Accessing Cisco MIB Files

This online reference provides instructions for accessing and downloading the Cisco Management Information Base (MIB) files.

This section contains the following information:

- Accessing Cisco MIB Files

- Downloading Cisco Public MIB Files

- Defining Instance Identifiers

- Displaying the IF-INDEX

Accessing Cisco MIB Files

You can access the Cisco MIB files in any of the following ways:

- Use File Transfer Protocol (FTP) to access the ftp.cisco.com server.

- Use Cisco Connection Online (CCO), formerly Cisco Information Online (CIO), to access the cisco.com server.

- Use the World Wide Web (WWW) to connect to CCO at this URL:

    ```
    http//www.cisco.com
    ```

Using FTP to Access the MIB Files

Use these steps to access the Cisco public MIBs using FTP:

Step 1   Use FTP to access the server **ftp.cisco.com**.

Step 2   Log in with the username **anonymous**.

Step 3   Enter your e-mail name when prompted for the password.

Step 4   At the ftp> prompt, change your directory to reflect the following path:

/pub/mibs/supportlists/*switch*

where *switch* is the name of the switch you want, such as **wsc5000** for the
Catalyst 5000.

Step 5   Enter the **get supportlist.txt** command to obtain the supportlist.txt file
containing a list of MIBs the switch supports.

Step 6   Enter the **get** command to retrieve the desired MIB files from the v1/ or v2/
directories.

Note   For general information on downloading MIB files, download the
README file by entering the **get README** command at the ftp> prompt.

Using CCO to Access MIB Files

CCO serves a wide variety of users through two interfaces that are updated and enhanced
simultaneously—a character-based version and a multimedia version, which both reside on
the WWW. The character-based CCO (called "CCO Classic") supports Zmodem, Kermit,
Xmodem, FTP, Internet e-mail, and fax download options, and allows quick access to
information over lower bandwidths. The WWW version of CCO provides richly formatted
documents with photographs, figures, graphics, and video, as well as hyperlinks to related
information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com.

- Telnet: cco.cisco.com (198.92.32.130).

- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; data bits: 8; parity: none; stop bits: 1; and baud rates up to 28.8 Kbps. Table 2-1 shows the modem settings that you should use to access CCO.

Table 2-1   Modem Settings for Accessing CCO

Modem Setting	Value
Terminal emulation	VT100
Data bits	8
Parity	None
Stop bits	1
Baud rate	Up to 28.8 kbps

Using WWW to Access MIB Files

Use these steps to access MIB files using the WWW:

Step 1   Ensure that you are *not* logged in as a registered user.

Step 2   Enter the following URL:

```
http://www.cisco.com/public/mibs/
```

Step 3   Access the list of supported MIBs from the "Index of /public/mibs" list by performing the following steps:

(a)   Select **supportlists/** from the "Index of /public/mibs" list.

(b)   Select the switch (for example, **wsc5000** for the Catalyst 5000) as appropriate.

(c)   Select the file **supportlist.txt** to read the supported list of MIBs for the selected switch.

Step 4   Read a brief description of the various MIB files from the "Index of /public/ mibs" list by performing the following steps:

(a)   Select **v1/** or **v2/**, depending on which version of SNMP you use.

Note   SNMP version 1 files are in the subdirectory v1/ and SNMP version 2 files are in the subdirectory v2/. Subdirectory v2-to-v1 contains old MIB files supported by IOS version 10.0. These files have a prefix of "OLD-" in anticipation of future releases where these MIBs will be removed and replaced with a new set of MIBs, written in the SNMPv2 format.

(b)   Select **readme** from the "Index of /public/mibs/v1" or "Index of /public/ mibs/v2" list that appears for a brief description of the various MIB files.

Step 5   Obtain trap definitions from the "Index of /public/mibs" list by performing the following steps:

(a)   Select **traps** from the "Index of /public/mibs" list.

(b)   Select the appropriate trap.

For example, Catalyst 5000 series switches support all standard traps defined in the standard MIBs listed in the "Product Overview" section of the *Catalyst 5000 Series Software Configuration Guide*. Cisco proprietary traps used by Catalyst 5000 series switches are documented in the various MIB files.

Using Telnet to Access MIB Files

Use these steps to access MIB files using a Telnet session:

Step 1   Telnet to cco.cisco.com.

Step 2   Select **Service & Support** from the "Cisco Systems Connection ONLINE" main menu.

Step 3   Select **Software Center** from the "Service & Support" list.

Step 4   Select **Network Management Products** from the "Software Center" list.

Step 5   Select **MIB Files** from the "Software Network Management Products" list.

Step 6   Access a list of supported MIB by performing the following steps:

(a)   Select **supportlists/** from the "Index of /public/mibs" list.

(b)   Select the switch (for example, **wsc5000** for the Catalyst 5000) as appropriate.

(c)   Select the file **supportlist.txt** to read the supported list of MIBs for the selected switch.

Step 7   Read a brief description of the various MIB files by performing the following steps:

(a)   Select **v1/** or **v2** from the "Index of /public/mibs" list, depending on which version of SNMP you use.

Note   SNMP version 1 files are in the subdirectory v1/ and SNMP version 2 files are in the subdirectory v2/. Subdirectory v2-to-v1 contains old MIB files supported by IOS version 10.0. These have a prefix of "OLD-" in anticipation of future releases where these MIBs will be removed and replaced with a new set of MIBs, written in the SNMPv2 format.

(b)   Select **readme** from the "Index of /public/mibs/v1" or "Index of /public/ mibs/v2" list that appears for a brief description of the various MIB files.

Step 8   Obtain trap definitions by performing the following steps:

(a)   Select **traps** from the "Index of /public/mibs" list.

(b)   Select the appropriate trap.

For example, Catalyst 5000 series switches support all standard traps defined in the standard MIBs listed in the "Product Overview" section of the *Catalyst 5000 Series Software Configuration Guide*. Cisco proprietary traps used by Catalyst 5000 series switches are documented in the various MIB files.

Downloading Cisco Public MIB Files

You can download a copy of MIB files in two ways:

- Use FTP to access the ftp.cisco.com server.
- Use CCO to access the cco.cisco.com server.

Using FTP to Download the MIB File

Download the MIB file using FTP from a UNIX server by performing these steps:

Step 1   Enter the following command at the system prompt from a UNIX server:

```
$ ftp ftp.cisco.com
```

The system displays a login prompt.

Step 2   Log in with the username **anonymous**, as follows:

```
Name (ftp.cisco.com:user): anonymous
```

The system displays a password prompt.

Step 3   Enter your full e-mail address in the following format:

```
Password: user@domain_name
```

For example:

```
Password: jdoe@cisco.com
```

The system displays an ftp> prompt.

Step 4   Change directories to **pub/mibs**, as follows:

```
ftp> cd pub/mibs
```

> **Note** For general information on downloading MIB files, download the
> *README* file by entering the **get README** command at the ftp> prompt. This
> file lists available MIB files and provides instructions for retrieving them.

Step 5   Change to the directory containing the desired MIB file, as follows:

ftp> **cd v1** (for SNMP version 1)

or

ftp> **cd v2** (for SNMP version 2)

Step 6   Enter the **get** command to download a copy of the MIB file, as follows:

ftp> **get** *MIB_filename.my*

The **get** command downloads the MIB file to your directory.

Step 7   Exit FTP by entering **quit** at the ftp> prompt, as follows:

ftp> **quit**

Using CCO to Download the MIB File

You can use CCO to download the MIB file with either a character-based interface or a
multimedia WWW browser interface.

Using a Multimedia Browser to Access CCO

Access CCO using a multimedia WWW browser by performing these steps:

Step 1   Enter the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Step 2   Select the switch (for example, **wsc5000** for the Catalyst 5000) as appropriate.

> **Note** Do not log in as a registered user at the CCO main menu.

Step 3 Save the MIB file as text using the **Save as...** command from your browser's File pulldown menu. You can also send the file to yourself using the **Mail Document...** command from the browser's File menu.

Using a Character-Based Interface to Access CCO

To access CCO using a character-based interface, perform these steps:

Step 1 Enter the following command from a system capable of running the Telnet protocol:

```
% telnet cco.cisco.com
```

The system displays a login prompt.

Step 2 Log in as **cco**, as follows:

```
login: cco
```

The system displays messages similar to the following and prompts you to specify a terminal type:

```
Last login: Tue Dec 17 17:14:51 from dynaserv-noc-use

Welcome to CCO Classic....
Enter terminal type (<cr>=vt100, ? for help):
```

Step 3 Press **Return** to select VT100 terminal emulation.

The system displays messages similar to the following:

```
   Cisco Systems, Incorporated - Cisco Connection Online (CCO)
                    [Enhanced for Lynx!]
_____

* Enter CCO as a Registered User
* Enter CCO as a Guest User (public information)
* Perform an Online Registration (Maintenance Contract required)
* Help
_____
```

Step 4 Select **Enter CCO as a Guest User (public information)**, and press **Return**.

The system displays the `Welcome to Cisco Connection Online` screen.

Step 5   Select **Software Image Library** and press **Return**.

                 The system displays the Software Image Library (p1 of 4) screen.

Step 6   Select **v1** (for SNMP version 1) or **v2** (for SNMP version 2) and press **Return**.

                 The system displays the first page of the MIB file.

Step 7   Press **P**.

                 The system displays the `Printing Options (CCOLynx Version 2.5)` screen.

Step 8   Select the **Mail the file** option and press **Return**.

                 The system prompts you for a valid Internet mail address.

Step 9   Enter your e-mail address at the prompt, as follows:

                 `Please enter a valid internet mail address:` **`user@domain_name`**

                 The CCO Classic interface sends the MIB file to the specified e-mail address.

Defining Instance Identifiers

To access the information that certain MIB variables support, you must enter either an *Interface Index* (IF-INDEX) or *Bridge Identifier* (BridgeID) value as an instance identifier. Use the following links for descriptions on how to access these types of values for use with MIBs mentioned previously:

- Finding the Mapping Between the Physical Interface and Interface Number

- Using RMON (RFC 1757) and SNMP MIBs

- Accessing the Bridge MIB (RFC 1493)

- Accessing the SNMP-REPEATER-MIB (RFC 1516)

Finding the Mapping Between the Physical Interface and Interface Number

To find the module number and port number to which an IF-INDEX is mapped, read the IfName in the MIB object of the Interface Extension MIB (RFC 1573). Use this method to find the IF-INDEX when you are accessing any of the variables in the Cisco Discovery Protocol (CDP) MIB that require an IF-INDEX for a variable instance identifier (such as "CDP neighbors").

For example, the Catalyst 5000 series switch Group Switching Ethernet module has 12 ports in each of its four switched, repeated segments. To gather statistical information about one of these segments using the Interface Extension MIB (RFC 1573) or CDP MIB, use the IF-INDEX of the first port of the segment (port 1, 13, 25, or 37) as the variable instance identifier.

Using RMON (RFC 1757) and SNMP MIBs

Standard remote monitoring (RMON, RFC 1757) supports nine types of monitoring groups. Catalyst 6000/5000/4000 series switches support four of these groups: statistics, history, alarms, and events. Other devices may support some or all of the groups. Any RMON-compliant manager can obtain and display information from these groups. For example, the Cisco TrafficDirector application provides a simple, point-and-click method of obtaining the information. Refer to the *TrafficDirector Windows User Guide* or *TrafficDirector UNIX User Guide* for details about TrafficDirector.

Collecting RMON information requires you to create TrafficDirector software agents. These agents consist of an IP address and an interface index (IF-INDEX) for the port about which information is to be collected. For instructions about how to display the IF-INDEX and the port number to which it is mapped, refer to "Using SunNet Manager to Display IF-INDEX" and "Using HP Openview to Display IF-INDEX." To gather statistical information using the Interface Extension MIB (RFC 1573) or CDP MIB, use the IF-INDEX of the first port of the segment (port 1, 13, 25, or 37) as the variable instance identifier.

Accessing the Bridge MIB (RFC 1493)

For the Catalyst 6000/5000/4000, the Bridge MIB (RFC 1493) contains a bridge port number for each Group Switching Ethernet module segment. Query the portCrossIndex.mod_num.port_num MIB object in the CISCO-STACK-MIB to find the BridgeID. The mod_num is the module number in Catalyst 6000/5000/4000 series switches, and the port_num is the first port in each Group Switching Ethernet module segment (that is, port 1, 13, 25, or 37).

To display Bridge MIB information for different VLANs, change the SNMP community string to append @vlan_num to the configured SNMP community string. The vlan_num is the VLAN number.

Accessing the SNMP-REPEATER-MIB (RFC 1516)

To access the different segments of a Group Switching Ethernet module using the SNMP-REPEATER-MIB (RFC 1516), change the SNMP community string of your SNMP application that references your switches to the following syntax:

```
community_string@mod_num/port_num
```

The community_string represents the name of the SNMP community (the defaults are Public for read-only permission, private for read-write permission, and secret for read-write-all permission). The mod_num is the module number in the switch and the port_num is the first port of each segment. For segment one, use port 1; for segment two, use port 13; for segment three, use port 25; and for segment four, use port 37.

Displaying the IF-INDEX

This section contains instructions on how to display the IF-INDIEX using the following methods:

- Using SunNet Manager to Display IF-INDEX

- Using HP Openview to Display IF-INDEX

Using SunNet Manager to Display IF-INDEX

Display the IF-INDEX and port number of a switch using SunNet Manager by performing the following steps:

Step 1   Download the following files from ftp.cisco.com:

`/pub/mibs/schema/IF-MIB.schema`

`/pub/mibs/oid/IF-MIB.oid.`

Step 2   Copy these files to your SNMP agents directory, which is typically located in `$SNMHOME/agents`.

Step 3   Reinitialize SunNet Manager using the following command:

`$SNMHOME/bin/snm -i`

Step 4   If a switch icon you are interested in monitoring is present in your network application topology map, highlight it and select IF-MIB from the properties sheet list. If a switch icon is not present, create a new object to represent the switch in your network before highlighting its icon and selecting IF-MIB from the properties sheet list.

Step 5   Select the following on the device-specific menu:

`Quick Dump`, `IF-MIB,` and `ifXTable`.

Output similar to the following will be displayed. The IF-INDEX is listed under the column heading "`KEY`" in the first column of the output.

```
Apr 12 13:48:39 1996 [ 172.20.24.188 ] : Quick Dump: IF-MIB.ifXTable

KEY   ifName   ifInMulticastPkts   ifInBroadcastPkts...

1     sc0             0                   0

2     sl0             0                   0

3     1/1             0                   0

4     1/2             0                   0

5     2/1             0                   0

6     2/2             0                   0

7     2/3             0                   0

8     2/4             0                   0

9     2/5             0                   0

10    2/6             0                   0

11    2/7             0                   0

12    2/8             0                   0

13    2/9             0                   0

14    2/10            0                   0

15    2/11            0                   0

16    2/12            0                   0
```

Step 6   Choose the key that corresponds to the module or port to monitor.

Using HP Openview to Display IF-INDEX

Display the IF-INDEX and port number of a switch using HP Openview by performing the following steps:

Step 1   Download the following file from ftp.cisco.com:

```
/ftp/pub/mibs/V2/IF-MIB.my
```

Step 2   Copy this MIB file to your OpenView MIBs directory, which is typically located in the directory path:

```
/usr/OV/snmp_mibs
```

Step 3   Rename the file *rfc1573.mib* to *rfc1573-INTERFACES*.

Step 4   Select the following from the HP Openview main menu:

```
Options, Load/Unload MIBs:SNMP.
```

Step 5   Click **Load**. Choose the filename **rfc1573-INTERFACES**, and click **OK**.

Step 6   Select the following from the HP Openview main menu:

```
Monitor, MIB Values, Browse MIB:SNMP
```

Step 7   Type a device name or IP address into the form and then click **MIB Object ID**.