the policies that are attached to an ATM PVC.                                                                                                                                                                                                |
| cbQosObjectsTable          | Specifies the QoS objects (classmap, policymap, match statements, and actions) hierarchy and provides a relationship between each PolicyIndex, ObjectsIndex pair, and the ConfigIndex. ConfigIndex is essential for querying any configuration tables. |
| cbQosPolicyMapCfgTable     | Specifies the policy-map configuration information.                                                                                                                                                                                                    |
| cbQosCMCfgTable            | Specifies the class map configuration information.                                                                                                                                                                                                     |
| cbQosMatchStmtCfgTable     | Specifies the class map configuration information.                                                                                                                                                                                                     |
| cbQosQueueingCfgTable      | Specifies the Queueing Action configuration information.                                                                                                                                                                                               |
| cbQosREDCfgTable           | Specifies the WRED action configuration information.                                                                                                                                                                                                   |
| cbQosREDClassCfgTable      | Specifies WRED action configuration information on a per IP precedence basis.                                                                                                                                                                          |
| cbQosPoliceCfgTable        | Specifies police action configuration information.                                                                                                                                                                                                     |
| cbQosPoliceActionCfgTable  | Specifies police action configuration information.                                                                                                                                                                                                     |
| cbQosTSCfgTable            | Specifies traffic-shaping action configuration information.                                                                                                                                                                                            |
| cbQosSetCfgTable           | Specifies the packet marking action configuration information.                                                                                                                                                                                         |
| cbQosCMStatsTable          | Specifies the class map related statistical information.                                                                                                                                                                                               |

| MIB Table                  | Description                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------|
| cbQosMatchStmtStatsTable   | specifies the match statement related statistical information.                               |
| cbQosPoliceStatsTable      | Specifies the police action related statistical information.                                 |
| cbQosQueueingStatsTable    | Specifies the queueing action related statistical information.                               |
| cbQosTSSStatsTable         | Specifies the traffic-shaping action related statistical information.                        |
| cbQosREDClassStatsTable    | Specifies the statistical information for each precedence WRED action.                       |
| cbQosIPHCCfgTable          | Specifies the IP header compression configuration information.                               |
| cbQosIPHCStatsTable        | Specifies the IP header compression statistical information.                                 |
| cbQosSetStatsTable         | Specifies the packet marking statistical information.                                        |
| cbQosPoliceColorStatsTable | Specifies the police action related statistical information for two rate color aware marker. |
| cbQosTableMapCfgTable      | Specifies the table map basic configuration information.                                     |
| cbQosTableMapValueCfgTable | Specifies the from-value to to-value conversion pairs for a tablemap.                        |
| cbQosTableMapSetCfgTable   | Specifies the enhanced packet marking configuration using a pre-defined tablemap.            |
| cbQosEBCfgTable            | Specifies the estimate bandwidth related configuration information.                          |
| cbQosEBStatsTable          | Specifies the estimate bandwidth related statistical information.                            |
| cbQosC3plAccountCfgTable   | Specifies the C3pl account action configuration information                                  |
| cbQosC3plAccountStatsTable | Specifies C3pl account action related statistics information.                                |

## MIB Constraints

Table 3-25 lists the constraints on objects in the CISCO-CLASS-BASED-QOS-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-25 CISCO-CLASS-BASED-QOS-MIB Constraints**

| MIB Object                 | Notes               |
|----------------------------|---------------------|
| cbQosATMPVCPolicyTable     | Not supported       |
| cbQosC3plAccountCfgTable   | Not supported on XR |
| cbQosC3plAccountStatsTable | Not supported on XR |

**Table 3-25 CISCO-CLASS-BASED-QOS-MIB Constraints (continued)**

| <b>MIB Object</b>                                                                                                                                                                                                                                                                                                 | <b>Notes</b>                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>cbQosCMStatsTable</b>                                                                                                                                                                                                                                                                                          |                                                     |
| <ul style="list-style-type: none"> <li>• CbQosCMNoBufDropPktOverflow</li> <li>• CbQosCMNoBufDropPkt</li> <li>• CbQosCMNoBufDropPkt64</li> </ul>                                                                                                                                                                   | Lack of SRAM buffers, count is negligible.          |
| <b>cbQosEBCfgTable</b>                                                                                                                                                                                                                                                                                            | Not supported in QoS on XR                          |
| <b>cbQosEBStatsTable</b>                                                                                                                                                                                                                                                                                          | Not supported                                       |
| <b>cbQosEVCGroup</b>                                                                                                                                                                                                                                                                                              | Not supported                                       |
| <b>cbQosFrameRelayPolicyTable</b>                                                                                                                                                                                                                                                                                 | Not supported                                       |
| <b>cbQosInterfacePolicyTable</b>                                                                                                                                                                                                                                                                                  | Not supported                                       |
| <b>cbQosIPHCStatsTable</b>                                                                                                                                                                                                                                                                                        | Only RTP supported on XR.                           |
| <b>cbQosMeasureIPSLACfgTable</b>                                                                                                                                                                                                                                                                                  | Not supported on XR                                 |
| <b>cbQosMatchStmntStatsTable</b>                                                                                                                                                                                                                                                                                  |                                                     |
| <ul style="list-style-type: none"> <li>• CbQosMatchPrePolicyPktOverflow</li> <li>• CbQosMatchPrePolicyPkt</li> <li>• CbQosMatchPrePolicyPkt64</li> <li>• CbQosMatchPrePolicyByteOverflow</li> <li>• CbQosMatchPrePolicyByte</li> <li>• CbQosMatchPrePolicyByte64</li> <li>• CbQosMatchPrePolicyBitRate</li> </ul> | Not supported                                       |
| <b>cbQosNoBufferDropTable</b>                                                                                                                                                                                                                                                                                     | Not supported                                       |
| <b>cbQosPoliceCfgTable</b>                                                                                                                                                                                                                                                                                        |                                                     |
| <ul style="list-style-type: none"> <li>• cbQosPoliceCfgConformAction</li> <li>• cbQosPoliceCfgConformSetValue</li> <li>• cbQosPoliceCfgExceedAction</li> <li>• cbQosPoliceCfgExceedSetValue</li> <li>• cbQosPoliceCfgViolateAction</li> <li>• cbQosPoliceCfgViolateSetValue</li> </ul>                            | Deprecated and defined in cbQosPoliceActionCfgTable |
|                                                                                                                                                                                                                                                                                                                   | Deprecated and defined in cbQosPoliceActionCfgTable |
|                                                                                                                                                                                                                                                                                                                   | Deprecated and defined in cbQosPoliceActionCfgTable |
|                                                                                                                                                                                                                                                                                                                   | Deprecated and defined in cbQosPoliceActionCfgTable |
|                                                                                                                                                                                                                                                                                                                   | Deprecated and defined in cbQosPoliceActionCfgTable |
|                                                                                                                                                                                                                                                                                                                   | Deprecated and defined in cbQosPoliceActionCfgTable |
| <b>cbQosQueueingCfgTable</b>                                                                                                                                                                                                                                                                                      |                                                     |
| <ul style="list-style-type: none"> <li>• cbQosQueueingCfgFlowEnabled</li> <li>• cbQosQueueingCfgAggregateQSize</li> </ul>                                                                                                                                                                                         | Not supported                                       |
|                                                                                                                                                                                                                                                                                                                   | Deprecated by cbQosQueueingCfgAggregateQLimit       |

**Table 3-25 CISCO-CLASS-BASED-QOS-MIB Constraints (continued)**

| MIB Object                                                                       | Notes                                                                                                                     |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>cbQosQueueingCfgDynamicQNumber</li> </ul> | Not supported                                                                                                             |
| <ul style="list-style-type: none"> <li>cbQosQueueingCfgPrioBurstSize</li> </ul>  | Not supported                                                                                                             |
| <b>cbQosQueueingClassCfgTable</b>                                                | Not supported                                                                                                             |
| <b>cbQosREDCfgTable</b>                                                          |                                                                                                                           |
| <ul style="list-style-type: none"> <li>cbQosREDCfgExponWeight</li> </ul>         | Not supported on XR                                                                                                       |
| <ul style="list-style-type: none"> <li>cbQosREDCfgMeanQSize</li> </ul>           | Replaced by cbQosREDMeanQSize                                                                                             |
| <ul style="list-style-type: none"> <li>cbQosREDCfgECNEnabled</li> </ul>          | Not supported                                                                                                             |
| <b>cbQosREDClassCfgTable</b>                                                     |                                                                                                                           |
| <ul style="list-style-type: none"> <li>cbQosREDCfgMinThreshold</li> </ul>        | Deprecated by cbQosREDClassCfg-MinThreshold. For XR, many objects from cbQosRedCfg are now available via cbQosREDClassCfg |
| <ul style="list-style-type: none"> <li>cbQosREDCfgMaxThreshold</li> </ul>        | Deprecated by cbQosREDClassCfg-MinThreshold. For XR, many objects from cbQosRedCfg are now available via cbQosREDClassCfg |
| <b>cbQosREDClassStatsTable</b>                                                   |                                                                                                                           |
| <ul style="list-style-type: none"> <li>CbQosREDMeanQSizeUnits</li> </ul>         | Not supported                                                                                                             |
| <ul style="list-style-type: none"> <li>CbQosREDMeanQSize</li> </ul>              | Not supported                                                                                                             |
| <b>cbQosServicePolicyTable</b>                                                   |                                                                                                                           |
| cbQosEntityIndex                                                                 | Not supported                                                                                                             |
| <b>cbQosSetStatsTable</b>                                                        | Marking statistics are not supported on XR                                                                                |
| <b>cbQosTableMapCfgTable</b>                                                     | Not supported on XR                                                                                                       |
| <b>cbQosTableMapValueCfgTable</b>                                                | Not supported                                                                                                             |
| <b>cbQosTableMapSetCfgTable</b>                                                  | Not supported                                                                                                             |
| <b>cbQosTrafficShapingDelayCountersGroup</b>                                     | Not supported                                                                                                             |
| <b>cbQosTSCfgTable</b>                                                           |                                                                                                                           |
| <ul style="list-style-type: none"> <li>CbQosTSCfgBurstsize</li> </ul>            | Not supported                                                                                                             |
| <ul style="list-style-type: none"> <li>CbQosTSCfgAdaptiveEnabled</li> </ul>      | Not supported                                                                                                             |
| <ul style="list-style-type: none"> <li>CbQosTSCfgAdaptiveRate</li> </ul>         | Not supported                                                                                                             |
| <b>cbQosTSSStatsTable</b>                                                        |                                                                                                                           |
| <ul style="list-style-type: none"> <li>CbQosTSSStatsCurrentQSize</li> </ul>      | Not supported                                                                                                             |

## CISCO-CONFIG-COPY-MIB

The CISCO-CONFIG-COPY-MIB contains objects to copy configuration files on the router. For example, the MIB enables the SNMP agent to copy:

- Configuration files to and from the network
- The running configuration to the startup configuration and startup to running
- The startup or running configuration files to and from a local Cisco IOS XR Software file system

Table 3-26 lists the tables associated with this MIB.

**Table 3-26 CISCO-CONFIG-COPY-MIB Tables and Descriptions**

| Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ccCopyTable      | Table of config-copy requests.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ccCopyErrorTable | Table containing information about the failure cause of the config copy operation. An entry is created only when the value of ccCopyState changes to 'failed' for a config copy operation. Not all combinations of ccCopySourceFileType and ccCopyDestFileType need to be supported. For example, an implementation may choose to support only the following combination: ccCopySourceFileType = 'runningConfig' ccCopyDestFileType = 'fabricStartupConfig'. In this case where a fabric wide config copy operation is being performed, for example by selecting ccCopyDestFileType value to be 'fabricStartupConfig', it is possible that the fabric could have more than one device. In such cases this table would have one entry for each device in the fabric. In this case even if the operation succeeded in one device and failed in another, the operation as such has failed, so the global state represented by ccCopyState 'failed', but for the device on which it was success, ccCopyErrorDescription would have the distinguished value, 'success'. After the config copy operation finishes and if an entry gets instantiated, the management station should retrieve the values of the status objects of interest. After an entry in ccCopyTable is deleted by management station, all the corresponding entries with the same ccCopyIndex in this table are also deleted. To prevent old entries from clogging the table, entries age out at the same time as the corresponding entry with same ccCopyIndex in ccCopyTable ages out. |

## MIB Constraints

Table 3-27 lists the constraints that the router places on objects in the CISCO-CONFIG-COPY-MIB.

**Table 3-27 CISCO-CONTEXT-MAPPING-MIB Constraints**

| MIB Object           | Notes                                                |
|----------------------|------------------------------------------------------|
| ccCopyProtocol       | rcp (3) is not supported.                            |
| ccCopySourceFileType | startupConfig(3) and terminal (5) are not supported. |
| ccCoypDestFileType   | startupConfig(3) and terminal (5) are not supported. |

## CISCO-CONFIG-MAN-MIB

The CISCO-CONFIG-MAN-MIB contains objects to track and save changes to the router configuration. The MIB represents a model of the configuration data that exists in the router and in the peripheral devices. Its main purpose is to report changes to the running configuration through the SNMP notification `ciscoConfigManEvent`.

Table 3-28 lists the tables associated with this MIB.

**Table 3-28 CISCO-CONFIG-MAN-MIB Tables and Descriptions**

| Name                                   | Description                                                        |
|----------------------------------------|--------------------------------------------------------------------|
| <code>ccmHistoryEventTable</code>      | Table of configuration events on this router                       |
| <code>ccmCLIHistoryCommandTable</code> | Table of CLI commands that took effect during configuration events |

## CISCO-CONTEXT-MAPPING-MIB

The CISCO-CONTEXT-MAPPING-MIB provides option to associate an SNMP context to a feature package group. This MIB allows manageability of license MIB objects specific to a feature package group.

A single SNMP agent sometimes needs to support multiple instances of the same MIB module, and does so through the use of multiple SNMP contexts. This typically occurs because the technology has evolved to have extra dimensions; that is, one or more extra data value, identifier value or both which are different in the different contexts, but were not defined in INDEX clauses of the original MIB module. In such cases, network management applications need to know the specific data or identifier values in each context, and this MIB module provides mapping tables which contain that information.

Within a network there can be multiple VPNs configured using Virtual Routing and Forwarding Instances (VRFs). Within a VPN there can be multiple topologies when Multi-topology Routing (MTR) is used. Also, Interior Gateway Protocols (IGPs) can have multiple protocol instances running on the device. A network can have multiple broadcast domains configured using Bridge Domain Identifiers.

With MTR routing, VRFs, and Bridge domains, a router now needs to support multiple instances of several existing MIB modules, and this can be achieved if the SNMP agent of the router provides access to each instance of the same MIB module via a different SNMP context (see Section 3.1.1 of RFC 3411). For MTR routing, VRFs, and Bridge domains, a different SNMP context is needed depending on one or more of the following: the VRF, the topology-identifier, the routing protocol instance, and the bridge domain identifier. In other words, the management information of the router can be accessed through multiple SNMP contexts where each such context represents a specific VRF, a specific topology-identifier, a specific routing protocol instance or a bridge domain identifier. This MIB module provides a mapping of each such SNMP context to the corresponding VRF, the corresponding topology, the corresponding routing protocol instance, and the corresponding bridge domain identifier. Some SNMP contexts are independent of VRFs, independent of a topology, independent of a routing protocol instance, or independent of a bridge domain and in such a case, the mapping is to the zero length string.

With the Cisco package licensing strategy, the features available in the image are grouped into multiple packages and each package can be managed to operate at different feature levels based on the available license.

Table 3-29 lists the tables associated with this MIB.

**Table 3-29 CISCO-CONTEXT-MAPPING-MIB Tables and Descriptions**

| Name                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cContextMappingTable               | This table contains information on which cContextMappingVacmContextName is mapped to which VRF, topology, and routing protocol instance. This table is indexed by SNMP VACM context. Configuring a row in this table for an SNMP context does not require that the context be already defined; that is, a row can be created in this table for a context before the corresponding row is created in RFC 3415 vacmContextTable. To create a row in this table, a manager must set cContextMappingRowStatus to either 'createAndGo' or 'createAndWait'. To delete a row in this table, a manager must set cContextMappingRowStatus to 'destroy'. |
| cContextMappingBridgeDomainTable   | This table contains information on which cContextMappingVacmContextName is mapped to which bridge domain. A Bridge Domain is one of the means by which it is possible to define an Ethernet broadcast domain on a bridging device. A network can have multiple broadcast domains configured. This table helps the network management personnel to find out the details of various broadcast domains configured in the network. An entry need to exist in cContextMappingTable, to create an entry in this table.                                                                                                                               |
| cContextMappingBridgeInstanceTable | This table contains information on mapping between cContextMappingVacmContextName and bridge instance. Bridge instance is an instance of a physical or logical bridge that has unique bridge-id. If an entry is deleted from cContextMappingTable, the corresponding entry in this table also gets deleted. If an entry needs to be created in this table, the corresponding entry must exist in cContextMappingTable.                                                                                                                                                                                                                         |
| cContextMappingLicenseGroupTable   | This table contains information on which cContextMappingVacmContextName is mapped to a License Group. Group level licensing is used where each Technology Package is enabled via a License.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## MIB Constraints

Table 3-30 lists the constraints that the router places on objects in the CISCO-CONTEXT-MAPPING-MIB.

**Table 3-30 CISCO-CONTEXT-MAPPING-MIB Constraints**

| MIB Object                            | Notes         |
|---------------------------------------|---------------|
| cContextMappingBridgeInstName         | Not supported |
| cContextMappingBridgeInstStorage-Type | Not supported |

**Table 3-30 CISCO-CONTEXT-MAPPING-MIB Constraints**

| MIB Object                             | Notes         |
|----------------------------------------|---------------|
| cContextMappingBridgeInstRowStatus     | Not supported |
| cContextMappingVrfName                 | Not supported |
| cContextMappingTopologyName            | Not supported |
| cContextMappingProtoInstName           | Not supported |
| cContextMappingStorageType             | Not supported |
| cContextMappingRowStatus               | Not supported |
| cContextMappingBridgeDomainIdentifier  | Not supported |
| cContextMappingBridgeDomainStorageType | Not supported |
| cContextMappingBridgeDomainRowStatus   | Not supported |

## CISCO-DS3-MIB

The CISCO-DS3-MIB describes DS3 line objects. This is an extension to the standard DS3 MIB (RFC 2496).

[Table 3-31](#) lists the tables associated with this MIB.

**Table 3-31 CISCO-DS3-MIB Tables and Descriptions**

| Name                     | Description                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cds3ConfigTable          | This table has objects for configuring a T3/E3 line.                                                                                                                                                                                                                                                                                          |
| cds3AlarmConfigTable     | This table contains the parameters associated with detecting and declaring alarms for the interface. The parameters include severity of alarm, alarm integration parameters, and 15-minute and 24-hour thresholds.                                                                                                                            |
| cds3StatsTable           | T3/E3 Statistics table. This table maintains the number of times the line encountered LOS <sup>1</sup> , LOF <sup>2</sup> , AIS <sup>3</sup> , RAI <sup>4</sup> , CCV <sup>5</sup> , FE <sup>6</sup> , from the time it is up. Line fails and goes down. When the line is brought back up again by the user the error statistics are cleared. |
| cds3AlarmConfigPlcpTable | ATM interface PLCP alarm configuration table. PLCP is a sublayer over the DS3 interface, that carries ATM cells.                                                                                                                                                                                                                              |
| cds3AlarmPlcpTable       | Plcp interface alarm table. This table maintains the CV,ES,SES, SEFS and UAS for DS3 line with Plcp framing selected. See RFC 2496 for description of these various error statistics.                                                                                                                                                         |

**Table 3-31** CISCO-DS3-MIB Tables and Descriptions (continued)

| Name                  | Description                                                                                                                                                                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cds3AlarmPlcpTable    | Plcp interface alarm table. This table maintains the CV,ES,SES, SEFS and UAS for DS3 line with Plcp framing selected. See RFC 2496 for description of these various error statistics.                                                                                                                |
| cds3PlcpStatsTable    | T3 Plcp Statistics table. This table maintains the errors encountered by the T3 line with Plcp frame format selected, from the time the line is up. Line fails and goes down. When the line is brought back up again by the user after eliminating the error conditions, the statistics are cleared. |
| cds3PlcpStatsTable    | T3 Plcp Statistics table. This table maintains the errors encountered by the T3 line with Plcp frame format selected, from the time the line is up. Line fails and goes down. When the line is brought back up again by the user after eliminating the error conditions, the statistics are cleared. |
| cds3IntervalTable     | DS3 interface interval table.                                                                                                                                                                                                                                                                        |
| cds3Current24HrTable  | DS3 interface current 24-hour table. This table contains counters for current 24-hour interval. Threshold on this counters are configured through cds3AlarmConfigTable table. 24-hour interval is aligned to wall clock.                                                                             |
| cds3Previous24HrTable | DS3 interface previous 24-hour table. This table contains counters for previous 24-hour interval. Implementation of this table is optional.                                                                                                                                                          |

1. LOS = loss of signal
2. LOF = out of frame
3. AIS = alarm indication signals
4. RAI = remote alarm indications
5. CCV = C-bit coding violations
6. FE = framing errors

## MIB Constraints

Table 3-32 lists the constraints that the router places on objects in the CISCO-DS3-MIB.

**Table 3-32** CISCO-DS3-MIB Constraints

| MIB Object                       | Notes         |
|----------------------------------|---------------|
| cds3PlcpStatisticalAlarmSeverity | Not supported |
| cds3PlcpBip8CV15MinThreshold     | Not supported |
| cds3PlcpBip8CV24HrThreshold      | Not supported |
| cds3PlcpBip8ES15MinThreshold     | Not supported |
| cds3PlcpBip8ES24HrThreshold      | Not supported |
| cds3PlcpBip8SES15MinThreshold    | Not supported |

**Table 3-32 CISCO-DS3-MIB Constraints**

| <b>MIB Object</b>            | <b>Notes</b>  |
|------------------------------|---------------|
| cds3PlcpBip8SES24HrThreshold | Not supported |
| cds3PlcpSEFS15MinThreshold   | Not supported |
| cds3PlcpSEFS24HrThreshold    | Not supported |
| cds3PlcpUAS15MinThreshold    | Not supported |
| cds3PlcpUAS24HrThreshold     | Not supported |
| cds3LineType                 | Not supported |
| cds3LineAIScBitsCheck        | Not supported |
| cds3LineRcvFEACValidation    | Not supported |
| cds3LineOOFCriteria          | Not supported |
| cds3TraceToTransmit          | Not supported |
| cds3TraceToExpect            | Not supported |
| cds3InternalEqualizer        | Not supported |
| cds3NEAlarmUpCount           | Not supported |
| cds3NEAlarmDownCount         | Not supported |
| cds3NEAlarmThreshold         | Not supported |
| cds3FEAlarmUpCount           | Not supported |
| cds3FEAlarmDownCount         | Not supported |
| cds3FEAlarmThreshold         | Not supported |
| cds3StatisticalAlarmSeverity | Not supported |
| cds3LCV15MinThreshold        | Not supported |
| cds3LCV24HrThreshold         | Not supported |
| cds3LES15MinThreshold        | Not supported |
| cds3LES24HrThreshold         | Not supported |
| cds3PCV15MinThreshold        | Not supported |
| cds3PCV24HrThreshold         | Not supported |
| cds3PES15MinThreshold        | Not supported |
| cds3PES24HrThreshold         | Not supported |
| cds3PSES15MinThreshold       | Not supported |
| cds3PSES24HrThreshold        | Not supported |
| cds3SEFS15MinThreshold       | Not supported |
| cds3SEFS24HrThreshold        | Not supported |
| cds3UAS15MinThreshold        | Not supported |
| cds3UAS24HrThreshold         | Not supported |
| cds3CCV15MinThreshold        | Not supported |
| cds3CCV24HrThreshold         | Not supported |
| cds3CES15MinThreshold        | Not supported |

**Table 3-32 CISCO-DS3-MIB Constraints**

| MIB Object             | Notes         |
|------------------------|---------------|
| cds3CES24HrThreshold   | Not supported |
| cds3CSES15MinThreshold | Not supported |
| cds3CSES24HrThreshold  | Not supported |
| cds3LSES15MinThreshold | Not supported |
| cds3LSES24HrThreshold  | Not supported |

## CISCO-ENHANCED-IMAGE-MIB

The CISCO-ENHANCED-IMAGE-MIB provides information about events running on the system. This MIB has Image table containing the following information related to the running the Cisco IOS XR Software image:

- Entity index
- Image name
- Family
- Feature set
- Version
- Media
- Description


**Note**

Only ceImageTable is supported in this MIB.

[Table 3-33](#) lists the tables associated with this MIB.

**Table 3-33 CISCO-ENHANCED-IMAGE-MIB Tables and Descriptions**

| Name                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ceImageTable         | This table provides information describing the executing image. For modular operating systems this table provides base image or MBI.                                                                                                                                                                                                                                                                                                                                                                                      |
| ceImageLocationTable | This table is applicable to modular operating systems. A location describes where on the file system the installed software is placed. This table consists of list of all locations along with status of image at that location. ceImageLocationRunningStatus is true only for the location from where system is currently operational. The agent may add entries to this table when a new image is installed on the system. The agent may delete entries from this table when an image has been removed from the system. |

**Table 3-33** *CISCO-ENHANCED-IMAGE-MIB Tables and Descriptions (continued)*

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ceImageInstallableTable | This table specifies a list of software drivers installed on the system. This table is applicable to operating systems which support installables. A modular operating system can consist of base image or MBI and installables. The value of ceImageLocationIndex can be used as index to retrieve installables installed at a particular location. Every image has a table of installables. Entries are added in this table when an installable is installed on the image. Entries are deleted from this table when installables are removed or rolled back from the image.     |
| ceImageTagTable         | A tag is a virtual label placed by a user that indicates a point deemed to be stable. It can be used to rollback to a system after an install that negatively impacts the functionality of the system. It gives point in system where user can go back to, to remove drivers installed after that point of time. When a tag is placed on an image, an entry appears in this table. An entry is removed from this table when tag is removed from the system. The value of ceImageLocationIndex is used as index to get all the tags that are placed on the image at this location. |

## CISCO-ENHANCED-MEMPOOL-MIB

The CISCO-ENHANCED-MEMPOOL-MIB contains objects to monitor memory pools on all of the physical entities on a managed system. Represents the different types of memory pools that may be present in a managed device. Memory use information is provided to users at three different intervals of time: 1 minute, 5 minutes, and 10 minutes. Memory pools can be categorized into two groups, predefined pools and dynamic pools. The following pool types are currently predefined:

- 1:Processor memory
- 2:I/O memory
- 3:PCI memory
- 4:Fast memory
- 5:Multibus memory

Dynamic pools have a pool type value greater than any of the predefined types listed above. Only the processor pool is required to be supported by all devices. Support for other pool types is dependent on the device being managed. [Table 3-34](#) lists the tables associated with this MIB.

**Table 3-34 CISCO-ENHANCED-MEMPOOL-MIB Tables and Descriptions**

| Name                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cempMemPoolTable            | Table of memory pool monitoring entries for all physical entities on a managed system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| cempMemBufferPoolTable      | Entries in this table define entities (buffer pools in this case) which are contained in an entity (memory pool) defined by an entry from cempMemPoolTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cempMemBufferCachePoolTable | Table that lists the cache buffer pools configured on a managed system. <ul style="list-style-type: none"> <li>To provide a noticeable performance boost, Cache Pool can be used. A Cache Pool is effectively a lookaside list of free buffers that can be accessed quickly. Cache Pool is tied to Buffer Pool.</li> <li>Cache pools can optionally have a threshold value on the number of cache buffers used in a pool. This can provide flow control management by having an implementation specific approach such as invoking a vector when pool cache rises above the optional threshold set for it on creation.</li> </ul> |

## MIB Constraints

Table 3-35 lists the constraints on objects in the CISCO-ENHANCED-MEMPOOL-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-35 CISCO-ENHANCED-MEMPOOL-MIB Constraints**

| MIB Object                  | Notes                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------|
| <b>ciscoMemoryPoolTable</b> |                                                                                                         |
| cempMemPoolType             | Values are: <ul style="list-style-type: none"> <li>processorMemory (2)</li> <li>ioMemory (3)</li> </ul> |
| cempMemPoolAlternate        | Always 0                                                                                                |
| cempMemPoolPlatformMemory   | Always 0                                                                                                |
| cempMemBufferNotifyEnabled  | Not supported                                                                                           |
| cempMemBufferSize           | Not supported                                                                                           |
| cempMemBufferMin            | Not supported                                                                                           |
| cempMemBufferMax            | Not supported                                                                                           |
| cempMemBufferPermanent      | Not supported                                                                                           |
| cempMemBufferTransient      | Not supported                                                                                           |

# CISCO-ENTITY-ASSET-MIB

The CISCO-ENTITY-ASSET-MIB provides asset tracking information for the physical components in the ENTITY-MIB (RFC 2737) entPhysicalTable.

The ceAssetTable contains an entry (ceAssetEntry) for each physical component on the router. Each entry provides information about the component, such as its orderable part number, serial number, hardware revision, manufacturing assembly number, and manufacturing revision.

Most physical components are programmed with a standard Cisco generic Identification Programmable Read-Only Memory (IDPROM) value that specifies asset information for the component. If possible, the MIB accesses the component's IDPROM information.

## MIB Tables

Table 3-36 lists the tables in the CISCO-ENTITY-ASSET-MIB:

**Table 3-36 CISCO-ENTITY-ASSET-MIB Tables**

| MIB Table    | Description                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ceAssetTable | <p>Provides this information for the entities in the ENTITY-MIB entPhysicalTable:</p> <ul style="list-style-type: none"> <li>• Orderable part number</li> <li>• Serial number</li> <li>• Hardware revision</li> <li>• Manufacturing assembly number</li> <li>• Revision number</li> <li>• FirmwareID and revision if any</li> <li>• SoftwareID and revision if any</li> </ul> |

Table 3-37 gives more information on the objects associated with this MIB.

**Table 3-37 CISCO-ENTITY-ASSET-MIB Objects and Value Information**

| Name                   | Description                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------|
| ceAssetMfgAssyNumber   | Top-level assembly number stored in IDPROM                                                              |
| ceAssetMfgAssyRevision | This object should reflect the revision of the TAN stored in IDPROM.                                    |
| ceAssetFirmwareID      | This object value should be the same as entPhysicalFirmwareRev of ENTITY-MIB.                           |
| ceAssetSoftwareID      | This object value should be the same as entPhysicalSoftwareRev of ENTITY-MIB.                           |
| ceAssetCLEI            | This object should reflect the value of the CLEI stored in the IDPROM supported by the physical entity. |

## MIB Constraints

Table 3-38 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-ENTITY-ASSET-MIB.

**Table 3-38 CISCO-ENTITY-ASSET-MIB Constraints**

| MIB Object   | Notes         |
|--------------|---------------|
| ceAssetAlias | Not supported |
| ceAssetTag   | Not supported |

## CISCO-ENTITY-FRU-CONTROL-MIB

The CISCO-ENTITY-FRU-CONTROL-MIB contains objects to configure and monitor the operational status of field replaceable units (FRUs) on the Cisco ASR 9000 Series router listed in the ENTITY-MIB entPhysicalTable. A FRU is a hardware component (such as a line card and module, fan, or power supply) that can be replaced on site.

## MIB Tables

Table 3-39 lists the tables in the CISCO-ENTITY-FRU-CONTROL-MIB:

**Table 3-39 CISCO-ENTITY-FRU-CONTROL-MIB Tables**

| MIB Table                    | Description                                                                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cefcFRUPowerSupplyGroupTable | Displays the redundancy mode and the operational status of the power supply groups in the system.                                                                                                                                                                                                  |
| cefcFRUPowerStatusTable      | Displays the power-related administrative status and operational status of the manageable components in the system.                                                                                                                                                                                |
| cefcFRUPowerSupplyValueTable | Displays the power capacity of a power FRU in the system if it provides variable power. This table supplements the information in the cefcFRUPowerStatusTable for power supply FRUs. The cefcFRUCurrent attribute in cefcFRUPowerStatusTable table indicates the type of power the FRU can supply. |
| cefcModuleTable              | Displays the operational and administrative status information for ENTITY-MIB entPhysicalTable entries for the manageable components of type PhysicalClass module(9).                                                                                                                              |

| MIB Table                       | Description                                                                                                                                                                                                                                                                                                              |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cefcIntelliModuleTable          | A cefcIntelliModuleTable entry lists the information specific to intelligent modules that are not listed under the cefcModuleTable. This table supplements the cefcModuleTable (every row in this table corresponds to a row in the cefcModuleTable but not necessarily vice-versa).                                     |
| cefcFanTrayStatusTable          | Provides the operational status information for all the ENTITY-MIB entPhysicalTable entries that have an entPhysicalClass value as <i>fan</i> . The entPhysicalClass value as <i>fan</i> indicates either: <ul style="list-style-type: none"> <li>• A physical fan</li> <li>• A combination of multiple fans.</li> </ul> |
| cefcPhysicalTable               | Displays a single row for each physical entity.                                                                                                                                                                                                                                                                          |
| cefcPowerSupplyInputTable       | Provides the power input information for all the power supplies that have entPhysicalTable entries with <i>powerSupply</i> as the entPhysicalClass.                                                                                                                                                                      |
| cefcPowerSupplyOutputTable      | Displays the output modes for the power supplies and the modes that are operational within the system.                                                                                                                                                                                                                   |
| cefcChassisCoolingTable         | Displays the cooling capacity information of the chassis (for ENTITY-MIB entPhysicalTable entries having an entPhysicalClass value as <i>chassis</i> ).                                                                                                                                                                  |
| cefcFanCoolingTable             | Displays the cooling capacity information of the fans (for ENTITY-MIB entPhysicalTable entries having an entPhysicalClass value as <i>fan</i> ).                                                                                                                                                                         |
| cefcModuleCoolingTable          | Specifies the cooling requirement for all the manageable components having entPhysicalClass value as <i>module</i> .                                                                                                                                                                                                     |
| cefcFanCoolingCapTable          | Displays the possible cooling capacity modes and properties of the fans (for ENTITY-MIB entPhysicalTable entries having entPhysicalClass value <i>fan</i> ).                                                                                                                                                             |
| cefcConnectorRatingTable        | Specifies the connector power ratings of FRUs.                                                                                                                                                                                                                                                                           |
| cefcModulePowerConsumptionTable | Provides the total power consumption information for modules (for ENTITY-MIB entPhysicalTable entries having entPhysicalClass value as <i>module</i> ).                                                                                                                                                                  |

## MIB Constraints

Table 3-40 lists the constraints that the router places on objects in the CISCO-ENTITY-FRU-CONTROL-MIB.

**Table 3-40 CISCO-ENTITY-FRU-CONTROL-MIB Constraints**

| <b>MIB Object</b>                      | <b>Notes</b>                                  |
|----------------------------------------|-----------------------------------------------|
| <b>cefcModuleTable</b>                 |                                               |
| cefcModuleAdminStatus                  | Set operation not supported                   |
| cefcModuleOperStatus                   | unknown (1)<br>ok (2)<br>failed (7)           |
| cefcModuleResetReason                  | unknown (1)<br>powerUp (2)<br>manualReset (5) |
| cefcModuleLastClearConfigTime          | Not implemented                               |
| cefcModuleResetReasonDescription       | Not implemented                               |
| cefcModuleStateChangeReasonDescr       | Not implemented                               |
| cefcFRUTotalSystemCurrent              | Not supported                                 |
| cefcFRUDrawnSystemCurrent              | Not supported                                 |
| cefcFRUTotalInlineCurrent              | Not supported                                 |
| cefcFRUDrawnInlineCurrent              | Not supported                                 |
| cefcFRUPowerAdminStatus                | on(1)<br>off(2)                               |
| cefcFRUPowerOperStatus                 | offEnvOther(1)<br>on(2)<br>offAdmin(3)        |
| cefcPowerRedundancyMode                | Not supported                                 |
| cefcModuleAdminStatus                  | Not supported                                 |
| cefcMaxDefaultHighInLinePower          | Not supported                                 |
| <b>cefcFRUPowerSupplyGroupTable</b>    | Not supported                                 |
| <b>cefcFRUPowerSupplyValueTable</b>    | Not supported                                 |
| <b>cefcIntelliModuleTable</b>          | Not supported                                 |
| <b>cefcPowerSupplyInputTable</b>       | Not supported                                 |
| <b>cefcPowerSupplyOutputTable</b>      | Not supported                                 |
| <b>cefcChassisCoolingTable</b>         | Not supported                                 |
| <b>cefcFanCoolingTable</b>             | Not supported                                 |
| <b>cefcModuleCoolingTable</b>          | Not supported                                 |
| <b>cefcFanCoolingCapTable</b>          | Not supported                                 |
| <b>cefcConnectorRatingTable</b>        | Not supported                                 |
| <b>cefcModulePowerConsumptionTable</b> | Not supported                                 |

# CISCO-ENTITY-REDUNDANCY-MIB

The CISCO-ENTITY-REDUNDANCY-MIB management information module supports configuration, control and monitoring of redundancy protection for various kinds of components on Cisco managed devices. It is meant to be generic enough to handle basic redundancy control and monitoring for many types of redundant member components and redundancy architectures as long as there is an Entity MIB `entPhysicalIndex` and `entPhysicalVendorType` assigned to each member component. It is designed so that the tables can be augmented in other extension MIBs which build upon this MIB by adding additional objects that may be specific to a particular type of redundancy or member component. This MIB can also be used in cases where some types of redundancy groups and members don't require explicit user configuration. One example may be redundant fan assemblies. In those cases, the managed system should internally assign group and member indexes, so that it can provide read-only access to the group and member tables. This allows MIB monitoring for these types of redundant entities. The CISCO-ENTITY-REDUNDANCY-MIB is supported from Release 4.2.1 onwards.

## MIB Tables

Table 3-41 lists the tables in CISCO-ENTITY-REDUNDANCY-MIB:

**Table 3-41 CISCO-ENTITY-REDUNDANCY-MIB Tables**

| MIB Table                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>ceRedunGroupTypesTable</code>     | This table lists the basic types of redundancy groups supported on the managed device along with additional information about each group type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <code>ceRedunVendorTypesTable</code>    | This table lists all <code>entPhysicalVendorTypes</code> allowed as members for a specific <code>ceRedunGroupTypeIndex</code> on the managed device, inclusive for all configurable values for <code>ceRedunType</code> , <code>ceRedunScope</code> , <code>ceRedunArch</code> , etc. If the <code>ceRedunGroupDefinitionChanged</code> object changes for a particular <code>ceRedunGroupTypeIndex</code> , then this table may have changed and should be read again. Note: Although a specific <code>ceRedunGroupTypeIndex</code> may allow groups of different <code>entPhysicalVendorTypes</code> , managed devices typically enforce all members within a specific group to have the same <code>entPhysicalVendorType</code> . |
| <code>ceRedunInternalStatesTable</code> | This table allows the managed system to report a read-only list of internal state numbers and the corresponding descriptions which apply for the members of a particular redundancy group type. If the <code>ceRedunGroupDefinitionChanged</code> object changes for a particular <code>ceRedunGroupTypeIndex</code> , then this table may have changed and should be read again.                                                                                                                                                                                                                                                                                                                                                    |

| MIB Table                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ceRedunSwitchoverReasonTable | This table allows the managed system to report a read-only list of switchover reason indexes and the corresponding descriptions. If the ceRedunGroupDefinitionChanged object changes for a particular ceRedunGroupTypeIndex, then this table may have changed and should be read again.                                                                                                                                                                                                                    |
| ceRedunGroupTable            | This table lists group configuration and status objects for a specific redundancy group. However, the members are configured separately in the ceRedunMbrTable.                                                                                                                                                                                                                                                                                                                                            |
| ceRedunMbrConfigTable        | This table lists the group members and generic redundancy objects which are associated with configuring redundancy group members. The switchover granularity should be for one member at a time. In other words if a member is allowed to be an individual port, then switchovers on multi-port linecards would be expected to take place independently for each port on the linecard. But if the members are full linecards, then all ports on the linecard would be expected to switch at the same time. |
| ceRedunMbrStatusTable        | This table lists the redundancy status and other read-only redundancy objects which are associated with redundancy group members. Status associated with member alarm conditions should be reported separately using the CISCO-ENTITY-ALARM-MIB.                                                                                                                                                                                                                                                           |
| ceRedunCommandTable          | This table allows switchover commands to be sent to members of configured redundancy groups.                                                                                                                                                                                                                                                                                                                                                                                                               |

## MIB Constraints

Table 3-42 lists the constraints that the router places on the objects in the CISCO-ENTITY-REDUNDANCY-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-42 CISCO-ENTITY-REDUNDANCY-MIB Constraints**

| MIB Object                    | Notes     |
|-------------------------------|-----------|
| ceRedunGroupTypesTable        |           |
| ceRedunGroupTypeName          | Supported |
| ceRedunGroupCounts            | Supported |
| ceRedunNextUnusedGroupIndex   | Supported |
| ceRedunMaxMbrsInGroup         | Supported |
| ceRedunUsesGroupName          | Supported |
| ceRedunGroupDefinitionChanged | Supported |

**Table 3-42** *CISCO-ENTITY-REDUNDANCY-MIB Constraints*

| <b>MIB Object</b>                   | <b>Notes</b> |
|-------------------------------------|--------------|
| <b>ceRedunVendorTypesTable</b>      |              |
| ceRedunVendorType                   | Supported    |
| <b>ceRedunInternalStatesTable</b>   |              |
| ceRedunStateCategory                | Supported    |
| ceRedunInternalStateDescr           | Supported    |
| <b>ceRedunSwitchoverReasonTable</b> |              |
| ceRedunReasonCategory               | Supported    |
| ceRedunSwitchoverReasonDescr        | Supported    |
| <b>ceRedunGroupTable</b>            |              |
| ceRedunGroupString                  | Supported    |
| ceRedunGroupRedunType               | Supported    |
| ceRedunGroupScope                   | Supported    |
| ceRedunGroupArch                    | Supported    |
| ceRedunGroupRevert                  | Supported    |
| ceRedunGroupStorageType             | Supported    |
| ceRedunGroupRowStatus               | Supported    |
| <b>ceRedunMbrConfigTable</b>        |              |
| ceRedunMbrPhysIndex                 | Supported    |
| ceRedunMbrMode                      | Supported    |
| ceRedunMbrStorageType               | Supported    |
| ceRedunMbrRowStatus                 | Supported    |
| <b>ceRedunMbrStatusTable</b>        |              |
| ceRedunMbrStatusCurrent             | Supported    |
| ceRedunMbrProtectingMbr             | Supported    |
| ceRedunMbrInternalState             | Supported    |
| ceRedunMbrSwitchoverCounts          | Supported    |
| ceRedunMbrLastSwitchover            | Supported    |
| ceRedunMbrSwitchoverReason          | Supported    |
| <b>Scalar Objects</b>               |              |
| ceRedunGroupLastChanged             | Supported    |
| ceRedunMbrLastChanged               | Supported    |
| ceRedunMbrStatusLastChanged         | Supported    |

**Note**

- MIB tables and objects which are not included in the above list are not supported.

- The **ceRedunGroupTable** and **ceRedunMbrConfigTable** have RowStatus objects and they are implemented as read-only. The access for other objects in these tables will be implemented as read-only.

## CISCO-ENTITY-SENSOR-MIB

The CISCO-ENTITY-SENSOR-MIB contains objects to monitor the values and thresholds of sensors in the ENTITY-MIB entPhysicalTable.

### MIB Tables

Table 3-43 lists the tables in CISCO-ENTITY-SENSOR-MIB:

**Table 3-43 CISCO-ENTITY-SENSOR-MIB Tables**

| MIB Table               | Description                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------|
| entSensorValueTable     | Displays the type, scale, and current value of a sensor listed in the Entity-MIB entPhysicalTable.                      |
| entSensorThresholdTable | Displays the threshold severity, relation, and comparison value for a sensor listed in the Entity-MIB entPhysicalTable. |

### MIB Constraints

Table 3-44 lists the constraints that the router places on the objects in the CISCO-ENTITY-SENSOR-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-44 CISCO-ENTITY-SENSOR-MIB Constraints**

| MIB Object                     | Notes     |
|--------------------------------|-----------|
| <b>entSensorThresholdTable</b> |           |
| • entSensorThresholdRelation   | Read-only |
| • entSensorThresholdSeverity   | Read-only |
| • entSensorThresholdValue      | Read-only |



#### Note

SPA Transceiver sensors are not support in ASR 9000 release 3.9.

### MIB Usage Values for Cisco Transceivers

The tables in this section list each type of sensor value represented in the entSensorValueTable and the entSensorThresholdTable.

Table 3-45 lists CISCO-ENTITY-SENSOR-MIB sensor objects and their usage values for Cisco ASR 9000 Series transceivers in the entSensorValueTable.

**Table 3-45 CISCO-ENTITY-SENSOR-MIB Usage Values in the entSensorValueTable for Cisco Transceivers**

| MIB Sensor Object                                                               | Notes                                                                                               |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Module Temperature Sensor</b>                                                |                                                                                                     |
| • entSensorType                                                                 | celsius (8)                                                                                         |
| • entSensorScale                                                                | units (9)                                                                                           |
| • entSensorPrecision                                                            | 1                                                                                                   |
| • entSensorStatus                                                               | ok (1)                                                                                              |
| • entSensorValue                                                                | Reports most recent measurement seen by the sensor                                                  |
| • entSensorValueTimeStamp                                                       | Value indicates the age of the value reported by entSensorValue object                              |
| • entSensorValueUpdateRate                                                      | Value indicates the rate that the agent updates entSensorValue in seconds, for example, 60 seconds. |
| <b>Module Voltage Sensor</b>                                                    |                                                                                                     |
| • entSensorType                                                                 | voltsDC(4)                                                                                          |
| • entSensorScale                                                                | milli (8)                                                                                           |
| • entSensorPrecision                                                            | 1                                                                                                   |
| • entSensorStatus                                                               | ok (1)                                                                                              |
| • entSensorValue                                                                | Reports most recent measurement seen by the sensor                                                  |
| • entSensorValueTimeStamp                                                       | Value indicates the age of the value reported by entSensorValue object                              |
| • entSensorValueUpdateRate                                                      | Value indicates the rate that the agent updates entSensorValue in seconds, for example, 60 seconds. |
| <b>Tx Laser Current Sensor</b>                                                  |                                                                                                     |
| • entSensorType                                                                 | amperes (5)                                                                                         |
| • entSensorScale                                                                | milli(8)                                                                                            |
| • entSensorPrecision                                                            | 1                                                                                                   |
| • entSensorStatus                                                               | ok (1)                                                                                              |
| • entSensorValue                                                                | Reports most recent measurement seen by the sensor                                                  |
| • entSensorValueTimeStamp                                                       | Value indicates the age of the value reported by entSensorValue object                              |
| • entSensorValueUpdateRate                                                      | Value indicates the rate that the agent updates entSensorValue in seconds, for example, 60 seconds. |
| <b>Transmit Power Sensor (Optical Tx) and Receive Power Sensor (Optical Rx)</b> |                                                                                                     |
| • entSensorType                                                                 | watts (6)                                                                                           |
| • entSensorScale                                                                | milli (8)                                                                                           |
| • entSensorPrecision                                                            | 1                                                                                                   |

**Table 3-45** *CISCO-ENTITY-SENSOR-MIB Usage Values in the entSensorValueTable for Cisco Transceivers (continued)*

| MIB Sensor Object          | Notes                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------------|
| • entSensorStatus          | ok (1)                                                                                              |
| • entSensorValue           | Reports most recent measurement seen by the sensor                                                  |
| • entSensorValueTimeStamp  | Value indicates the age of the value reported by entSensorValue object                              |
| • entSensorValueUpdateRate | Value indicates the rate that the agent updates entSensorValue in seconds, for example, 60 seconds. |

Each Cisco transceiver sensor has four threshold values corresponding to the four alarm states listed in [Table 3-46](#). The entSensorValueTable is indexed by both entPhysicalIndex and entSensorThresholdIndex. The Cisco ASR 9000 Series router entSensorThresholdIndices range from 1 to 4. For N/A, a value of zero is returned.

[Table 3-46](#) lists the default values for the Cisco transceivers in the entSensorThresholdTable.

**Table 3-46** *Default Values in the entSensorThreshold Table for Cisco Transceivers*

| MIB Sensor Object | High Alarm | High Warning   | Low Warning    | Low Alarm      |
|-------------------|------------|----------------|----------------|----------------|
| Temperature       | 70.0       | 60.0           | 5.0            | 0.0            |
| Voltage           | N/A        | Not applicable | Not applicable | Not applicable |
| Tx Bias Current   | 80.0       | 75.0           | 15.0           | 10.0           |
| Tx Optical Power  | 2.0        | 0.9            | -4.0           | -9.7           |
| Rx Optical Power  | 2.0        | 0.4            | -11.9          | -15.0          |

## CISCO-ENTITY-STATE-EXT-MIB

The CISCO-ENTITY-STATE-EXT-MIB is a Cisco Specific extension of ENTITY-STATE-MIB specified in RFC 4268. This MIB module is to add objects which provide additional information related to entity states. This MIB define notifications which are generated when an entity undergoes a redundancy switchover.

## MIB Tables

[Table 3-47](#) lists the tables in CISCO-ENTITY-STATE-EXT-MIB :

**Table 3-47** *CISCO-ENTITY-STATE-EXT-MIB Tables*

| MIB Table       | Description                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ceStateExtTable | An extension of the entStateTable, defined in ENTITY-STATE-MIB (rfc 4268) providing additional information and control objects for the entities listed in the table. |

## MIB Constraints

[Table 3-48](#) lists the constraints that the router places on the objects in the CISCO-ENTITY-STATE-EXT-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-48** *CISCO-ENTITY-STATE-EXT-MIB Constraints*

| MIB Object                               | Notes         |
|------------------------------------------|---------------|
| ceStateExtPrevStandbyState               | Not Supported |
| ceStateExtSwitchoverNotifEnable          | Supported     |
| ceStateExtStandbyStatusNotifEnable       | Read-only     |
| ceStateExtOperNotifEnable                | Read-only     |
| ceStateExtGlobalSwitchoverNotifEnable    | Supported     |
| ceStateExtGlobalStandbyStatusNotifEnable | Read-only     |
| ceStateExtGlobalOperNotifEnable          | Read-only     |
| ceStateExtStandbySwitchover              | Supported     |
| ceStateExtStandbyStatusChange            | Not Supported |

## CISCO-FLASH-MIB

The CISCO-FLASH-MIB contains objects to manage flash cards and flash card operations.

[Table 3-49](#) lists the tables associated with this MIB.

**Table 3-49**      **CISCO-FLASH-MIB Tables and Descriptions**

| Name                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciscoFlashDeviceTable     | Table of Flash device properties for each initialized Flash device. Each Flash device installed in a system is detected, sized, and initialized when the system image boots up. For removable Flash devices, the device properties are dynamically deleted and recreated as the device is removed and inserted. Note that in this case, the newly inserted device may not be the same as the earlier removed one. The ciscoFlashDeviceInitTime object is available for a management station to determine the time at which a device was initialized, and thereby detect the change of a removable device. A removable device that has not been installed also has an entry in this table. This is to let a management station know about a removable device that has been removed. Since a removed device obviously cannot be sized and initialized, the table entry for such a device has ciscoFlashDeviceSize equal to zero, and the following objects have an indeterminate value:<br>ciscoFlashDeviceMinPartitionSize,<br>ciscoFlashDeviceMaxPartitions,<br>ciscoFlashDevicePartitions, and<br>ciscoFlashDeviceChipCount.<br>ciscoFlashDeviceRemovable is true to indicate it is removable. |
| ciscoFlashChipTable       | Table of Flash device chip properties for each initialized Flash device. This table is meant primarily for aiding error diagnosis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ciscoFlashPartitionTable  | Table of flash device partition properties for each initialized flash partition. Whenever there is no explicit partitioning done, a single partition spanning the entire device is assumed to exist. Therefore, there is always at least one partition on a device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ciscoFlashFileTable       | Entry in the table of Flash file properties for each initialized Flash partition. Each entry represents a file and gives details about the file. An entry is indexed using the device number, partition number within the device, and file number within the partition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ciscoFlashFileByTypeTable | Table of information for files on the manageable flash devices sorted by File Types.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ciscoFlashCopyTable       | Table of Flash copy operation entries. Each entry represents a Flash copy operation (to or from Flash) that has been initiated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Table 3-49 CISCO-FLASH-MIB Tables and Descriptions (continued)**

| Name                        | Description                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------|
| ciscoFlashPartitioningTable | Table of Flash partitioning operation entries. Each entry represents a Flash partitioning operation that has been initiated. |
| ciscoFlashMiscOpTable       | Table of misc Flash operation entries. Each entry represents a Flash operation that has been initiated.                      |

## MIB Constraints

Table 3-50 lists the constraints that the Cisco ASR 9000 Series router places on the objects in CISCO-FLASH-MIB.

**Table 3-50 CISCO-FLASH-MIB Constraints**

| MIB Object                               | Notes                                     |
|------------------------------------------|-------------------------------------------|
| ciscoFlashCfgDevInsNotifEnable           | Not supported                             |
| ciscoFlashCfgDevRemNotifEnable           | Not supported                             |
| <b>miscOpTable</b>                       | Verify and erase operations not supported |
| <b>ciscoFlashPartitioningTable</b>       | Not supported                             |
| ciscoFlashDeviceInitTime                 | Not supported                             |
| ciscoFlashPhyEntIndex                    | Not supported                             |
| ciscoFlashPartitioningCommand            | Not supported                             |
| ciscoFlashPartitioningDestinationName    | Not supported                             |
| ciscoFlashPartitioningPartitionCount     | Not supported                             |
| ciscoFlashPartitioningPartitionSizes     | Not supported                             |
| ciscoFlashPartitioningNotifyOnCompletion | Not supported                             |
| ciscoFlashPartitioningEntryStatus        | Not supported                             |
| ciscoFlashDeviceSize                     | Supported, read-only                      |
| ciscoFlashDeviceMinPartitionSize         | Supported, read-only                      |
| ciscoFlashPartitionSize                  | Supported, read-only                      |
| ciscoFlashPartitionFreeSpace             | Supported, read-only                      |
| ciscoFlashCfgDevInsNotifEnable           | Supported, read-only                      |
| ciscoFlashCfgDevRemNotifEnable           | Supported, read-only                      |
| ciscoFlashDeviceCard                     | Object is deprecated                      |
| ciscoFlashDeviceName                     | Object is deprecated                      |
| ciscoFlashDeviceRemovable                | Supported, read-only                      |
| ciscoFlashDeviceNameExtended             | Supported, read-only                      |

# CISCO-FLOW-CLONE-MIB

This MIB module defines objects that manage flow cloning feature. A flow cloning can be described as a hardware or software entity, that is responsible to clone (or duplicate) flows to the specified destination port in the device. These cloned packets will be sent to an external device for a more fine-grained analysis of the flows. A typical application of this MIB module will facilitate cloning media flows. However, by no means does the definition of this MIB module prevents other applications from using it.

## MIB Tables

Table 3-51 lists the tables in CISCO-FLOW-CLONE-MIB:

**Table 3-51 CISCO-FLOW-CLONE-MIB Tables**

| MIB Table            | Description                                                                                                                                                                                                                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cfcCloneProfileTable | This table lists the clone profiles contained by the device.                                                                                                                                                                                                                                                                                                      |
| cfcFlowIpTable       | This table lists the IP traffic flows that are cloned by corresponding clone profile supported by the device. This table has an expansion dependent relationship on the cfcCloneProfileTable, containing zero or more rows for each clone profile.                                                                                                                |
| cfcFlowStatsTable    | This table contains data relating to the collection of statistics for the flows cloned by the corresponding clone profiles supported by the device. This table has a sparse dependent relationship on the flow tables, containing a row for each row in the flow table (cfcFlowIpTable in case of IP flows) for which the device is actively cloning the packets. |

## MIB Constraints

Table 3-52 lists the constraints that the Cisco ASR 9000 Series router places on the objects in CISCO-FLOW-CLONE-MIB.

**Table 3-52 CISCO-FLOW-CLONE-MIB Constraints**

| MIB Table                  | Description    |
|----------------------------|----------------|
| cfcCloneProfileTable       |                |
| cfcCloneProfileId          | Not-accessible |
| cfcCloneProfileStatus      | Read-create    |
| cfcCloneProfileStorageType | Read-create    |
| cfcCloneProfileName        | Read-create    |

| MIB Table                   | Description    |
|-----------------------------|----------------|
| cfcCloneProfileDescription  | Read-create    |
| cfcCloneProfileCreateTime   | Not-supported  |
| cfcCloneProfileFlowCount    | Not-supported  |
| cfcCloneProfileFlowType     | Read-create    |
| cfcCloneTargetType          | Not-supported  |
| cfcCloneTargetIfIndex       | Not-supported  |
| cfcCloneProfileEgressIfType | Read-create    |
| cfcCloneProfileEgressIf     | Read-create    |
| cfcFlowIpTable              |                |
| cfcFlowIndex                | Not-accessible |
| cfcFlowIpStatus             | Read-create    |
| cfcFlowIpStorageType        | Read-create    |
| cfcFlowIpAddrSrcType        | Read-create    |
| cfcFlowIpAddrSrc            | Read-create    |
| cfcFlowIpAddrDstType        | Read-create    |
| cfcFlowIpAddrDst            | Read-create    |
| cfcFlowIpCreateTime         | Not-supported  |
| cfcFlowStatsTable           |                |
| cfcFlowPkts                 | Read-only      |
| cfcFlowOctets               | Not-supported  |

## CISCO-FLOW-MONITOR-MIB

This MIB module defines objects that describe flow monitoring. A typical application of this MIB module will facilitate monitoring media flows, especially flows carrying video streams. However, by no means does the definition of this MIB module prevents other applications from using it.

## MIB Constraints

[Table 3-50](#) lists the constraints on the objects in CISCO-FLOW-MONITOR-MIB.

**Table 3-53 CISCO-FLOW-MONITOR-MIB Constraints**

| MIB Object          | Notes          |
|---------------------|----------------|
| cfmFlowMonitorTable |                |
| cfmFlowMonitorId    | Not-accessible |
| cfmFlowMonitorDescr | Read-only      |
| cfmFlowMonitorCaps  | Read-only      |

**Table 3-53 CISCO-FLOW-MONITOR-MIB Constraints**

| <b>MIB Object</b>                | <b>Notes</b>    |
|----------------------------------|-----------------|
| cfmFlowMonitorFlowCount          | Read-only       |
| cfmFlowMonitorConditionsProfile  | Read-only       |
| cfmFlowMonitorConditions         | Read-only       |
| cfmFlowMonitorAlarms             | Read-only       |
| cfmFlowMonitorAlarmSeverity      | Read-only       |
| cfmFlowMonitorAlarmCriticalCount | Read-only       |
| cfmFlowMonitorAlarmMajorCount    | Read-only       |
| cfmFlowMonitorAlarmMinorCount    | Not-supported   |
| cfmFlowMonitorAlarmWarningCount  | Not-supported   |
| cfmFlowMonitorAlarmInfoCount     | Not-supported   |
| cfmFlowTable                     |                 |
| cfmFlowId                        | Not-accessible, |
| cfmFlowDescr                     | Read-only       |
| cfmFlowNext                      | Read-only       |
| cfmFlowCreateTime                | Read-only       |
| cfmFlowDiscontinuityTime         | Not-supported   |
| cfmFlowExpirationTime            | Read-only       |
| cfmFlowDirection                 | Read-only       |
| cfmFlowAdminStatus               | Read-write      |
| cfmFlowOperStatus                | Not-supported   |
| cfmFlowIngressType               | Read-only       |
| cfmFlowIngress                   | Read-only       |
| cfmFlowEgressType                | Not-supported   |
| cfmFlowEgress                    | Not-supported   |
| cfmFlowL2VlanTable               |                 |
| cfmFlowL2VlanNext                | Not-supported   |
| cfmFlowL2VlanId                  | Not-supported   |
| cfmFlowL2VlanCos                 | Not-supported   |
| cfmFlowIpTable                   |                 |
| cfmFlowIpNext                    | Read-only       |
| cfmFlowIpAddrType                | Read-only       |
| cfmFlowIpAddrSrc                 | Read-only       |
| cfmFlowIpAddrDst                 | Read-only       |
| cfmFlowIpValid                   | Read-only       |
| cfmFlowIpTrafficClass            | Not-supported   |
| cfmFlowIpHopLimit                | Read-only       |

**Table 3-53 CISCO-FLOW-MONITOR-MIB Constraints**

| <b>MIB Object</b>               | <b>Notes</b>   |
|---------------------------------|----------------|
| cfmFlowUdpTable                 |                |
| cfmFlowUdpNext                  | Read-only      |
| cfmFlowUdpPortSrc               | Read-only      |
| cfmFlowUdpPortDst               | Read-only      |
| cfmFlowTcpTable                 |                |
| cfmFlowTcpNext                  | Not-supported  |
| cfmFlowTcpPortSrc               | Not-supported  |
| cfmFlowTcpPortDst               | Not-supported  |
| cfmFlowRtpTable                 |                |
| cfmFlowRtpNext                  | Not-supported  |
| cfmFlowRtpVersion               | Not-supported  |
| cfmFlowRtpSrc                   | Not-supported  |
| cfmFlowRtpPayloadType           | Not-supported  |
| cfmFlowMetricsTable             |                |
| cfmFlowMetricsCollected         | Read-only      |
| cfmFlowMetricsIntervalTime      | Read-only      |
| cfmFlowMetricsMaxIntervals      | Read-only      |
| cfmFlowMetricsElapsedTime       | Not-supported  |
| cfmFlowMetricsIntervals         | Read-only      |
| cfmFlowMetricsInvalidIntervals  | Read-only      |
| cfmFlowMetricsConditionsProfile | Read-only      |
| cfmFlowMetricsConditions        | Read-only      |
| cfmFlowMetricsAlarms            | Not-supported  |
| cfmFlowMetricsAlarmSeverity     | Not-supported  |
| cfmFlowMetricsPkts              | Read-only      |
| cfmFlowMetricsOctets            | Read-only      |
| cfmFlowMetricsBitRateUnits      | Read-only      |
| cfmFlowMetricsBitRate           | Read-only      |
| cfmFlowMetricsPktRate           | Read-only      |
| cfmFlowMetricsIntTable          |                |
| cfmFlowMetricsIntNumber         | Not-accessible |
| cfmFlowMetricsIntValid          | Read-only      |
| cfmFlowMetricsIntTime           | Read-only      |
| cfmFlowMetricsIntConditions     | Read-only      |
| cfmFlowMetricsIntAlarms         | Read-only      |
| cfmFlowMetricsIntAlarmSeverity  | Read-only      |

**Table 3-53** *CISCO-FLOW-MONITOR-MIB Constraints*

| <b>MIB Object</b>               | <b>Notes</b>   |
|---------------------------------|----------------|
| cfmFlowMetricsIntPkts           | Read-only      |
| cfmFlowMetricsIntOctets         | Read-only      |
| cfmFlowMetricsIntBitRateUnits   | Read-only      |
| cfmFlowMetricsIntBitRate        | Read-only      |
| cfmFlowMetricsIntPktRate        | Read-only      |
| cfmConditionTable               |                |
| cfmConditionProfile             | Not-accessible |
| cfmConditionId                  | Not-accessible |
| cfmConditionDescr               | Read-only      |
| cfmConditionMonitoredElement    | Read-only      |
| cfmConditionType                | Read-only      |
| cfmConditionThreshRiseScale     | Read-only      |
| cfmConditionThreshRisePrecision | Read-only      |
| cfmConditionThreshRise          | Read-only      |
| cfmConditionThreshFallScale     | Read-only      |
| cfmConditionThreshFallPrecision | Read-only      |
| cfmConditionThreshFall          | Read-only      |
| cfmConditionSampleType          | Not-supported  |
| cfmConditionSampleWindow        | Not-supported  |
| cfmConditionAlarm               | Read-only      |
| cfmConditionAlarmActions        | Read-only      |
| cfmConditionAlarmSeverity       | Read-only      |
| cfmConditionAlarmGroup          | Not-supported  |
| cfmAlarmGroupTable              |                |
| cfmAlarmGroupId                 | Not-accessible |
| cfmAlarmGroupDescr              | Read-only      |
| cfmAlarmGroupConditionsProfile  | Read-only      |
| cfmAlarmGroupConditionId        | Read-only      |
| cfmAlarmGroupFlowSet            | Read-only      |
| cfmAlarmGroupFlowCount          | Read-only      |
| cfmAlarmGroupThresholdUnits     | Read-only      |
| cfmAlarmGroupThreshold          | Read-only      |
| cfmAlarmGroupRaised             | Read-only      |
| cfmAlarmGroupCurrentCount       | Read-only      |
| cfmAlarmGroupFlowTable          |                |
| cfmAlarmGroupFlowSetId          | Not-accessible |

**Table 3-53 CISCO-FLOW-MONITOR-MIB Constraints**

| MIB Object                       | Notes          |
|----------------------------------|----------------|
| cfmAlarmGroupFlowMonitorId       | Not-accessible |
| cfmAlarmGroupFlowId              | Read-only      |
| cfmAlarmHistorySize              | Read-write     |
| cfmAlarmHistoryLastId            | Read-only      |
| cfmAlarmHistoryTable             |                |
| cfmAlarmHistoryId                | Read-only      |
| cfmAlarmHistoryType              | Read-only      |
| cfmAlarmHistoryEntity            | Read-only      |
| cfmAlarmHistoryConditionsProfile | Read-only      |
| cfmAlarmHistoryConditionId       | Read-only      |
| cfmAlarmHistorySeverity          | Read-only      |
| cfmAlarmHistoryTime              | Read-only      |
| cfmNotifyEnable                  | Read-write     |

## CISCO-FRAME-RELAY-MIB

The CISCO-FRAME-RELAY-MIB provides Frame Relay specific information that are either excluded by RFC 1315 (FR DTE MIB) or specific to Cisco products.

[Table 3-54](#) lists the tables associated with this MIB.

**Table 3-54 CISCO-FRAME-RELAY Tables and Descriptions**

| Name                 | Description                                                                                                                              |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| cfrLmiTable          | Table of Frame Relay LMI information that are either supplemental to the frDlcmiTable of RFC 1315 or specific to Cisco's implementation. |
| cfrCircuitTable      | Table of descriptive and statistics information that are generic to Frame Relay virtual circuits.                                        |
| cfrExtCircuitTable   | Table of Cisco implementation specific FR circuit information. This is a Cisco extension for the frCircuitTable of RFC 1315.             |
| cfrMapTable          | Table of protocols and addresses mapping information of FR virtual circuit.                                                              |
| cfrSvcTable          | Table of FR SVC specific, descriptive and statistics information.                                                                        |
| cfrElmiTable         | Table of Cisco Frame Relay ELMI information that is specific to Cisco implementation.                                                    |
| cfrElmiNeighborTable | Table of Cisco Frame Relay Neighbor ELMI information that is specific to Cisco implementation.                                           |

**Table 3-54** *CISCO-FRAME-RELAY Tables and Descriptions (continued)*

| Name               | Description                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| cfrFragTable       | Table of Frame Relay Fragmentation information. These are specific to Cisco implementation.                                                           |
| cfrConnectionTable | Table of Frame Relay/Frame Relay and Frame Relay/ATM Network/Service Interworking connection information. These are specific to Cisco implementation. |

## CISCO-FTP-CLIENT-MIB

The CISCO-FTP-CLIENT-MIB contains objects to invoke File Transfer Protocol (FTP) operations for network management. This MIB has no known constraints and all objects are implemented as defined in the MIB.

Table 3-55 lists the tables associated with this MIB.

**Table 3-55** *CISCO-FTP-CLIENT-MIB Tables and Descriptions*

| Name            | Description                  |
|-----------------|------------------------------|
| cfcRequestTable | Table of FTP client requests |

## CISCO-HSRP-EXT-MIB

The CISCO-HSRP-EXT-MIB provides an extension to the CISCO-HSRP-MIB, which defines the Cisco proprietary Hot Standby Routing Protocol (HSRP), defined in RFC 2281. The extensions cover assigning of secondary HSRP ip addresses and modifying priority of an HSRP Group by tracking the operational status of interfaces.

Table 3-56 lists the tables associated with this MIB.

**Table 3-56** *CISCO-HSRP-EXT-MIB Tables and Descriptions*

| Name                   | Description                                                                            |
|------------------------|----------------------------------------------------------------------------------------|
| cHsrpExtIfTrackedTable | Table containing information about tracked interfaces per HSRP group                   |
| cHsrpExtSecAddrTable   | Table containing information about secondary HSRP IP Addresses per interface and group |
| cHsrpExtIfTable        | HSRP-specific configurations for each physical interface                               |

## MIB Constraints

Table 3-57 lists the constraints on the objects in CISCO-HSRP-EXT-MIB.

**Table 3-57 CISCO-HSRP-EXT-MIB Constraints**

| MIB Object                 | Notes         |
|----------------------------|---------------|
| cHsrpExtIfTrackedPriority  | Not supported |
| cHsrpExtIfTrackedRowStatus | Not supported |
| cHsrpExtSecAddrRowStatus   | Not supported |
| cHsrpExtIfUseBIA           | Not supported |
| cHsrpExtIfRowStatus        | Not supported |

## CISCO-HSRP-MIB

The CISCO-HSRP-MIB provides a means to monitor and configure the Cisco IOS Proprietary Hot Standby Router Protocol (HSRP). Cisco HSRP protocol is defined in RFC 2281.

[Table 3-58](#) lists the tables associated with this MIB.

**Table 3-58 CISCO-HSRP-MIB Tables and Descriptions**

| Name          | Description                                                        |
|---------------|--------------------------------------------------------------------|
| cHsrpGrpTable | Table containing information on each HSRP group for each interface |

## MIB Constraints

[Table 3-59](#) lists the constraints on the objects in CISCO-HSRP-MIB.

**Table 3-59 CISCO-HSRP-MIB Constraints**

| MIB Object                  | Notes         |
|-----------------------------|---------------|
| cHsrpConfigTimeout          | Not supported |
| cHsrpGrpAuth                | Not supported |
| cHsrpGrpPriority            | Not supported |
| cHsrpGrpPreempt             | Not supported |
| cHsrpGrpPreemptDelay        | Not supported |
| cHsrpGrpConfiguredHelloTime | Not supported |
| cHsrpGrpConfiguredHoldTime  | Not supported |
| cHsrpGrpVirtualIpAddr       | Not supported |
| cHsrpGrpEntryRowStatus      | Not supported |

# CISCO-IETF-BFD-MIB

The CISCO-IETF-BFD-MIB contains objects to manage Bidirectional Forwarding Detection(BFD) Protocol. BFD is a protocol to detect faults in the bidirectional path between two forwarding engines, including interfaces, and data link(s) with very low latency. This protocol operates independently of media, data protocols, and routing protocols.

## MIB Tables

Table 3-60 lists the tables in CISCO-IETF-BFD-MIB:

**Table 3-60 CISCO-IETF-BFD-MIB Tables**

| MIB Table                | Description                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciscoBfdSessTable        | Describes the BFD sessions.                                                                                                                                                                                                                                                                                    |
| ciscoBfdSessPerfTable    | Specifies BFD Session performance counters.                                                                                                                                                                                                                                                                    |
| ciscoBfdSessMapTable     | Maps the complex indexing of the BFD sessions to the flat CiscoBfdSessIndexTC defined in the ciscoBfdSessTable.                                                                                                                                                                                                |
| ciscoBfdSessDiscMapTable | Maps a local discriminator value to the associated CiscoBfdSessIndexTC attribute of BFD session defined in the ciscoBfdSessTable.                                                                                                                                                                              |
| ciscoBfdSessIpMapTable   | Maps the ciscoBfdSessInterface, ciscoBfdSessAddrType, and ciscoBbfdSessAddr to an associated CiscoBfdSessIndexTC attribute of BFD session defined in the ciscoBfdSessTable. This table contains two IP type BFD sessions: <ul style="list-style-type: none"> <li>singleHop(1)</li> <li>multiHop(2).</li> </ul> |

## MIB Constraints

Table 3-61 lists the constraints on objects in the CISCO-IETF-BFD-MIB.

**Table 3-61 CISCO-IETF-BFD-MIB Constraints**

| MIB Object                        | Notes         |
|-----------------------------------|---------------|
| ciscoBfdSessMapTable              | Not supported |
| ciscoBfdSessNotificationsEnable   | Not supported |
| ciscoBfdAdminStatus               | Not supported |
| ciscoBfdSessAddrType              | Not supported |
| ciscoBfdSessAddr                  | Not supported |
| ciscoBfdSessUdpPort               | Not supported |
| ciscoBfdSessDemandModeDesiredFlag | Not supported |

**Table 3-61** *CISCO-IETF-BFD-MIB Constraints (continued)*

| MIB Object                          | Notes         |
|-------------------------------------|---------------|
| ciscoBfdSessEchoFuncModeDesiredFlag | Not supported |
| ciscoBfdSessControlPlanIndepFlag    | Not supported |
| ciscoBfdSessDesiredMinTxInterval    | Not supported |
| ciscoBfdSessReqMinRxInterval        | Not supported |
| ciscoBfdSessReqMinEchoRxInterval    | Not supported |
| ciscoBfdSessDetectMult              | Not supported |
| ciscoBfdSessStorType                | Not supported |
| ciscoBfdSessRowStatus               | Not supported |
| ciscoBfdSessAuthPresFlag            | Not supported |
| ciscoBfdSessAuthenticationType      | Not supported |

## CISCO-IETF-FRR-MIB

The CISCO-IETF-FRR-MIB contains managed object definitions for MPLS Fast Reroute (FRR) as defined in: Pan, P., Gan, D., Swallow, G., Vasseur, J.Ph., Cooper, D., Atlas, A., Jork, M., Fast Reroute Techniques in RSVP-TE, draft-ietf-mpls-rsvp-lsp-fastreroute-00.txt, January 2002.

[Table 3-62](#) lists the tables associated with this MIB.

**Table 3-62** *CISCO-IETF-FRR-MIB Tables and Descriptions*

| Name                   | Description                                                                                                              |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| cmplsFrrConstTable     | This table shows detour setup constraints                                                                                |
| cmplsFrrLogTable       | Fast reroute log table records fast reroute events such as protected links going up or down or the FRR feature starting. |
| mplsFrrOne2OnePlrTable | This table shows the lists of PLRs that initiated detour LSPs, which affect this node.                                   |

**Table 3-62** CISCO-IETF-FRR-MIB Tables and Descriptions (continued)

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsFrrDetourTable      | This table shows all detour LSPs together with their characteristics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| cmplsFrrFacRouteDBTable | <p>mplsFrrFacRouteDBTable provides information about the fast reroute database. Each entry belongs to an interface, protecting backup tunnel and protected tunnel. MPLS interfaces defined on this node are protected by backup tunnels and are indexed by mplsFrrFacRouteProtectedIndex. Backup tunnels defined to protect the tunnels traversing an interface, and are indexed by mplsFrrFacRouteProtectingTunIndex. Note that the tunnel instance index is not required, because it is implied to be 0, which indicates the tunnel head interface for the protecting tunnel. The protecting tunnel is defined to exist on the PLR in the FRR specification. Protected tunnels are the LSPs that traverse the protected link. These LSPs are uniquely identified by:</p> <ul style="list-style-type: none"> <li>• mplsFrrFacRouteProtectedTunIndex</li> <li>• mplsFrrFacRouteProtectedTunInstance,</li> <li>• mplsFrrFacRouteProtectedTunIngressLSRId</li> <li>• mplsFrrFacRouteProtectedTunEgressLSRId</li> </ul> |

## MIB Constraints

Table 3-63 lists the constraints on objects in the CISCO-IETF-FRR-MIB.

**Table 3-63** CISCO-IETF-FRR-MIB Constraints

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| mplsFrrOne2OnePIrGroup        | Not supported |
| mplsFrrOne2OnePLRDetourGroup  | Not supported |
| cmplsFrrConstProtectionMethod | Not supported |
| cmplsFrrConstSetupPrio        | Not supported |
| cmplsFrrConstHoldingPrio      | Not supported |
| cmplsFrrConstInclAnyAffinity  | Not supported |
| cmplsFrrConstInclAllAffinity  | Not supported |
| cmplsFrrConstExclAllAffinity  | Not supported |
| cmplsFrrConstHopLimit         | Not supported |
| cmplsFrrConstBandwidth        | Not supported |
| cmplsFrrConstRowStatus        | Not supported |
| cmplsFrrNotifsEnabled         | Not supported |
| cmplsFrrLogTableMaxEntries    | Not supported |

**Table 3-63** *CISCO-IETF-FRR-MIB Constraints (continued)*

| MIB Object                                  | Notes         |
|---------------------------------------------|---------------|
| cmplsFrrNotifMaxRate                        | Not supported |
| cmplsFrrFacRouteProtectingTunProtectionType | Not supported |

## CISCO-IETF-MPLS-TE-P2MP-STD-MIB

This MIB module contains managed object definitions for Point-to-Multipoint (P2MP) MPLS Traffic Engineering (TE) defined in: 1. Signaling Requirements for Point-to-Multipoint Traffic-Engineered MPLS Label Switched Paths (LSPs), S. Yasukawa, RFC 4461, April 2006. 2. Extensions to Resource Reservation Protocol - Traffic Engineering (RSVP-TE) for Point-to-Multipoint TE Label Switched Paths (LSPs), Aggarwal, R., Papadimitriou, D., and Yasukawa, S., RFC 4875, May 2007.

[Table 3-64](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-64** *CISCO-IETF-MPLS-TE-P2MP-STD-MIB Tables and Description*

| Name                             | Description                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cmplsTeP2mpTunnelTable           | The cmplsTeP2mpTunnelTable allows new P2MP MPLS tunnels to be created between an LSR and one or more remote end-points, and existing P2MP tunnels to be reconfigured or removed. This table sparse augments mplsTunnelTable in MPLS-TE-STD-MIB such that entries in that table can be flagged as point-to-multipoint, and can be configured and monitored appropriately. |
| cmplsTeP2mpTunnelDestTable       | The cmplsTeP2mpTunnelDestTable allows new destinations of P2MP MPLS tunnels to be added to and removed from P2MP tunnels.                                                                                                                                                                                                                                                |
| cmplsTeP2mpTunnelBranchPerfTable | This table provides per-tunnel branch MPLS performance information. This table is not valid for switching types other than packet.                                                                                                                                                                                                                                       |

## MIB Constraints

[Table 3-63](#) lists the constraints on objects in the CISCO-IETF-MPLS-TE-P2MP-STD-MIB.

**Table 3-65** *CISCO-IETF-MPLS-TE-P2MP-STD-MIB Constraints*

| MIB Object                     | Notes     |
|--------------------------------|-----------|
| cmplsTeP2mpTunnelP2mpIntegrity | Read-only |
| cmplsTeP2mpTunnelBranchRole    | Read-only |

**Table 3-65** *CISCO-IETF-MPLS-TE-P2MP-STD-MIB Constraints (continued)*

| MIB Object                          | Notes     |
|-------------------------------------|-----------|
| cmplsTeP2mpTunnelRowStatus          | Read-only |
| cmplsTeP2mpTunnelStorageType        | Read-only |
| cmplsTeP2mpTunnelDestHopTableIndex  | Read-only |
| cmplsTeP2mpTunnelDestPathInUse      | Read-only |
| cmplsTeP2mpTunnelDestAdminStatus    | Read-only |
| cmplsTeP2mpTunnelDestRowStatus      | Read-only |
| cmplsTeP2mpTunnelDestStorageType    | Read-only |
| cmplsTeP2mpTunnelNotificationEnable | Read-only |

## CISCO-IETF-IPMROUTE-MIB

The CISCO-IETF-IPMROUTE-MIB is an address family-independent MIB module to manage IP Multicast routing. It is independent of the specific multicast routing protocol. This MIB module is based on RFC 2932 with additional MIB objects to provide address family-independent functionality.

This MIB module contains two scalars and five tables. The tables are:

- The IP Multicast Route Table containing multicast routing information for IP datagrams sent by a source to the IP multicast groups known to a router.
- The IP Multicast Routing Next Hop Table containing information on the next hops for the routing IP multicast datagrams.
- The IP Multicast Routing Interface Table containing multicast routing information specific to interfaces.
- The IP Multicast Scope Boundary Table containing the boundaries configured for multicast scopes.
- The IP Multicast Scope Name Table containing names of multicast scope.

[Table 3-66](#) lists the tables associated with this MIB.

**Table 3-66** *CISCO-IETF-IPMROUTE-MIB Tables and Descriptions*

| Name                    | Description                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cIpMRouteTable          | (conceptual) Table containing multicast routing information for IP datagrams sent by particular sources to the IP multicast groups known to this router.                                                                                                      |
| cIpMRouteNextHopTable   | (conceptual) Table containing information on the next-hops on outgoing interfaces for routing IP multicast datagrams. Each entry is one of a list of next-hops on outgoing interfaces for particular sources sending to a particular multicast group address. |
| cIpMRouteInterfaceTable | (conceptual) Table containing multicast routing information specific to interfaces.                                                                                                                                                                           |

**Table 3-66** *CISCO-IETF-IPMROUTE-MIB Tables and Descriptions (continued)*

| Name                    | Description                                                                        |
|-------------------------|------------------------------------------------------------------------------------|
| cIpMRouteBoundaryTable  | (conceptual) Table listing the scoped multicast address boundaries of the router.  |
| cIpMRouteScopeNameTable | (conceptual) Table listing the multicast scope names. This table is not supported. |

## MIB Constraints

Table 3-67 lists the constraints on objects in the CISCO-IETF-IPMROUTE-MIB.

**Table 3-67** *CISCO-IETF-IPMROUTE-MIB Constraints*

| MIB Object                  | Notes                        |
|-----------------------------|------------------------------|
| cIpMRouteScopeNameTable     | This table is not supported. |
| cIpMRouteBoundaryStatus     | Not supported                |
| cIpMRouteScopeNameString    | Not supported                |
| cIpMRouteScopeNameDefault   | Not supported                |
| cIpMRouteScopeNameStatus    | Not supported                |
| cIpMRouteBoundaryNameString | Not supported                |
| cIpMRouteEnable             | Not supported                |
| cIpMRouteInterfaceTtl       | Not supported                |
| cIpMRouteInterfaceRateLimit | Not supported                |

## CISCO-IETF-MSDP-MIB

The CISCO-IETF-MSDP-MIB is an experimental MIB module for MSDP Management and Monitoring. Version draft-ietf-mboned-msdp-mib-01.txt is ciscoized.

Table 3-68 lists the tables associated with this MIB.

**Table 3-68 CISCO-IETF-MSDP-MIB Tables and Descriptions**

| Name                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cMsdpRequestsTable  | (conceptual) Table listing group ranges and MSDP peers used when deciding where to send an SA Request message when required. If SA Requests are not enabled, this table may be empty. To choose a peer to whom to send an SA Request for a given group G, the subset of entries in this table whose (cMsdpRequestsPeerType, cMsdpRequestsPeer) tuple represents a peer whose cMsdpPeerState is established are examined. The set is further reduced by examining only those entries for which cMsdpPeerRequestsGroupAddressType equals the address type of G, and the entries with the highest value of cMsdpRequestsGroupPrefix are considered, where the group G falls within the range described by the combination of cMsdpRequestsGroup and cMsdpRequestsGroupPrefix. (This sequence is commonly known as a 'longest-match' lookup.) Finally, if multiple entries remain, the entry with the lowest value of cMsdpRequestsPriority is chosen. The SA Request message is sent to the peer described by this row. |
| cMsdpPeerTable      | (conceptual) Table listing the MSDP speaker's peers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| cMsdpSACacheTable   | (conceptual) Table listing the MSDP SA advertisements currently in the MSDP speaker's cache.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| cMsdpMeshGroupTable | (conceptual) Table listing MSDP Mesh Group configuration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## MIB Constraints

Table 3-69 lists the constraints on objects in the CISCO-IETF-MSDP-MIB.

**Table 3-69 CISCO-IETF-MSDP-MIB Constraints**

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| cMsdpEnabled                  | Not supported |
| cMsdpRPAddress                | Not supported |
| cMsdpCacheLifetime            | Not supported |
| cMsdpSACacheStatus            | Not supported |
| cMsdpMeshGroupStatus          | Not supported |
| cMsdpPeerLocalAddress         | Not supported |
| cMsdpPeerConnectRetryInterval | Not supported |
| cMsdpPeerHoldTimeConfigured   | Not supported |
| cMsdpPeerKeepAliveConfigured  | Not supported |
| cMsdpPeerStatus               | Not supported |

**Table 3-69 CISCO-IETF-MSDP-MIB Constraints (continued)**

| MIB Object                 | Notes         |
|----------------------------|---------------|
| cMsdpPeerDataTtl           | Not supported |
| cMsdpPeerEncapsulationType | Not supported |

## CISCO-IETF-PIM-MIB

The CISCO-IETF-PIM-MIB is based on RFC 2934 with additional MIB objects added to make it address family independent MIB. This Cisco MIB was created because of non availability of RFC or an Internet Draft, which can provide address family independent MIB for management of PIM routers. This MIB may later be deprecated with a stable RFC or an Internet Draft.

[Table 3-70](#) lists the tables associated with this MIB.

**Table 3-70 CISCO-IETF-PIM-MIB Tables and Descriptions**

| Name                       | Description                                                                                                                                                                                                                                                                                                                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cPimIfTable                | (conceptual) Table listing the router's PIM interfaces. Along with PIM IGMP or MLD is enabled on all interfaces listed in this table                                                                                                                                                                                           |
| cPimNbrTable               | (conceptual) Table listing the router's PIM neighbors                                                                                                                                                                                                                                                                          |
| cPimInetMRouteTable        | (conceptual) Table listing PIM-specific information on a subset of the rows of the cIpMRouteTable defined in the IP Multicast MIB                                                                                                                                                                                              |
| cPimInetMRouteNextHopTable | (conceptual) Table listing PIM-specific information on a subset of the rows of the cIpMRouteNextHopTable defined in the IP Multicast MIB. This table is not supported.                                                                                                                                                         |
| cPimRPMapTable             | (conceptual) Table listing PIM information for candidate RPs for IP multicast groups. When the local router is the BSR, this information is obtained from received Candidate-RP-Advertisements. When the local router is not the BSR, this information is obtained from received RP-Set messages. This table is not supported. |

**Table 3-70** *CISCO-IETF-PIM-MIB Tables and Descriptions (continued)*

| Name               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cPimCRPTable       | (conceptual) Table listing the IP multicast groups for which the local router is to advertise itself as a Candidate-RP when the value of cPimComponentCRPHoldTime is non-zero. If this table is empty, then the local router advertises itself as a Candidate-RP for all groups (providing the value of cPimComponentCRPHoldTime is non-zero). This table is not supported.                                                                                          |
| cPimComponentTable | (conceptual) Table containing objects specific to a PIM domain. One row exists for each domain to which the router is connected. A PIM-SM domain is defined as an area of the network over which Bootstrap messages are forwarded. Typically, a PIM-SM router is a member of exactly one domain. This table also supports routers that may form a border between two PIM-SM domains and do not forward Bootstrap messages between them. This table is not supported. |

## MIB Constraints

Table 3-71 lists the constraints on objects in the CISCO-IETF-PIM-MIB.

**Table 3-71** *CISCO-IETF-PIM-MIB Constraints*

| MIB Object                 | Notes                        |
|----------------------------|------------------------------|
| cPimInetMRouteNextHopTable | This table is not supported. |
| cPimRPMapTable             | This table is not supported. |
| cPimCRPTable               | This table is not supported. |
| cPimComponentTable         | This table is not supported. |

## CISCO-IETF-PIM-EXT-MIB

The CISCO-IETF-PIM-EXT-MIB extends PIM management capabilities defined in CISCO-IETF-PIM-MIB.

Table 3-72 lists the tables associated with this MIB.

**Table 3-72 CISCO-IETF-PIM-EXT-MIB Tables and Descriptions**

| Name                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpimExtIfTable            | (conceptual) Table listing the router's PIM interfaces. IGMP and PIM are enabled on all interfaces listed in this table. This table is augmented to cPimIfTable. This table is not supported.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| cpimExtNbrTable           | (conceptual) Table listing the router's PIM neighbors. This table is augmented to cPimNbrTable. This table is not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| cpimExtNbrSecAddressTable | (conceptual) Table listing the Secondary InetAddresses advertised by each PIM neighbor (on a subset of the rows of the cPimNbrTable defined in CISCO-IETF-PIM-MIB)                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| cpimExtMRouteTable        | (conceptual) Table listing PIM-specific information on a subset of the rows of the cIpMRouteTable defined in the IP Multicast MIB. This table is augmented to cPimInetMRouteTable. This table is not supported.                                                                                                                                                                                                                                                                                                                                                                                                      |
| cpimExtMRouteNextHopTable | (conceptual) Table listing PIM-specific information on a subset of the rows of the cIpMRouteNextHopTable defined in the IP Multicast Routing Table MIB-IPMROUTE-MIB. This table is augmented to cPimInetMRouteNextHopTable. This table is not supported.                                                                                                                                                                                                                                                                                                                                                             |
| cpimExtBidirDFTable       | (conceptual) Table listing the Per-RP DF <sup>1</sup> Election state for each interface for all the RPs in Bidir mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| cpimExtRPSetTable         | (conceptual) Table listing PIM information for available RPs for IP multicast groups. An entry is learnt from one of {static, bsr, embedded} methods, as defined by the cpimExtRPSetType object. When the cpimExtRPSetType object has a value {static}, the entry is a mapping provided by user-configuration. A value of {embedded} indicates that the RP-address is embedded in the Group-address. When the value is {bsr}, this entry is obtained from received Candidate-RP-Advertisements when the local router is the BSR, and is obtained from received RP-Set messages when the local router is not the BSR. |
| cpimExtCRPTable           | (conceptual) Table listing the IP multicast groups for which the local router is to advertise itself as a Candidate-RP when the value of cPimComponentCRPHoldTime is non-zero. If this table is empty, the local router advertises itself as a Candidate-RP for all groups (providing the value of cPimComponentCRPHoldTime is non-zero). This table is not supported.                                                                                                                                                                                                                                               |

1. DF = designated forwarder

## MIB Constraints

Table 3-73 lists the constraints on objects in the CISCO-IETF-PIM-EXT-MIB.

**Table 3-73 CISCO-IETF-PIM-EXT-MIB Constraints**

| MIB Object                              | Notes         |
|-----------------------------------------|---------------|
| <b>cpimExtIfTable</b>                   | Not supported |
| <b>cpimExtNbrTable</b>                  | Not supported |
| <b>cpimExtMRouteTable</b>               | Not supported |
| <b>cpimExtMRouteNextHopTable</b>        | Not supported |
| <b>cpimExtCRPTable</b>                  | Not supported |
| cpimExtIfTrigHelloInterval              | Not supported |
| cpimExtIfHelloHoldtime                  | Not supported |
| cpimExtIfLanPruneDelay                  | Not supported |
| cpimExtIfPropagationDelay               | Not supported |
| cpimExtIfOverrideInterval               | Not supported |
| cpimExtIfGenerationID                   | Not supported |
| cpimExtIfJoinPruneHoldtime              | Not supported |
| cpimExtIfGraftRetryInterval             | Not supported |
| cpimExtIfMaxGraftRetries                | Not supported |
| cpimExtIfSRTTLThreshold                 | Not supported |
| cpimExtIfDRPriority                     | Not supported |
| cpimExtIfBSRBorder                      | Not supported |
| cpimExtSourceLifetime                   | Not supported |
| cpimExtStateRefreshInterval             | Not supported |
| cpimExtStateRefreshLimitInterval        | Not supported |
| cpimExtStateRefreshTimeToLive           | Not supported |
| cpimExtInterfaceStateChangeNotifEnabled | Not supported |
| cpimExtRPMMappingChangeNotifEnabled     | Not supported |
| cpimExtCRPBidir                         | Not supported |

## CISCO-IETF-PW-ENET-MIB

The CISCO-IETF-PW-ENET-MIB describes a model for managing Ethernet point-to-point pseudo wire services over a Packet Switched Network (PSN).

Table 3-74 lists the tables associated with this MIB.

**Table 3-74 CISCO-IETF-PW-ENET-MIB Tables and Descriptions**

| Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpwVcEnetTable               | This table contains the index to the Ethernet tables associated with this ETH VC, the VLAN configuration and VLAN mode.                                                                                                                                                                                                                                                                                                                                                                                         |
| cpwVcEnetMplsPriMappingTable | This table may be used for MPLS PSNs if there is a need to hold multiple VC, each with different COS, for the same user service (port + PW VLAN). Such a need may arise if the MPLS network is capable of L-LSP or E-LSP without multiple COS capabilities. Each row is indexed by the cpwVcIndex and indicate the PRI bits on the packet received from the user port (or VPLS virtual port) that are classified to this VC. Note that the EXP bit value of the VC is configured in the CISCO-IETF-PW-MPLS-MIB. |
| cpwVcEnetStatsTable          | This table contains statistical counters specific for Ethernet PW.                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## MIB Constraints

Table 3-76 lists the constraints on objects in the CISCO-IETF-PW-ENET-MIB.

**Table 3-75 CISCO-IETF-PW-ENET-MIB Constraints**

| MIB Object                  | Notes           |
|-----------------------------|-----------------|
| <b>cpwVcEnetTable</b>       |                 |
| cpwVcEnetPwVlan             | Read-only       |
| cpwVcEnetVlanMode           | Read-only       |
| cpwVcEnetPortVlan           | Read-only       |
| cpwVcEnetPortIfIndex        | Read-only       |
| cpwVcEnetVcIfIndex          | Read-only       |
| cpwVcEnetRowStatus          | Read-only       |
| cpwVcEnetStorageType        | Read-only       |
| <b>cpwVcEnetStatsTable</b>  |                 |
| cpwVcEnetStatsIllegalVlan   | Not Implemented |
| cpwVcEnetStatsIllegalLength | Not Implemented |

## CISCO-IETF-PW-MIB

The CISCO-IETF-PW-MIB contains managed object definitions for pseudo wire operations. The indexes of CISCO-IETF-PW-MIB are also used to index the PSN-specific tables and the VC-specific tables. This MIB enables you to use the underlying PSN.

Table 3-76 lists the tables associated with this MIB.

**Table 3-76 CISCO-IETF-PW-MIB Tables and Descriptions**

| Name                   | Description                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpwVcTable             | This table specifies information for connecting various emulated services to various tunnel type.                                                                  |
| cpwVcPerfCurrentTable  | This table provides per-VC performance information for the current interval.                                                                                       |
| cpwVcPerfIntervalTable | This table provides per-VC performance information for each interval.                                                                                              |
| cpwVcPerfTotalTable    | This table provides per-VC Performance information from VC start time.                                                                                             |
| cpwVcIdMappingTable    | This table provides reverse mapping of the existing VCs based on vc type and VC ID ordering. This table is typically useful for EMS ordered query of existing VCs. |
| cpwVcPeerMappingTable  | This table provides reverse mapping of the existing VCs based on vc type and VC ID ordering. This table is typically useful for EMS ordered query of existing VCs. |

## MIB Constraints

Table 3-77 lists the constraints on objects in the CISCO-IETF-PW-MIB.

**Table 3-77 CISCO-IETF-PW-MIB Constraints**

| MIB Object             | Notes         |
|------------------------|---------------|
| cpwVcType              | Not supported |
| cpwVcOwner             | Not supported |
| cpwVcPsnType           | Not supported |
| cpwVcSetUpPriority     | Not supported |
| cpwVcHoldingPriority   | Not supported |
| cpwVcInboundMode       | Not supported |
| cpwVcPeerAddrType      | Not supported |
| cpwVcPeerAddr          | Not supported |
| cpwVcID                | Not supported |
| cpwVcLocalGroupID      | Not supported |
| cpwVcControlWord       | Not supported |
| cpwVcLocalIfMtu        | Not supported |
| cpwVcLocalIfString     | Not supported |
| cpwVcRemoteControlWord | Not supported |
| cpwVcOutboundVcLabel   | Not supported |
| cpwVcInboundVcLabel    | Not supported |
| cpwVcName              | Not supported |

**Table 3-77 CISCO-IETF-PW-MIB Constraints**

| MIB Object             | Notes         |
|------------------------|---------------|
| cpwVcDescr             | Not supported |
| cpwVcAdminStatus       | Not supported |
| cpwVcRowStatus         | Not supported |
| cpwVcStorageType       | Not supported |
| cpwVcUpDownNotifEnable | Not supported |
| cpwVcNotifRate         | Not supported |

## CISCO-IETF-PW-FR-MIB

Cisco Pseudo Wire Frame Relay MIB This MIB describes network management objects defined for FRoPW services over a Packet Switched Network (PSN). As described in the IETF Frame Relay over Pseudowire (FRoPW) draft, draft-ietf-pwe3-frame-relay-01.txt, FR VCs and PW can be mapped in 2 modes: One-to-one mapping mode: a FR VC is mapped to a PW. This mode is described by cpwVcFrTable. Many-to-one mapping mode (a.k.a. port mode): multiple FR VCs assigned to a port are mapped to a PW. This mode is addressed by cpwVcFrPortModeTable. In this mode, all data frames are directed to the associated PSN tunnel regardless of DLCI.

[Table 3-78](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-78 CISCO-IETF-PW-FR-MIB Tables and Descriptions**

| Name            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpwVcFrTable    | The PW-FR connection table. Each entry in this table represents a FRoPW connection operating in one-to-one mapping mode. This table uses the same index as the generic PW MIB's VC table. Therefore, each entry in cpwVcFrTable has a mapping entry to the generic PW MIB VC table associated by the PW VC index. An entry is created in this table by the agent for every entry in the generic PW MIB VC table with a VcType of 'frameRelay'.         |
| cpwVcFrPMTTable | The PW-FR port mode connection table. Each entry in this table represents a FRoPW connection operating in the port mode. This table uses the same index as the generic PW MIB's VC table. Therefore, each entry in cpwVcFrTable has a mapping entry to the generic PW MIB VC table associated by the PW VC index. An entry is created in this table by the agent for every entry in the generic PW MIB VC table with a VcType of 'frameRelayPortMode'. |

## MIB Constraints

Table 3-79 lists the constraints on objects in the CISCO-IETF-PW-FR-MIB.

**Table 3-79 CISCO-IETF-PW-FR-MIB Constraints**

| MIB Object            | Notes         |
|-----------------------|---------------|
| cpwVcFrIfIndex        | Read-only     |
| cpwVcFrDlci           | Read-only     |
| cpwVcFrAdminStatus    | Read-only     |
| cpwVcFrRowStatus      | Read-only     |
| cpwVcFrStorageType    | Read-only     |
| cpwVcFrPMAAdminStatus | Not supported |
| cpwVcFrPMRowStatus    | Not supported |
| cpwVcFrPMStorageType  | Not supported |

# CISCO-IETF-PW-MPLS-MIB

The CISCO-IETF-PW-MPLS-MIB complements the CISCO-IETF-PW-MIB for pseudo wire operation over Multiprotocol Label Switching (MPLS).

Table 3-80 lists the tables associated with this MIB.

**Table 3-80 CISCO-IETF-PW-MPLS-MIB Tables and Descriptions**

| Name                       | Description                                                                                                                                                                      |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpwVcMplsTable             | This table specifies information for VC to be carried over MPLS PSN.                                                                                                             |
| cpwVcMplsOutboundTable     | This table associates VCs using MPLS PSN with the outbound MPLS tunnels (that is toward the PSN) or the physical interface in case of VC only.                                   |
| cpwVcMplsInboundTable      | This table associates VCs using MPLS PSN with the inbound MPLS tunnels (that is, for packets coming from the PSN), if such association is desired (mainly for security reasons). |
| cpwVcMplsNonTeMappingTable | This table maps an inbound/outbound Tunnel to a VC in non-TE applications.                                                                                                       |
| cpwVcMplsTeMappingTable    | This table maps an inbound/outbound Tunnel to a VC in MPLS-TE applications.                                                                                                      |

## MIB Constraints

Table 3-81 lists the constraints on objects in the CISCO-IETF-PW-MPLS-MIB.

**Table 3-81 CISCO-IETF-PW-MPLS-MIB Constraints**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| cpwVcMplsInboundLsrXcIndex      | Not supported |
| cpwVcMplsInboundTunnelIndex     | Not supported |
| cpwVcMplsInboundTunnelInstance  | Not supported |
| cpwVcMplsInboundTunnelLclLSR    | Not supported |
| cpwVcMplsInboundTunnelPeerLSR   | Not supported |
| cpwVcMplsInboundIfIndex         | Not supported |
| cpwVcMplsInboundRowStatus       | Not supported |
| cpwVcMplsInboundStorageType     | Not supported |
| cpwVcMplsOutboundLsrXcIndex     | Not supported |
| cpwVcMplsOutboundTunnelIndex    | Not supported |
| cpwVcMplsOutboundTunnelInstance | Not supported |
| cpwVcMplsOutboundTunnelLclLSR   | Not supported |
| cpwVcMplsOutboundTunnelPeerLSR  | Not supported |

**Table 3-81 CISCO-IETF-PW-MPLS-MIB Constraints**

| MIB Object                   | Notes         |
|------------------------------|---------------|
| cpwVcMplsOutboundIfIndex     | Not supported |
| cpwVcMplsOutboundRowStatus   | Not supported |
| cpwVcMplsOutboundStorageType | Not supported |
| cpwVcMplsMplsType            | Not supported |
| cpwVcMplsExpBitsMode         | Not supported |
| cpwVcMplsExpBits             | Not supported |
| cpwVcMplsTtl                 | Not supported |
| cpwVcMplsLocalLdpID          | Not supported |
| cpwVcMplsLocalLdpEntityID    | Not supported |
| cpwVcMplsStorageType         | Not supported |

## CISCO-IETF-PW-TC-MIB

The CISCO-IETF-PW-TC-MIB provides textual conventions and OBJECT-IDENTITY objects to be used in pseudo wire services.

## CISCO-IETF-VPLS-BGP-EXT-MIB

The CISCO-IETF-VPLS-BGP-EXT-MIB contains table objects to implement the underlying Pseudo Wire network and manage object definitions for BGP signalled VPLS.

[Table 3-82](#) lists the tables defined in CISCO-IETF-VPLS-BGP-EXT-MIB.

**Table 3-82 CISCO-IETF-VPLS-BGP-EXT-MIB Tables**

| MIB Table                      | Description                                                                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ciVplsBgpExtConfigTable</b> | Contains attributes to configure and monitor BGP-specific parameters for VPLS.                                                                                                           |
| <b>civplsBgpExtRTTable</b>     | Contains the list of Route Targets imported or exported by BGP during VPLS auto-discovery.                                                                                               |
| <b>ciVplsBgpExtVETable</b>     | Contains objects to associates VPLS Edge devices to a VPLS.                                                                                                                              |
| <b>ciVplsBgpExtPwBindTable</b> | Contains objects to store BGP-specific information for an association between a VPLS and the corresponding Pseudo Wires. A VPLS service can have association with multiple Pseudo Wires. |

## MIB Constraints

Table 3-83 lists the constraints on objects in the CISCO-IETF-VPLS-BGP-EXT-MIB.

**Table 3-83 CISCO-IETF-VPLS-BGP-EXT-MIB Constraints**

| MIB Object                           | Notes         |
|--------------------------------------|---------------|
| ciVplsBgpExtVEName                   | Not supported |
| ciVplsBgpExtVEPreference             | Not supported |
| ciVplsBgpExtVERowStatus              | Not supported |
| ciVplsBgpExtVEStorageType            | Not supported |
| ciVplsBgpExtConfigRouteDistinguisher | Not supported |
| ciVplsBgpExtConfigVERangeSize        | Not supported |
| ciVplsBgpExtRTType                   | Not supported |
| ciVplsBgpExtRT                       | Not supported |
| ciVplsBgpExtRTStorageType            | Not supported |
| ciVplsBgpExtRTRowStatus              | Not supported |

## CISCO-IETF-VPLS-GENERIC-MIB

The CISCO-IETF-VPLS-GENERIC-MIB contains table objects to store and manage generic managed object definitions for Virtual Private LAN Services (VPLS). This MIB module enables you to use the underlying pseudo wire network.

This MIB is based on the following IETF document:

<http://tools.ietf.org/html/draft-ietf-l2vpn-vpls-mib-05>

## MIB Tables

Table 3-84 lists the tables defined in CISCO-IETF-VPLS-GENERIC-MIB:

**Table 3-84 CISCO-IETF-VPLS-GENERIC-MIB Tables**

| MIB Table               | Description                                                                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>cvplsConfigTable</b> | Contains information for configuring and monitoring Virtual Private Lan Services(VPLS).                                                         |
| <b>cvplsStatusTable</b> | Contains information for monitoring Virtual Private Lan Services(VPLS).                                                                         |
| <b>cvplsPwBindTable</b> | Contains objects to associates VPLS service and the corresponding Pseudo Wires. A VPLS service can have association with multiple Pseudo Wires. |

## MIB Constraints

Table 3-85 lists the constraints on objects in the CISCO-IETF-VPLS-GENERIC-MIB.

**Table 3-85 CISCO-IETF-VPLS-GENERIC-MIB Constraints**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| cvplsConfigName                 | Not supported |
| cvplsConfigDescr                | Not supported |
| cvplsConfigAdminStatus          | Not supported |
| cvplsConfigMacLearning          | Not supported |
| cvplsConfigDiscardUnknownDest   | Not supported |
| cvplsConfigMacAging             | Not supported |
| cvplsConfigFwdFullHighWatermark | Not supported |
| cvplsConfigFwdFullLowWatermark  | Not supported |
| cvplsConfigRowStatus            | Not supported |
| cvplsConfigMtu                  | Not supported |
| cvplsConfigServiceType          | Not supported |
| cvplsConfigStorageType          | Not supported |
| cvplsStatusNotifEnable          | Not supported |
| cvplsNotificationMaxRate        | Not supported |
| cvplsPwBindConfigType           | Not supported |
| cvplsPwBindType                 | Not supported |
| cvplsPwBindRowStatus            | Not supported |
| cvplsPwBindStorageType          | Not supported |

## CISCO-IETF-VPLS-LDP-MIB

The CISCO-IETF-VPLS-LDP-MIB contains table objects that define managed object definitions for LDP signalled Virtual Private LAN Services. This MIB enables the use of any underlying Pseudo Wire network. This MIB is based on the following IETF document.

<http://www1.tools.ietf.org/html/draft-nadeau-l2vpn-vpls-mib-03>

Table 3-86 lists the tables defined in CISCO-IETF-VPLS-LDP-MIB.

**Table 3-86 CISCO-IETF-VPLS-LDP-MIB Tables**

| MIB Table           | Description                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| cvplsLdpConfigTable | Contains attributes to configure and monitor LDP specific parameters for Virtual Private Lan Services(VPLS).                                        |
| cvplsLdpPwBindTable | Contains attributes to associate a VPLS service and the corresponding Pseudo Wires. A VPLS service can have association with multiple Pseudo Wires. |

## MIB Constraints

Table 3-87 lists the constraints on objects in the CISCO-IETF-VPLS-LDP-MIB.

**Table 3-87 CISCO-IETF-VPLS-LDP-MIB Constraints**

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| cvplsLdpConfigMacAddrWithdraw | Not supported |
| cvplsLdpPwBindMacAddressLimit | Not supported |

## CISCO-IF-EXTENSION-MIB

The CISCO-IF-EXTENSION-MIB contains objects for extending the IF-MIB (RFC2863) to add objects that provide additional information about interfaces that are not available in other MIBS. This MIB replaces the OLD-CISCO-INTERFACES-MIB.

## MIB Tables

Table 3-88 lists the tables in CISCO-IF-EXTENSION-MIB:

**Table 3-88 CISCO-IF-EXTENSION-MIB Tables**

| Name                           | Description                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cieIfPacketStatsTable          | Displays interface packet statistics that are not listed in IF-MIB(RFC2863). These interfaces are: <ul style="list-style-type: none"> <li>• Ethernet</li> <li>• FastEthernet</li> <li>• ATM</li> <li>• BRI</li> <li>• Sonet</li> <li>• GigabitEthernet</li> </ul> |
| cieIfInterfaceTable            | Provides extended information about interface properties that are not available in IF-MIB (RFC 2863).                                                                                                                                                             |
| cieIfStatusListTable           | Provides information such as ifIndex, interface operational mode, and interface operational cause for all the interfaces in modules. The table contains individual entries for all the 64 interfaces in a module.                                                 |
| cieIfDot1qCustomEtherTypeTable | Displays the interfaces that support the 802.1q custom Ethertype feature.                                                                                                                                                                                         |
| cieIfUtilTable                 | Displays the interface utilization rates for inbound and outbound traffic on an interface. The cieIfInOctetRate object and cieIfOutOctetRate object are used for reporting number of bytes of data transferred from/to an interface in a given time period.       |
| cieIfDot1dBaseMappingTable     | Contains the mappings between ifIndex of an interface to its corresponding dot1dBasePort value.                                                                                                                                                                   |
| cieIfNameMappingTable          | Provides mapping information between ifName and ifIndex. This table contains an entry for each valid <i>ifName</i> available in the system.                                                                                                                       |

## MIB Constraints

Table 3-89 lists the constraints on objects in the CISCO-IF-EXTENSION-MIB.

**Table 3-89 CISCO-IF-EXTENSION-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| cieSystemMtu                   | Not supported |
| cieIfDot1qCustomAdminEtherType | Not supported |
| cieLinkUpDownEnable            | Not supported |
| cieStandardLinkUpDownVarbinds  | Not supported |

**Table 3-89 CISCO-IF-EXTENSION-MIB Constraints**

| MIB Object            | Notes         |
|-----------------------|---------------|
| cieIfDhcpMode         | Not supported |
| cieIfMtu              | Not supported |
| cieIfAutoNegotiate    | Not supported |
| cieIfKeepAliveEnabled | Not supported |

## CISCO-IP-CBR-METRICS-MIB

This MIB module defines objects that describe the a set of metrics used to measure the quality of a IP CBR traffic flow. An IP CBR traffic flow consists of a stream of IP datagrams sent from one application to another with a constant packet rate or bit rate.

[Table 3-90](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-90 CISCO-IP-CBR-METRICS-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cfmIpCbrMetricsTable    | This table contains aggregate data maintained by a flow monitor for traffic flows for which it is computing IP CBR metrics. This table has a sparse dependent relationship on the cfmFlowMetricsTable (defined by the CISCO-FLOW-MONITOR-MIB), containing a row for each row in the cfmFlowMetricsTable having a corresponding instance of cfmFlowMetricsCollected with the 'ipCbr' bit set to one.             |
| cfmIpCbrMetricsIntTable | This table contains historic IP CBR metrics for the traffic flows monitored by each of the flow monitors supported by the device. This table has a sparse dependent relationship on the cfmFlowMetricsIntTable (defined by the CISCO-FLOW-MONITOR-MIB), containing a row for each row in the cfmFlowMetricsIntTable having a corresponding instance of cfmFlowMetricsCollected with the 'ipCbr' bit set to one. |

## MIB Constraints

[Table 3-98](#) lists the constraints on objects in the CISCO-IP-CBR-METRICS-MIB.

**Table 3-91 CISCO-IP-CBR-METRICS-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| cfmIpCbrMetricsTable           |               |
| cfmIpCbrMetricsCfgRateType     | Read-only     |
| cfmIpCbrMetricsCfgBitRate      | Read-only     |
| cfmIpCbrMetricsCfgRate         | Read-only     |
| cfmIpCbrMetricsCfgMediaPktSize | Not-supported |
| cfmIpCbrMetricsValid           | Read-only     |
| cfmIpCbrMetricsLostPkts        | Read-only     |
| cfmIpCbrMetricsMrvScale        | Read-only     |
| cfmIpCbrMetricsMrvPrecision    | Read-only     |
| cfmIpCbrMetricsMrv             | Read-only     |
| cfmIpCbrMetricsIntTable        |               |
| cfmIpCbrMetricsIntValid        | Read-only     |
| cfmIpCbrMetricsIntLostPkts     | Read-only     |
| cfmIpCbrMetricsIntVbMin        | Not-supported |
| cfmIpCbrMetricsIntVbMax        | Not-supported |
| cfmIpCbrMetricsIntMrUnits      | Read-only     |
| cfmIpCbrMetricsIntMr           | Read-only     |
| cfmIpCbrMetricsIntDfScale      | Read-only     |
| cfmIpCbrMetricsIntDfPrecision  | Read-only     |
| cfmIpCbrMetricsIntDf           | Read-only     |
| cfmIpCbrMetricsIntMrvScale     | Read-only     |
| cfmIpCbrMetricsIntMrvPrecision | Read-only     |
| cfmIpCbrMetricsIntMrv          | Read-only     |

## CISCO-IP-TAP-MIB

The CISCO-IP-TAP-MIB manages Cisco's intercept feature for IP. This MIB is used along with CISCO-TAP2-MIB to intercept IP traffic. CISCO-TAP2-MIB along with specific filter MIBs like this MIB replace CISCO-TAP-MIB. To create an IP intercept, an entry `citapStreamEntry` is created which contains the filter details. An entry `cTap2StreamEntry` of CISCO-TAP2-MIB is created, which is the common stream information for all kinds of intercepts and type of the specific stream is set to `ip` in this entry.

## MIB Tables

Table 3-92 lists the tables in CISCO-IP-TAP-MIB:

**Table 3-92 CISCO-IP-TAP-MIB Tables**

| Name             | Description                                                                                                                                                                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| citapStreamTable | The Intercept Stream IP Table lists the IPv4 and IPv6 streams to be intercepted. The same data stream may be required by multiple taps, and one might assume that often the intercepted stream is a small subset of the traffic that could be intercepted. This essentially provides options for packet selection, only some of which might be used. |

## MIB Constraints

Table 3-93 lists the constraints on objects in the CISCO-IP-TAP-MIB.

**Table 3-93 CISCO-IP-TAP-MIB Constraints**

| MIB Object                    | Notes                 |
|-------------------------------|-----------------------|
| citapStreamCapabilities       | Read-only             |
| citapStreamInterface          | Always 0. Read-create |
| citapStreamAddrType           | Read-create           |
| citapStreamDestinationAddress | Read-create           |
| citapStreamDestinationLength  | Read-create           |
| citapStreamSourceAddress      | Read-create           |
| citapStreamSourceLength       | Read-create           |
| citapStreamTosByte            | Read-create           |
| citapStreamTosByteMask        | Read-create           |
| citapStreamFlowId             | Read-create           |
| citapStreamProtocol           | Read-create           |
| citapStreamDestL4PortMin      | Read-create           |
| citapStreamDestL4PortMax      | Read-create           |
| citapStreamSourceL4PortMin    | Read-create           |
| citapStreamSourceL4PortMax    | Read-create           |
| citapStreamVRF                | Read-create           |
| citapStreamStatus             | Read-create           |

## CISCO-IP-STAT-MIB

The CISCO-IP-STAT-MIB incorporates objects to provide support for the Cisco IP statistics as implemented in command interfaces.

## MIB Tables

Table 3-94 lists the tables in CISCO-IP-STAT-MIB:

**Table 3-94 CISCO-IP-STAT-MIB Tables**

| Name                | Description                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| cipPrecedenceTable  | A table of entries sorted by the precedence of IP packets. The table is created and deleted via ip accounting command line interface. |
| cipMacTable         | A table is created and deleted via ip accounting command line interface.                                                              |
| cipMacFreeTable     | A table of free space available to store new MAC address information.                                                                 |
| cipPrecedenceXTable | This table contains additional objects for the cipPrecedenceTable.                                                                    |
| cipMacXTable        | This table contains additional objects for the cipMacTable.                                                                           |

## CISCO-IPSEC-MIB

The MIB module for modeling Cisco-specific IPsec attributes. This MIB models the Cisco implementation-specific attributes of a Cisco entity that implements IPsec. This MIB is complementary to the standard IPsec MIB proposed jointly by Tivoli and Cisco. The ciscoIPsec MIB provides the operational information on Cisco's IPsec tunnelling implementation. The following entities are managed: 1) ISAKMP Group: a) ISAKMP global parameters b) ISAKMP Policy Table 2) IPsec Group: a) IPsec Global Parameters b) IPsec Global Traffic Parameters c) Cryptomap Group - Cryptomap Set Table - Cryptomap Table - CryptomapSet Binding Table 3) System Capacity & Capability Group: a) Capacity Parameters b) Capability Parameters 4) Trap Control Group 5) Notifications Group

Table 3-95 lists the tables associated with this MIB.

## MIB Objects

**Table 3-95** *CISCO-IPSEC-MIB Tables and Descriptions*

| Name                         | Description                                                                                                                                                                                                  |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cipsIsakmpPolicyTable        | The table containing the list of all ISAKMP policy entries configured by the operator.                                                                                                                       |
| cipsStaticCryptomapSetTable  | The table containing the list of all cryptomap sets that are fully specified and are not wild-carded. The operator may include different types of cryptomaps in such a set - manual, CET, ISAKMP or dynamic. |
| cipsDynamicCryptomapSetTable | The table containing the list of all dynamic cryptomaps that use IKE, defined on the managed entity.                                                                                                         |
| cipsStaticCryptomapTable     | The table listing the member cryptomaps of the cryptomap sets that are configured on the managed entity.                                                                                                     |
| cipsCryptomapSetIfTable      | The table lists the binding of cryptomap sets to the interfaces of the managed entity.                                                                                                                       |

## MIB Constraints

Table 3-98 lists the constraints on objects in the CISCO-IPSEC-MIB.

**Table 3-96** *CISCO-IPSEC-MIB Constraints*

| MIB Object                   | Notes         |
|------------------------------|---------------|
| cipsCntlIsakmpPolicyAdded    | Not supported |
| cipsCntlIsakmpPolicyDeleted  | Not supported |
| cipsCntlCryptomapAdded       | Not supported |
| cipsCntlCryptomapDeleted     | Not supported |
| cipsCntlCryptomapSetAttached | Not supported |
| cipsCntlCryptomapSetDetached | Not supported |
| cipsCntlTooManySAs           | Not supported |

## CISCO-IPSEC-FLOW-MONITOR-MIB

This is a MIB Module for monitoring the structures in IPSec-based Virtual Private Networks. The MIB has been designed to be adopted as an IETF standard.

Table 3-97 lists the tables associated with this MIB.

## MIB Objects

**Table 3-97 CISCO-IPSEC-FLOW-MONITOR-MIB Tables and Descriptions**

| Name                     | Description                                                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cikePeerTable            | The IPsec Phase-1 Internet Key Exchange Peer Table. There is one entry in this table for each IPsec Phase-1 IKE peer association which is currently associated with an active IPsec Phase-1 Tunnel. The IPsec Phase-1 IKE Tunnel associated with this IPsec Phase-1 IKE peer association may or may not be currently active. |
| cikeTunnelTable          | The IPsec Phase-1 Internet Key Exchange Tunnel Table. There is one entry in this table for each active IPsec Phase-1 IKE Tunnel.                                                                                                                                                                                             |
| cikePeerCorrTable        | The IPsec Phase-1 Internet Key Exchange Peer Association to IPsec Phase-2 Tunnel Correlation Table. There is one entry in this table for each active IPsec Phase-2 Tunnel.                                                                                                                                                   |
| cikePhase1GWStatsTable   | Phase-1 IKE stats information is included in this table. Each entry is related to a specific gateway which is identified by 'cmgwIndex'.                                                                                                                                                                                     |
| cipSecTunnelTable        | The IPsec Phase-2 Tunnel Table. There is one entry in this table for each active IPsec Phase-2 Tunnel.                                                                                                                                                                                                                       |
| cipSecEndPtTable         | The IPsec Phase-2 Tunnel Endpoint Table. This table contains an entry for each active endpoint associated with an IPsec Phase-2 Tunnel.                                                                                                                                                                                      |
| cipSecSpiTable           | The IPsec Phase-2 Security Protection Index Table. This table contains an entry for each active and expiring security association.                                                                                                                                                                                           |
| cipSecPhase2GWStatsTable | Phase-2 IPsec stats information is included in this table. Each entry is related to a specific gateway which is identified by 'cmgwIndex'.                                                                                                                                                                                   |
| cikeTunnelHistTable      | The IPsec Phase-1 Internet Key Exchange Tunnel History Table. This table is implemented as a sliding window in which only the last n entries are maintained. The maximum number of entries is specified by the cipSecHistTableSize object.                                                                                   |
| cipSecTunnelHistTable    | The IPsec Phase-2 Tunnel History Table. This table is implemented as a sliding window in which only the last n entries are maintained. The maximum number of entries is specified by the cipSecHistTableSize object.                                                                                                         |

**Table 3-97 CISCO-IPSEC-FLOW-MONITOR-MIB Tables and Descriptions**

| Name                 | Description                                                                                                                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cipSecEndPtHistTable | The IPsec Phase-2 Tunnel Endpoint History Table. This table is implemented as a sliding window in which only the last n entries are maintained. The maximum number of entries is specified by the cipSecHistTableSize object. |
| cikeFailTable        | The IPsec Phase-1 Failure Table. This table is implemented as a sliding window in which only the last n entries are maintained. The maximum number of entries is specified by the cipSecFailTableSize object.                 |
| cipSecFailTable      | The IPsec Phase-2 Failure Table. This table is implemented as a sliding window in which only the last n entries are maintained. The maximum number of entries is specified by the cipSecFailTableSize object.                 |

## MIB Constraints

Table 3-98 lists the constraints on objects in the CISCO-IPSEC-FLOW-MONITOR-MIB.

**Table 3-98 CISCO-IPSEC-FLOW-MONITOR-MIB Constraints**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| cikeTunStatus                   | Not supported |
| cipSecHistTableSize             | Not supported |
| cipSecHistCheckPoint            | Not supported |
| cipSecFailTableSize             | Not supported |
| cipSecTrapCntlIkeTunnelStart    | Not supported |
| cipSecTrapCntlIkeTunnelStop     | Not supported |
| cipSecTrapCntlIkeSysFailure     | Not supported |
| cipSecTrapCntlIkeCertCrlFailure | Not supported |
| cipSecTrapCntlIkeProtocolFail   | Not supported |
| cipSecTrapCntlIkeNoSa           | Not supported |
| cipSecTrapCntlIpSecTunnelStart  | Not supported |
| cipSecTrapCntlIpSecTunnelStop   | Not supported |
| cipSecTrapCntlIpSecSysFailure   | Not supported |
| cipSecTrapCntlIpSecSetUpFailure | Not supported |
| cipSecTrapCntlIpSecEarlyTunTerm | Not supported |
| cipSecTrapCntlIpSecProtocolFail | Not supported |

**Table 3-98** *CISCO-IPSEC-FLOW-MONITOR-MIB Constraints*

| MIB Object              | Notes         |
|-------------------------|---------------|
| cipSecTrapCntlIpSecNoSa | Not supported |
| cipSecTunStatus         | Not supported |

## CISCO-LICENSE-MGMT-MIB

The MIB module for managing licenses on the system. The licensing mechanism provides flexibility to enforce licensing for various features in the system.

[Table 3-99](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-99** *CISCO-LICENSE-MGMT-MIB Tables and Descriptions*

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| clmgmtLicenseActionTable       | A table for invoking license management actions. Management application must create a row in this table to trigger any of the license management actions. The following are different actions that can be executed using this table. 1. install 2. clear 3. processPermissionTicket 4. regenerateLastRe-hostTicket 5. backup 6. generateEULA Refer to the description of clmgmtLicenseAction for more information on what these actions do on the device. Once the request completes, the management application should retrieve the values of the objects of interest, and then delete the entry. In order to prevent old entries from clogging the table, entries will be aged out, but an entry will never be deleted within 5 minutes of completion. |
| clmgmtLicenseActionResultTable | This table contains results of license action if the license action involves multiple licenses. Entries in this table are not created for actions where there is only license that is subject of the action. For example, if there are 3 licenses in a license file when executing license install action, 3 entries will be created in this table, one for each license.                                                                                                                                                                                                                                                                                                                                                                                |
| clmgmtLicenseStoreInfoTable    | This table contains information about all the license stores allocated on the device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| clmgmtLicenseDeviceInfoTable   | This table contains objects that provide licensing related information at the device level. Entries will exist only for entities that support licensing. For example, if it is a stand alone device and supports licensing, then there will be only one entry in this table. If it is stackable switch then there will be multiple entries with one entry for each device in the stack.                                                                                                                                                                                                                                                                                                                                                                  |
| clmgmtLicenseInfoTable         | This table contains information about all the licenses installed on the device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Table 3-99 CISCO-LICENSE-MGMT-MIB Tables and Descriptions**

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| clmgmtLicenseActionTable       | A table for invoking license management actions. Management application must create a row in this table to trigger any of the license management actions. The following are different actions that can be executed using this table. 1. install 2. clear 3. processPermissionTicket 4. regenerateLastRe-hostTicket 5. backup 6. generateEULA Refer to the description of clmgmtLicenseAction for more information on what these actions do on the device. Once the request completes, the management application should retrieve the values of the objects of interest, and then delete the entry. In order to prevent old entries from clogging the table, entries will be aged out, but an entry will never be deleted within 5 minutes of completion. |
| clmgmtLicensableFeatureTable   | This table contains list of licensable features in the image. All the licensable features will have an entry each in this table irrespective of whether they are using any licenses currently. Entries in this table are created by the agent one for each licensable feature in the image. These entries remain in the table permanently and can not be deleted. Management application can not create or delete entries from this table.                                                                                                                                                                                                                                                                                                               |
| clmgmtDevCredExportActionTable | A table for triggering device credentials export action. Management application must create this entry to trigger the export of device credentials from the device to a file. Once the request completes, the management application should retrieve the values of the objects of interest, and then delete the entry. In order to prevent old entries from clogging the table, entries will be aged out, but an entry will never be deleted within 5 minutes of completion.                                                                                                                                                                                                                                                                             |

## MIB Constraints

Table 3-100 lists the constraints on objects in the CISCO-LICENSE-MGMT-MIB.

**Table 3-100 CISCO-LICENSE-MGMT-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| clmgmtDevCredEntPhysicalIndex  | Not supported |
| clmgmtDevCredTransferProtocol  | Not supported |
| clmgmtDevCredServerAddressType | Not supported |
| clmgmtDevCredServerAddress     | Not supported |
| clmgmtDevCredServerUsername    | Not supported |

**Table 3-100 CISCO-LICENSE-MGMT-MIB Constraints**

| MIB Object                         | Notes         |
|------------------------------------|---------------|
| clmgmtDevCredServerPassword        | Not supported |
| clmgmtDevCredExportFile            | Not supported |
| clmgmtDevCredCommand               | Not supported |
| clmgmtDevCredStorageType           | Not supported |
| clmgmtDevCredRowStatus             | Not supported |
| clmgmtLicenseUsageNotifEnable      | Not supported |
| clmgmtLicenseDeploymentNotifEnable | Not supported |
| clmgmtLicenseErrorNotifEnable      | Not supported |
| clmgmtLicenseComments              | Not supported |

## CISCO-MEMORY-POOL-MIB

The CISCO-MEMORY-POOL-MIB contains objects that represents the different types of memory pools that may be present in a managed device. Memory pools are categorized into two groups:

- Predefined pools
- Dynamic pools

[Table 3-101](#) lists the tables associated with this MIB.

**Table 3-101 CISCO-MEMORY-POOL-MIB Tables and Descriptions**

| Name                            | Description                                                                                                                                                                                                      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciscoMemoryPoolTable            | Table of memory pool monitoring entries.                                                                                                                                                                         |
| ciscoMemoryPoolUtilizationTable | Table of memory pool utilization entries. Each of the objects provides a general idea of how much of the memory pool has been used over a given period of time. It is determined as a weighted decaying average. |

## CISCO-MLD-SNOOPING-MIB

This MIB module defines objects that describe IGMP/MLD snooping. It provides remote network management system the ability to manage the IGMP/MLD Snooping feature when snooping is operating at the system and port level. Virtual systems and related ports data can be accessed by NMS using appropriate SNMP context. For example, in order to access data related to a particular L2VPN bridge domain system, the user shall specify on the SNMP request the SNMP context related to that particular bridge domain.

[Table 3-102](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-102 CISCO-MLD-SNOOPING-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cmsProfileTable         | This table lists IGMP/MLD configuration for each profile available on the system.                                                                                                                                                                                                                                                                        |
| cmsConfigPortTable      | This table lists snooping configuration for each port.                                                                                                                                                                                                                                                                                                   |
| cmsMcastInfoTable       | This table lists the snooping multicast operational data for group/source addresses associated to a port.                                                                                                                                                                                                                                                |
| cmsMRouterPortInfoTable | This table provides IGMP/MLD snooping operational data for the multicast router ports available on the system.                                                                                                                                                                                                                                           |
| cmsStatsPortTrfTable    | This table provides the IGMP/MLD snooping port traffic statistics. Each row contains traffic statistical data associated with a unique bridge domain port identified by the indexes. Conceptual rows can be seen by SNMP agents or NMS as containing statistical informations related to the indexes discovered on cbdBridgeDomainTable and cbdPortTable |

## MIB Constraints

Table 3-103 lists the constraints on objects in the CISCO-MLD-SNOOPING-MIB.

**Table 3-103 CISCO-MLD-SNOOPING-MIB Constraints**

| MIB Object                   | Notes         |
|------------------------------|---------------|
| cmsConfigPortProfileName     | Not supported |
| cmsProfileSnoopMinVersion    | Not supported |
| cmsProfileStatus             | Not supported |
| cmsProfileStorageType        | Not supported |
| cmsProfileIPAddress          | Not supported |
| cmsProfileRobustnessVariable | Not supported |
| cmsProfileIntQuerierVersion  | Not supported |
| cmsProfileIPAddrType         | Not supported |
| cmsConfigPortStatus          | Not supported |
| cmsConfigPortStorageType     | Not supported |

# CISCO-NETSYNC-MIB

The Synchronous Ethernet (SyncE) MIB is defined for monitoring network synchronization based on ITU-T G.781 clock selection. Synchronous Ethernet (SyncE) is a standard defined for delivering timing to the remote NEs through a Packet Network. SyncE is well defined by ITU-T which included G.8261, G.8262, G.8264 and G.781. It leverages the PHY layer of Ethernet to transmit frequency to the remote sites. Its functionality and accuracy mimics that of the SONET/SDH network because of its physical layer characteristic. In order to allow best clock source traceability, define the timing source correctly helps prevent timing loop. Synchronization Status Message is required for SyncE. This is similar to SONET/SDH. However, since SONET/SDH use 4 bits from the two S bytes in the SONET/SDH overhead frame for such message, Ethernet relies on a different channel called ESMC (Ethernet Synchronization Messaging Channel) which is based on IEEE 802.3 Organization Specific Slow Protocol.

## MIB Objects

**Table 3-104 CISCO-NETSYNC-MIB Tables and Descriptions**

| Name                        | Description                                                                                                                                                                                                                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cnsClkSelGlobalTable        | G.781 clock selection process table. This table contains the global parameters for the G.781 clock selection process.                                                                                                                                                                                                            |
| cnsSelectedInputSourceTable | T0 selected clock source table. This table contains the selected clock source for the input T0 clock.                                                                                                                                                                                                                            |
| cnsInputSourceTable         | T0 clock source table. This table contains a list of input sources for input T0 clock selection.                                                                                                                                                                                                                                 |
| cnsExtOutputTable           | T4 external output table. This table contains a list of T4 external outputs. Each T4 external output is associated with clock source(s) to be found in cnsT4ClockSourceTable. The clock selection process considers all the available clock sources and select the T4 clock source based on the G.781 clock selection algorithm. |
| cnsT4ClockSourceTable       | T4 clock source table. This table contains a list of input sources for a specific T4 external output. An entry shall be added to cnsExtOutputTable first. Then clock sources shall be added in this table for the selection process to select the appropriate T4 clock source.                                                   |

## MIB Constraints

Table 3-105 lists the constraints on objects in the CISCO-NETSYNC-MIB.

**Table 3-105 CISCO-NETSYNC-MIB Constraints**

| MIB Object                       | Notes        |
|----------------------------------|--------------|
| cnsClkSelGlobalTable             |              |
| cnsClkSelGloProcIndex            | Always 1     |
| cnsClkSelGlobNetsyncEnable       | Supported    |
| cnsClkSelGlobRevertiveMode       | Always FALSE |
| cnsClkSelGlobESMCMODE            | Always TRUE  |
| cnsClkSelGlobEECOption           | Supported    |
| cnsClkSelGlobNetworkOption       | Supported    |
| cnsClkSelGlobWtrTime             | Supported    |
| cnsClkSelGlobNofSources          | Supported    |
| cnsClkSelGlobLastHoldoverSeconds | Supported    |
| cnsClkSelGlobCurrHoldoverSeconds | Supported    |

**Table 3-105 CISCO-NETSYNC-MIB Constraints (continued)**

| <b>MIB Object</b>                  | <b>Notes</b>  |
|------------------------------------|---------------|
| cnsClkSelGlobClockMode             | Supported     |
| cnsClkSelGlobProcessMode           | Not supported |
| cnsClkSelGlobHoldoffTime           | Not supported |
| <b>cnsSelectedInputSourceTable</b> |               |
| cnsSelInpSrcNetsyncIndex           | Supported     |
| cnsSelInpSrcName                   | Supported     |
| cnsSelInpSrcIntfType               | Supported     |
| cnsSelInpSrcQualityLevel           | Supported     |
| cnsSelInpSrcPriority               | Supported     |
| cnsSelInpSrcFSW                    | Always FALSE  |
| cnsSelInpSrcMSW                    | Always FALSE  |
| cnsSelInpSrcTimestamp              | Not supported |
| <b>cnsInputSourceTable</b>         |               |
| cnsInpSrcNetsyncIndex              | Supported     |
| cnsInpSrcName                      | Supported     |
| cnsInpSrcIntfType                  | Supported     |
| cnsInpSrcPriority                  | Supported     |
| cnsInpSrcESMCCap                   | Supported     |
| cnsInpSrcSSMCCap                   | Supported     |
| cnsInpSrcQualityLevelTxCfg         | Supported     |
| cnsInpSrcQualityLevelRxCfg         | Supported     |
| cnsInpSrcQualityLevelTx            | Supported     |
| cnsInpSrcQualityLevelRx            | Supported     |
| cnsInpSrcQualityLevel              | Supported     |
| cnsInpSrcWtrTime                   | Supported     |
| cnsInpSrcLockout                   | Always false  |
| cnsInpSrcSignalFailure             | Supported     |
| cnsInpSrcAlarm                     | Supported     |
| cnsInpSrcFSW                       | Always false  |
| cnsInpSrcMSW                       | Always false  |
| cnsInpSrcAlarmInfo                 | Not supported |
| cnsInpSrcHoldoffTime               | Not supported |
| <b>cnsExtOutputTable</b>           |               |
| cnsExtOutListIndex                 | Supported     |
| cnsExtOutSelNetsyncIndex           | Supported     |
| cnsExtOutName                      | Supported     |

**Table 3-105 CISCO-NETSYNC-MIB Constraints (continued)**

| MIB Object                   | Notes         |
|------------------------------|---------------|
| cnsExtOutIntfType            | Supported     |
| cnsExtOutQualityLevel        | Supported     |
| cnsExtOutPriority            | Supported     |
| cnsExtOutFSW                 | Always false  |
| cnsExtOutMSW                 | Always false  |
| cnsExtOutSquelch             | Supported     |
| <b>cnsT4ClockSourceTable</b> |               |
| cnsT4ClkSrcNetsyncIndex      | Supported     |
| cnsT4ClkSrcName              | Supported     |
| cnsT4ClkSrcIntfType          | Supported     |
| cnsT4ClkSrcPriority          | Supported     |
| cnsT4ClkSrcESMCCap           | Supported     |
| cnsT4ClkSrcSSMCap            | Supported     |
| cnsT4ClkSrcQualityLevelTxCfg | Supported     |
| cnsT4ClkSrcQualityLevelRxCfg | Supported     |
| cnsT4ClkSrcQualityLevelTx    | Supported     |
| cnsT4ClkSrcQualityLevelRx    | Supported     |
| cnsT4ClkSrcQualityLevel      | Supported     |
| cnsT4ClkSrcWtrTime           | Supported     |
| cnsT4ClkSrcLockout           | Always false  |
| cnsT4ClkSrcSignalFailure     | Supported     |
| cnsT4ClkSrcAlarm             | Supported     |
| cnsT4ClkSrcFSW               | Always false  |
| cnsT4ClkSrcMSW               | Always false  |
| cnsT4ClkSrcAlarmInfo         | Not supported |
| cnsT4ClkSrcHoldoffTime       | Not supported |

## CISCO-NTP-MIB

The CISCO-NTP-MIB provides mechanisms to monitor an Network Time Protocol (NTP) server. The (NTP) Version 3 is used to synchronize timekeeping among a set of distributed time servers and clients. The service model is based on a returnable-time design which depends only on measured clock offsets, but does not require reliable message delivery. The synchronization subnet uses a self-organizing, hierarchical master-slave configuration, with synchronization paths determined by a minimum-weight spanning tree. While multiple masters (primary servers) may exist, there is no requirement for an election protocol.

In the NTP model several primary reference sources, synchronized by wire or radio to national standards, are connected to widely accessible resources, such as backbone gateways, and operated as primary time servers. The purpose of NTP is to convey timekeeping information from these servers to other time servers via the Internet and also to cross-check clocks and mitigate errors because of equipment or propagation failures. Some number of local-net hosts or gateways, acting as secondary time servers, run NTP with one or more of the primary servers. To reduce the protocol overhead, the secondary servers distribute time via NTP to the remaining local-net hosts. In the interest of reliability, selected hosts can be equipped with less accurate but less expensive radio clocks and used for backup in case of failure of the primary or secondary servers or communication paths between them.

NTP is designed to produce three products: clock offset, round-trip delay, and dispersion, all of which are relative to a selected reference clock. Clock offset represents the amount to adjust the local clock to bring it into correspondence with the reference clock. Roundtrip delay provides the capability to launch a message to arrive at the reference clock at a specified time. Dispersion represents the maximum error of the local clock relative to the reference clock. Because most host time servers synchronize via another peer time server, there are two components in each of these three products, those determined by the peer relative to the primary reference source of standard time and those measured by the host relative to the peer. Each of these components are maintained separately in the protocol to facilitate error control and management of the subnet itself. They provide not only precision measurements of offset and delay, but also definitive maximum error bounds, so that the user interface can determine not only the time, but the quality of the time as well.

In what may be the most common client/server model, a client sends an NTP message to one or more servers and processes the replies as received. The server interchanges addresses and ports, overwrites certain fields in the message, recalculates the checksum and returns the message immediately. Information included in the NTP message allows the client to determine the server time with respect to local time and adjust the local clock accordingly. Also, the message includes information to calculate expected timekeeping accuracy and reliability, as well as select the best from possibly several servers. Although the client/server model may suffice for use on local nets involving a public server and perhaps many workstation clients, the full generality of NTP requires distributed participation of a number of client/servers or peers arranged in a dynamically reconfigurable, hierarchically distributed configuration. It also requires sophisticated algorithms for association management, data manipulation and local-clock control.

[Table 3-106](#) lists the tables associated with this MIB.

**Table 3-106 CISCO-NTP-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cntpPeersVarTable       | This table provides information on the peers with which the local NTP server has associations. The peers are also NTP servers but running on different hosts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| cntpFilterRegisterTable | Contains NTP state variables used by the NTP clock filter and selection algorithms. This table depicts a shift register. Each stage in the shift register is a 3-tuple consisting of the measured clock offset, measured clock delay, and measured clock dispersion associated with a single observation. An important factor affecting the accuracy and reliability of time distribution is the complex of algorithms used to reduce the effect of statistical errors and falsetickers because of failure of various subnet components, reference sources or propagation media. The NTP clock-filter and selection algorithms are designed to do exactly this. The objects in the filter register table below are used by these algorithms to minimize the error in the calculated time. |

## MIB Constraints


**Note**

CISCO-NTP-MIB has very limited support. cntpSysSrvStatus is supported.

Table 3-107 lists the constraints on objects in the CISCO-NTP-MIB.

**Table 3-107 CISCO-NTP-MIB Constraints**

| MIB Object              | Notes         |
|-------------------------|---------------|
| cntpPeersVarTable       | Not supported |
| cntpFilterRegisterTable | Not supported |
| cntpSysLeap             | Not supported |
| cntpSysStratum          | Not supported |
| cntpPeersPrefPeer       | Not supported |
| cntpPeersPeerAddress    | Not supported |
| cntpPeersHostAddress    | Not supported |
| cntpPeersMode           | Not supported |
| cntpPeersEntryStatus    | Not supported |
| cntpPeersPeerName       | Not supported |
| cntpPeersPeerType       | Not supported |

# CISCO-OAM-MIB

A MIB module for invoking OAM loopback Ping on ATM connections.

[Table 3-108](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-108** *CISCO-OAM-MIB Tables and Descriptions*

| Name                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| oamLoopbackPingTable        | A table of OAM loopback request entries. (This table is similar to the CISCO-PING-MIB.)                                                                                                                                                                                                                                                                                                                                                                                               |
| oamLoopbackSegEndPointTable | This table contains a list of OAM loopback segment endpoints. When the endpoint is an OAM segment endpoint, it is able to send ATM segment loop back cells or loop back the cells to the originator which initiates the OAM loop back ping test. The provisioning of this table is required if the loopback ping test type (oamLoopbackPingType) in oamLoopbackPingTable is 'segment', and the endpoint under test or the remote ping endpoint is not OAM segment loopback endpoints. |

## MIB Constraints

[Table 3-107](#) lists the constraints on objects in the CISCO-OAM-MIB.

**Table 3-109** *CISCO-OAM-MIB Constraints*

| MIB Object          | Notes         |
|---------------------|---------------|
| oamLoopSegRowStatus | Not supported |

# CISCO-OTN-IF-MIB

The CISCO-OTN-IF-MIB defines the managed objects for physical layer characteristics of DWDM optical channel interfaces and performance statistics objects for protocol specific error counters in DWDM optical devices.

Performance monitoring (PM) parameters are used by service providers to gather, store, set thresholds for and report performance data for early detection of problems. Thresholds are used to set error levels for each PM parameter. During the accumulation cycle, if the current value of a performance monitoring parameter reaches or exceeds its corresponding threshold value, a threshold crossing alarm (TCA) is generated. The TCAs provide early detection of performance degradation.

## MIB Objects

[Table 3-110](#) lists the tables associated with this MIB.

**Table 3-110 CISCO-OTN-IF-MIB Tables and Descriptions**

| Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| coiIfControllerTable         | This table provides management information for physical layer related attributes of interfaces with an ifType of opticalChannel (195).                                                                                                                                                                                                                                                                                             |
| coiOtnNearEndThresholdsTable | This table provides objects for configuring OTN (G.709) near end error thresholds on interfaces of ifType opticalChannel (195).                                                                                                                                                                                                                                                                                                    |
| coiOtnFarEndThresholdsTable  | This table provides objects for configuring OTN (G.709) thresholds for far end of interfaces of ifType opticalChannel (195).                                                                                                                                                                                                                                                                                                       |
| coiOtnNearEndCurrentTable    | This table contains the cumulative OTN (G.709) PM statistics for the near end of interfaces of ifType opticalChannel (195). The statistics are for the current interval of interval type identified by coiOtnNearEndCurIntervalType. The current PM statistics is the accumulated statistics for the time period defined by the interval type.                                                                                     |
| coiOtnFarEndCurrentTable     | This table contains the cumulative OTN (G.709) PM stats for the far end of interfaces of ifType opticalChannel (195). The statistics are for the current interval of interval type identified by coiOtnFarEndCurIntervalType. The current PM statistics is the accumulated statistics for the time period defined by the interval type.                                                                                            |
| coiOtnNearEndIntervalTable   | This table contains historical cumulative OTN (G.709) PM stats for the near end of interfaces of ifType opticalChannel (195), for the interval type identified by the index coiOtnNearEndIntervalType and the interval number as identified by the index coiOtnNearEndIntervalNum. The PM statistics is the accumulated stats for the time period defined by the interval type in the time interval as defined by interval number. |
| coiOtnFarEndIntervalTable    | This table contains historical cumulative OTN (G.709) PM stats for the far end interfaces of ifType opticalChannel (195), for the interval type identified by the index coiOtnFarEndIntervalType and the interval number as identified by coiOtnFarEndIntervalNum. The PM statistics is the accumulated stats for the time period defined by the interval type in the time interval as defined by interval number.                 |
| coiFECThresholdsTable        | This table contains the configurable thresholds for Forward Error Correction statistics.                                                                                                                                                                                                                                                                                                                                           |

**Table 3-110 CISCO-OTN-IF-MIB Tables and Descriptions (continued)**

| Name                | Description                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| coiFECCurrentTable  | This table contains the cumulative FEC PM stats for the interfaces of ifType opticalChannel (195) for the current interval of interval type identified coiFECCurIntervalType.                                                                                                                                                                                                                |
| coiFECIntervalTable | This table contains historical cumulative FEC PM stats for the interfaces of ifType opticalChannel (195), for the interval type identified by the index coiFECIntervalType and the interval number as identified by index coiFECIntervalNum. The PM statistics is the accumulated stats for the time period defined by the interval type in the time interval as defined by interval number. |

## CISCO-PTP-MIB

The MIB module for PTPv2 (IEEE1588 - 2008) Overview of PTPv2 (IEEE 1588-2008) This IEEE standard defines a protocol enabling precise synchronization of clocks in measurement and control systems implemented with packet-based networks, the IEEE Standard PTPv2 1588 (2008). This MIB does not address the standard IEEE 1588 (2002). The protocol is applicable to network elements communicating using IP. The protocol enables heterogeneous systems that include clocks of various inherent precision, resolution, and stability to synchronize to a grandmaster clock. The protocol supports system-wide synchronization accuracy in the sub-microsecond range with minimal network and local clock computing resources. The standard uses UDP/IP. It includes formal mechanisms for message extensions, higher sampling rates, correction for asymmetry, a clock type to reduce error accumulation in large topologies, and specifications on how to incorporate the resulting additional data into the synchronization protocol. The standard defines conformance and management capability also. MIB description This MIB is to support the Precision Timing Protocol (PTP) feature of Cisco System devices.

## MIB Objects

[Table 3-111](#) lists the tables associated with this MIB.

**Table 3-111 CISCO-PTP-MIB Tables and Descriptions**

| Name                    | Description                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------|
| cPtpSystemTable         | Table of count information about the PTP system for all domains.                                    |
| cPtpSystemDomainTable   | Table of information about the PTP system for all clock modes -- ordinary, boundary or transparent. |
| cPtpClockNodeTable      | Table of information about the PTP system for a given domain.                                       |
| cPtpClockCurrentDSTable | Table of information about the PTP clock Current Datasets for all domains.                          |
| cPtpClockParentDSTable  | Table of information about the PTP clock Parent Datasets for all domains.                           |
| cPtpClockDefaultDSTable | Table of information about the PTP clock Default Datasets for all domains.                          |

**Table 3-111 CISCO-PTP-MIB Tables and Descriptions (continued)**

| Name                           | Description                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cPtpClockRunningTable          | Table of information about the PTP clock Running Datasets for all domains.                                                                                                                                                                                                                                                         |
| cPtpClockTimePropertiesDSTable | Table of information about the PTP clock Timeproperties Datasets for all domains.                                                                                                                                                                                                                                                  |
| cPtpClockTransDefaultDSTable   | Table of information about the PTP Transparent clock Default Datasets for all domains.                                                                                                                                                                                                                                             |
| cPtpClockPortTable             | Table of information about the clock ports for a particular domain.                                                                                                                                                                                                                                                                |
| cPtpClockPortDSTable           | Table of information about the clock ports dataset for a particular domain.                                                                                                                                                                                                                                                        |
| cPtpClockPortRunningTable      | Table of information about the clock ports running dataset for a particular domain.                                                                                                                                                                                                                                                |
| cPtpClockPortTransDSTable      | Table of information about the Transparent clock ports running dataset for a particular domain.                                                                                                                                                                                                                                    |
| cPtpClockPortAssociateTable    | Table of information about a given port's associated ports. For a master port - multiple slave ports which have established sessions with the current master port. For a slave port - the list of masters available for a given slave port. Session information (pkts, errors) to be displayed based on availability and scenario. |

## MIB Constraints

Table 3-112 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-PTP-MIB.

**Table 3-112 CISCO-PTP-MIB Constraints**

| MIB Object                                      | Notes                    |
|-------------------------------------------------|--------------------------|
| <b>cPtpSystemDomainTable</b>                    |                          |
| cPtpSystemDomainClockTypeIndex                  | Always "boundary clock"  |
| cPtpSystemDomainTotals                          | Always 1                 |
| <b>ciscoPtpMibSystemInfo</b>                    |                          |
| cPtpSystemProfile                               | Always "vendor specific" |
| <b>cPtpSystemTable</b>                          |                          |
| cPtpDomainIndex                                 | Supported                |
| cPtpInstanceIndex                               | Always 0                 |
| cPtpDomainClockPortsTotal                       | Supported                |
| cPtpDomainClockPortPhysicalInter-<br>facesTotal | Supported                |
| <b>cPtpSystemDomainTable</b>                    |                          |
| cPtpSystemDomainClockTypeIndex                  | Supported                |

**Table 3-112** *CISCO-PTP-MIB Constraints (continued)*

| <b>MIB Object</b>                       | <b>Notes</b>            |
|-----------------------------------------|-------------------------|
| cPtpSystemDomainTotals                  | Supported               |
| <b>cPtpClockNodeTable</b>               | Not supported           |
| <b>cPtpClockCurrentDSTable</b>          |                         |
| cPtpClockCurrentDSDomainIndex           | Supported               |
| cPtpClockCurrentDSClockTypeIndex        | Always "boundary clock" |
| cPtpClockCurrentDSInstanceIndex         | Always 0                |
| cPtpClockCurrentDSStepsRemoved          | Supported               |
| cPtpClockCurrentDSOffsetFromMaster      | Not supported           |
| cPtpClockCurrentDSMeanPathDelay         | Not supported           |
| <b>cPtpClockParentDSTable</b>           |                         |
| PtpClockParentDSDomainIndex             | Supported               |
| cPtpClockParentDSClockTypeIndex         | Always "boundary clock" |
| cPtpClockParentDSInstanceIndex          | Always 0                |
| cPtpClockParentDSParentPortIdentity     | Supported               |
| cPtpClockParentDSParentStats            | Supported               |
| cPtpClockParentDSGMClockIdentity        | Supported               |
| cPtpClockParentDSGMClockPriority1       | Supported               |
| cPtpClockParentDSGMClockPriority2       | Supported               |
| cPtpClockParentDSGMClockQuality-Class   | Supported               |
| cPtpClockParentDSGMClockQualityAccuracy | Supported               |
| cPtpClockParentDSGMClockQuality-Offset  | Supported               |
| cPtpClockParentDSOffset                 | Not supported           |
| cPtpClockParentDSClockPhChRate          | Not supported           |
| <b>cPtpClockDefaultDSTable</b>          |                         |
| cPtpClockDefaultDSDomainIndex           | Supported               |
| cPtpClockDefaultDSClockTypeIndex        | Always "boundary clock" |
| cPtpClockDefaultDSInstanceIndex         | Always 0                |
| cPtpClockDefaultDSTwoStepFlag           | Always true             |
| cPtpClockDefaultDSClockIdentity         | Supported               |
| cPtpClockDefaultDSPriority1             | Supported               |
| cPtpClockDefaultDSPriority2             | Supported               |
| cPtpClockDefaultDSSlaveOnly             | Always false            |
| cPtpClockDefaultDSQualityClass          | Supported               |
| cPtpClockDefaultDSQualityAccuracy       | Supported               |

**Table 3-112 CISCO-PTP-MIB Constraints (continued)**

| <b>MIB Object</b>                              | <b>Notes</b>            |
|------------------------------------------------|-------------------------|
| cPtpClockDefaultDSQualityOffset                | Supported               |
| <b>cPtpClockRunningTable</b>                   |                         |
| cPtpClockRunningDomainIndex                    | Supported               |
| cPtpClockRunningClockTypeIndex                 | Always "boundary clock" |
| cPtpClockRunningInstanceIndex                  | Always 0                |
| cPtpClockRunningState                          | Supported               |
| cPtpClockRunningPacketsSent                    | Supported               |
| cPtpClockRunningPacketsReceived                | Supported               |
| <b>cPtpClockTimePropertiesDSTable</b>          |                         |
| cPtpClockTimePropertiesDSDomainIndex           | Supported               |
| cPtpClockTimePropertiesDSClockTypeIndex        | Always "boundary clock" |
| cPtpClockTimePropertiesDSInstanceIndex         | Always 0                |
| cPtpClockTimePropertiesDSCurrentUTCOffsetValid | Supported               |
| cPtpClockTimePropertiesDSCurrentUTCOffset      | Supported               |
| cPtpClockTimePropertiesDSLeap59                | Supported               |
| cPtpClockTimePropertiesDSLeap61                | Supported               |
| cPtpClockTimePropertiesDSTimeTraceable         | Supported               |
| cPtpClockTimePropertiesDSFreqTraceable         | Supported               |
| cPtpClockTimePropertiesDSPTPTimescale          | Supported               |
| cPtpClockTimePropertiesDSSource                | Supported               |
| <b>cPtpClockTransDefaultDSTable</b>            | Not supported           |
| <b>cPtpClockPortTable</b>                      |                         |
| cPtpClockPortDomainIndex                       | Supported               |
| cPtpClockPortClockTypeIndex                    | Always "boundary clock" |
| cPtpClockPortClockInstanceIndex                | Always 0                |
| cPtpClockPortTablePortNumberIndex              | Supported               |
| cPtpClockPortName                              | Supported               |
| cPtpClockPortRole                              | Supported               |
| cPtpClockPortSyncOneStep                       | Supported               |
| cPtpClockPortCurrentPeerAddressType            | Supported               |

**Table 3-112** *CISCO-PTP-MIB Constraints (continued)*

| <b>MIB Object</b>                      | <b>Notes</b>            |
|----------------------------------------|-------------------------|
| cPtpClockPortCurrentPeerAddress        | Supported               |
| cPtpClockPortNumOfAssociatedPorts      | Supported               |
| <b>cPtpClockPortDSTable</b>            |                         |
| cPtpClockPortDSDomainIndex             | Supported               |
| cPtpClockPortDSClockTypeIndex          | Always "boundary clock" |
| cPtpClockPortDSClockInstanceIndex      | Always 0                |
| cPtpClockPortDSPortNumberIndex         | Supported               |
| cPtpClockPortDSName                    | Supported               |
| cPtpClockPortDSPortIdentity            | Supported               |
| cPtpClockPortDSAnnouncementInterval    | Supported               |
| cPtpClockPortDSAnnounceRctTimeout      | Supported               |
| cPtpClockPortDSSyncInterval            | Supported               |
| cPtpClockPortDSMinDelayReqInterval     | Supported               |
| cPtpClockPortDSDelayMech               | Always "e2e"            |
| cPtpClockPortDSPTPVersion              | Always 2                |
| cPtpClockPortDSPeerDelayReqInterval    | Not supported           |
| cPtpClockPortDSPeerMeanPathDelay       | Not supported           |
| cPtpClockPortDSGrantDuration           | Not supported           |
| <b>cPtpClockPortRunningTable</b>       |                         |
| cPtpClockPortRunningDomainIndex        | Supported               |
| cPtpClockPortRunningClockTypeIndex     | Always "boundary clock" |
| cPtpClockPortRunningClockInstanceIndex | Always 0                |
| cPtpClockPortRunningPortNumberIndex    | Supported               |
| cPtpClockPortRunningName               | Supported               |
| cPtpClockPortRunningState              | Supported               |
| cPtpClockPortRunningRole               | Supported               |
| cPtpClockPortRunningInterfaceIndex     | Supported               |
| cPtpClockPortRunningIPversion          | Supported               |
| cPtpClockPortRunningTxMode             | Supported               |
| cPtpClockPortRunningPacketsReceived    | Supported               |
| cPtpClockPortRunningPacketsSent        | Supported               |
| cPtpClockPortRunningRxMode             | Not supported           |
| cPtpClockPortRunningEncapsulationType  | Not supported           |
| <b>cPtpClockPortTransDSTable</b>       | Not supported           |
| <b>cPtpClockPortAssociateTable</b>     |                         |

**Table 3-112 CISCO-PTP-MIB Constraints (continued)**

| MIB Object                             | Notes                   |
|----------------------------------------|-------------------------|
| cPtpClockPortCurrentDomainIndex        | Supported               |
| cPtpClockPortCurrentClockTypeIndex     | Always "boundary clock" |
| cPtpClockPortCurrentClockInstanceIndex | Always 0                |
| cPtpClockPortCurrentPortNumberIndex    | Supported               |
| cPtpClockPortAssociatePortIndex        | Supported               |
| cPtpClockPortAssociateAddressType      | Supported               |
| cPtpClockPortAssociateAddress          | Supported               |
| cPtpClockPortAssociatePacketsSent      | Supported               |
| cPtpClockPortAssociatePacketsReceived  | Supported               |
| cPtpClockPortAssociateInErrors         | Supported               |
| cPtpClockPortAssociateOutErrors        | Not supported           |

## CISCO-P2P-IF-MIB

The CISCO-P2P-IF-MIB is a Point to Point Interface MIB module. This MIB defines table objects to manage the generic objects for Serial link or SONET/SDH like point to point network interfaces with the encapsulations of PPP (Point to Point Protocol), HDLC (High Level Data Link Control) or cHDLC (Cisco extension to High Level Data Link Control) framing.

[Table 3-113](#) lists the tables defined in CISCO-P2P-IF-MIB.

**Table 3-113 CISCO-P2P-IF-MIB Tables**

| MIB Table        | Description                                                                              |
|------------------|------------------------------------------------------------------------------------------|
| cp2pIfCfgTable   | Contains Point to Point generic Configuration information.                               |
| cp2pIfStatsTable | Contains Point to Point Interface Statistics information including the error statistics. |

## MIB Constraints

[Table 3-114](#) lists the constraints on objects in the CISCO-P2P-IF-MIB.

**Table 3-114 CISCO-P2P-IF-MIB Constraints**

| MIB Object              | Notes         |
|-------------------------|---------------|
| cp2pIfCfgCrcMode        | Not supported |
| cp2pIfCfgScramblingMode | Not supported |
| cp2pIfCfgTransmitDelay  | Not supported |

# CISCO-PIM-MIB

The CISCO-PIM-MIB defines the Cisco specific variables for Protocol Independent Multicast (PIM) management. These definitions are an extension of those defined in the UETF PIM MIB (RFC 2934). This MIB has no tables. A Management Station pinging different Network elements can use this MIB to ping and get back the results if the Network Element is accessible or not. The number of packets, packet size, timeout, delay can be set to the appropriate values and tested. This MIB is superseded by the CISCO-RTTMON-MIB that provides this functionality in addition to other features.

# CISCO-PING-MIB

The CISCO-PING-MIB is used to determine connectivity and reachability of network elements and devices via use of the PING protocol.

Table 3-115 lists the tables associated with this MIB.

**Table 3-115 CISCO-PING-MIB Tables and Descriptions**

| Name           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciscoPingTable | Ping request entry. A management station wishing to create an entry should first generate a pseudo-random serial number to be used as the index to this sparse table. The station should then create the associated instance of the row status and row owner objects. It must also, either in the same or in successive PDUs, create the associated instance of the protocol and address objects. It should also modify the default values for the other configuration objects if the defaults are not appropriate. After the appropriate instance of all the configuration objects have been created, either by an explicit SNMP set request or by default, the row status should be set to active to initiate the request. Note that this entire procedure may be initiated via a single set request which specifies a row status of createAndGo as well as specifies valid values for the non-defaulted configuration objects. After the ping sequence has been activated, it cannot be stopped—it runs until the configured number of packets have been sent. After the sequence completes, the management station should retrieve the values of the status objects of interest, and should then delete the entry. To prevent old entries from clogging the table, entries are aged out, but an entry is never deleted within 5 minutes of completing barring an explicit delete request from the management station. |

# MIB Constraints

IPv6 support is not available for CISCO-PING-MIB.

## CISCO-PROCESS-MIB

The CISCO-PROCESS-MIB describes active system processes. Virtual Machine refers to those OS which can run the code or process of a different executional model OS. Virtual processes assume the executional model of a OS which is different from Native IOS. Virtual Processes are also referred to as Tasks. Thread is a sequence of instructions to be executed within a program. A thread which adheres to POSIX standard is referred to as a POSIX thread.

[Table 3-116](#) lists the tables associated with this MIB.

**Table 3-116 CISCO-PROCESS-MIB Tables and Descriptions**

| Name                      | Description                                                                                                                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cpmCPUTotalTable          | Table of overall CPU statistics.                                                                                                                                                                                |
| cpmProcessTable           | Table of generic information on all active processes on this device.                                                                                                                                            |
| cpmProcessExtTable        | This table contains information that may or may not be available on all cisco devices. It contains additional objects for the more general cpmProcessTable. This object is deprecated by cpmProcessExtRevTable. |
| cpmProcessExtRevTable     | This table contains information that may or may not be available on all Cisco devices. It contains additional objects for the more general cpmProcessTable. This object deprecates cpmProcessExtTable.          |
| cpmCPUThresholdTable      | This table contains the information about the thresholding values for CPU, configured by the user.                                                                                                              |
| cpmCPUHistoryTable        | List of CPU utilization history entries.                                                                                                                                                                        |
| cpmThreadTable            | This table contains generic information about POSIX threads in the device.                                                                                                                                      |
| cpmVirtualProcessTable    | This table contains information about virtual processes in a virtual machine.                                                                                                                                   |
| cpmCPUProcessHistoryTable | List of process history entries. This table contains CPU utilization of processes which crossed the cpmCPUHistoryThreshold.                                                                                     |

## CISCO-RF-MIB

The CISCO-RF-MIB provides configuration control and status for the Redundancy Framework (RF) subsystem. RF provides a mechanism for logical redundancy of software functionality and is designed to support 1:1 redundancy on Route Switch Processors (RSPs). Redundancy duplicates data elements and software functions to provide an alternative in case of failure.



### Note

For information about the levels of redundancy and how to verify that the redundancy feature is available on the Cisco ASR 9000 Series routers, see [Appendix 5, “Using MIBs.”](#)

[Table 3-117](#) lists the tables defined in CISCO-RF-MIB.

**Table 3-117 CISCO-RF-MIB Tables**

| MIB Table                 | Description                                                                                                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cRFStatusRFModeCapsTable  | This table containing a list of redundancy modes that can be supported on the device.                                                                                                                                                                                                                                                      |
| cRFStatusRFClientTable    | This table contains a list of RF clients that are registered on the device. RF clients are applications that have registered with the Redundancy Facility (RF) to receive RF events and notifications. The purpose of RF clients is to synchronize any relevant data with the standby unit.                                                |
| cRFHistorySwitchOverTable | A table that tracks the history of all switchovers that have occurred since system initialization. The maximum number of entries permissible in this table is defined by cRFHistoryTableMaxLength. When the number of entries in the table reaches the maximum limit, the next entry would replace the oldest existing entry in the table. |

## MIB Constraints

Table 3-118 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-RF-MIB.

**Table 3-118 CISCO-RF-MIB Constraints**

| MIB Object             | Notes                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>cRFCfgGroup</b>     |                                                                                                                                                        |
| cRFCfgSplitMode        | Object is deprecated.                                                                                                                                  |
| cRFCfgRedundancyMode   | Values: 6, 7, and 8.                                                                                                                                   |
| cRFCfgMaintenanceMode  | Read-only. Supported value is false (2).                                                                                                               |
| <b>cRFHistoryGroup</b> |                                                                                                                                                        |
| cRFHistory             | There are three switchover modes: coldstandby, warmstandby, and hoststandby. The only entries saved are those generated from a hot standby switchover. |
| cRFCfgKeepaliveThresh  | Not supported                                                                                                                                          |
| cRFCfgKeepaliveTimer   | Not supported                                                                                                                                          |
| cRFCfgNotifTimer       | Not supported                                                                                                                                          |
| cRFCfgAdminAction      | Not supported                                                                                                                                          |
| cRFCfgNotifsEnabled    | Not supported                                                                                                                                          |
| cRFCfgMaintenanceMode  | Not supported                                                                                                                                          |

**Table 3-118 CISCO-RF-MIB Constraints (continued)**

| MIB Object               | Notes         |
|--------------------------|---------------|
| cRFCfgRedundancyMode     | Not supported |
| cRFHistoryTableMaxLength | Not supported |

**Note**

SNMP process placement was introduced in Cisco IOS XR Release 3.8.3. cRFStatusRFCClientTable in CISCO-RF-MIB lists the status of all processes on DSC and their redundancy status. However, the redundancy status of all the processes (for example bgp, ospf) that are placeable is not correct when the process is placed on a different RP or DRP. To overcome this issue, use RFCClientStatus definition to get redundancy information about the process and to get the process state use Processmib.

## CISCO-RTTMON-MIB

The CISCO-RTTMON-MIB defines a MIB for Round Trip Time (RTT) monitoring of a list of targets, using a variety of protocols.

[Table 3-119](#) lists the tables associated with this MIB.

**Table 3-119 CISCO-RTTMON-MIB Tables and Descriptions**

| Name                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonApplSupportedRttTypesTable  | Table of which contains the supported Rtt Monitor Types. See the RttMonRttType textual convention for the definition of each type.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| rttMonApplSupportedProtocolsTable | Table of which contains the supported Rtt Monitor Protocols. See the RttMonProtocol textual convention for the definition of each protocol.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| rttMonApplPreConfigedTable        | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| rttMonApplAuthTable               | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| rttMonCtrlAdminTable              | Table of RTT monitoring definitions. The RTT administration control is in multiple tables. This first table, is used to create a conceptual RTT control row. The following tables contain objects which configure scheduling, information gathering, and notification/trigger generation. All of these tables create the same conceptual RTT control row as this table using this table index as their own index. This table is limited in size by the agent implementation. The object rttMonApplNumCtrlAdminEntry reflects this tables maximum number of entries. |
| rttMonEchoAdminTable              | Table that contains RTT specific definitions. This table is controlled via the rttMonCtrlAdminTable. Entries in this table are created via the rttMonCtrlAdminStatus object.                                                                                                                                                                                                                                                                                                                                                                                        |
| rttMonFileIOAdminTable            | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**Table 3-119** CISCO-RTTMON-MIB Tables and Descriptions (continued)

| Name                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonScriptAdminTable     | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| rttMonScheduleAdminTable   | Table of RTT monitoring scheduling specific definitions. This table is controlled via the rttMonCtrlAdminTable. Entries in this table are created via the rttMonCtrlAdminStatus object.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| rttMonReactAdminTable      | Not supported. This table was replaced by rttMonReactTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| rttMonStatisticsAdminTable | <p>Table of Round Trip Time (RTT) monitoring statistics definitions. The definitions in this table control what and how many entries are placed into the rttMonStatsCaptureTable. The statistics capture table is a rollover table. When the rttMonStatisticsAdminNumHourGroups index value exceeds its value defined in this table, the oldest corresponding group is deleted and is replaced with the new group. All other indices only fill to there maximum size.</p> <p>NOTE: The maximum size of this table is defined to be the product of the<br/> rttMonCtrlAdminIndex times<br/> rttMonStatisticsAdminNumHourGroups times<br/> rttMonStatisticsAdminNumPaths times<br/> rttMonStatisticsAdminNumHops times<br/> rttMonStatisticsAdminNumDistBuckets.</p> <p> <b>Note</b> Each of the 'Num' objects values in this have a special behavior. When one of the objects is set to a value larger than the RTT application can support the set succeeds, but the resultant value is set to the applications maximum value. The setting management station must reread this object to verify the actual value. This table augments the rttMonCtrlAdminTable.</p> |

**Table 3-119** CISCO-RTTMON-MIB Tables and Descriptions (continued)

| Name                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonHistoryAdminTable     | <p>Table of RTT monitoring history definitions. The definitions in this table control what and how many entries are placed into the rttMonHistoryCollectionTable. The history collection table is a rollover table. When the rttMonHistoryAdminNumLives index value exceeds its value defined in this table, the oldest corresponding 'lives' group are deleted and are replaced with the new 'lives' group. All other indices only fill to their maximum size.</p> <p> <b>Note</b> The maximum size of this table is defined to be the product of the rttMonCtrlAdminIndex times rttMonHistoryAdminNumLives times rttMonHistoryAdminNumBuckets times rttMonHistoryAdminNumSamples.</p> <p> <b>Note</b> Each of the 'Num' objects values in this have a special behavior. When one of the objects is set to a value larger than the RTT application can support the set succeeds, but the resultant value is set to the applications maximum value. The setting management station must reread this object to verify the actual value.</p> <p> <b>Note</b> This table is not applicable to http and jitter probes.</p> |
| rttMonCtrlOperTable         | Table that contains the Operational values for the probe, and the conceptual RTT control row. This table augments the rttMonCtrlAdminTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rttMonLatestRttOperTable    | Table that contains the status of latest RTT operation. When the RttMonRttType is 'pathEcho', operations performed to the hops along the path will be recorded in this table. This table augments the RTT definition table, rttMonCtrlAdminTable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| rttMonLatestHTTPOperTable   | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| rttMonLatestJitterOperTable | Table that contains the status of the latest Jitter operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Table 3-119** *CISCO-RTTMON-MIB Tables and Descriptions (continued)*

| Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonReactTriggerAdminTable | <p>Table that contains the list of conceptual RTT control rows that start to collect data when a reaction condition is violated and when rttMonReactAdminActionType is set to one of the following:</p> <ul style="list-style-type: none"> <li>• triggerOnly</li> <li>• trapAndTrigger</li> <li>• nmvtAndTrigger</li> <li>• trapNmvtAndTrigger or when a reaction condition is violated and when any of the row in rttMonReactTable has rttMonReactActionType as one of the following:</li> <li>• triggerOnly</li> <li>• trapAndTrigger</li> </ul> <p>The goal of this table is to define one or more additional conceptual RTT control rows that become active and start to collect additional history and statistics (depending on the rows configuration values), when a problem has been detected. If the conceptual RTT control row is undefined, and a trigger occurs, no action takes place. If the conceptual RTT control row is scheduled to start at a later time, triggering that row has no effect. If the conceptual RTT control row is currently active, triggering that row has no effect on that row, but the rttMonReactTriggerOperState object transitions to 'active'. An entry in this table can only be triggered when it is not currently in a triggered state. The object rttMonReactTriggerOperState reflects the state of each entry in this table.</p> |
| rttMonReactTriggerOperTable  | Table of which contains the operational state of each entry in the rttMonReactTriggerAdminTable. This table augments the RTT trigger definition table, rttMonReactTriggerAdminTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| rttMonEchoPathAdminTable     | Table to store the hop addresses in a Loose Source Routing path. Response times are computed along the specified path using ping. This maximum table size is limited by the size of the maximum number of hop addresses that can fit in an IP header, which is eight. The object rttMonEchoPathAdminEntry reflects this tables maximum number of entries. This table is coupled with rttMonCtrlAdminStatus.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| rttMonGrpScheduleAdminTable  | Not supported                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Table 3-119 CISCO-RTTMON-MIB Tables and Descriptions (continued)**

| Name                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMplsVpnMonCtrlTable     | Table of Auto SAA Layer 3 MPLS VPN definitions. The Auto SAA Layer 3 MPLS VPN administration control is in multiple tables. This first table, is used to create a conceptual Auto SAA Layer 3 MPLS VPN control row. The following tables contain objects which used in type specific configurations, scheduling and reaction configurations. All of these tables create the same conceptual control row as this table using this table index as their own index. In order for a row in this table to become active, the following objects must be defined. rttMplsVpnMonCtrlRttType, rttMplsVpnMonCtrlVrfName, and rttMplsVpnMonSchedulePeriod. |
| rttMplsVpnMonTypeTable     | Table that contains Auto SAA Layer 3 MPLS VPN configured RTT operation specific definitions. Table is controlled via the rttMplsVpnMonCtrlTable. Entries in this table are created via the rttMplsVpnMonCtrlStatus object.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| rttMplsVpnMonScheduleTable | Table of Auto SAA Layer 3 MPLS VPN monitoring scheduling specific definitions. This table is controlled via the rttMplsVpnMonCtrlTable. Entries in this table are created via the rttMplsVpnMonCtrlStatus object.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| rttMplsVpnMonReactTable    | Table of Auto SAA Layer 3 MPLS VPN Notification definitions. This table augments the rttMplsVpnMonCtrlTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| rttMonReactTable           | Table that contains the reaction configurations. Each conceptual row in rttMonReactTable corresponds to a reaction configured for the probe defined in rttMonCtrlAdminTable. For each reaction configured for a probe there is an entry in the table. Each Probe can have multiple reactions and hence there can be multiple rows for a particular probe. This table is coupled with rttMonCtrlAdminTable.                                                                                                                                                                                                                                      |

**Table 3-119** CISCO-RTTMON-MIB Tables and Descriptions (continued)

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonStatsCaptureTable | <p>The statistics capture database. The statistics capture table contains summarized information of the results for a conceptual RTT control row. A rolling accumulated history of this information is maintained in a series of hourly 'group(s)'. Each 'group' contains a series of 'path(s)', each 'path' contains a series of 'hop(s)', each 'hop' contains a series of 'statistics distribution bucket(s)'. Each conceptual statistics row has a current hourly group, into which RTT results are accumulated. At the end of each hour a new hourly group is created which then becomes current. The counters and accumulators in the new group are initialized to zero. The previous group is kept in the table until the table contains rttMonStatisticsAdminNumHourGroups groups for the conceptual statistics row; at this point, the oldest group is discarded and is replaced by the newly created one. The hourly group is uniquely identified by the rttMonStatsCaptureStartTimeIndex object. If the activity for a conceptual RTT control row ceases because the rttMonCtrlOperState object transitions to 'inactive', the corresponding current hourly group in this table is 'frozen', and a new hourly group is created when activity is resumed. If the activity for a conceptual RTT control row ceases because the rttMonCtrlOperState object transitions to 'pending' this whole table will be cleared and reset to its initial state. When the RttMonRttType is 'pathEcho', the path exploration RTT request statistics will not be accumulated in this table.</p> <div>  <p><b>Note</b> When the RttMonRttType is 'pathEcho', a source to target rttMonStatsCapturePathIndex path will be created for each rttMonStatsCaptureStartTimeIndex to hold all errors that occur when a specific path had not been found or connection has not be setup.</p> </div> <p>Using this rttMonStatsCaptureTable, a managing application can retrieve summarized data from accurately measured periods, which is synchronized across multiple conceptual RTT control rows. With the new hourly group creation being performed on a 60-minute period, the managing station has plenty of time to collect the data, and need not be concerned with the vagaries of network delays and lost PDU's when trying to get matching data. Also, the managing station can spread the data gathering over a longer period, which removes the need for a flood of get requests in a short period which otherwise would occur.</p> |

**Table 3-119 CISCO-RTTMON-MIB Tables and Descriptions (continued)**

| Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rttMonStatsCollectTable      | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| rttMonStatsTotalsTable       | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| rttMonHTTPStatsTable         | Not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| rttMonJitterStatsTable       | Jitter statistics collection database. The Jitter statistics table contains summarized information of the results for a conceptual RTT control row. A rolling accumulated history of this information is maintained in a series of hourly 'group(s)'. The operation of this table is same as that of rttMonStatsCaptureTable, except that this table stores 2 hours of data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| rttMonLpdGrpStatsTable       | <p>Auto SAA Layer 3 MPLS VPN LPD Group Database.</p> <p>The LPD Group statistics table contains summarized performance statistics for the LPD group.</p> <p>LPD Group—Set of 'single probes' which are subset of the 'lspGroup' probe traversing set of paths between two PE end points are grouped together and called as the <i>LPD group</i>. The LPD group is uniquely referenced by the LPD Group ID.</p> <p>A rolling accumulated history of this information is maintained in a series of hourly 'group(s)'.</p> <p>Each conceptual statistics row has a current hourly group, into which RTT results are accumulated. At the end of each hour a new hourly group is created which then becomes current. The counters and accumulators in the new group are initialized to zero. The previous group(s) is kept in the table until the table contains rttMplsVpnMonTypeLpdStatHours groups for the conceptual statistics row; at this point, the oldest group is discarded and is replaced by the newly created one. The hourly group is uniquely identified by the rttMonLpdGrpStatsStartTimeIndex object.</p> |
| rttMonHistoryCollectionTable | History collection database. The history table contains a point by point rolling history of the most recent RTT operations for each conceptual RTT control row. The rolling history of this information is maintained in a series of 'live(s)', each containing a series of 'bucket(s)', each 'bucket' contains a series of 'sample(s)'. Each conceptual history row can have lives. A life is defined by the rttMonCtrlOperRttLife object. A new life is created when rttMonCtrlOperState transitions 'active'. When the number of lives become greater than rttMonHistoryAdminNumLives the oldest life is discarded and a new life is created by incrementing the index. The path exploration RTT operation is kept as an entry in this table.                                                                                                                                                                                                                                                                                                                                                                      |

## MIB Constraints

Table 3-120 lists the constraints on objects in the CISCO-RTTMON-MIB.

**Table 3-120 CISCO-RTTMON-MIB Constraints**

| MIB Object                         | Notes                                                       |
|------------------------------------|-------------------------------------------------------------|
| <b>rttMonApplPreConfigedTable</b>  | Not supported—No back end IP SLA.                           |
| <b>rttMonApplAuthTable</b>         | Not supported—No back end IP SLA.                           |
| <b>rttMonFileIOAdminTable</b>      | Not supported—No back end IP SLA.                           |
| <b>rttMonScriptAdminTable</b>      | Not supported—No back end IP SLA.                           |
| <b>rttMonReactAdminTable</b>       | Not supported. This table is replaced by rtt-MonReactTable. |
| <b>rttMonLatestHTTPOperTable</b>   | Not supported—IP SLA in XR does not support HTTP probes.    |
| <b>rttMonGrpScheduleAdminTable</b> | Not supported—No back end IP SLA.                           |
| <b>rttMonStatsCollectTable</b>     | Not supported—No back end IP SLA.                           |
| <b>rttMonStatsTotalsTable</b>      | Not supported—No back end IP SLA.                           |
| <b>rttMonHTTPStatsTable</b>        | Not supported—IP SLA in XR does not support HTTP probes.    |
| rttMonGrpScheduleAdminProbes       | Not supported                                               |
| rttMonGrpScheduleAdminPeriod       | Not supported                                               |
| rttMonGrpScheduleAdminFrequency    | Not supported                                               |
| rttMonGrpScheduleAdminLife         | Not supported                                               |
| rttMonGrpScheduleAdminAgeout       | Not supported                                               |
| rttMonGrpScheduleAdminStatus       | Not supported                                               |
| rttMonGrpScheduleAdminStartTime    | Not supported                                               |
| rttMonGrpScheduleAdminAdd          | Not supported                                               |
| rttMonGrpScheduleAdminDelete       | Not supported                                               |
| rttMonGrpScheduleAdminReset        | Not supported                                               |
| rttMonApplAuthKeyChain             | Not supported                                               |
| rttMonApplAuthKeyString1           | Not supported                                               |
| rttMonApplAuthKeyString2           | Not supported                                               |
| rttMonApplAuthKeyString3           | Not supported                                               |
| rttMonApplAuthKeyString4           | Not supported                                               |
| rttMonApplAuthKeyString5           | Not supported                                               |
| rttMonApplAuthStatus               | Not supported                                               |
| rttMonGrpScheduleAdminFreqMax      | Not supported                                               |
| rttMonGrpScheduleAdminFreqMin      | Not supported                                               |

# CISCO-SELECTIVE-VRF-DOWNLOAD-MIB

The CISCO-SELECTIVE-VRF-DOWNLOAD-MIB module defines objects describing selective VRF download. The selective VRF download feature makes a best effort to download only those prefixes and labels to a physical entity required to forward traffic through the physical entity. The feature accomplishes this by characterizing roles for physical entities based on their configuration.

For more information about the commands related to the

CISCO-SELECTIVE-VRF-DOWNLOAD-MIB, see

[http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k\\_r4.2/system\\_management/command\\_reference/b\\_sysman\\_cr42asr9k\\_chapter\\_01101.html#wp2072088589](http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k_r4.2/system_management/command_reference/b_sysman_cr42asr9k_chapter_01101.html#wp2072088589)

## MIB Tables

Table 3-121 lists the table defined under CISCO-SELECTIVE-VRF-DOWNLOAD-MIB:

**Table 3-121 CISCO-SELECTIVE-VRF-DOWNLOAD-MIB Tables**

| MIB Table            | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| csvdStateTable       | This table lists the state relating to the selective VRF download feature for each physical entity capable of forwarding packets. This table has an expansion dependent relationship on the entPhysicalTable, containing zero or more rows each row in the entPhysicalEntity. If the physical entity is capable of forwarding packets, it contains a row for each address family it supports. |
| csvdRoleHistoryTable | This table lists the role change history per address family (ipv4 and ipv6) for each physical entity capable of forwarding packets. This table has an expansion dependant relationship on csvdStateTable, containing zero or more rows for each row in csvdStateTable.                                                                                                                        |
| csvdVrfTable         | This table lists VRF tables selectively downloaded to each physical entity capable of forwarding packets. This table has an expansion dependent relationship on the csvdStateTable, containing zero or more rows for each address family supported by each physical entity capable of forwarding packets.                                                                                     |

## MIB Constraints

Table 3-122 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-SELECTIVE-VRF-DOWNLOAD-MIB.

**Table 3-122** *CISCO-SELECTIVE-VRF-DOWNLOAD-MIB Constraints*

| MIB Object                             | Notes                                                 |
|----------------------------------------|-------------------------------------------------------|
| csvdEntityRoleChangeNotificationEnable | Read-only. By default, this object is set to "False". |
| csvdRoleHistorySize                    | Read-only. By default, this object is set to 100.     |

**Note**

All objects are defined as read-only for the CISCO-SELECTIVE-VRF-DOWNLOAD-MIB.

## CISCO-SONET-MIB

The CISCO-SONET-MIB contains objects to manage SONET/SDH interfaces on the router. This MIB is an extension to the standard SONET-MIB (RFC 2558) and has objects that provide additional SONET-related information not found in the SONET-MIB.

**Note**

CISCO-SONET-MIB supports SONET traps that are seen when the linestatus, sectionstatus, pathstatus changes, and Notifications are enabled.

## MIB Tables

[Table 3-123](#) lists the table defined under CISCO-SONET-MIB:

**Table 3-123** *CISCO-SONET-MIB Tables*

| MIB Table        | Description                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| csConfigTable    | Displays the objects to configure the sonet lines.                                                                                                                                                                                                                                                                      |
| csVTConfigTable  | Displays the objects to configure the VT/VC (Virtual Tributary / Virtual Container) related properties of SONET/SDH lines.                                                                                                                                                                                              |
| csApsConfigTable | Displays the objects to configure APS (Automatic Protection Switching) in a SONET Line. APS is the functionality to configure a pair of SONET lines for redundancy so that the hardware automatically switches the active line from working line to the backup line, within 60milliseconds, when the active line fails. |
| cssTotalTable    | Displays the cumulative sum of the various CSS total statistics for the 24 hour period preceding the current interval.                                                                                                                                                                                                  |
| cssTraceTable    | Displays objects for tracing the sonet section.                                                                                                                                                                                                                                                                         |

| MIB Table            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cslTotalTable        | Displays the cumulative sum of the various CSL total statistics for the 24 hour period preceding the current interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| cslFarEndTotalTable  | Displays the cumulative sum of the various SCL far end total statistics for the 24 hour period preceding the current interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| cspTotalTable        | Displays the cumulative sum of the various CSP total statistics for the 24 hour period preceding the current interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| cspFarEndTotalTable  | Displays the cumulative sum of the various CSP far end total statistics for the 24 hour period preceding the current interval. Far End is the remote end of the line.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| cspTraceTable        | Displays the objects for tracing the sonet path.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| csStatsTable         | Specifies the number of times a line encounters: <ul style="list-style-type: none"> <li>• Loss of signal(LOS)</li> <li>• Loss of frame(LOF)</li> <li>• Alarm indication signals(AISs)</li> <li>• Remote failure indications(RFIs).</li> </ul>                                                                                                                                                                                                                                                                                                                                         |
| cspConfigTable       | Displays the Cisco extension to the SONET Path current table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| csAu4Tug3ConfigTable | Displays the objects that configure the VC( Virtual Container) related properties of a TUG-3 within a AU-4 paths. This multiplexing structure is created using this table:<br>STM-1/AU-4/TUG-3/TU-3/DS3<br>STM-1/AU-4/TUG-3/TU-3/E3<br>STM-1/AU-4/TUG-3/TUG-2/TU-11/DS1<br>STM-1/AU-4/TUG-3/TUG-2/TU-12/E1. Three entries are created in this table for a given AU-4 path when cspSonetPathPayload object is set to one of these: <ul style="list-style-type: none"> <li>• vt15vc11(4)</li> <li>• vt2vc12(5)</li> <li>• ds3(3)</li> <li>• e3(8)</li> <li>• vtStructured(9)</li> </ul> |

## MIB Constraints

Table 3-124 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-SONET-MIB.

**Table 3-124 CISCO-SONET-MIB Constraints**

| MIB Object                 | Notes         |
|----------------------------|---------------|
| csConfigLoopbackType       | Not supported |
| csConfigXmtClockSource     | Not supported |
| csConfigFrameScramble      | Not supported |
| csConfigRDIPTYPE           | Not supported |
| csConfigRDIVType           | Not supported |
| cspSonetPathPayload        | Not supported |
| csTributaryType            | Not supported |
| csTributaryMappingType     | Not supported |
| csTributaryFramingType     | Not supported |
| csSignallingTransportMode  | Not supported |
| csTributaryGroupingType    | Not supported |
| csAu4Tug3Payload           | Not supported |
| cspTributaryMappingType    | Not supported |
| cspSignallingTransportMode | Not supported |
| cspTributaryGroupingType   | Not supported |
| csApsProtectionIndex       | Not supported |
| csApsEnable                | Not supported |
| csApsArchMode              | Not supported |
| csApsSigFaultBER           | Not supported |
| csApsSigDegradeBER         | Not supported |
| csApsWaitToRestore         | Not supported |
| csApsDirection             | Not supported |
| csApsRevertive             | Not supported |
| csApsChannelProtocol       | Not supported |

## CISCO-SUBSCRIBER-SESSION-MIB

This MIB defines objects describing subscriber sessions, or more specifically, subscriber sessions terminated by a RAS. A subscriber session consists of the traffic between a CPE and a NAS.

### MIB Tables

[Table 3-125](#) lists the table defined under CISCO-SUBSCRIBER-SESSION-MIB:

**Table 3-125 CISCO-SUBSCRIBER-SESSION-MIB Tables**

| MIB Table                            | Description                                                                                                                         |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>csubAggStatsTable</b>             |                                                                                                                                     |
| csubAggStatsUpSessions               | Current number of active sessions.                                                                                                  |
| csubAggStatsHighUpSessions           | Highest number of concurrently active sessions.                                                                                     |
| csubAggStatsDiscontinuityTime        | Time when the last event occurred where an event could be missed to invalidate the counters supported.                              |
| <b>csubAggThreshTable</b>            |                                                                                                                                     |
| csubSessionRisingThresh              | Threshold for triggering csubSessionRisingNotif when session count rises above                                                      |
| csubSessionFallingThresh             | Threshold for triggering csubSessionFallingNotif when session count drops below                                                     |
| csubSessionDeltaPercentFallingThresh | Threshold for triggering csubSessionDeltaPercentLossNotif when session count drops by the percentage over the measurement interval. |
| csubSessionThreshEvalInterval        | Interval of time for the periodic sampling of the session values.                                                                   |

## CISCO-SYSLOG-MIB

The CISCO-SYSLOG-MIB contains objects to manage all the system log messages generated by the Cisco IOS XR Software. The MIB provides a way to access the syslog messages through SNMP. All Cisco IOS XR syslog messages contain the message name and its severity, message text, the name of the entity generating the message, and an optional time stamp. The MIB also contains a history of syslog messages and counts related to syslog messages.


**Note**

You can configure the Cisco ASR 9000 Series router to send syslog messages to a syslog server.


**Note**

The MIB does not keep track of messages generated from debug commands entered through the command-line interface (CLI).

Table 3-126 lists the tables associated with this MIB.

**Table 3-126 CISCO-SYSLOG-MIB Tables and Descriptions**

| Name                  | Description                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| clogHistoryTable      | Table of syslog messages generated by this device. All 'interesting' syslog messages (that is, severity <= clogMaxSeverity) are entered into this table.                                                 |
| clogServerConfigTable | This table contains entries that allow application to configure syslog servers for the system. The maximum number of entries that can be created for this table is limited by the object clogMaxServers. |

## MIB Constraints

Table 3-127 lists the constraints on objects in the CISCO-SYSLOG-MIB.

**Table 3-127 CISCO-SYSLOG-MIB Constraints**

| MIB Object         | Notes         |
|--------------------|---------------|
| clogServerMaxTable | Not supported |

## CISCO-SYSTEM-MIB

The CISCO-SYSTEM-MIB provides a standard set of basic system information. This MIB module contains Cisco-defined extensions to the systemGroup. This MIB has no tables.

## MIB Constraints

Table 3-128 lists the constraints on objects in the CISCO-SYSTEM-MIB.

**Table 3-128 CISCO-SYSTEM-MIB Constraints**

| MIB Object             | Notes         |
|------------------------|---------------|
| csyNotificationsEnable | Not supported |

## CISCO-TAP2-MIB

The CISCO-TAP2-MIB manages Cisco's intercept feature. This MIB replaces CISCO-TAP-MIB. This MIB defines a generic stream table that contains fields common to all intercept types. Specific intercept filters are defined in extension MIBs. They are CISCO-IP-TAP-MIB for IP intercepts, CISCO-802-TAP-MIB for IEEE 802 intercepts and CISCO-USER-CONNECTION-TAP-MIB for RADIUS-based user connection intercepts.

## MIB Objects

Table 3-129 lists the tables associated with this MIB.

**Table 3-129 CISCO-TAP2-MIB Tables and Descriptions**

| Name                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cTap2MediationTable | This table lists the Mediation Devices with which the intercepting device communicates. These may be on the same or different Mediation Devices. This table is written by the Mediation Device, and is always volatile. This is because intercepts may disappear during a restart of the intercepting equipment. Entries are added to this table via cTap2MediationStatus in accordance with the RowStatus convention.                                                                                                                                                                                                                                                                             |
| cTap2StreamTable    | This table lists the traffic streams to be intercepted. The same data stream may be required by multiple taps, and one might assume that often the intercepted stream is a small subset of the traffic that could be intercepted. The Table consists of generic fields that are independent of the type of intercept. It contains type of the specific filter which is defined in an extension MIB and counters to account for packets intercepted or dropped by the attached filter specification. Note that the Mediation Device must make sure there is only one type of specific filter created with the same indices as that of a row in this table, otherwise the later creations will fail. |
| cTap2DebugTable     | This table contains Lawful Intercept debug messages generated by the implementing device. This table is used by ciscoTap2MediationDebug and ciscoTap2StreamDebug notifications. An entry in this table contains a debug message which is regarding either a Mediation Device or a intercept stream created by a Mediation Device.                                                                                                                                                                                                                                                                                                                                                                  |
| cTap2DebugUserTable | This table lists information of all the users configured in the system who are given permission by different Mediation Devices to access Lawful Intercept CLIs. This table will have dependancy on cTap2MediationTable. When entry in cTap2MediationTable is deleted or moved to 'notInService', entries corresponding cTap2MediationContentId in this table will be deleted.                                                                                                                                                                                                                                                                                                                      |

## MIB Constraints

Table 3-130 lists the constraints that the Cisco ASR 9000 Series router places on objects in the CISCO-TAP2-MIB.

**Table 3-130 CISCO-TAP2-MIB Constraints**

| MIB Object                       | Notes                      |
|----------------------------------|----------------------------|
| cTap2MediationDestAddressType    | Read-create                |
| cTap2MediationDestAddress        | Read-create                |
| cTap2mediationDestPort           | Read-create                |
| cTap2MediationSrcInterface       | Read-create                |
| cTap2MediationRtcpPort           | Not Supported. Read-only   |
| cTap2MediationDscp               | Read-create                |
| cTap2MediationDataType           | Not Supported. Read-create |
| cTap2MediationRetransmitType     | Not Supported. Read-create |
| cTap2MediationTimeout            | Read-create                |
| cTap2MediationTransport          | Read-create                |
| cTap2MediationNotificationEnable | Read-create                |
| cTap2MediationStatus             | Read-create                |
| cTap2MediationNewIndex           | Read-only                  |
| cTap2MediationCapabilities       | Read-only                  |
| cTap2StreamType                  | Read-create                |
| cTap2StreamInterceptEnable       | Read-create                |
| cTap2StreamInterceptedPackets    | Read-only                  |
| cTap2StreamInterceptDrops        | Read-only                  |
| cTap2StreamStatus                | Read-create                |
| cTap2DebugAge                    | Read-only                  |
| cTap2DebugMaxEntries             | Read-only                  |
| cTap2DebugMediationId            | Read-only                  |
| cTap2DebugStreamId               | Read-only                  |
| cTap2DebugMessage                | Read-only                  |
| cTap2DebugStatus                 | Read-write                 |

## CISCO-TCP-MIB

The CISCO-TCP-MIB is an extension to the IETF MIB module for managing TCP implementations.

[Table 3-131](#) lists the tables associated with this MIB.

**Table 3-131 CISCO-TCP-MIB Tables and Descriptions**

| Name              | Description                                           |
|-------------------|-------------------------------------------------------|
| ciscoTcpConnTable | Table containing TCP connection-specific information. |

# CISCO-VPDN-MGMT-MIB

This MIB is to support the Virtual Private Dialup Network (VPDN) feature. VPDN handles the forwarding of PPP links from an Internet Provider (ISP) to a Home Gateway. The VPDN MIB provides the operational information on Cisco's VPDN tunnelling implementation. The following entities are managed:

1. Global VPDN information
2. VPDN tunnel information
3. VPDN tunnel's user information
4. Failure history per user

## MIB Objects

Table 3-132 lists the tables associated with this MIB.

**Table 3-132 CISCO-VPDN-MGMT-MIB Tables and Descriptions**

| Name                                  | Description                         |
|---------------------------------------|-------------------------------------|
| <b>cvpdnSystemEntryTable</b>          |                                     |
| cvpdnSystemTunnelTotal.2 <sup>1</sup> | Indicates total number of tunnels   |
| cvpdnSystemSessionTotal.2             | Indicates total number of sessions. |

1. .2 indicates tunnel type and VPDN mib supports l2 tunnels only.

# CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB

The CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB lists VLAN-id and ifIndex information for routed VLAN interfaces. The MIB contains entries for all sub-interfaces that have a basic 802.1Q VLAN Id configured, but excludes any sub-interfaces configured with a more complex encapsulation (that is double tagged, 802.1ad tagged, VLAN ranges).

Table 3-133 lists the tables associated with this MIB.

**Table 3-133 CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB Tables and Descriptions**

| Name                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>cviVlanInterfaceIndexTable</b> | cviVlanInterfaceIndexTable provides a way to translate a VLAN-id in to an ifIndex, so that the routed VLAN interface routing configuration can be obtained from interface entry in ipRouteTable. Note that some routers can have interfaces to multiple VLAN management domains, and therefore can have multiple routed VLAN interfaces which connect to different VLANs having the same VLAN-id. Thus, it is possible to have multiple rows in this table for the same VLAN-id. The cviVlanInterfaceIndexTable also provides a way to find the VLAN-id from an ifTable VLAN ifIndex. |

# DISMAN-EXPRESSION-MIB

The DISMAN-EXPRESSION-MIB module is used for defining expressions of MIB objects for management purposes.

## MIB Tables

[Table 3-134](#) lists the tables in DISMAN-EXPRESSION-MIB:

**Table 3-134** *DISMAN-EXPRESSION-MIB Tables and Descriptions*

| Name               | Description                                                                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expExpressionTable | A table of expression definitions.                                                                                                                                                       |
| expErrorTable      | A table of expression errors.                                                                                                                                                            |
| expObjectTable     | A table of object definitions for each expExpression. Wildcarding instance IDs: It is legal to omit all or part of the instance portion for some or all of the objects in an expression. |
| expValueTable      | A table of values from evaluated expressions.                                                                                                                                            |

# DOT3-OAM-MIB

This MIB module manages the new Ethernet OAM features introduced by the Ethernet in the First Mile taskforce (IEEE 802.3ah). The functionality presented here is based on IEEE 802.3ah [802.3ah], released in October, 2004. [802.3ah] was prepared as an addendum to the standing version of IEEE 802.3 [802.3-2002]. Since then, [802.3ah] has been merged into the base IEEE 802.3 specification in [802.3-2005]. In particular, this MIB focuses on the new OAM functions introduced in Clause 57 of [802.3ah]. The OAM functionality of Clause 57 is controlled by new management attributes introduced in Clause 30 of [802.3ah]. The OAM functions are not specific to any particular Ethernet physical layer, and can be generically applied to any Ethernet interface of [802.3-2002]. An Ethernet OAM protocol data unit is a valid Ethernet frame with a destination MAC address equal to the reserved MAC address for Slow Protocols (See 43B of [802.3ah]), a lengthOrType field equal to the reserved type for Slow Protocols, and a Slow Protocols subtype equal to that of the subtype reserved for Ethernet OAM.

## MIB Tables

[Table 3-135](#) lists the tables in DOT3-OAM-MIB:

**Table 3-135** *DOT3-OAM-MIB Tables and Descriptions*

| Name         | Description                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dot3OamTable | This table contains the primary controls and status for the OAM capabilities of an Ethernet-like interface. There will be one row in this table for each Ethernet-like interface in the system that supports the OAM functions defined in [802.3ah]. |

**Table 3-135** DOT3-OAM-MIB Tables and Descriptions (continued)

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dot3OamPeerTable        | This table contains information about the OAM peer for a particular Ethernet-like interface. OAM entities communicate with a single OAM peer entity on Ethernet links on which OA is enabled and operating properly. There is one entry in this table for each entry in the dot3OamTable for which information on the peer OAM entity is available.                |
| dot3OamLoopbackTable    | This table contains controls for the loopback state of the local link as well as indicates the status of the loopback function. There is one entry in this table for each entry in dot3OamTable that supports loopback functionality (where dot3OamFunctionsSupported includes the loopbackSupport bit set).                                                       |
| dot3OamStatsTable       | This table contains statistics for the OAM function on a particular Ethernet-like interface. There is an entry in the table for every entry in the dot3OamTable. The counters in this table are defined as 32-bit entries to match the counter size as defined in [802.3ah]. Given that the OA protocol is a slow protocol, the counters increment at a slow rate. |
| dot3OamEventConfigTable | Ethernet OAM includes the ability to generate and receive Event Notification OAMPDUs to indicate various link problems. This table contains the mechanisms to enable Event Notifications and configure the thresholds to generate the standard Ethernet OAM events.                                                                                                |
| dot3OamEventLogTable    | This table records a history of the events that have occurred at the Ethernet OAM level.                                                                                                                                                                                                                                                                           |

## MIB Constraints

Table 3-136 lists the constraints that the Cisco ASR 9000 Series router places on objects in the DOT3-OAM-MIB.

**Table 3-136** DOT3-OAM-MIB Constraints

| MIB Object                | Notes     |
|---------------------------|-----------|
| dot3OamTable              |           |
| dot3OamEntry              | Read-only |
| dot3OamAdminState         | Read-only |
| dot3OamOperStatus         | Read-only |
| dot3OamMode               | Read-only |
| dot3OamMaxOamPduSize      | Read-only |
| dot3OamConfigRevision     | Read-only |
| dot3OamFunctionsSupported | Read-only |
| dot3OamPeerTable          |           |
| dot3OamPeerEntry          | Read-only |
| dot3OamPeerMacAddress     | Read-only |

**Table 3-136 DOT3-OAM-MIB Constraints (continued)**

| <b>MIB Object</b>                   | <b>Notes</b> |
|-------------------------------------|--------------|
| dot3OamPeerVendorOui                | Read-only    |
| dot3OamPeerVendorInfo               | Read-only    |
| dot3OamPeerMode                     | Read-only    |
| dot3OamPeerMaxOamPduSize            | Read-only    |
| dot3OamPeerConfigRevision           | Read-only    |
| dot3OamPeerFunctionsSupported       | Read-only    |
| dot3OamLoopbackTable                |              |
| dot3OamLoopbackEntry                | Read-only    |
| dot3OamLoopbackStatus               | Read-only    |
| dot3OamLoopbackIgnoreRx             | Read-only    |
| dot3OamStatsTable                   |              |
| dot3OamStatsEntry                   | Read-only    |
| dot3OamInformationTx                | Read-only    |
| dot3OamInformationRx                | Read-only    |
| dot3OamUniqueEventNotificationTx    | Read-only    |
| dot3OamUniqueEventNotificationRx    | Read-only    |
| dot3OamDuplicateEventNotificationTx | Read-only    |
| dot3OamDuplicateEventNotificationRx | Read-only    |
| dot3OamLoopbackControlTx            | Read-only    |
| dot3OamLoopbackControlRx            | Read-only    |
| dot3OamVariableRequestTx            | Read-only    |
| dot3OamVariableRequestRx            | Read-only    |
| dot3OamVariableResponseTx           | Read-only    |
| dot3OamVariableResponseRx           | Read-only    |
| dot3OamOrgSpecificTx                | Read-only    |
| dot3OamOrgSpecificRx                | Read-only    |
| dot3OamUnsupportedCodesTx           | Read-only    |
| dot3OamUnsupportedCodesRx           | Read-only    |
| dot3OamFramesLostDueToOam           | Read-only    |
| dot3OamEventConfigTable             |              |
| dot3OamEventConfigEntry             | Read-only    |
| dot3OamErrSymPeriodWindowHi         | Read-only    |
| dot3OamErrSymPeriodWindowLo         | Read-only    |
| dot3OamErrSymPeriodThresholdHi      | Read-only    |
| dot3OamErrSymPeriodThresholdLo      | Read-only    |
| dot3OamErrSymPeriodEvNotifEnable    | Read-only    |

**Table 3-136 DOT3-OAM-MIB Constraints (continued)**

| MIB Object                          | Notes     |
|-------------------------------------|-----------|
| dot3OamErrFramePeriodWindow         | Read-only |
| dot3OamErrFramePeriodThreshold      | Read-only |
| dot3OamErrFramePeriodEvNotifEnable  | Read-only |
| dot3OamErrFrameWindow               | Read-only |
| dot3OamErrFrameThreshold            | Read-only |
| dot3OamErrFrameEvNotifEnable        | Read-only |
| dot3OamErrFrameSecsSummaryWindow    | Read-only |
| dot3OamErrFrameSecsSummaryThreshold | Read-only |
| dot3OamErrFrameSecsEvNotifEnable    | Read-only |
| dot3OamDyingGaspEnable              | Read-only |
| dot3OamCriticalEventEnable          | Read-only |
| dot3OamEventLogTable                |           |
| dot3OamEventLogEntry                | Read-only |
| dot3OamEventLogIndex                | Read-only |
| dot3OamEventLogTimestamp            | Read-only |
| dot3OamEventLogOui                  | Read-only |
| dot3OamEventLogType                 | Read-only |
| dot3OamEventLogLocation             | Read-only |
| dot3OamEventLogWindowHi             | Read-only |
| dot3OamEventLogWindowLo             | Read-only |
| dot3OamEventLogThresholdHi          | Read-only |
| dot3OamEventLogThresholdLo          | Read-only |
| dot3OamEventLogValue                | Read-only |
| dot3OamEventLogRunningTotal         | Read-only |
| dot3OamEventLogEventTotal           | Read-only |

## DS1-MIB (RFC 2495)

The DS1-MIB(RFC-2495) contains a description of DS1, E1, DS2, and E2 interfaces objects.

## MIB Tables

[Table 3-137](#) lists the tables in DS1-MIB:

**Table 3-137 DS1-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dsx1ConfigTable         | DS1 Configuration table.                                                                                                                                                                                                                                                                                                                                            |
| dsx1CurrentTable        | DS1 current table contains various statistics being collected for the current 15-minute interval.                                                                                                                                                                                                                                                                   |
| dsx1IntervalTable       | DS1 Interval Table contains various statistics collected by each DS1 Interface over the previous 24-hours of operation. The past 24 hours are broken into 96 completed 15-minute intervals. Each row in this table represents one such interval (identified by dsx1IntervalNumber) for one specific instance (identified by dsx1IntervalIndex).                     |
| dsx1TotalTable          | DS1 Total Table contains the cumulative sum of the various statistics for the 24-hour period preceding the current interval.                                                                                                                                                                                                                                        |
| dsx1ChanMappingTable    | DS1 Channel Mapping table. This table maps a DS1 channel number on a particular DS3 into an ifIndex. In the presence of DS2s, this table can be used to map a DS2 channel number on a DS3 into an ifIndex, or used to map a DS1 channel number on a DS2 onto an ifIndex.                                                                                            |
| dsx1FarEndCurrentTable  | DS1 Far End Current table contains various statistics being collected for the current 15-minute interval. The statistics are collected from the far end messages on the Facilities Data Link. The definitions are the same as described for the near-end information.                                                                                               |
| dsx1FarEndIntervalTable | DS1 Far End Interval Table contains various statistics collected by each DS1 interface over the previous 24-hours of operation. The past 24 hours are broken into 96 completed 15-minute intervals. Each row in this table represents one such interval (identified by dsx1FarEndIntervalNumber) for one specific instance (identified by dsx1FarEndIntervalIndex). |
| dsx1FarEndTotalTable    | DS1 Far End Total Table contains the cumulative sum of the various statistics for the 24-hour period preceding the current interval.                                                                                                                                                                                                                                |

**Table 3-137 DS1-MIB Tables and Descriptions (continued)**

| Name          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dsx1FracTable | <p>Table is deprecated, use ifStackTable. The table was mandatory for systems dividing a DS1 into channels containing different data streams that are of local interest. Systems which are indifferent to data content, such as CSUs, need not implement it. The DS1 fractional table identifies which DS1 channels associated with a CSU are being used to support a logical interface, that is, an entry in the interfaces table from the Internet-standard MIB. Consider an application managing a North American ISDN Primary Rate link whose division is a 384 kbit/s H1 _B_ Channel for Video, a second H1 for data to a primary routing peer, and 12 64 kbit/s H0 _B_ Channels. Consider that some subset of the H0 channels are used for voice and the remainder are available for dynamic data calls. There is a total of 14 interfaces multiplexed onto the DS1 interface. Six DS1 channels (for example, channels 1 to 6) are used for Video, six more (7 to 11 and 13) are used for data. The remaining 12 are in channels 12 and 14 to 24. If ifIndex 2 is of type DS1 and refers to the DS1 interface, and that the interfaces layered onto it are numbered 3 to 16.</p> <p>dsx3FracIfIndex.2.1 = 3<br/> dsx3FracIfIndex.2.2 = 3<br/> dsx3FracIfIndex.2.3 = 3<br/> dsx3FracIfIndex.2.4 = 3<br/> dsx3FracIfIndex.2.5 = 3<br/> dsx3FracIfIndex.2.6 = 3<br/> dsx3FracIfIndex.2.7 = 4<br/> dsx3FracIfIndex.2.8 = 4<br/> dsx3FracIfIndex.2.9 = 4<br/> dsx3FracIfIndex.2.10 = 4<br/> dsx3FracIfIndex.2.11 = 4<br/> dsx3FracIfIndex.2.12 = 5<br/> dsx3FracIfIndex.2.13 = 4<br/> dsx3FracIfIndex.2.14 = 6<br/> dsx3FracIfIndex.2.15 = 7<br/> dsx3FracIfIndex.2.16 = 8<br/> dsx3FracIfIndex.2.17 = 9<br/> dsx3FracIfIndex.2.18 = 10<br/> dsx3FracIfIndex.2.19 = 11<br/> dsx3FracIfIndex.2.20 = 12<br/> dsx3FracIfIndex.2.21 = 13<br/> dsx3FracIfIndex.2.22 = 14<br/> dsx3FracIfIndex.2.23 = 15<br/> dsx3FracIfIndex.2.24 = 16</p> <p>For North American (DS1) interfaces, there are 24 legal channels, numbered 1 through 24. For G.704 interfaces, there are 31 legal channels, numbered 1 through 31. The channels (1 to 31) correspond directly to the equivalently numbered time-slots.</p> |

## MIB Constraints

Table 3-138 lists the constraints that the Cisco ASR 9000 Series router places on objects in the DS1-MIB(RFC-2495).

**Table 3-138 DS1-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| dsx1LineType                   | Not supported |
| dsx1LineCoding                 | Not supported |
| dsx1SendCode                   | Not supported |
| dsx1CircuitIdentifier          | Not supported |
| dsx1LoopbackConfig             | Not supported |
| dsx1SignalMode                 | Not supported |
| dsx1TransmitClockSource        | Not supported |
| dsx1Fdl                        | Not supported |
| dsx1LineLength                 | Not supported |
| dsx1Channelization             | Not supported |
| dsx1LineStatusChangeTrapEnable | Not supported |
| dsx1LineType                   | Not supported |
| dsx1LineCoding                 | Not supported |
| dsx1SendCode                   | Not supported |
| dsx1SignalMode                 | Not supported |
| dsx1TransmitClockSource        | Not supported |
| dsx1Channelization             | Not supported |



### Note

The intervals in a dsx1IntervalTable are reset during an OIR operation whereas the SONET intervals are not reset.

## DS3-MIB

The DS3-MIB contains objects that describe DS3 and E3 interfaces objects.

## MIB Tables

Table 3-139 lists the tables in DS3-MIB:

**Table 3-139 DS3-MIB Tables**

| MIB Table                      | Description                                                                                                                                                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dsx3ConfigTable                | Provides the D3/S3 configuration information.                                                                                                                                                                                                                                                                              |
| dsx3CurrentTable               | Provides statistics collected for the current 15 minute interval.                                                                                                                                                                                                                                                          |
| dsx3IntervalTable <sup>1</sup> | Provides statistics collected by each DS3/E3 Interface over the previous 24 hours of operation. The previous 24 hours are broken into 96 completed 15 minute intervals. Each row in this table represents one such interval (identified by dsx3IntervalNumber) and a specific interface (identified by dsx3IntervalIndex). |
| dsx3TotalTable                 | Provides cumulative statistics logged for the 24 hour period preceding the current interval.                                                                                                                                                                                                                               |
| dsx3FarEndConfigTable          | Provides configuration information reported in the C-bits from the remote end.                                                                                                                                                                                                                                             |
| dsx3FarEndCurrentTable         | Provides statistics collected for the current 15 minute interval. The statistics are collected from the far end block error code within the C- bits.                                                                                                                                                                       |
| dsx3FarEndIntervalTable        | provides statistics collected by each DS3 interface over the previous 24 hours of operation. The past 24 hours are broken into 96 completed 15 minute intervals.                                                                                                                                                           |
| dsx3FarEndTotalTable           | Provides cumulative sum of the various statistics for the 24 hour period preceding the current interval.                                                                                                                                                                                                                   |
| dsx3FracTable                  | Deprecated, use ifStackTable instead.                                                                                                                                                                                                                                                                                      |

1. Interval information in dsx3IntervalTable resets after an OIR operation is performed.

## MIB Constraints

Table 3-140 lists the constraints that the Cisco ASR 9000 Series router places on objects in the DS3-MIB:

**Table 3-140 DS3-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| dsx3FarEndEquipCode            | Not supported |
| dsx3FarEndLocationIDCode       | Not supported |
| dsx3FarEndFrameIDCode          | Not supported |
| dsx3FarEndUnitCode             | Not supported |
| dsx3FarEndFacilityIDCode       | Not supported |
| dsx3LineStatusChangeTrapEnable | Not supported |

**Table 3-140 DS3-MIB Constraints (continued)**

| MIB Object              | Notes         |
|-------------------------|---------------|
| dsx3LineType            | Not supported |
| dsx3LineCoding          | Not supported |
| dsx3SendCode            | Not supported |
| dsx3CircuitIdentifier   | Not supported |
| dsx3LoopbackConfig      | Not supported |
| dsx3TransmitClockSource | Not supported |
| dsx3LineLength          | Not supported |
| dsx3Channelization      | Not supported |
| dsx3Ds1ForRemoteLoop    | Not supported |

## ENTITY-MIB (RFC 2737)

The ENTITY-MIB (RFC 2737) allows functional component discovery. It is used to represent physical and logical entities (components) in the router and manages those entities. It defines managed objects for representing multiple logical entities supported by a single SNMP agent.

The entity modeling is:

- Line card port with line card as the parent
- The Xcvr container with Line card port as the parent
- If Xcvr is present, Xcvr module with Xcvr container as parent

The current software release supports the RFC 2737 version of this MIB.

The following are the conformance groups contained in the ENTITY-MIB:

- entityPhysical group—Describes the physical entities managed by a single agent.
- entityLogical group—Describes the logical entities managed by a single agent.
- entityMapping group—Describes the associations between the physical entities, logical entities, interfaces, and non-interface ports managed by a single agent.
- entityGeneral group—Describes general system attributes shared by potentially all types of entities managed by a single agent.
- entityNotifications group—Contains status indication notifications.

The following groups are added from RFC 2737:

- entityPhysical2 group—This group augments the entityPhysical group.
- entityLogical2 group—Describes the logical entities managed by a single agent, and replaces entityLogical group.

The MIB table entPhysicalTable identifies the physical entities in the router. The entPhysicalTable contains a single row for the Cisco ASR 9000 Series router chassis and a row for each entity in the chassis. A physical entity may contain other entities.

## MIB Tables

Table 3-141 lists the MIB tables in ENTITY-MIB:

**Table 3-141 ENTITY-MIB Tables**

| MIB Table                | Description                                                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| entPhysicalTable         | Displays a single row for each physical entity.                                                                                                                                                                                                                                                                              |
| entLogicalTable          | Displays a single row for each logical entity.                                                                                                                                                                                                                                                                               |
| entLPMappingTable        | Displays rows representing association between a logical entity and the corresponding physical equipment. For each logical entity, there are zero or more mappings to the physical resources, which are used to identify the logical entity.                                                                                 |
| entAliasMappingTable     | Displays rows representing mappings of logical entity and physical component to external MIB identifiers. Each physical port in the system may be associated with a mapping to an external identifier, which itself is associated with a particular logical naming scope of an entity.                                       |
| entPhysicalContainsTable | Displays the container-to-containee relationships between the various physical entities. If a physical entity is contained by more than one physical entities (for example, double-wide modules), this table includes the additional mappings, which cannot be represented in the entPhysicalTable virtual containment tree. |

## MIB Constraints

Table 3-142 lists the constraints that the Cisco ASR 9000 Series router places on objects in the ENTITY-MIB.

**Table 3-142 ENTITY-MIB Constraints**

| MIB Object              | Notes                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| entPhysicalTable        | SNMP sets are not supported.<br>Unable to show information for powered down LC modules.<br>No entry for preconfigured interfaces. |
| cefcFRUPowerStatusTable | SNMP sets not supported. (cefcFRUPowerAdminStatus)                                                                                |
| entModuleTable          | SNMP sets not supported. (cefcModuleAdminStatus)                                                                                  |
| entLogicalTable         | entLogicalType not supported.                                                                                                     |
| entLPMappingTable       |                                                                                                                                   |

**Table 3-142** ENTITY-MIB Constraints (continued)

| MIB Object                | Notes          |
|---------------------------|----------------|
| entLogicalCommunity       | Not supported. |
| entLogicalTAddress        | Not supported. |
| entLogicalTDomain         | Not supported. |
| entLogicalContextEngineID | Not supported. |
| entLogicalContextName     | Not supported. |
| entPhysicalSerialNum      | Not supported. |
| entPhysicalAlias          | Not supported. |
| entPhysicalAssetID        | Not supported. |

**Note**

SPA Transceiver sensors are not modeled in ASR 9000 release 3.9.

## ENTITY-STATE-MIB

The ENTITY-STATE-MIB defines a state extension to the Entity MIB. Copyright (C) The Internet Society 2005. This version of this MIB module is part of RFC 4268; see the RFC itself for full legal notices.

[Table 3-143](#) lists the tables associated with this MIB.

**Table 3-143** ENTITY-STATE-MIB Tables and Descriptions

| Name          | Description                                                                                                                                                                                                                                                                    |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| entStateTable | A table of information about state/status of entities. This is a sparse augment of the entPhysicalTable. Entries appear in this table for values of entPhysicalClass [RFC4133] that in this implementation are able to report any of the state or status stored in this table. |

## MIB Constraints

[Table 3-144](#) lists the constraints on objects in the ENTITY-STATE-MIB.

**Table 3-144** ENTITY-STATE-MIB Constraints

| MIB Object          | Notes         |
|---------------------|---------------|
| entStateLastChanged | Supported     |
| entStateAdmin       | Read-only     |
| entStateOper        | Supported     |
| entStateUsage       | Not Supported |

**Table 3-144 ENTITY-STATE-MIB Constraints (continued)**

| MIB Object      | Notes         |
|-----------------|---------------|
| entStateAlarm   | Not Supported |
| entStateStandby | Supported     |

## ETHERLIKE-MIB (RFC 2665, 3635)

The ETHERLIKE-MIB (RFC 2665) contains objects to manage Ethernet-like interfaces.

### MIB Constraints

[Table 3-142](#) lists the constraints on objects in the ETHERLIKE-MIB.

**Table 3-145 ETHERLIKE-MIB Constraints**

| MIB Object         | Notes         |
|--------------------|---------------|
| dot3PauseAdminMode | Not supported |

## EVENT-MIB

The EVENT-MIB contains objects to define event triggers and actions for network management purposes.

[Table 3-146](#) lists the tables associated with this MIB.

**Table 3-146 EVENT-MIB Tables and Descriptions**

| Name                     | Description                                                                                                                                |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| mteTriggerTable          | Table of management event trigger information                                                                                              |
| mteTriggerDeltaTable     | Table of management event trigger information for delta sampling                                                                           |
| mteTriggerExistenceTable | Table of management event trigger information for existence triggers                                                                       |
| mteTriggerBooleanTable   | Table of management event trigger information for boolean triggers                                                                         |
| mteTriggerThresholdTable | Table of management event trigger information for threshold triggers                                                                       |
| mteObjectsTable          | Table of objects that can be added to notifications based on the trigger, trigger test, or event, as pointed to by entries in those tables |
| mteEventTable            | Table of management event action information                                                                                               |

**Table 3-146** *EVENT-MIB Tables and Descriptions (continued)*

| Name                      | Description                                                                               |
|---------------------------|-------------------------------------------------------------------------------------------|
| mteEventNotificationTable | Table of information about notifications to be sent as a consequence of management events |
| mteEventSetTable          | Table of management event action information                                              |

## MIB Constraints

Table 3-147 lists the constraints on objects in the EVENT-MIB.

**Table 3-147** *EVENT-MIB Constraints*

| MIB Object                             | Notes          |
|----------------------------------------|----------------|
| mteTriggerDeltaDiscontinuityID         | Not supported. |
| mteTriggerDeltaDiscontinuityIDWildcard | Not supported. |
| mteTriggerDeltaDiscontinuityIDType     | Not supported. |

## EXPRESSION-MIB

The EXPRESSION-MIB defines expressions of MIB objects for network management purposes. This MIB is an early snapshot of work done by the IETF Distributed Management working group. After this snapshot was taken, the MIB was modified, had new OIDs assigned, and then published as RFC 2982.

Table 3-148 lists the tables associated with this MIB.

**Table 3-148** *EXPRESSION-MIB Tables and Descriptions*

| Name               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expNameTable       | Table of expression names, for creating and deleting expressions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| expExpressionTable | Table of expression definitions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| expObjectTable     | Table of object definitions for each expExpression. Wildcarding instance IDs: It is legal to omit all or part of the instance portion for some or all of the objects in an expression. (See the description of expObjectID for details). However, note that if more than one object in the same expression is wildcarded in this way, they all must be objects where that portion of the instance is the same. In other words, all objects may be in the same sequence or in different sequences but with the same semantic index value (that is, a value of ifIndex) for the wildcarded portion |
| expValueTable      | Table of values from evaluated expressions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

# FRAME-RELAY-DTE-MIB

The FRAME-RELAY-DTE-MIB describes the use of a Frame Relay interface by a DTE.

[Table 3-149](#) lists the tables associated with this MIB.

**Table 3-149** *FRAME-RELAY-DTE-MIB Tables and Descriptions*

| Name           | Description                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| frDlcmiTable   | Parameters for the Data Link Connection Management Interface for the frame relay service on this interface.                                                                                         |
| frCircuitTable | Table containing information about specific DLC <sup>1</sup> or virtual circuits.                                                                                                                   |
| frErrTable     | Table containing information about Errors on the Frame Relay interface. Discontinuities in the counters contained in this table are the same as apply to the ifEntry associated with the Interface. |

1. DLC = data link connections

## MIB Constraints

[Table 3-147](#) lists the constraints on objects in the FRAME-RELAY-DTE-MIB.

**Table 3-150** *FRAME-RELAY-DTE-MIB Constraints*

| MIB Object                 | Notes          |
|----------------------------|----------------|
| frTrapState                | Not supported. |
| frTrapMaxRate              | Not supported. |
| frCircuitState             | Not supported. |
| frCircuitCommittedBurst    | Not supported. |
| frCircuitExcessBurst       | Not supported. |
| frCircuitThroughput        | Not supported. |
| frDlcmiState               | Not supported. |
| frDlcmiAddress             | Not supported. |
| frDlcmiAddressLen          | Not supported. |
| frDlcmiPollingInterval     | Not supported. |
| frDlcmiFullEnquiryInterval | Not supported. |
| frDlcmiErrorThreshold      | Not supported. |
| frDlcmiMonitoredEvents     | Not supported. |
| frDlcmiMaxSupportedVCs     | Not supported. |
| frDlcmiMulticast           | Not supported. |
| frDlcmiState               | Not supported. |
| frDlcmiAddress             | Not supported. |

**Table 3-150** *FRAME-RELAY-DTE-MIB Constraints (continued)*

| <b>MIB Object</b>          | <b>Notes</b>   |
|----------------------------|----------------|
| frDlcmiAddressLen          | Not supported. |
| frDlcmiPollingInterval     | Not supported. |
| frDlcmiFullEnquiryInterval | Not supported. |
| frDlcmiErrorThreshold      | Not supported. |
| frDlcmiMonitoredEvents     | Not supported. |
| frDlcmiMaxSupportedVCs     | Not supported. |
| frDlcmiMulticast           | Not supported. |
| frDlcmiRowStatus           | Not supported. |
| frCircuitState             | Not supported. |
| frCircuitCommittedBurst    | Not supported. |
| frCircuitExcessBurst       | Not supported. |
| frCircuitThroughput        | Not supported. |
| frCircuitMulticast         | Not supported. |
| frCircuitLogicalIfIndex    | Not supported. |
| frCircuitRowStatus         | Not supported. |
| frTrapState                | Not supported. |

## IEEE8021-CFM-MIB

The IEEE8021-CFM-MIB is a Connectivity Fault Management (CFM) module for managing IEEE 802.1ag.

[Table 3-148](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-151 IEEE8021-CFM-MIB Tables and Descriptions**

| Names       | Descriptions                                                                                                                                                                                                                                                                                                                                                       |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OBJECT-TYPE | There is one CFM Stack table per bridge. It permits the retrieval of information about the Maintenance Points configured on any given interface.                                                                                                                                                                                                                   |
| OBJECT-TYPE | This table defines the association of VIDs into VLANs. There is an entry in this table, for each component of the bridge, for each VID that is: a) a VID belonging to a VLAN associated with more than one VID; and b) not the Primary VLAN of that VID.                                                                                                           |
| OBJECT-TYPE | For each bridge component, the Default MD Level Managed Object controls MHF creation for VIDs that are not attached to a specific Maintenance Association Managed Object, and Sender ID TLV transmission by those MHFs.                                                                                                                                            |
| OBJECT-TYPE | The CFM Configuration Error List table provides a list of Interfaces and VIDs that are incorrectly configured.                                                                                                                                                                                                                                                     |
| OBJECT-TYPE | The Maintenance Domain table. Each row in the table represents a different Maintenance Domain. A Maintenance Domain is described in 802.1ag (3.21) as the network or the part of the network for which faults in connectivity are to be managed.                                                                                                                   |
| OBJECT-TYPE | The Maintenance Association table. Each row in the table represents an MA. An MA is a set of MEPs, each configured with a single service instance.                                                                                                                                                                                                                 |
| OBJECT-TYPE | The Maintenance Association table. Each row in the table represents an MA. An MA is a set of MEPs, each configured with a single service instance. This is the part of the complete MA table that is variable across the Bridges in a Maintenance Domain, or across the components of a single Bridge.                                                             |
| OBJECT-TYPE | List of MEPIDs that belong to this MA. Clause 12.14.6.1.3 specifies that a list of MEPIDs in all bridges in that MA, but since SNMP SMI does not allow to state in a MIB that an object in a table is an array, the information has to be stored in another table with two indices, being the first index, the index of the table that contains the list or array. |

**Table 3-151 IEEE8021-CFM-MIB Tables and Descriptions**

| Names       | Descriptions                                                                                                                                                                                                                                                          |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OBJECT-TYPE | The Maintenance Association End Point (MEP) table. Each row in the table represents a different MEP. A MEP is an actively managed CFM entity, associated with a specific DSAP of a Service Instance, which can generate and receive CFM PDUs and track any responses. |
| OBJECT-TYPE | This table extends the MEP table and contains a list of Linktrace replies received by a specific MEP in response to a linktrace message.                                                                                                                              |
| OBJECT-TYPE | The MEP Database. A database, maintained by every MEP, that maintains received information about other MEPs in the Maintenance Domain.                                                                                                                                |

## MIB Constraints

Table 3-154 lists the constraints on objects in the IEEE8021-CFM-MIB.

**Table 3-152 IEEE8021-CFM-MIB Constraints**

| MIB Object                        | Notes         |
|-----------------------------------|---------------|
| dot1agCfmVlanPrimaryVid           | Not supported |
| dot1agCfmVlanRowStatus            | Not supported |
| dot1agCfmMdName                   | Not supported |
| dot1agCfmMdFormat                 | Not supported |
| dot1agCfmMdMdLevel                | Not supported |
| dot1agCfmMdMhfCreation            | Not supported |
| dot1agCfmMdMhfIdPermission        | Not supported |
| dot1agCfmMdRowStatus              | Not supported |
| dot1agCfmDefaultMdDefLevel        | Not supported |
| dot1agCfmDefaultMdDefMhfCreation  | Not supported |
| dot1agCfmDefaultMdDefIdPermission | Not supported |
| dot1agCfmDefaultMdLevel           | Not supported |
| dot1agCfmDefaultMdMhfCreation     | Not supported |
| dot1agCfmDefaultMdIdPermission    | Not supported |
| dot1agCfmMepIfIndex               | Not supported |
| dot1agCfmMepDirection             | Not supported |
| dot1agCfmMepPrimaryVid            | Not supported |
| dot1agCfmMepActive                | Not supported |
| dot1agCfmMepCciEnabled            | Not supported |
| dot1agCfmMepCcmLtmPriority        | Not supported |

**Table 3-152 IEEE8021-CFM-MIB Constraints (continued)**

| MIB Object                              | Notes         |
|-----------------------------------------|---------------|
| dot1agCfmMepLowPrDef                    | Not supported |
| dot1agCfmMepFngAlarmTime                | Not supported |
| dot1agCfmMepFngResetTime                | Not supported |
| dot1agCfmMepTransmitLbmStatus           | Not supported |
| dot1agCfmMepTransmitLbmDestMacAddress   | Not supported |
| dot1agCfmMepTransmitLbmDestMepId        | Not supported |
| dot1agCfmMepTransmitLbmDestIsMepId      | Not supported |
| dot1agCfmMepTransmitLbmMessages         | Not supported |
| dot1agCfmMepTransmitLbmDataTlv          | Not supported |
| dot1agCfmMepTransmitLbmVlanPriority     | Not supported |
| dot1agCfmMepTransmitLbmVlanDropEnabled  | Not supported |
| dot1agCfmMepTransmitLtmFlags            | Not supported |
| dot1agCfmMepTransmitLtmTargetMacAddress | Not supported |
| dot1agCfmMepTransmitLtmTargetMepId      | Not supported |
| dot1agCfmMepTransmitLtmTargetIsMepId    | Not supported |
| dot1agCfmMepTransmitLtmTtl              | Not supported |
| dot1agCfmMepTransmitLtmEgressIdentifier | Not supported |
| dot1agCfmMepRowStatus                   | Not supported |

## IEEE8023-LAG-MIB

The IEEE8023-LAG-MIB is the Link Aggregation module for managing IEEE Std. 802.3ad.

[Table 3-153](#) lists the tables associated with this MIB.

**Table 3-153 IEEE8023-LAG-MIB Tables and Descriptions**

| Name           | Description                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| dot3adAggTable | Table that contains information about every Aggregator running the IEEE 802.3ad Link Aggregation Control Protocol that is associated with this System |

**Table 3-153 IEEE8023-LAG-MIB Tables and Descriptions (continued)**

| Name                    | Description                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dot3adAggPortListTable  | Table that contains a list of all the ports associated with each Aggregator running the IEEE 802.3ad Link Aggregation Control Protocol.                                                                                                        |
| dot3adAggPortTable      | Table that contains Link Aggregation Control configuration information about every Aggregation Port running the IEEE 802.3ad Link Aggregation Control Protocol associated with this device. A row appears in this table for each physical port |
| dot3adAggPortStatsTable | Table that contains Link Aggregation information about every port running the IEEE 802.3ad Link Aggregation Control Protocol that is associated with this device. A row appears in this table for each physical port                           |
| dot3adAggPortDebugTable | Table that contains Link Aggregation debug information about every port running the IEEE 802.3ad Link Aggregation Control Protocol that is associated with this device. A row appears in this table for each physical port                     |
| dot3adTablesLastChanged | This object indicates the time of the most recent change to the dot3adAggTable, dot3adAggPortListTable or dot3adAggPortTable.                                                                                                                  |

## MIB Constraints

Table 3-154 lists the constraints on objects in the IEEE8023-LAG-MIB.

**Table 3-154 IEEE8023-LAG-MIB Constraints**

| MIB Object                              | Notes                                    |
|-----------------------------------------|------------------------------------------|
| dot3adAggPortListTable                  | dot3adAggPortListPorts is not supported. |
| dot3adAggActorSystemPriority            | Not supported                            |
| dot3adAggActorAdminKey                  | Not supported                            |
| dot3adAggCollectorMaxDelay              | Not supported                            |
| dot3adAggPortActorSystemPriority        | Not supported                            |
| dot3adAggPortActorAdminKey              | Not supported                            |
| dot3adAggPortActorOperKey               | Not supported                            |
| dot3adAggPortPartnerAdminSystemPriority | Not supported                            |
| dot3adAggPortPartnerAdminSystemID       | Not supported                            |
| dot3adAggPortPartnerAdminKey            | Not supported                            |
| dot3adAggPortActorPortPriority          | Not supported                            |
| dot3adAggPortPartnerAdminPort           | Not supported                            |
| dot3adAggPortPartnerAdminPortPriority   | Not supported                            |

**Table 3-154 IEEE8023-LAG-MIB Constraints (continued)**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| dot3adAggPortActorAdminState   | Not supported |
| dot3adAggPortPartnerAdminState | Not supported |

## IETF-TCP-MIB

The IETF-TCP-MIB module is used for managing TCP implementations. Copyright (C) The Internet Society (2004). This version of this MIB module is a part of RFC xxxx; see the RFC itself for full legal notices.

### MIB Tables

[Table 3-155](#) lists the tables in IETF-TCP-MIB:

**Table 3-155 IETF-TCP-MIB Tables**

| MIB Table          | Description                                                                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tcpConnectionTable | A table containing information about existing TCP connections. Note that unlike earlier TCP MIBs, there is a separate table for connections in the LISTEN state. |
| tcpListenerTable   | A table containing information about TCP listeners.                                                                                                              |

## IETF-UDP-MIB

The IETF-UDP-MIB module manages UDP implementations.

### MIB Tables

[Table 3-157](#) lists the tables in IETF-UDP-MIB:

**Table 3-156 IETF-UDP-MIB Tables**

| MIB Table        | Description                                                                                                                                                                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| udpEndpointTable | A table containing information about this entity's UDP endpoints on which a local application is currently accepting or sending datagrams. The address type in this table represents the address type used for the communication, irrespective of the higher-layer abstraction. |

# IF-MIB (RFC 2863)

The IF-MIB (RFC 2863) describes the attributes of physical and logical interfaces (network interface sublayers). The router supports the ifGeneralGroup of MIB objects for all layers (ifIndex, ifDescr, ifType, ifSpeed, ifPhysAddress, ifAdminStatus, ifOperStatus, ifLastChange, ifName, ifLinkUpDownTrapEnable, and ifHighSpeed).

One of the most commonly used identifiers in SNMP-based network management applications is the Interface Index (ifIndex) value. IfIndex is a unique identifying number associated with a physical or logical interface.

To provide access to information on selected interfaces stored in IF-MIB table to a user, this MIB is made vrf-aware. This makes management of IF-MIB table for VRF based networks more secure. Context based community can be used only when VRF based polling needs to be done.



**Note**

- The ifHighSpeed and ifSpeed for an interface with type ds1 is zero.
- The object ifNumber is not committed on SNMP Data Collection Manager (DCM).

## MIB Tables

Table 3-157 lists the tables in IF-MIB:

**Table 3-157 IF-MIB Tables**

| MIB Table    | Description                                                                                                                                                |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ifTable      | List of the interface entries (represented by the value of ifNumber). This table is vrf-aware.                                                             |
| ifXTable     | List of interface entries (represented by the value of ifNumber). This table contains additional objects for the interface table. This table is vrf-aware. |
| ifStackTable | Provides the information about the relationships between the multiple sub-layers of network interfaces.                                                    |

| MIB Table         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ifRcvAddressTable | <p>Displays an entry for each address (broadcast, multicast, or unicast) for which the system receives packets/frames on a particular interface. The ifRcvAddressTable is vrf-aware.</p> <p>Exceptions are (Exceptions are not clear, please explain):</p> <ul style="list-style-type: none"> <li>For an interface operating in promiscuous mode, entries are only required for those addresses for which the system would receive frames were it not operating in promiscuous mode.</li> <li>For 802.5 functional addresses, only one entry is required, for the address which has the functional address bit ANDed with the bit mask of all functional addresses for which the interface will accept frames.</li> </ul> <p>A system is able to use any unicast address, which corresponds to an entry in this table as a source address.</p> |
| ifTestTable       | <p>Displays an entry for each interface and lists the objects that allow a network manager to instruct an agent to test an interface for various faults. Tests for an interface are defined in the media-specific MIB for that interface.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## MIB Constraints

Table 3-154 lists the constraints on objects in the IF-MIB.

**Table 3-158 IF-MIB Constraints**

| MIB Object             | Notes                                    |
|------------------------|------------------------------------------|
| dot3adAggPortListTable | dot3adAggPortListPorts is not supported. |
| ifRcvAddressStatus     | Supported                                |
| ifRcvAddressType       | Supported                                |
| ifStackStatus          | Supported                                |
| ifTestTable            | Not supported                            |

## IMA-MIB

The MIB module describes Cisco IMA objects. This is an extension to the standard of ATM Forum IMA version 1.1.

## MIB Objects

| Name                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cimaGroupTable       | The Cisco IMA group table. This table contains Cisco extension objects for the imaGroupTable. Each entry in the table contains Cisco specific configuration, control, and status information for each IMA group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| cimaLinkMappingTable | The link mapping table is an IMA group oriented mapping table which associates an IMA group to its corresponding IMA links. It provides an efficient way of accessing to IMA links based on the knowledge of an IMA group. This is a read-only mapping table. The agent creates an entry when an IMA link identified by 'imaLinkIfIndex' is added to an IMA group identified by 'imaGroupIndex'. The agent removes an entry when an IMA link identified by 'imaLinkIfIndex' is removed from an IMA group identified by 'imaGroupIndex'. A state object 'cimaLinkState' provides the link state in either 'active' or 'nonactive'. The management station can query detailed information in imaGroupTable, and imaLinkTable with the two index readily available. |
| cimaLinkTable        | The Cisco IMA link table. This table has Cisco specific configuration, and status management information for IMA links.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| cimaFeatureTable     | The Cisco IMA feature table. This table provides IMA features supported in a Cisco card. Any SNMP set to the writable object has card wide impact on all IMA groups and IMA links.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## MIB Constraints

Table 3-159 lists the constraints on objects in the IMA-MIB.

**Table 3-159 IMA-MIB Constraints**

| MIB Object              | Notes         |
|-------------------------|---------------|
| imaLinkRowStatus        | Not supported |
| imaLinkGroupIndex       | Not supported |
| imaGroupTestLinkIfIndex | Not supported |
| imaGroupTestPattern     | Not supported |
| imaGroupTestProcStatus  | Not supported |
| imaGroupRowStatus       | Not supported |
| imaGroupSymmetry        | Not supported |

**Table 3-159 IMA-MIB Constraints (continued)**

| MIB Object            | Notes         |
|-----------------------|---------------|
| imaGroupMinNumTxLinks | Not supported |
| imaGroupMinNumRxLinks | Not supported |
| imaGroupNeTxClkMode   | Not supported |
| imaGroupTxImaId       | Not supported |
| imaGroupTxFrameLength | Not supported |
| imaGroupDiffDelayMax  | Not supported |
| imaGroupAlphaValue    | Not supported |
| imaGroupBetaValue     | Not supported |
| imaGroupGammaValue    | Not supported |

## IP-FORWARD-MIB

The IP-FORWARD-MIB contains objects to control the display of Classless Interdomain Routing (CIDR) multipath IP routes.

To provide selective access to information stored in IP forwarding table to user, the IP-FORWARD-MIB is made vrf-aware. This makes management of IP forwarding table for VRF based networks more secure.

[Table 3-160](#) lists the tables associated with this MIB.

**Table 3-160 IP-FORWARD-MIB Tables and Descriptions**

| Name               | Description                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| inetCidrRouteTable | This entity's IP Routing table (when MIB is used to poll IPv6 route information).                                                                        |
| ipCidrRouteTable   | This entity's IP Routing table. This table has been deprecated in favor of the IP version neutral inetCidrRouteTable. The ipCidrRouteTable is vrf-aware. |
| ipForwardTable     | This entity's IP Routing table. The ipForwardNumber object is vrf-aware.                                                                                 |

## MIB Constraints

[Table 3-154](#) lists the constraints on objects in the IP-FORWARD-MIB.

**Table 3-161 IP-FORWARD-MIB Constraints**

| MIB Object           | Notes     |
|----------------------|-----------|
| ipCidrRouteIfIndex   | Supported |
| ipCidrRouteType      | Supported |
| ipCidrRouteInfo      | Supported |
| ipCidrRouteNextHopAS | Supported |

**Table 3-161 IP-FORWARD-MIB Constraints (continued)**

| MIB Object         | Notes     |
|--------------------|-----------|
| ipCidrRouteMetric1 | Supported |
| ipCidrRouteMetric2 | Supported |
| ipCidrRouteMetric3 | Supported |
| ipCidrRouteMetric4 | Supported |
| ipCidrRouteMetric5 | Supported |
| ipCidrRouteStatus  | Supported |

# IP-MIB

The IP-MIB contains objects for managing IP and Internet Control Message Protocol (ICMP) implementations.



**Note**

The IP-MIB does not provide functionality to manage IP routes.

## MIB Tables

Table 3-162 lists the tables in IP-MIB:

**Table 3-162 IP-MIB Tables**

| MIB Table            | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv4InterfaceTable   | Provides IPv4-specific information for each interface.                                                                                                                                                                                                                                                                                                                                                                  |
| ipv6InterfaceTable   | Provides IPv6-specific information for each interface.                                                                                                                                                                                                                                                                                                                                                                  |
| ipSystemStatsTable   | Provides system wide IP version specific traffic statistics.                                                                                                                                                                                                                                                                                                                                                            |
| ipIfStatsTable       | Provides traffic statistics for each interface.                                                                                                                                                                                                                                                                                                                                                                         |
| ipAddressPrefixTable | Provides information that helps a user to determine the source of an IP address or set of IP addresses. The information in this table is linked to other tables through reference. For example, when the node configures both a unicast and anycast address for a prefix, the ipAddressPrefix objects for those addresses point to a single row in this table. This table primarily provides support for IPv6 prefixes. |

| MIB Table               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipAddressTable          | <p>Provides addressing information related to the interfaces. This table does not contain multicast address information. This table is used for storing and managing temporary interface entries.</p> <p> <b>Note</b> When including IPv6 link-local addresses in this table, the entry must use an InetAddressType of <i>ipv6z</i> to differentiate between the possible interfaces.</p> |
| ipNetToPhysicalTable    | Provides mapping information between IP addresses and physical addresses. The address translation tables contain the IP address to the corresponding physical address. Some interfaces do not use translation tables for determining address equivalences (for example, DDN-X.25 has an algorithmic method); if all interfaces do not use this table, then this table is empty.                                                                                            |
| ipv6ScopeZoneIndexTable | Displays IPv6 unicast and multicast scope zones.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ipDefaultRouterTable    | Displays the default routers known to a specific entity.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ipv6RouterAdvertTable   | Provides information used to construct router advertisements.                                                                                                                                                                                                                                                                                                                                                                                                              |
| icmpStatsTable          | Displays the generic system-wide ICMP counters.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| icmpMsgStatsTable       | Displays the system-wide per-version, per-message type ICMP counters.                                                                                                                                                                                                                                                                                                                                                                                                      |
| ipAddrTable             | Provides addressing information pertinent to IPv4 addresses for an entity. Deprecated, use ipAddressTable instead.                                                                                                                                                                                                                                                                                                                                                         |
| ipNetToMediaTable       | Provides mapping between IPv4 addresses and physical addresses. Deprecated, use ipNetToPhysicalTable instead.                                                                                                                                                                                                                                                                                                                                                              |

## MIB Constraints

Table 3-163 lists the constraints that the router places on objects in the IP-MIB. For detailed definitions of MIB objects, see the MIB.



### Note

Tables which are specific to IPv4 are not implemented.

**Table 3-163 IP-MIB Constraints**

| MIB Object                                                                    | Notes                                                                                                       |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>ipv6InterfaceTable</b>                                                     |                                                                                                             |
| • ipv6InterfaceIdentifier                                                     | Lower n bits of link local address, where n=128 - prefix-len                                                |
| • ipv6InterfaceEnableStatus                                                   | up (1) if link local address is configured else down (2)                                                    |
| • ipv6InterfaceForwarding                                                     | ipv6InterfaceForwarding(1) if IPv6 is configured on LC or notForwarding(2) if IPv6 is configured on RP      |
| <b>ipSystemStatsTable</b>                                                     |                                                                                                             |
| • ipSystemStatsInOctets                                                       | Not supported                                                                                               |
| • ipSystemStatsInNoRoutes                                                     | Not supported                                                                                               |
| • ipSystemStatsInAddrErrors                                                   | Not supported                                                                                               |
| • ipSystemStatsInDiscards                                                     | Not supported                                                                                               |
| • ipSystemStatsOutNoRoutes                                                    | Not supported                                                                                               |
| • ipSystemStatsOutForwDatagrams                                               | Not supported                                                                                               |
| • ipSystemStatsOutDiscards                                                    | Not supported                                                                                               |
| • ipSystemStatsOutTransmits                                                   | Not supported                                                                                               |
| • ipSystemStatsOutOctets                                                      | Not supported                                                                                               |
| • ipSystemStatsInMcastPkts                                                    | Not supported                                                                                               |
| • ipSystemStatsInMcastOctets                                                  | Not supported                                                                                               |
| • ipSystemStatsOutMcastPkts                                                   | Not supported                                                                                               |
| • ipSystemStatsOutMcastOctets                                                 | Not supported                                                                                               |
| • ipSystemStatsInBcastPkts                                                    | Not supported                                                                                               |
| • ipSystemStatsOutBcastPkts                                                   | Not supported                                                                                               |
| • ipSystemStatsDiscontinuityTime                                              | Not supported                                                                                               |
| <b>ipIfStatsTable</b>                                                         | Table only applicable to IPv6                                                                               |
| • ipIfStatsRefreshRate                                                        | Not supported                                                                                               |
| • Protocol related counters on per-interface basis (22 objects in this table) | Not supported                                                                                               |
| <b>ipAddressPrefixTable</b>                                                   |                                                                                                             |
| • ipAddressPrefixPrefix                                                       | First n bits of ipv6_addr () where n=prefix_len                                                             |
| • ipAddressPrefixLength                                                       | prefix_len field                                                                                            |
| • ipAddressPrefixOrigin                                                       | manual(2) if prefix is taken from global address or wellknown(3) if prefix is taken from link local address |
| • ipAddressPrefixAutonomousFlag                                               | False(2) for link local and True(1) for others                                                              |
| • ipAddressPrefixAdvPreferredLifetime                                         | Not supported                                                                                               |
| • ipAddressPrefixAdvValidLifetime                                             | Not supported                                                                                               |

**Table 3-163** *IP-MIB Constraints (continued)*

| MIB Object                     | Notes                                                            |
|--------------------------------|------------------------------------------------------------------|
| <b>ipAddressTable</b>          |                                                                  |
| • ipAddressPrefix              | First n bits of ipv6_addr () where n=prefix_len                  |
| • ipAddressOrigin              | 'manual' is address if global or 'linklayer' if it is link local |
| • ipAddressCreated             | Not supported                                                    |
| • ipAddressLastChanged         | Not supported                                                    |
| <b>ipv6ScopeZoneIndexTable</b> | Not supported                                                    |
| <b>ipDefaultRouterTable</b>    | Not supported                                                    |
| <b>ipRouterAdvertTable</b>     | Not supported                                                    |
| <b>icmpStatsTable</b>          |                                                                  |
| • icmpStatsOutErrors           | Not supported                                                    |
| <b>Scalar Objects</b>          |                                                                  |
| • ipv6InterfaceTableLastChange | Not supported                                                    |
| • ipv6IpDefaultHopLimit        | Not supported                                                    |

## IPV6-MIB

The MIB module for entities implementing the IPv6 protocol.

## MIB Tables

[Table 3-164](#) lists the Tables in IPV6-MIB:

**Table 3-164** *IPV6-MIB Tables*

| MIB Tables          | Description                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6IfTable         | Provides information on the entity internetwork-layer interfaces. An IPv6 interface constitutes a logical network layer attached to the layer immediately below IPv6 layer including internet layer tunnels. |
| ipv6IfStatsTable    | Provides IPv6 interface traffic statistics.                                                                                                                                                                  |
| ipv6AddrPrefixTable | Displays IPv6 address prefixes for IPv6 interfaces.                                                                                                                                                          |
| ipv6AddrTable       | Provides information related to interface addresses for a node.                                                                                                                                              |

| MIB Tables          | Description                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6RouteTable      | Not supported                                                                                                                                                             |
| ipv6NetToMediaTable | Provides mapping information from IPv6 addresses to physical addresses. The IPv6 address translation table contain the Ipv6Address to the corresponding physical address. |

## MIB Constraints

Table 3-165 lists the constraints that the router places on objects in the IPV6-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-165 IPV6-MIB Constraints**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| ipDefaultRouterTable            | Not supported |
| ipv6ScopeZoneIndexTable         | Not supported |
| ipv4InterfaceTable              | Not supported |
| ipIfStatsTableLastChange        | Not supported |
| ipAddressSpinLock               | Not supported |
| ipAddressIfIndex                | Not supported |
| ipAddressType                   | Not supported |
| ipAddressStatus                 | Not supported |
| ipAddressRowStatus              | Not supported |
| ipAddressStorageType            | Not supported |
| ipv6IpForwarding                | Not supported |
| ipv6IpDefaultHopLimit           | Not supported |
| ipv4InterfaceEnableStatus       | Not supported |
| ipNetToPhysicalPhysAddress      | Not supported |
| ipNetToPhysicalType             | Not supported |
| ipNetToPhysicalRowStatus        | Not supported |
| ipv6InterfaceEnableStatus       | Not supported |
| ipv6InterfaceForwarding         | Not supported |
| ipv6RouterAdvertSpinLock        | Not supported |
| ipv6RouterAdvertSendAdverts     | Not supported |
| ipv6RouterAdvertMaxInterval     | Not supported |
| ipv6RouterAdvertMinInterval     | Not supported |
| ipv6RouterAdvertManagedFlag     | Not supported |
| ipv6RouterAdvertOtherConfigFlag | Not supported |
| ipv6RouterAdvertLinkMTU         | Not supported |

**Table 3-165** *IPV6-MIB Constraints (continued)*

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| ipDefaultRouterTable            | Not supported |
| ipv6RouterAdvertReachableTime   | Not supported |
| ipv6RouterAdvertRetransmitTime  | Not supported |
| ipv6RouterAdvertCurHopLimit     | Not supported |
| ipv6RouterAdvertDefaultLifetime | Not supported |
| ipv6RouterAdvertRowStatus       | Not supported |

## IPV6-FORWARD-MIB

The MIB module describes the management of CIDR multipath IP Routes.

[Table 3-168](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-166** *IPV6-MLD-MIB Tables and Descriptions*

| Name               | Description                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| inetCidrRouteTable | This entity's IP Routing table.                                                                                             |
| inetCidrRouteEntry | A particular route to a particular destination, under a particular policy (as reflected in the inetCidrRoutePolicy object). |

## MIB Constraints

[Table 3-165](#) lists the constraints that the router places on objects in the IPV6-FORWARD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-167** *IPV6-FORWARD-MIB Constraints*

| MIB Object             | Notes         |
|------------------------|---------------|
| ipv6Forwarding         | Not supported |
| ipv6DefaultHopLimit    | Not supported |
| ipv6IfDescr            | Not supported |
| ipv6IfIdentifier       | Not supported |
| ipv6IfIdentifierLength | Not supported |
| ipv6IfAdminStatus      | Not supported |
| ipv6RouteValid         | Not supported |
| ipv6NetToMediaValid    | Not supported |

# IPV6-MLD-MIB

The IPV6-MLD-MIB is the MIB module for MLD management.

[Table 3-168](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-168** *IPV6-MLD-MIB Tables and Descriptions*

| Name              | Description                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------|
| mldInterfaceTable | (conceptual) Table listing the interfaces on which MLD is enabled                                          |
| mldCacheTable     | (conceptual) Table listing the IPv6 multicast groups for which there are members on a particular interface |

## MIB Constraints

[Table 3-165](#) lists the constraints that the router places on objects in the IPV6-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-169** *IPV6-MIB Constraints*

| MIB Object                       | Notes         |
|----------------------------------|---------------|
| mldInterfaceProxyIfIndex         | Not supported |
| mldInterfaceQueryInterval        | Not supported |
| mldInterfaceVersion              | Not supported |
| mldInterfaceQueryMaxRespDelay    | Not supported |
| mldInterfaceRobustness           | Not supported |
| mldInterfaceLastListenQueryIntvl | Not supported |
| mldCacheSelf                     | Not supported |
| mldCacheStatus                   | Not supported |
| mldInterfaceStatus               | Not supported |

# IPV6-TC

The IPV6-TC contains TCs for IPV6. There are no tables associated with this MIB.

# ISIS-MIB

The IS-IS MIB describes a management information base for the IS-IS Routing protocol, as described in ISO 10589, when it is used to construct routing tables for IP networks, as described in RFC 1195.

Table 3-170 lists the tables associated with this MIB.

**Table 3-170 ISIS-MIB Tables and Descriptions**

| Name                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| isisManAreaAddrTable      | Set of manual area addresses configured on this Intermediate System. At least one row in which the value of isisManAreaAddrExistState is active must be present. The maximum number of rows in this table for which the object isisManAreaAddrExistState has the value active is three. An attempt to create more than three rows of isisManAreaAddrEntry with state 'active' in one instance of the IS-IS protocol should return inconsistentValue |
| isisAreaAddrTable         | Union of the sets of area addresses reported in all Level 1 LSPs with fragment number zero generated by this Intermediate System, or received from other Intermediate Systems that are reachable via Level 1 routing                                                                                                                                                                                                                                |
| isisSummAddrTable         | Set of IP summary addresses to use in forming summary TLVs originated by this Intermediate System. An administrator may use a summary address to combine and modify IP Reachability announcements. If the Intermediate system can reach any subset of the summary address, the summary address <i>must</i> be announced instead, at the configured metric                                                                                           |
| isisRedistributeAddrTable | This table provides criteria to decide if a route should be leaked from Layer 2 to Layer 1 when Domain Wide Prefix leaking is enabled. Addresses that match the summary mask in the table <b>MUST</b> be announced at Layer 1 by routers when isisSysL2toL1Leaking is enabled. Routes that fall into the ranges specified are announced as is, without being summarized. Routes that do not match a summary mask are not announced                  |
| isisRouterTable           | Set of hostnames and router ID                                                                                                                                                                                                                                                                                                                                                                                                                      |
| isisSysLevelTable         | Level specific information about the System                                                                                                                                                                                                                                                                                                                                                                                                         |
| isisCircTable             | The table of circuits used by this Intermediate System                                                                                                                                                                                                                                                                                                                                                                                              |
| isisCircLevelTable        | Level specific information about circuits used by IS-IS                                                                                                                                                                                                                                                                                                                                                                                             |
| isisSystemCounterTable    | System-wide counters for this Intermediate System                                                                                                                                                                                                                                                                                                                                                                                                   |
| isisCircuitCounterTable   | Circuit specific counters for this Intermediate System                                                                                                                                                                                                                                                                                                                                                                                              |
| isisPacketCounterTable    | Information about IS-IS protocol traffic at one level, on one circuit, in one direction                                                                                                                                                                                                                                                                                                                                                             |
| isisISAdjTable            | Table of adjacencies to Intermediate Systems                                                                                                                                                                                                                                                                                                                                                                                                        |
| isisISAdjAreaAddrTable    | This table contains the set of Area Addresses of neighboring Intermediate Systems as reported in received IIH PDUs                                                                                                                                                                                                                                                                                                                                  |
| isisISAdjIPAddrTable      | This table contains the set of IP Addresses of neighboring Intermediate Systems as reported in received IIH PDUs                                                                                                                                                                                                                                                                                                                                    |

**Table 3-170** *ISIS-MIB Tables and Descriptions (continued)*

| Name                   | Description                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| isisISAdjProtSuppTable | This table contains the set of protocols supported by neighboring Intermediate Systems as reported in received IIH PDUs        |
| isisRATable            | Table of Reachable Addresses to NSAPs or Address Prefixes                                                                      |
| isisIPRATable          | Table of IP Reachable Addresses to networks, subnetworks, or hosts either manually configured or learned from another protocol |
| isisLSPSummaryTable    | Table of LSP Headers                                                                                                           |
| isisLSPTLVTable        | Table of LSPs in the database                                                                                                  |

## MIB Constraints

[Table 3-171](#) lists the constraints that the router places on objects in the ISIS-MIB. For detailed definitions of MIB objects, see the MIB.

SNMP sets are not supported.

**Table 3-171** *ISIS-MIB Constraints*

| MIB Object                | Notes                                   |
|---------------------------|-----------------------------------------|
| isisAreaAddrTable         | isisAreaAddr not supported              |
| isisCircuitGroup          | Not supported                           |
| isisISAdjGroup            | Not supported                           |
| isisISIPRADestGroup       | Not supported                           |
| isisLSPGroup              | Not supported                           |
| isisManAreaAddrTable      | isisManAreaAddrExistState not supported |
| isisNotificationTable     | Not supported                           |
| isisRATable Group         | Not supported                           |
| isisRedistributeAddrEntry | isisRedistributeAddrExistState          |
| isisRouterTable           | isisRouterID is not supported           |
| isisSummAddrTable         |                                         |
| isisSummAddrExistState    | Not supported                           |
| isisSummAddrMetric        | Not supported                           |
| isisSummAddrFullMetric    | Not supported                           |
| isisSysLevelType          | Not supported                           |
| isisSysID                 | Not supported                           |
| isisSysMaxPathSplits      | Not supported                           |
| isisSysMaxLSPGenInt       | Not supported                           |

**Table 3-171**     **ISIS-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| isisSysPollESHelloRate         | Not supported |
| isisSysWaitTime                | Not supported |
| isisSysAdminState              | Not supported |
| isisSysL2toL1Leaking           | Not supported |
| isisSysMaxAge                  | Not supported |
| isisSysNotificationEnable      | Not supported |
| isisManAreaAddrExistState      | Not supported |
| isisSysLevelOrigLSPBuffSize    | Not supported |
| isisSysLevelMinLSPGenInt       | Not supported |
| isisSysLevelSetOverload        | Not supported |
| isisSysLevelSetOverloadUntil   | Not supported |
| isisSysLevelMetricStyle        | Not supported |
| isisSysLevelSPFConsiders       | Not supported |
| isisSysLevelTEEnabled          | Not supported |
| isisSysReceiveLSPBufferSize    | Not supported |
| isisSummAddrExistState         | Not supported |
| isisSummAddrMetric             | Not supported |
| isisSummAddrFullMetric         | Not supported |
| isisRedistributeAddrExistState | Not supported |
| isisRAExistState               | Not supported |
| isisRAAdminState               | Not supported |
| isisRAAddrPrefix               | Not supported |
| isisRAMapType                  | Not supported |
| isisRAMetric                   | Not supported |
| isisRAMetricType               | Not supported |
| isisRASNPAddress               | Not supported |
| isisRASNPAMask                 | Not supported |
| isisRASNPAPrefix               | Not supported |
| isisRAType                     | Not supported |
| isisIPRANextHopType            | Not supported |
| isisIPRANextHop                | Not supported |
| isisIPRAType                   | Not supported |
| isisIPRAExistState             | Not supported |
| isisIPRAAdminState             | Not supported |
| isisIPRAMetric                 | Not supported |
| isisIPRAFullMetric             | Not supported |

**Table 3-171** *ISIS-MIB Constraints*

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| isisIPRAMetricType            | Not supported |
| isisIPRASNPAddress            | Not supported |
| isisCircAdminState            | Not supported |
| isisCircExistState            | Not supported |
| isisCircType                  | Not supported |
| isisCircExtDomain             | Not supported |
| isisCircLevelType             | Not supported |
| isisCircPassiveCircuit        | Not supported |
| isisCircMeshGroupEnabled      | Not supported |
| isisCircMeshGroup             | Not supported |
| isisCircSmallHellos           | Not supported |
| isisCirc3WayEnabled           | Not supported |
| isisCircExtendedCircID        | Not supported |
| isisCircIfIndex               | Not supported |
| isisCircLevelMetric           | Not supported |
| isisCircLevelWideMetric       | Not supported |
| isisCircLevelISPriority       | Not supported |
| isisCircLevelHelloMultiplier  | Not supported |
| isisCircLevelHelloTimer       | Not supported |
| isisCircLevelDRHelloTimer     | Not supported |
| isisCircLevelLSPThrottle      | Not supported |
| isisCircLevelMinLSPRetransInt | Not supported |
| isisCircLevelCSNPInterval     | Not supported |
| isisCircLevelPartSNPInterval  | Not supported |

## MAU-MIB

This section describes the management information for 802.3 MAUs. This MIB has no tables.

## MIB Constraints

[Table 3-178](#) lists the constraints that the router places on objects in the MAU-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-172 MAU-MIB Constraints**

| MIB Object                        | Notes         |
|-----------------------------------|---------------|
| ifMauStatus                       | Not supported |
| ifMauAutoNegRemoteFaultAdvertised | Not supported |
| ifMauAutoNegAdminStatus           | Not supported |
| ifMauAutoNegCapAdvertisedBits     | Not supported |
| ifMauAutoNegRestart               | Not supported |
| ifMauDefaultType                  | Not supported |

## MFR-MIB

The MFR-MIB is used to control and monitor the multilink frame relay (MFR) function described in FRF.16.

[Table 3-170](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-173 MFR-MIB Tables and Descriptions**

| Name                         | Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mfrBundleTable               | The bundle configuration and status table. There is a one-to-one correspondence between a bundle and an interface represented in the ifTable. The following objects of the ifTable have specific meaning for an MFR bundle: ifAdminStatus - the bundle admin status ifOperStatus - the bundle operational status ifSpeed - the current bandwidth of the bundle ifInUcastPkts - the number of frames received on the bundle ifOutUcastPkts - the number of frames transmitted on the bundle ifInErrors - frame (not fragment) errors ifOutErrors - frame (not fragment) errors                                                                                                                                                 |
| mfrBundleIfIndexMappingTable | A table mapping the values of ifIndex to the mfrBundleIndex. This is required in order to find the mfrBundleIndex given an ifIndex. The mapping of mfrBundleIndex to ifIndex is provided by the mfrBundleIfIndex entry in the mfrBundleTable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| mfrBundleLinkTable           | The bundle link configuration and status table. There is a one-to-one correspondence between a bundle link and a physical interface represented in the ifTable. The ifIndex of the physical interface is used to index the bundle link table, and to create rows. The following objects of the ifTable have specific meaning for an MFR bundle link: ifAdminStatus - the bundle link admin status ifOperStatus - the bundle link operational status ifSpeed - the bandwidth of the bundle link interface ifInUcastPkts - the number of frames received on the bundle link ifOutUcastPkts - the number of frames transmitted on the bundle link ifInErrors - frame and fragment errors ifOutErrors - frame and fragment errors |

## MIB Constraints

Table 3-178 lists the constraints that the router places on objects in the MFR-MIB.

**Table 3-174 MFR-MIB Constraints**

| MIB Object                     | Notes         |
|--------------------------------|---------------|
| mfrBundleLinkRowStatus         | Not supported |
| mfrBundleLinkConfigBundleIndex | Not supported |
| mfrBundleLinkNearEndName       | Not supported |
| mfrBundleNextIndex             | Not supported |

**Table 3-174 MFR-MIB Constraints (continued)**

| <b>MIB Object</b>        | <b>Notes</b>  |
|--------------------------|---------------|
| mfrBundleRowStatus       | Not supported |
| mfrBundleNearEndName     | Not supported |
| mfrBundleFragmentation   | Not supported |
| mfrBundleMaxFragSize     | Not supported |
| mfrBundleTimerHello      | Not supported |
| mfrBundleTimerAck        | Not supported |
| mfrBundleCountMaxRetry   | Not supported |
| mfrBundleActivationClass | Not supported |
| mfrBundleThreshold       | Not supported |
| mfrBundleMaxDiffDelay    | Not supported |
| mfrBundleSeqNumSize      | Not supported |

## MGMD-STD-MIB

This MIB describes the MIB module for MGMD Management.

## MIB Objects

**Table 3-175** *MGMD-STD-MIB Tables and Descriptions*

| Name                        | Description                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mgmdHostInterfaceTable      | The (conceptual) table listing the interfaces on which IGMP or MLD is enabled.                                                                                 |
| mgmdRouterInterfaceTable    | The (conceptual) table listing the interfaces on which IGMP or MLD is enabled.                                                                                 |
| mgmdHostCacheTable          | The (conceptual) table listing the IP multicast groups for which the host is a member on a particular interface.                                               |
| mgmdRouterCacheTable        | The (conceptual) table listing the IP multicast groups for which there are members on a particular router interface.                                           |
| mgmdInverseHostCacheTable   | The (conceptual) table listing the interfaces which are members of a particular group. This is a reverse lookup table for entries in the mgmdHostCacheTable.   |
| mgmdInverseRouterCacheTable | The (conceptual) table listing the interfaces which are members of a particular group. This is a reverse lookup table for entries in the mgmdRouterCacheTable. |
| mgmdHostSrcListTable        | The (conceptual) table listing the Source List entries corresponding to each interface and multicast group pair on a host.                                     |
| mgmdRouterSrcListTable      | The (conceptual) table listing the Source List entries corresponding to each interface and multicast group pair on a Router.                                   |

## MIB Constraints

Table 3-176 lists the constraints that the router places on objects in the MGMD-STD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-176** *MGMD-STD-MIB Constraints*

| MIB Object                              | Notes         |
|-----------------------------------------|---------------|
| mgmdHostInterfaceStatus                 | Not supported |
| mgmdRouterInterfaceVersion              | Not supported |
| mgmdRouterInterfaceQueryMaxResponseTime | Not supported |
| mgmdRouterInterfaceRobustness           | Not supported |
| mgmdRouterInterfaceLastMembQueryIntvl   | Not supported |
| mgmdRouterInterfaceStatus               | Not supported |

**Table 3-176 MGMD-STD-MIB Constraints (continued)**

| MIB Object                       | Notes         |
|----------------------------------|---------------|
| mgmdRouterInterfaceQueryInterval | Not supported |
| mgmdRouterInterfaceProxyIfIndex  | Not supported |

## MPLS-L3VPN-STD-MIB

The MPLS-L3VPN-STD-MIB contains managed object definitions for the Layer-3 Multiprotocol Label Switching Virtual Private Networks.

[Table 3-177](#) lists the tables associated with this MIB.

**Table 3-177 MPLS-L3VPN-STD-MIB Tables and Descriptions**

| Name                  | Description                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsL3VpnIfConfTable  | This table specifies per-interface MPLS capability and associated information                                                                                                                                                                                                                                         |
| mplsL3VpnVrfTable     | This table specifies per-interface MPLS L3VPN VRF Table capability and associated information. Entries in this table define VRF routing instances associated with MPLS/VPN interfaces. Note that multiple interfaces can belong to the same VRF instance. The collection of all VRF instances comprises an actual VPN |
| mplsL3VpnVrfRTTable   | This table specifies per-VRF route target association. Each entry identifies a connectivity policy supported as part of a VPN                                                                                                                                                                                         |
| mplsL3VpnVrfSecTable  | This table specifies per MPLS L3VPN VRF Table security-related counters                                                                                                                                                                                                                                               |
| mplsL3VpnVrfPerfTable | This table specifies per MPLS L3VPN VRF Table performance information                                                                                                                                                                                                                                                 |
| mplsL3VpnVrfRteTable  | This table specifies per-interface MPLS L3VPN VRF Table routing information. Entries in this table define VRF routing entries associated with the specified MPLS/VPN interfaces. Note that this table contains both BGP and Interior Gateway Protocol IGP routes, as both may appear in the same VRF                  |

## MIB Constraints

[Table 3-178](#) lists the constraints that the router places on objects in the MPLS-L3VPN-STD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-178 MPLS-L3VPN-STD-MIB Constraints**

| MIB Object                       | Notes         |
|----------------------------------|---------------|
| mplsL3VpnVrfRteInetCidrIfIndex   | Not supported |
| mplsL3VpnVrfRteInetCidrType      | Not supported |
| mplsL3VpnVrfRteInetCidrNextHopAS | Not supported |
| mplsL3VpnVrfRteInetCidrMetric1   | Not supported |
| mplsL3VpnVrfRteInetCidrMetric2   | Not supported |
| mplsL3VpnVrfRteInetCidrMetric3   | Not supported |
| mplsL3VpnVrfRteInetCidrMetric4   | Not supported |
| mplsL3VpnVrfRteInetCidrMetric5   | Not supported |
| mplsL3VpnVrfRteXCPointer         | Not supported |
| mplsL3VpnVrfRteInetCidrStatus    | Not supported |
| mplsL3VpnIfVpnClassification     | Not supported |
| mplsL3VpnIfVpnRouteDistProtocol  | Not supported |
| mplsL3VpnIfConfStorageType       | Not supported |
| mplsL3VpnIfConfRowStatus         | Not supported |
| mplsL3VpnNotificationEnable      | Not supported |
| mplsL3VpnIlliLbIRcvThrsh         | Not supported |
| mplsL3VpnVrfVpnId                | Not supported |
| mplsL3VpnVrfDescription          | Not supported |
| mplsL3VpnVrfRD                   | Not supported |
| mplsL3VpnVrfConfMidRteThresh     | Not supported |
| mplsL3VpnVrfConfHighRteThresh    | Not supported |
| mplsL3VpnVrfConfMaxRoutes        | Not supported |
| mplsL3VpnVrfConfRowStatus        | Not supported |
| mplsL3VpnVrfConfAdminStatus      | Not supported |
| mplsL3VpnVrfConfStorageType      | Not supported |
| mplsL3VpnVrfRTDescr              | Not supported |
| mplsL3VpnVrfRT                   | Not supported |
| mplsL3VpnVrfRTRowStatus          | Not supported |
| mplsL3VpnVrfRTStorageType        | Not supported |

## MPLS-LDP-GENERIC-STD-MIB

The MPLS-LDP-GENERIC-STD-MIB contains managed object definitions for configuring and monitoring the Multiprotocol Label Switching (MPLS), Label Distribution Protocol (LDP), utilizing ethernet as the Layer 2 media.

[Table 3-179](#) lists the tables associated with this MIB.

**Table 3-179 MPLS-LDP-GENERIC-STD-MIB Tables and Descriptions**

| Name                        | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsLdpEntityGenericLRTable | MPLS LDP Entity Generic LR Table. The purpose of this table is to provide a mechanism for configuring a contiguous range of generic labels, or a 'label range' for LDP Entities. LDP Entities, which use Generic Labels, must have at least one entry in this table. In other words, this table 'extends' the mplsLdpEntityTable for Generic Labels. There is read-only support for all objects in this table. |

## MIB Constraints

Table 3-180 lists the constraints that the router places on objects in the MPLS-LDP-GENERIC-STD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-180 MPLS-LDP-GENERIC-STD-MIB Constraints**

| MIB Object                        | Notes         |
|-----------------------------------|---------------|
| mplsLdpEntityGenericLabelSpace    | Not supported |
| mplsLdpEntityGenericIfIndexOrZero | Not supported |
| mplsLdpEntityGenericLRStorageType | Not supported |
| mplsLdpEntityGenericLRRowStatus   | Not supported |

## MPLS-LDP-STD-MIB

The MPLS-LDP-STD-MIB contains managed object definitions for the 'Multiprotocol Label Switching, Label Distribution Protocol, LDP document'.



### Note

Only MANDATORY-GROUPS, which include mplsLdpGeneralGroup and mplsLdpNotificationGroup, are supported.

Table 3-181 lists the tables associated with this MIB.

**Table 3-181 MPLS-LDP-STD-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsLdpEntityTable      | This table contains information about the MPLS Label Distribution Protocol Entities which exist on this LSR or LER                                                    |
| mplsLdpEntityStatsTable | This table is a read-only table which augments the mplsLdpEntityTable. The purpose of this table is to keep statistical information about the LDP Entities on the LSR |

**Table 3-181 MPLS-LDP-STD-MIB Tables and Descriptions (continued)**

| Name                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsLdpPeerTable            | Information about LDP peers known by Entities in the mplsLdpEntityTable. The information in this table is based on information from the Entity-Peer interaction during session initialization but is not appropriate for the mplsLdpSessionTable, because objects in this table may or may not be used in session establishment                                                                                                                                      |
| mplsLdpSessionTable         | Table of Sessions between the LDP Entities and LDP Peers. This table AUGMENTS the mplsLdpPeerTable. Each row in this table represents a single session                                                                                                                                                                                                                                                                                                               |
| mplsLdpSessionStatsTable    | Table of statistics for Sessions between LDP Entities and LDP Peers. This table AUGMENTS the mplsLdpPeerTable                                                                                                                                                                                                                                                                                                                                                        |
| mplsLdpHelloAdjacencyTable  | Table of Hello Adjacencies for Sessions                                                                                                                                                                                                                                                                                                                                                                                                                              |
| mplsFecTable                | This table represents the FEC Information associated with an LSP                                                                                                                                                                                                                                                                                                                                                                                                     |
| mplsLdpSessionPeerAddrTable | This table 'extends' the mplsLdpSessionTable. This table is used to store Label Address Information from Label Address Messages received by this LSR from Peers. This table is read-only and should be updated when Label Withdraw Address Messages are received, that is, Rows should be deleted as appropriate. NOTE: since more than one address may be contained in a Label Address Message, this table 'sparse augments', the mplsLdpSessionTable's information |

## MIB Constraints

Table 3-180 lists the constraints that the router places on objects in the MPLS-LDP-STD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-182 MPLS-LDP-STD-MIB Constraints**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| mplsLdpLspFecStorageType        | Not supported |
| mplsLdpLspFecRowStatus          | Not supported |
| mplsLdpEntityProtocolVersion    | Not supported |
| mplsLdpEntityAdminStatus        | Not supported |
| mplsLdpEntityTcpPort            | Not supported |
| mplsLdpEntityUdpDscPort         | Not supported |
| mplsLdpEntityMaxPduLength       | Not supported |
| mplsLdpEntityKeepAliveHoldTimer | Not supported |
| mplsLdpEntityHelloHoldTimer     | Not supported |

**Table 3-182 MPLS-LDP-STD-MIB Constraints (continued)**

| MIB Object                        | Notes         |
|-----------------------------------|---------------|
| mplsLdpEntityInitSessionThreshold | Not supported |
| mplsLdpEntityLabelDistMethod      | Not supported |
| mplsLdpEntityLabelRetentionMode   | Not supported |
| mplsLdpEntityPathVectorLimit      | Not supported |
| mplsLdpEntityHopCountLimit        | Not supported |
| mplsLdpEntityTransportAddrKind    | Not supported |
| mplsLdpEntityTargetPeer           | Not supported |
| mplsLdpEntityTargetPeerAddrType   | Not supported |
| mplsLdpEntityTargetPeerAddr       | Not supported |
| mplsLdpEntityLabelType            | Not supported |
| mplsLdpEntityStorageType          | Not supported |
| mplsLdpEntityRowStatus            | Not supported |
| mplsFecType                       | Not supported |
| mplsFecAddrType                   | Not supported |
| mplsFecAddr                       | Not supported |
| mplsFecAddrPrefixLength           | Not supported |
| mplsFecStorageType                | Not supported |
| mplsFecRowStatus                  | Not supported |

## MPLS-LSR-STD-MIB

The MPLS-LSR-STD-MIB contains managed object definitions for the Multiprotocol Label Switching (MPLS) Router as defined in: Rosen, E., Viswanathan, A., and R. Callon, Multiprotocol Label Switching Architecture, RFC 3031, January 2001.



### Note

Only MANDATORY-GROUPS which include mplsInterfaceTable, mplsInSegmentTable, mplsOutSegmentTable, mplsXCTable and mplsInterfacePerfTable are supported.

Table 3-183 lists the tables associated with this MIB.

**Table 3-183 MPLS-LSR-STD-MIB Tables and Descriptions**

| Name                   | Description                                                                   |
|------------------------|-------------------------------------------------------------------------------|
| mplsInterfaceTable     | This table specifies per-interface MPLS capability and associated information |
| mplsInterfacePerfTable | This table provides MPLS performance information on a per-interface basis     |

**Table 3-183 MPLS-LSR-STD-MIB Tables and Descriptions (continued)**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsInSegmentTable      | This table contains a description of the incoming MPLS segments (labels) to an LSR and their associated parameters. The index for this table is mplsInSegmentIndex. The index structure of this table is specifically designed to handle many different MPLS implementations that manage their labels both in a distributed and centralized manner. The table is also designed to handle existing MPLS labels as defined in RFC 3031 as well as longer ones that may be necessary in the future. In cases where the label cannot fit into the mplsInSegmentLabel object, the mplsInSegmentLabelPtr indicates this by being set to the first accessible column in the appropriate extension table's row. In this case an additional table <b>MUST</b> be provided and <b>MUST</b> be indexed by at least the indexes used by this table. In all other cases when the label is represented within the mplsInSegmentLabel object, the mplsInSegmentLabelPtr <b>MUST</b> be set to 0.0. Due to the fact that MPLS labels may not exceed 24 bits, the mplsInSegmentLabelPtr object is only a provision for future-proofing the MIB module. Thus, the definition of any extension tables is beyond the scope of this MIB module |
| mplsInSegmentPerfTable  | This table contains statistical information for incoming MPLS segments to an LSR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| mplsOutSegmentTable     | This table contains a representation of the outgoing segments from an LSR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| mplsOutSegmentPerfTable | This table contains statistical information about outgoing segments from an LSR. The counters in this entry should behave in a manner similar to that of the interface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| mplsXCTable             | This table specifies information for switching between LSP segments. It supports point-to-point, point-to-multipoint and multipoint-to-point connections. mplsLabelStackTable specifies the label stack information for a cross-connect LSR and is referred to from mplsXCTable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| mplsLabelStackTable     | This table specifies the label stack to be pushed onto a packet, beneath the top label. Entries into this table are referred to from mplsXCTable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| mplsInSegmentMapTable   | This table specifies the mapping from the mplsInSegmentIndex to the corresponding mplsInSegmentInterface and mplsInSegmentLabel objects. The purpose of this table is to provide the manager with an alternative means by which to locate in-segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## MIB Constraints

Table 3-184 lists the constraints that the router places on objects in the MPLS-LSR-STD-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-184 MPLS-LSR-STD-MIB Constraints**

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| mplsInSegmentInterface        | Not supported |
| mplsInSegmentLabel            | Not supported |
| mplsInSegmentLabelPtr         | Not supported |
| mplsInSegmentNPop             | Not supported |
| mplsInSegmentAddrFamily       | Not supported |
| mplsInSegmentRowStatus        | Not supported |
| mplsInSegmentStorageType      | Not supported |
| mplsInSegmentTrafficParamPtr  | Not supported |
| mplsLabelStackLabel           | Not supported |
| mplsLabelStackLabelPtr        | Not supported |
| mplsLabelStackRowStatus       | Not supported |
| mplsLabelStackStorageType     | Not supported |
| mplsXCLspId                   | Not supported |
| mplsXCLabelStackIndex         | Not supported |
| mplsXCStorageType             | Not supported |
| mplsXCAdminStatus             | Not supported |
| mplsXCRowStatus               | Not supported |
| mplsXCNotificationsEnable     | Not supported |
| mplsOutSegmentInterface       | Not supported |
| mplsOutSegmentPushTopLabel    | Not supported |
| mplsOutSegmentTopLabel        | Not supported |
| mplsOutSegmentTopLabelPtr     | Not supported |
| mplsOutSegmentNextHopAddrType | Not supported |
| mplsOutSegmentNextHopAddr     | Not supported |
| mplsOutSegmentRowStatus       | Not supported |
| mplsOutSegmentStorageType     | Not supported |
| mplsOutSegmentTrafficParamPtr | Not supported |

## MPLS-TC-STD-MIB

The MPLS-TC-STD-MIB defines TEXTUAL-CONVENTIONS for concepts used in Multiprotocol Label Switching (MPLS) networks. This MIB has no tables.

# MPLS-TE-STD-MIB

The MPLS-TE-STD-MIB contains managed object definitions for the MPLS Traffic Engineering (TE).

[Table 3-185](#) lists the tables associated with this MIB.

**Table 3-185 MPLS-TE-STD-MIB Tables and Descriptions**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsTunnelTable         | mplsTunnelTable allows new MPLS tunnels to be created between an LSR and a remote endpoint, and existing tunnels to be reconfigured or removed. Note that only point-to-point tunnel segments are supported, although multipoint-to-point and point- to-multipoint connections are supported by an LSR acting as a cross-connect. Each MPLS tunnel can have one out-segment originating at this LSR or one in-segment terminating at this LSR                                                                                                                                                                                                                                                                                                                                                                                                         |
| mplsTunnelHopTable      | mplsTunnelHopTable is used to indicate the hops, strict or loose, for an instance of an MPLS tunnel defined in mplsTunnelTable, when it is established via signaling, for the outgoing direction of the tunnel. Thus at a transit LSR, this table contains the desired path of the tunnel from this LSR onwards. Each row in this table is indexed by mplsTunnelHopListIndex which corresponds to a group of hop lists or path options. Each row also has a secondary index mplsTunnelHopIndex, which indicates a group of hops (also known as a path option). Finally, the third index, mplsTunnelHopIndex indicates the specific hop information for a path option. To specify a particular interface on the originating LSR of an outgoing tunnel for packets to exit the LSR, specify this as the first hop for this tunnel in mplsTunnelHopTable |
| mplsTunnelResourceTable | mplsTunnelResourceTable allows a manager to specify which resources are desired for an MPLS tunnel. This table also allows several tunnels to point to a single entry in this table, implying that these tunnels should share resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Table 3-185 MPLS-TE-STD-MIB Tables and Descriptions (continued)**

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mplsTunnelARHopTable    | mplsTunnelARHopTable is used to indicate the hops for an MPLS tunnel defined in mplsTunnelTable, as reported by the MPLS signaling protocol. Thus at a transit LSR, this table (if the table is supported and if the signaling protocol is recording actual route information) contains the actual route of the whole tunnel. If the signaling protocol is not recording the actual route, this table MAY report the information from the mplsTunnelHopTable or the mplsTunnelCHopTable. Each row in this table is indexed by mplsTunnelARHopListIndex. Each row also has a secondary index mplsTunnelARHopIndex, corresponding to the next hop that this row corresponds to. Note that since the information necessary to build entries within this table is not provided by some MPLS signaling protocols, implementation of this table is optional. Furthermore, because the information in this table is actually provided by the MPLS signaling protocol after the path has been set-up, the entries in this table are provided only for observation, and hence, all variables in this table are accessible exclusively as read-only. Note also that the contents of this table may change while it is being read because of re-routing activities. A network administrator may verify that the actual route read is consistent by reference to the mplsTunnelLastPathChange object |
| mplsTunnelCHopTable     | mplsTunnelCHopTable is used to indicate the hops, strict or loose, for an MPLS tunnel defined in mplsTunnelTable, as computed by a constraint-based routing protocol, based on the mplsTunnelHopTable for the outgoing direction of the tunnel. Thus at a transit LSR, this table (if the table is supported) MAY contain the path computed by the CSPF engine on (or on behalf of) this LSR. Each row in this table is indexed by mplsTunnelCHopListIndex. Each row also has a secondary index mplsTunnelCHopIndex, corresponding to the next hop that this row corresponds to. In case we want to specify a particular interface on the originating LSR of an outgoing tunnel by which we want packets to exit the LSR, we specify this as the first hop for this tunnel in mplsTunnelCHopTable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| mplsTunnelPerfTable     | This table provides per-tunnel instance MPLS performance information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| mplsTunnelCRLDPResTable | mplsTunnelCRLDPResTable allows a manager to specify which CR-LDP-specific resources are desired for an MPLS tunnel if that tunnel is signaled using CR-LDP. Note that these attributes are in addition to those specified in mplsTunnelResourceTable. This table also allows several tunnels to point to a single entry in this table, implying that these tunnels should share resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## MIB Constraints

Table 3-186 lists the constraints on objects in the MPLS-TE-STD-MIB.

**Table 3-186 MPLS-TE-STD-MIB Constraints**

| MIB Object                      | Notes                                                  |
|---------------------------------|--------------------------------------------------------|
| <b>mplsTunnelCRLDPResTable</b>  | CRLDP signaling not supported for Traffic Engineering. |
| mplsTunnelNotificationMaxRate   | Not supported                                          |
| mplsTunnelSetupPrio             | Not supported                                          |
| mplsTunnelHoldingPrio           | Not supported                                          |
| mplsTunnelSignallingProto       | Not supported                                          |
| mplsTunnelLocalProtectInUse     | Not supported                                          |
| mplsTunnelSessionAttributes     | Not supported                                          |
| mplsTunnelHopAddrType           | Not supported                                          |
| mplsTunnelHopIpAddr             | Not supported                                          |
| mplsTunnelHopIpPrefixLen        | Not supported                                          |
| mplsTunnelHopAddrUnnum          | Not supported                                          |
| mplsTunnelHopAsNumber           | Not supported                                          |
| mplsTunnelHopLspId              | Not supported                                          |
| mplsTunnelHopType               | Not supported                                          |
| mplsTunnelHopInclude            | Not supported                                          |
| mplsTunnelHopPathOptionName     | Not supported                                          |
| mplsTunnelHopEntryPathComp      | Not supported                                          |
| mplsTunnelHopRowStatus          | Not supported                                          |
| mplsTunnelHopStorageType        | Not supported                                          |
| mplsTunnelIsIf                  | Not supported                                          |
| mplsTunnelCRLDPResMeanBurstSize | Not supported                                          |
| mplsTunnelCRLDPResExBurstSize   | Not supported                                          |
| mplsTunnelCRLDPResFrequency     | Not supported                                          |
| mplsTunnelCRLDPResWeight        | Not supported                                          |
| mplsTunnelCRLDPResFlags         | Not supported                                          |
| mplsTunnelCRLDPResRowStatus     | Not supported                                          |
| mplsTunnelCRLDPResStorageType   | Not supported                                          |
| mplsTunnelSignallingProto       | Not supported                                          |
| mplsTunnelIsIf                  | Not supported                                          |
| mplsTunnelName                  | Not supported                                          |
| mplsTunnelDescr                 | Not supported                                          |
| mplsTunnelXCPointer             | Not supported                                          |

**Table 3-186 MPLS-TE-STD-MIB Constraints (continued)**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| mplsTunnelHopTableIndex         | Not supported |
| mplsTunnelAdminStatus           | Not supported |
| mplsTunnelRowStatus             | Not supported |
| mplsTunnelNotificationEnable    | Not supported |
| mplsTunnelStorageType           | Not supported |
| mplsTunnelIncludeAnyAffinity    | Not supported |
| mplsTunnelIncludeAllAffinity    | Not supported |
| mplsTunnelExcludeAnyAffinity    | Not supported |
| mplsTunnelResourcePointer       | Not supported |
| mplsTunnelInstancePriority      | Not supported |
| mplsTunnelPathInUse             | Not supported |
| mplsTunnelRole                  | Not supported |
| mplsTunnelResourceMaxRate       | Not supported |
| mplsTunnelResourceMeanRate      | Not supported |
| mplsTunnelResourceMaxBurstSize  | Not supported |
| mplsTunnelResourceMeanBurstSize | Not supported |
| mplsTunnelResourceExBurstSize   | Not supported |
| mplsTunnelResourceFrequency     | Not supported |
| mplsTunnelResourceWeight        | Not supported |
| mplsTunnelResourceRowStatus     | Not supported |
| mplsTunnelResourceStorageType   | Not supported |

## NOTIFICATION-LOG-MIB

The NOTIFICATION-LOG-MIB is for logging SNMP Notifications, that is, Traps and Informs.

[Table 3-187](#) lists the tables associated with this MIB.

**Table 3-187 NOTIFICATION-LOG-MIB Tables and Descriptions**

| Name              | Description                                  |
|-------------------|----------------------------------------------|
| nlmConfigLogTable | Table of logging control entries             |
| nlmStatsLogTable  | Table of Notification log statistics entries |

**Table 3-187 NOTIFICATION-LOG-MIB Tables and Descriptions**

| Name                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nmlLogTable         | Table of Notification log entries. It is an implementation-specific matter whether entries in this table are preserved across initializations of the management system. In general, one would expect that they are not. Note that keeping entries across initializations of the management system leads to some confusion with counters and TimeStamps, since both of those are based on sysUpTime, which resets on management initialization. In this situation, counters apply only after the reset and nmlLogTime for entries made before the reset must be set to 0 |
| nmlLogVariableTable | Table of variables to go with Notification log entries                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## OSPF-MIB

The OSPF-MIB contains objects to describe the OSPF Version 2 Protocol.

## MIB Tables

[Table 3-188](#) lists the tables in OSPF-MIB:

**Table 3-188 OSPF-MIB Tables**

| MIB Tables         | Description                                                                                                                                                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ospfAreaTable      | Provides information about the configured parameters and cumulative statistics of the router's attached areas. The interfaces and virtual links are configured as part of these areas. For example, area 0.0.0.0, is defined as the backbone area. |
| ospfStubAreaTable  | Displays the set of metrics that are advertised by a default area border router into a stub area.                                                                                                                                                  |
| ospfLsdbTable      | Contains the OSPF Process link state database (LSDB) that provides the information about the link state advertisements in the area for the attached devices.                                                                                       |
| ospfAreaRangeTable | Displays the address range summaries and supplements the information available in the ospfAreaTable. It contains a set of IP address ranges specified by an IP address/IP network mask pair. Deprecated, use ospfAreaAggregateTable.               |

| MIB Tables             | Description                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ospfHostTable          | Provides this information about the host: <ul style="list-style-type: none"> <li>List of the hosts that are directly attached to the router.</li> <li>Lists the metrics and types of service that should be advertised.</li> <li>Lists the areas where the host is visible.</li> </ul> |
| ospfIfTable            | Provides information about interfaces and supplements the information contained in ipAddrTable.                                                                                                                                                                                        |
| ospfIfMetricTable      | Displays the metrics to be advertised for an interface at the various types of service.                                                                                                                                                                                                |
| ospfVirtIfTable        | Provides information about the virtual interfaces for which an OSPF process is configured for a router.                                                                                                                                                                                |
| ospfNbrTable           | Lists all the non-virtual neighbors in the locality of the OSPF router.                                                                                                                                                                                                                |
| ospfVirtNbrTable       | Lists all virtual neighbors. This table is read-only because the virtual links are configured in the virtual interface table.                                                                                                                                                          |
| ospfExtLsdbTable       | Provides the external link state advertisement information. This table is basically external LSA link state database for OSPF processes.                                                                                                                                               |
| ospfAreaAggregateTable | Displays the address aggregates that are configured to be propagated from an area. The ospfAreaAggregateTable supplements the information provided in the ospfAreaTable. It contains a set of IP address ranges specified by an IP address/IP network mask pair.                       |
| ospfLocalLsdbTable     | Displays the link-local Link State Advertisements for non-virtual links. This table lists the link-local LSAs for each non-virtual interface.                                                                                                                                          |
| ospfVirtLocalLsdbTable | Displays the link-local Link State Advertisements for virtual links. This table lists the link-local LSAs for each virtual interface.                                                                                                                                                  |
| ospfAsLsdbTable        | Displays the AS-scope link state advertisements received from the connected areas. This table lists AS-scope LSAs for each router.                                                                                                                                                     |
| ospfAreaLsaCountTable  | Displays per-area per-LSA-type counters.                                                                                                                                                                                                                                               |

**Note**

To access OSPF data, the corresponding SNMP context must be used (i.e. v2 community or v3 group mapped to context).

## MIB Constraints

Table 3-186 lists the constraints on objects in the OSPF-MIB.

**Table 3-189 OSPF-MIB Constraints**

| MIB Object                   | Notes         |
|------------------------------|---------------|
| ospfHostMetric               | Not supported |
| ospfHostStatus               | Not supported |
| ospfHostCfgAreaID            | Not supported |
| ospfVirtIfTransitDelay       | Not supported |
| ospfVirtIfRetransInterval    | Not supported |
| ospfVirtIfHelloInterval      | Not supported |
| ospfVirtIfRtrDeadInterval    | Not supported |
| ospfVirtIfAuthType           | Not supported |
| ospfVirtIfAuthKey            | Not supported |
| ospfVirtIfStatus             | Not supported |
| ospfRouterId                 | Not supported |
| ospfAdminStat                | Not supported |
| ospfASBdrRtrStatus           | Not supported |
| ospfTOSSupport               | Not supported |
| ospfExtLsdbLimit             | Not supported |
| ospfMulticastExtensions      | Not supported |
| ospfExitOverflowInterval     | Not supported |
| ospfDemandExtensions         | Not supported |
| ospfRFC1583Compatibility     | Not supported |
| ospfReferenceBandwidth       | Not supported |
| ospfRestartSupport           | Not supported |
| ospfRestartInterval          | Not supported |
| ospfRestartStrictLsaChecking | Not supported |
| ospfStubRouterAdvertisement  | Not supported |
| ospfAreaAggregateStatus      | Not supported |
| ospfAreaAggregateEffect      | Not supported |
| ospfAreaAggregateExtRouteTag | Not supported |
| ospfStubMetric               | Not supported |
| ospfStubMetricType           | Not supported |
| ospfIfMetricValue            | Not supported |
| ospfIfMetricStatus           | Not supported |
| ospfIfAreaId                 | Not supported |
| ospfIfType                   | Not supported |

**Table 3-189 OSPF-MIB Constraints (continued)**

| MIB Object                              | Notes         |
|-----------------------------------------|---------------|
| ospfIfAdminStat                         | Not supported |
| ospfIfRtrPriority                       | Not supported |
| ospfIfTransitDelay                      | Not supported |
| ospfIfRetransInterval                   | Not supported |
| ospfIfHelloInterval                     | Not supported |
| ospfIfRtrDeadInterval                   | Not supported |
| ospfIfPollInterval                      | Not supported |
| ospfIfAuthType                          | Not supported |
| ospfIfAuthKey                           | Not supported |
| ospfIfStatus                            | Not supported |
| ospfIfMulticastForwarding               | Not supported |
| ospfIfDemand                            | Not supported |
| ospfNbrPriority                         | Not supported |
| ospfNbmaNbrStatus                       | Not supported |
| ospfImportAsExtern                      | Not supported |
| ospfAreaSummary                         | Not supported |
| ospfAreaStatus                          | Not supported |
| ospfAreaNssaTranslatorRole              | Not supported |
| ospfAreaNssaTranslatorStabilityInterval | Not supported |

## OSPF-TRAP-MIB

The OSPF-TRAP-MIB describes the traps for OSPF Version 2 Protocol. This MIB has no tables.

## OSPFV3-MIB

The OSPFV3-MIB is the MIB module for OSPF version 3.

[Table 3-190](#) lists the tables associated with this MIB.

**Table 3-190 OSPFV3-MIB Tables and Descriptions**

| Name              | Description                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| ospfv3AreaTable   | OSPFv3 Process's AS-Scope LSDB. The LSDB contains the AS-Scope Link State Advertisements from throughout the areas that the device is attached to. |
| ospfv3AsLsdbTable | OSPFv3 Process's AS-Scope LSDB. The LSDB contains the AS-Scope Link State Advertisements from throughout the areas that the device is attached to. |

**Table 3-190 OSPFV3-MIB Tables and Descriptions (continued)**

| Name                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ospfv3AreaLsdbTable      | OSPFv3 Process's Area-Scope LSDB. The LSDB contains the Area-Scope Link State Advertisements from throughout the area that the device is attached to.                                                                                                                                                                                                                                                                                        |
| ospfv3LinkLsdbTable      | OSPFv3 Process's Link-Scope LSDB for non-virtual interfaces. The LSDB contains the Link-Scope Link State Advertisements from the interfaces that the device is attached to                                                                                                                                                                                                                                                                   |
| ospfv3HostTable          | Host/Metric Table indicates what hosts are directly attached to the router and their corresponding metrics                                                                                                                                                                                                                                                                                                                                   |
| ospfv3IfTable            | OSPFv3 Interface Table describes the interfaces from the viewpoint of OSPFv3                                                                                                                                                                                                                                                                                                                                                                 |
| ospfv3VirtIfTable        | Information about this router's virtual interfaces that the OSPFv3 Process is configured to carry on                                                                                                                                                                                                                                                                                                                                         |
| ospfv3NbrTable           | A table describing all neighbors in the locality of the OSPFv3 router                                                                                                                                                                                                                                                                                                                                                                        |
| ospfv3CfgNbrTable        | Table describing all configured neighbors                                                                                                                                                                                                                                                                                                                                                                                                    |
| ospfv3VirtNbrTable       | Table describing all virtual neighbors                                                                                                                                                                                                                                                                                                                                                                                                       |
| ospfv3AreaAggregateTable | Area Aggregate Table acts as an adjunct to the Area Table. It describes those address aggregates that are configured to be propagated from an area. Its purpose is to reduce the amount of information that is known beyond an Area's borders. A range of IPv6 prefixes specified by a prefix/prefix length pair. Note that if ranges are configured such that one range subsumes another range the most specific match is the preferred one |
| ospfv3VirtLinkLsdbTable  | OSPFv3 Process's Link-Scope LSDB for virtual interfaces. The LSDB contains the Link-Scope Link State Advertisements from virtual interfaces                                                                                                                                                                                                                                                                                                  |

## MIB Constraints

Table 3-186 lists the constraints on objects in the OSPFV3-MIB.

**Table 3-191 OSPFV3-MIB Constraints**

| MIB Object                 | Notes         |
|----------------------------|---------------|
| ospfv3RouterId             | Not supported |
| ospfv3AdminStat            | Not supported |
| ospfv3ASBdrRtrStatus       | Not supported |
| ospfv3ExtAreaLsdbLimit     | Not supported |
| ospfv3MulticastExtensions  | Not supported |
| ospfv3ExitOverflowInterval | Not supported |

**Table 3-191 OSPFV3-MIB Constraints (continued)**

| <b>MIB Object</b>                         | <b>Notes</b>  |
|-------------------------------------------|---------------|
| ospfv3DemandExtensions                    | Not supported |
| ospfv3TrafficEngineeringSupport           | Not supported |
| ospfv3ReferenceBandwidth                  | Not supported |
| ospfv3RestartSupport                      | Not supported |
| ospfv3RestartInterval                     | Not supported |
| ospfv3ImportAsExtern                      | Not supported |
| ospfv3AreaSummary                         | Not supported |
| ospfv3AreaStatus                          | Not supported |
| ospfv3StubMetric                          | Not supported |
| ospfv3AreaNssaTranslatorRole              | Not supported |
| ospfv3AreaNssaTranslatorStabilityInterval | Not supported |
| ospfv3AreaStubMetricType                  | Not supported |
| ospfv3NbmaNbrPriority                     | Not supported |
| ospfv3NbmaNbrStorageType                  | Not supported |
| ospfv3NbmaNbrStatus                       | Not supported |
| ospfv3VirtIfIndex                         | Not supported |
| ospfv3VirtIfTransitDelay                  | Not supported |
| ospfv3VirtIfRetransInterval               | Not supported |
| ospfv3VirtIfHelloInterval                 | Not supported |
| ospfv3VirtIfRtrDeadInterval               | Not supported |
| ospfv3VirtIfStatus                        | Not supported |
| ospfv3AreaAggregateStatus                 | Not supported |
| ospfv3AreaAggregateEffect                 | Not supported |
| ospfv3AreaAggregateRouteTag               | Not supported |
| ospfv3IfAreaId                            | Not supported |
| ospfv3IfType                              | Not supported |
| ospfv3IfAdminStat                         | Not supported |
| ospfv3IfRtrPriority                       | Not supported |
| ospfv3IfTransitDelay                      | Not supported |
| ospfv3IfRetransInterval                   | Not supported |
| ospfv3IfHelloInterval                     | Not supported |
| ospfv3IfRtrDeadInterval                   | Not supported |
| ospfv3IfPollInterval                      | Not supported |
| ospfv3IfStatus                            | Not supported |
| ospfv3IfMulticastForwarding               | Not supported |

**Table 3-191 OSPFV3-MIB Constraints (continued)**

| MIB Object                      | Notes         |
|---------------------------------|---------------|
| ospfv3IfDemand                  | Not supported |
| ospfv3IfMetricValue             | Not supported |
| ospfv3IfInstId                  | Not supported |
| ospfv3IfDemandNbrProbe          | Not supported |
| ospfv3IfDemandNbrProbeRetxLimit | Not supported |
| ospfv3IfDemandNbrProbeInterval  | Not supported |
| ospfv3HostMetric                | Not supported |
| ospfv3HostStatus                | Not supported |
| ospfv3HostAreaID                | Not supported |

## PIM-MIB

The MIB module for management of PIM routers.

[Table 3-192](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-192** PIM-MIB Tables and Descriptions

| Name                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pimInterfaceTable       | The (conceptual) table listing the router's PIM interfaces. IGMP and PIM are enabled on all interfaces listed in this table.                                                                                                                                                                                                                                                                                                                                |
| pimNeighborTable        | The (conceptual) table listing the router's PIM neighbors.                                                                                                                                                                                                                                                                                                                                                                                                  |
| pimIpMRouteTable        | The (conceptual) table listing PIM-specific information on a subset of the rows of the ipMRouteTable defined in the IP Multicast MIB.                                                                                                                                                                                                                                                                                                                       |
| pimIpMRouteNextHopTable | The (conceptual) table listing PIM-specific information on a subset of the rows of the ipMRouteNextHopTable defined in the IP Multicast MIB.                                                                                                                                                                                                                                                                                                                |
| pimRPTable              | The (conceptual) table listing PIM version 1 information for the Rendezvous Points (RPs) for IP multicast groups. This table is deprecated since its function is replaced by the pimRPSetTable for PIM version 2.                                                                                                                                                                                                                                           |
| pimRPSetTable           | The (conceptual) table listing PIM information for candidate Rendezvous Points (RPs) for IP multicast groups. When the local router is the BSR, this information is obtained from received Candidate-RP-Advertisements. When the local router is not the BSR, this information is obtained from received RP-Set messages.                                                                                                                                   |
| pimCandidateRPTable     | The (conceptual) table listing the IP multicast groups for which the local router is to advertise itself as a Candidate-RP when the value of pimComponentCRPHoldTime is non-zero. If this table is empty, then the local router will advertise itself as a Candidate-RP for all groups (providing the value of pimComponentCRPHoldTime is non-zero).                                                                                                        |
| pimComponentTable       | The (conceptual) table containing objects specific to a PIM domain. One row exists for each domain to which the router is connected. A PIM-SM domain is defined as an area of the network over which Bootstrap messages are forwarded. Typically, a PIM-SM router will be a member of exactly one domain. This table also supports, however, routers which may form a border between two PIM-SM domains and do not forward Bootstrap messages between them. |

## MIB Constraints

Table 3-186 lists the constraints on objects in the PIM-MIB.

**Table 3-193 PIM-MIB Constraints**

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| pimInterfaceHelloInterval     | Not supported |
| pimInterfaceStatus            | Not supported |
| pimInterfaceMode              | Not supported |
| pimCandidateRPAddress         | Not supported |
| pimCandidateRPRowStatus       | Not supported |
| pimJoinPruneInterval          | Not supported |
| pimInterfaceJoinPruneInterval | Not supported |
| pimInterfaceCBSPReference     | Not supported |
| pimComponentCRPHoldTime       | Not supported |
| pimComponentStatus            | Not supported |

## RADIUS-ACC-CLIENT-MIB

The RADIUS-ACC-CLIENT-MIB is the MIB module for entities implementing the client side of the RADIUS accounting protocol.

Table 3-194 lists the tables associated with this MIB.

**Table 3-194 RADIUS-ACC-CLIENT-MIB Tables and Descriptions**

| Name                 | Description                                                                                     |
|----------------------|-------------------------------------------------------------------------------------------------|
| radiusAccServerTable | (conceptual) Table listing the RADIUS accounting servers with which the client shares a secret. |

## RADIUS-AUTH-CLIENT-MIB

The RADIUS-AUTH-CLIENT-MIB is the MIB module for entities implementing the client side of the RADIUS authentication protocol.

Table 3-195 lists the tables associated with this MIB.

**Table 3-195 RADIUS-AUTH-CLIENT-MIB Tables and Descriptions**

| Name                  | Description                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------|
| radiusAuthServerTable | (conceptual) Table listing the RADIUS authentication servers with which the client shares a secret. |

## RFC1213-MIB

The RFC1213-MIB is the second version of the MIB-II used with network management protocols in TCP-based networks.

[Table 3-196](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-196** *RFC 1213-MIB Tables and Descriptions*

| Name              | Description                                                                                                                                                                                                                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ifTable           | List of interface entries. The number of entries is given by the value of ifNumber.                                                                                                                                                                                                                                                                |
| atTable           | Address Translation tables contain the NetworkAddress to 'physical' address equivalences. Some interfaces do not use translation tables for determining address equivalences (for example, DDN-X.25 has an algorithmic method); if all interfaces are of this type, then the Address Translation table is empty, in other words, has zero entries. |
| ipAddrTable       | Table of addressing information relevant to this entity's IP addresses.                                                                                                                                                                                                                                                                            |
| ipRouteTable      | This entity's IP Routing table.                                                                                                                                                                                                                                                                                                                    |
| ipNetToMediaTable | IP Address Translation table used for mapping from IP addresses to physical addresses.                                                                                                                                                                                                                                                             |
| tcpConnTable      | Table containing TCP connection-specific information.                                                                                                                                                                                                                                                                                              |
| udpTable          | Table containing UDP listener information.                                                                                                                                                                                                                                                                                                         |
| egpNeighTable     | EGP neighbor table.                                                                                                                                                                                                                                                                                                                                |

## RFC 2011-MIB

This MIB describes the module for managing IP and ICMP implementations, but excluding their management of IP routes.

[Table 3-201](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-197**     *RFC 2011-MIB Tables and Descriptions*

| Name              | Description                                                                                |
|-------------------|--------------------------------------------------------------------------------------------|
| ipAddrTable       | The table of addressing information relevant to this entity's IP addresses.                |
| ipNetToMediaTable | The IP Address Translation table used for mapping from IP addresses to physical addresses. |

## MIB Constraints

[Table 3-202](#) lists the constraints on objects in the RFC 2011-MIB.

**Table 3-198**     *RFC 2011-MIB Constraints*

| MIB Object   | Notes         |
|--------------|---------------|
| ipForwarding | Not supported |
| ipDefaultTTL | Not supported |

## RFC 2465-MIB

The MIB module for entities implementing the IPv6 protocol.

[Table 3-196](#) lists the tables associated with this MIB.

## MIB Objects

**Table 3-199 RFC 2465-MIB Tables and Descriptions**

| Name                | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6IfTable         | The IPv6 Interfaces table contains information on the entity's internetwork-layer interfaces. An IPv6 interface constitutes a logical network layer attachment to the layer immediately below IPv6 including internet layer 'tunnels', such as tunnels over IPv4 or IPv6 itself.                                                                                                              |
| ipv6IfStatsTable    | IPv6 interface traffic statistics.                                                                                                                                                                                                                                                                                                                                                            |
| ipv6AddrPrefixTable | The list of IPv6 address prefixes of IPv6 interfaces.                                                                                                                                                                                                                                                                                                                                         |
| ipv6AddrTable       | The table of addressing information relevant to this node's interface addresses.                                                                                                                                                                                                                                                                                                              |
| ipv6RouteTable      | IPv6 Routing table. This table contains an entry for each valid IPv6 unicast route that can be used for packet forwarding determination.                                                                                                                                                                                                                                                      |
| ipv6NetToMediaTable | The IPv6 Address Translation table used for mapping from IPv6 addresses to physical addresses. The IPv6 address translation table contains the Ipv6Address to 'physical' address equivalencies. Some interfaces do not use translation tables for determining address equivalencies; if all interfaces are of this type, then the Address Translation table is empty, i.e., has zero entries. |

## MIB Constraints

Table 3-202 lists the constraints on objects in the RFC 2465-MIB.

**Table 3-200 RFC 2465-MIB Constraints**

| MIB Object             | Notes         |
|------------------------|---------------|
| ipv6Forwarding         | Not supported |
| ipv6DefaultHopLimit    | Not supported |
| ipv6IfDescr            | Not supported |
| ipv6IfIdentifier       | Not supported |
| ipv6IfIdentifierLength | Not supported |
| ipv6IfAdminStatus      | Not supported |
| ipv6RouteValid         | Not supported |
| ipv6NetToMediaValid    | Not supported |

# RSVP-MIB

The RSVP-MIB defines table objects to describe Resource Reservation Protocol (RSVP).

[Table 3-201](#) lists the tables defined in RSVP-MIB.

**Table 3-201** *RSVP-MIB Tables and Descriptions*

| Name              | Description                                                                                                                                                                                                                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ifTable           | List of interface entries. The number of entries is given by the value of ifNumber.                                                                                                                                                                                                                                                    |
| atTable           | Address Translation tables contain the Network Address to physical address equivalences. Some interfaces do not use translation tables for determining address equivalences (that is, DDN-X.25 has an algorithmic method); if all interfaces are of this type, then the Address Translation table is empty, that is, has zero entries. |
| ipAddrTable       | Table of addressing information relevant to this entity's IP addresses.                                                                                                                                                                                                                                                                |
| ipRouteTable      | This entity's IP Routing table.                                                                                                                                                                                                                                                                                                        |
| ipNetToMediaTable | IP Address Translation table used for mapping from IP addresses to physical addresses.                                                                                                                                                                                                                                                 |
| tcpConnTable      | Table containing TCP connection-specific information.                                                                                                                                                                                                                                                                                  |
| udpTable          | Table containing UDP listener information.                                                                                                                                                                                                                                                                                             |
| egpNeighTable     | EGP neighbor table.                                                                                                                                                                                                                                                                                                                    |

## MIB Constraints

[Table 3-202](#) lists the constraints on objects in the RSVP-MIB.

**Table 3-202** *RSVP-MIB Constraints*

| MIB Object               | Notes         |
|--------------------------|---------------|
| rsvpResvFwdNewIndex      | Not supported |
| rsvpResvFwdStatus        | Not supported |
| rsvpSenderType           | Not supported |
| rsvpSenderDestAddr       | Not supported |
| rsvpSenderAddr           | Not supported |
| rsvpSenderDestAddrLength | Not supported |
| rsvpSenderAddrLength     | Not supported |
| rsvpSenderProtocol       | Not supported |
| rsvpSenderDestPort       | Not supported |
| rsvpSenderPort           | Not supported |
| rsvpSenderHopAddr        | Not supported |

**Table 3-202** *RSVP-MIB Constraints (continued)*

| <b>MIB Object</b>                    | <b>Notes</b>  |
|--------------------------------------|---------------|
| rsvpSenderHopLih                     | Not supported |
| rsvpSenderInterface                  | Not supported |
| rsvpSenderTSpecRate                  | Not supported |
| rsvpSenderTSpecPeakRate              | Not supported |
| rsvpSenderTSpecBurst                 | Not supported |
| rsvpSenderTSpecMinTU                 | Not supported |
| rsvpSenderTSpecMaxTU                 | Not supported |
| rsvpSenderInterval                   | Not supported |
| rsvpSenderStatus                     | Not supported |
| rsvpSenderRSVPHop                    | Not supported |
| rsvpSenderPolicy                     | Not supported |
| rsvpSenderAdspecBreak                | Not supported |
| rsvpSenderAdspecHopCount             | Not supported |
| rsvpSenderAdspecPathBw               | Not supported |
| rsvpSenderAdspecMinLatency           | Not supported |
| rsvpSenderAdspecMtu                  | Not supported |
| rsvpSenderAdspecGuaranteedSvc        | Not supported |
| rsvpSenderAdspecGuaranteedBreak      | Not supported |
| rsvpSenderAdspecGuaranteedCtot       | Not supported |
| rsvpSenderAdspecGuaranteedDt看        | Not supported |
| rsvpSenderAdspecGuaranteedCsum       | Not supported |
| rsvpSenderAdspecGuaranteedDsum       | Not supported |
| rsvpSenderAdspecGuaranteedHopCount   | Not supported |
| rsvpSenderAdspecGuaranteedPathBw     | Not supported |
| rsvpSenderAdspecGuaranteedMinLatency | Not supported |
| rsvpSenderAdspecGuaranteedMtu        | Not supported |
| rsvpSenderAdspecCtrlLoadSvc          | Not supported |
| rsvpSenderAdspecCtrlLoadBreak        | Not supported |
| rsvpSenderAdspecCtrlLoadHopCount     | Not supported |
| rsvpSenderAdspecCtrlLoadPathBw       | Not supported |
| rsvpSenderAdspecCtrlLoadMinLatency   | Not supported |
| rsvpSenderAdspecCtrlLoadMtu          | Not supported |
| rsvpSenderNewIndex                   | Not supported |
| rsvpIfEnabled                        | Not supported |
| rsvpIfUdpRequired                    | Not supported |

**Table 3-202** *RSVP-MIB Constraints (continued)*

| <b>MIB Object</b>             | <b>Notes</b>  |
|-------------------------------|---------------|
| rsvpIfRefreshBlockadeMultiple | Not supported |
| rsvpIfRefreshMultiple         | Not supported |
| rsvpIfRefreshInterval         | Not supported |
| rsvpIfTTL                     | Not supported |
| rsvpIfRouteDelay              | Not supported |
| rsvpIfStatus                  | Not supported |
| rsvpResvType                  | Not supported |
| rsvpResvDestAddr              | Not supported |
| rsvpResvSenderAddr            | Not supported |
| rsvpResvDestAddrLength        | Not supported |
| rsvpResvSenderAddrLength      | Not supported |
| rsvpResvProtocol              | Not supported |
| rsvpResvDestPort              | Not supported |
| rsvpResvPort                  | Not supported |
| rsvpResvHopAddr               | Not supported |
| rsvpResvHopLih                | Not supported |
| rsvpResvInterface             | Not supported |
| rsvpResvService               | Not supported |
| rsvpResvTSpecRate             | Not supported |
| rsvpResvTSpecBurst            | Not supported |
| rsvpResvTSpecPeakRate         | Not supported |
| rsvpResvTSpecMinTU            | Not supported |
| rsvpResvTSpecMaxTU            | Not supported |
| rsvpResvRSpecRate             | Not supported |
| rsvpResvRSpecSlack            | Not supported |
| rsvpResvInterval              | Not supported |
| rsvpResvScope                 | Not supported |
| rsvpResvShared                | Not supported |
| rsvpResvExplicit              | Not supported |
| rsvpResvRSVPHop               | Not supported |
| rsvpResvPolicy                | Not supported |
| rsvpResvStatus                | Not supported |
| rsvpResvNewIndex              | Not supported |
| rsvpSessionNewIndex           | Not supported |
| rsvpNbrProtocol               | Not supported |
| rsvpNbrStatus                 | Not supported |

## SNMP-COMMUNITY-MIB (RFC 2576)

The SNMP-COMMUNITY-MIB (RFC 2576) contains objects that help support coexistence between SNMPv1, SNMPv2c, and SNMPv3.

[Table 3-203](#) lists the tables associated with this MIB.

**Table 3-203** *SNMP-COMMUNITY-MIB Tables and Descriptions*

| Name                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| snmpCommunityTable     | Table of community strings configured in the SNMP engine's LCD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| snmpTargetAddrExtTable | Table of mask and mms values associated with the snmpTargetAddrTable. The snmpTargetAddrExtTable augments the snmpTargetAddrTable with a transport address mask value and a maximum message size value. The transport address mask allows entries in the snmpTargetAddrTable to define a set of addresses instead of just a single address. The maximum message size value allows the maximum message size of another SNMP entity to be configured for use in SNMPv1 (and SNMPv2c) transactions, where the message format does not specify a maximum message size. |

## SNMP-FRAMEWORK-MIB (RFC 2571)

The SNMP-FRAMEWORK-MIB (RFC 2571) contains objects that describe the SNMP management architecture. There are no constraints on this MIB.

## SNMP-NOTIFICATION-MIB (RFC 2573)

The SNMP-NOTIFICATION-MIB contains managed objects for SNMPv3 notifications. The MIB also defines a set of filters that limit the number of notifications generated by a particular entity (snmpNotifyFilterProfileTable and snmpNotifyFilterTable).

Objects in the snmpNotifyTable are used to select entities in the SNMP-TARGET-MIB snmpTargetAddrTable and specify the types of supported SNMP notifications.

## SNMP-TARGET-MIB (RFC 2573)

The SNMP-TARGET-MIB (RFC 2573) contains objects to remotely configure the parameters used by an entity to generate SNMP notifications. The MIB defines the addresses of the destination entities for SNMP notifications and contains a list of tag values that are used to filter the notifications sent to the entities (see the SNMP-NOTIFICATION-MIB). There are no constraints on this MIB.

[Table 3-204](#) lists the tables associated with this MIB.

**Table 3-204** *SNMP-TARGET-MIB Tables and Descriptions*

| Name                  | Description                                                                    |
|-----------------------|--------------------------------------------------------------------------------|
| snmpTargetAddrTable   | Table of transport addresses to be used in the generation of SNMP messages     |
| snmpTargetParamsTable | Table of SNMP target information to be used in the generation of SNMP messages |

## SNMP-USM-MIB (RFC 2574)

The SNMP-USM-MIB (RFC 2574) contains objects that describe the SNMP user-based security model.

## SNMPv2-MIB (RFC 1907)

The SNMPv2-MIB contains objects SNMPv2 entities. The SNMPv2-MIB contains the following mandatory object groups:

- **SNMP group**—Collection of objects providing basic instrumentation and control of an SNMP entity.
- **System group**—Collection of objects common to all managed systems.
- **snmpSetGroup**—Collection of objects that allow several cooperating SNMPv2 entities, all acting in a manager role, to coordinate their use of the SNMPv2 set operation.
- **snmpBasicNotificationsGroup**—The two notifications are coldStart and authenticationFailure, which an SNMPv2 entity is required to implement.

## SNMP-VACM-MIB

The SNMP-VACM-MIB contains objects to manage the View-Based Access Control Model (VACM) for SNMP clients and managers. The MODULE-IDENTITY for the SNMP-VACM-MIB is snmpVacmMIB, and its top-level OID is 1.3.6.1.6.3.16 (iso.org.dod.internet.snmpv2.snmpModules.snmpVacmMIB).

## SONET-MIB (RFC 2558)

The SONET-MIB (RFC 2558) provides both configuration and performance monitoring objects for SONET interfaces.



### Note

When the SONET path is initialized and no active alarms exist, the value of sonetPathCurrentStatus object is zero.

**Note**

If an alarm is triggered and cleared, the value of sonetPathNoDefect object is one.

**Note**

The intervals in a dsx1IntervalTable are reset during an OIR operation whereas the SONET intervals are not reset.

## MIB Tables

Table 3-205 lists the tables in SONET-MIB:

**Table 3-205 SONET-MIB Tables**

| MIB Table                    | Description                                |
|------------------------------|--------------------------------------------|
| sonetMediumTable             | The SONET/SDH Medium table.                |
| sonetSectionCurrentTable     | The SONET/SDH Section Current table        |
| sonetSectionIntervalTable    | The SONET/SDH Section Interval table.      |
| sonetLineCurrentTable        | The SONET/SDH Line Current table.          |
| sonetLineIntervalTable       | The SONET/SDH Line Interval table.         |
| sonetFarEndLineCurrentTable  | The SONET/SDH Far End Line Current table.  |
| sonetFarEndLineIntervalTable | The SONET/SDH Far End Line Interval table. |
| sonetPathCurrentTable        | The SONET/SDH Path Current table.          |
| sonetPathIntervalTable       | The SONET/SDH Path Interval table.         |
| sonetFarEndPathCurrentTable  | The SONET/SDH Far End Path Current table.  |
| sonetFarEndPathIntervalTable | The SONET/SDH Far End Path Interval table. |
| sonetVTCurrentTable          | The SONET/SDH VT Current table.            |
| sonetVTIntervalTable         | The SONET/SDH VT Interval table.           |
| sonetFarEndVTCurrentTable    | The SONET/SDH Far End VT Current table.    |
| sonetFarEndVTIntervalTable   | The SONET/SDH Far End VT Interval table.   |

## MIB Constraints

Table 3-206 lists the constraints that the Cisco ASR 9000 Series router places on objects in the Sonet-MIB(RFC 2558).

**Table 3-206 Sonet-MIB Constraints**

| MIB Object                   | Notes            |
|------------------------------|------------------|
| <b>sonetPathCurrentTable</b> |                  |
| • sonetPathCurrentWidth      | Read-only        |
| <b>sonetVTCurrentTable</b>   | Not Implemented. |

**Table 3-206 Sonet-MIB Constraints (continued)**

| MIB Object                     | Notes            |
|--------------------------------|------------------|
| sonetVTIntervalTable           | Not Implemented. |
| sonetFarEndVTCurrentTable      | Not Implemented. |
| sonetFarEndVTIntervalTable     | Not Implemented. |
| <b>SonetMediumTable</b>        |                  |
| • sonetMediumLineCoding        | Read-only.       |
| • sonetMediumLineType          | Read-only.       |
| • sonetMediumCircuitIdentifier | Read-only.       |
| • sonetMediumLoopbackConfig    | Read-only.       |
| sonetSESthresholdSet           | Not Implemented. |

# TCP-MIB

The TCP-MIB is the MIB module for managing TCP implementations.

[Table 3-207](#) lists the tables associated with this MIB.

**Table 3-207 TCP-MIB Tables and Descriptions**

| Name               | Description                                                                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tcpConnectionTable | Table containing information about existing TCP connections. Note that unlike earlier TCP MIBs, there is a separate table for connections in the LISTEN state |

**Table 3-207 TCP-MIB Tables and Descriptions (continued)**

| Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tcpListenerTable | <p>Table containing information about TCP listeners. A listening application can be represented in three possible ways:</p> <ol style="list-style-type: none"> <li>1. An application that is willing to accept both IPv4 and IPv6 datagrams is represented by a tcpListenerLocalAddressType of unknown (0) and a tcpListenerLocalAddress of 'h' (a zero-length octet-string).</li> <li>2. An application that is willing to accept only IPv4 or IPv6 datagrams is represented by a tcpListenerLocalAddressType of the appropriate address type and a tcpListenerLocalAddress of '0.0.0.0' or ':::' respectively.</li> <li>3. An application that is listening for data destined only to a specific IP address, but from any remote system, is represented by a tcpListenerLocalAddressType of an appropriate address type, with tcpListenerLocalAddress as the specific local address.</li> </ol> <p> <b>Note</b> The address type in this table represents the address type used for the communication, irrespective of the higher-layer abstraction. For example, an application using IPv6 'sockets' to communicate via IPv4 between ::ffff:10.0.0.1 and ::ffff:10.0.0.2 would use InetAddressType IPv4(1))</p> |
| tcpConnTable     | Table containing information about existing IPv4-specific TCP connections or listeners. This table has been deprecated in favor of the version neutral tcpConnectionTable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## MIB Constraints

Table 3-208 lists the constraints that the router places on objects in the TCP-MIB.

**Table 3-208 TCP-MIB Constraints**

| MIB Object           | Notes         |
|----------------------|---------------|
| tcpConnectionTable   |               |
| tcpConnectionProcess | Not supported |

## UDP-MIB

The UDP-MIB is the MIB module for UDP implementations. See RFC 4113.

Table 3-209 lists the tables associated with this MIB.

**Table 3-209 UDP-MIB Tables and Descriptions**

| Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| udpEndpointTable | <p>Table containing information about this entity's UDP endpoints on which a local application is currently accepting or sending datagrams. The address type in this table represents the address type used for the communication, irrespective of the higher-layer abstraction. For example, an application using IPv6 'sockets' to communicate via IPv4 between ::ffff:10.0.0.1 and ::ffff:10.0.0.2 would use InetAddressType IPv4(1). Unlike the udpTable in RFC 1333, this table also allows the representation of an application that completely specifies both local and remote addresses and ports. A listening application is represented in three possible ways:</p> <ol style="list-style-type: none"> <li>1) An application that is willing to accept both IPv4 and IPv6 datagrams is represented by a udpEndpointLocalAddressType of unknown(0) and a udpEndpointLocalAddress of h (a zero-length octet-string).</li> <li>2) An application that is willing to accept only IPv4 or only IPv6 datagrams is represented by a udpEndpointLocalAddressType of the appropriate address type and a udpEndpointLocalAddress of '0.0.0.0' or ':::' respectively.</li> <li>3) An application that is listening for datagrams only for a specific IP address but from any remote system is represented by a udpEndpointLocalAddressType of the appropriate address type, with udpEndpointLocalAddress specifying the local address.</li> </ol> <p>In all cases where the remote is a wildcard, the udpEndpointRemoteAddressType is unknown(0), the udpEndpointRemoteAddress is h (a zero-length octet-string), and the udpEndpointRemotePort is 0. If the operating system is demultiplexing UDP packets by remote address and port, or if the application has 'connected' the socket specifying a default remote address and port, the udpEndpointRemote* values should be used to reflect this</p> |
| udpTable         | <p>Table containing IPv4-specific UDP listener information. It contains information about all local IPv4 UDP end-points on which an application is currently accepting datagrams. This table has been replaced by the version neutral udpEndpointTable but is currently still supported on IOS XR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## MIB Constraints

Table 3-210 lists the constraints that the router places on objects in the UDP-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-210 UDP-MIB Constraints**

| MIB Object         | Notes         |
|--------------------|---------------|
| tcpConnectionTable |               |
| udpEndPointProcess | Not supported |

# VRRP-MIB

The VRRP-MIB defines table objects to manage Virtual Router Redundancy Protocol (VRRP) routers.

[Table 3-211](#) lists the tables defined in VRRP-MIB.

**Table 3-211 VRRP-MIB Tables**

| MIB Table                   | Description                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>vrrpOperTable</b>        | Defines vrrpOperEntry attribute that contains information about the state of each VRRP virtual router.      |
| <b>vrrpAssolpAddrTable</b>  | Contains the virtual IP addresses (operational) associated with a virtual router                            |
| <b>vrrpRouterStatsTable</b> | Contains statistical information about the state changes and packets sent or received for a virtual router. |

## MIB Constraints

[Table 3-212](#) lists the constraints that the router places on objects in the VRRP-MIB. For detailed definitions of MIB objects, see the MIB.

**Table 3-212 VRRP-MIB Constraints**

| MIB Object                    | Notes         |
|-------------------------------|---------------|
| vrrpNotificationCntl          | Not supported |
| vrrpOperAdminState            | Not supported |
| vrrpOperPriority              | Not supported |
| vrrpOperPrimaryIpAddr         | Not supported |
| vrrpOperAuthType              | Not supported |
| vrrpOperAuthKey               | Not supported |
| vrrpOperAdvertisementInterval | Not supported |
| vrrpOperPreemptMode           | Not supported |
| vrrpOperProtocol              | Not supported |
| vrrpOperRowStatus             | Not supported |
| vrrpAssoIpAddrRowStatus       | Not supported |

