Consider SNMP FAQ

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Introduction

This document describes Simple Network Management Protocol (SNMP) and issues related to Cisco equipment.

Q. How have Cisco MIBs evolved?

A. In the past, all the objects under the Cisco MIB branch were documented in one large document. This document was updated with each new release of Cisco IOS® software. Therefore, there was a 9.0 Cisco MIB and a 10.0 Cisco MIB, and so forth. Also, in those days, the product line was exclusively routers.

However, as Cisco IOS software matured and the product line grew, this massive MIB model became unscalable. Within one revision level of Cisco IOS software, there were different versions (such as the IP-only image and the IBM feature set version). The product line also included other devices, such as LAN switches that ran completely different software code.

In Cisco IOS Software Release 10.2 and later, the Cisco MIB was broken into individual component MIB documents, each focused on a specific feature, technology, or device type. This structure allows quicker implementation of new features. It also allows users to compile only the parts they need into their network management system (NMS).

Q. How do I retrieve Cisco MIBs on the Web?

A. Use these steps:

1. Choose one:
    1. For the MIBs supported by a specific Cisco IOS software release, go to Cisco IOS MIB Locator.
    2. For the MIBs supported by non-Cisco IOS products, go to SNMP Object Navigator > Download MIBs.
    3. For all of the MIBs or a specific MIB, go to SNMP Object Navigator > Download MIBs.
2. Make all necessary selections until you reach the download page.

Q. How do I retrieve Cisco MIBs with GitHub?

A. Use these steps:

1. Go to GitHub-cisco/cisco-mibs. All version 1 MIBs are in the v1 directory and all version 2 MIBs are in the v2 directory.
2. Go to the appropriate v1 or v2 directory to retrieve the MIB.

Q. How do I navigate MIBs on GitHub?

A. Under the cisco/cisco-mibs directory, you can find these subdirectories:

- /traps—This is similar to the /oid (object identifier [OID]) and /schema directories. The files in this directory list traps that are supported by Cisco products. Files that end with the .trap extension are SunNet Manager trap definition files. They can be added to the snmp.trap file normally found in /var/adm/snm.
- /v1 (SNMPv1 MIBs)—This is a collection of SNMPv1 Structure of Management Information (SMI) MIB files. Included are the older MIB files that were implemented in SNMPv1 SMI and the newer SNMPv2 SMI MIB files converted to SNMPv1 SMI.
- /v2 (SNMPv2 MIBs)—The newer MIB files, all in SNMPv2 SMI.
- /oid—A useful directory if you have SunNet Manager, which requires the OID strings of each object rather than ASN.1 format MIB files.
- /app_notes (Application Notes)—Several application notes from wide-ranging areas are in this directory.
- /contrib—A collection of contributed non-supported scripts or files.
- /archive—The older monolithic MIB files are kept in this directory. The /archive directory somewhat mirrors the MIBs area. Here, you can find the MIB files, OID files, and schema files for Cisco IOS Software Release 10.0 and earlier.
- /schema—Like the /oid directory, these files are provided if you have SunNet Manager that requires MIB files in this format.
- /supportlists—These are directories for non-Cisco IOS products, and they contain information about which products support which MIBs. For Cisco IOS software releases, use the Cisco IOS MIB Locator for more up-to-date information.

At each directory level containing multiple files, all of the files located in that directory are compressed (with tar or gzip) into a single file for easy download. For example, traps.tar.gz contains all of the traps files.

Within the SNMP version directories, you can find all Cisco-specific MIBs in their latest form, along with some other MIBs that can apply to Cisco products. All MIB documents supersede any previous versions of the MIB document, including the monolithic MIB used in Cisco IOS Software Releases 9.x and 10.0.

In order to determine when the MIB document was released, look at the date in the file comments.

Q. How can I determine which MIBs are supported by a device?

A. For the MIBs supported by a specific Cisco IOS software release, go to Cisco IOS MIB Locator.

For the MIBs supported by non-Cisco IOS products, go to SNMP Object Navigator > Download MIBs.



Note: There is an automated email gateway to Cisco IOS MIB Locator. Send an e-mail to mii@external.cisco.com with “help” in the subject line, to learn more about it.

Q. How can I determine which Cisco IOS software releases support some specific MIBs?

A. In the Cisco IOS MIB Locator, in the **Search by** section, click the **MIBs** radio button. In the **Search for MIBs** drop-down list, choose the correct MIB. Click **Submit**.

Q. How can I add Cisco traps to HP OpenView and NetView?

A. Refer to Adding Cisco Traps in NetView and HP OpenView.

Q. How do I load Cisco MIBs into a third-party NMS?

A. Refer to MIB Compilers and Loading MIBs.

Q. Is my MIB an SNMPv1 MIB or an SNMPv2 MIB?

A. There are several new macros defined for SNMPv2. It is an SNMPv2 MIB if you can find any of these in your MIB:

- **MODULE-IDENTITY**
- **MODULE-COMPLIANCE**
- **OBJECT-GROUP**
- **NOTIFICATION-TYPE TEXTUAL-CONVENTION**

Another way to tell is that MIB objects defined in an SNMPv1 MIB usually have an **ACCESS** clause. MIB objects defined in an SNMPv2 MIB usually have a **MAX-ACCESS** clause.

Q. Is there an SNMP MIB to show Address Resolution Protocol (ARP) table information? I need both the IP and MAC addresses in the same table.

A. Yes, **ipNetToMediaPhysAddress** = .1.3.6.1.2.1.4.22.1.2 from the MIB RFC1213-MIB.my:

```
ipNetToMediaPhysAddress OBJECT-TYPE

       -- FROM RFC1213-MIB, IP-MIB
       -- TEXTUAL CONVENTION PhysAddress

    SYNTAX          OCTET STRING
    MAX-ACCESS      read-write
    STATUS          Mandatory
    DESCRIPTION     "The media-dependent `physical' address."

::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) ip(4)
      ipNetToMediaTable(22) ipNetToMediaEntry(1) 2 }
```

Q. With Silicon Switching activated, MIB values for interface statistics are only updated every 10 seconds. Why?

A. This is expected (it is not a bug) and is part of a trade-off: the box is allowed to dedicate more resources to actually switching traffic because it is polled less often for interface statistics. The **show interfaces** command can have the same behavior.

Related Information

- Cisco Feature Navigator - MIBs
- Networking Technologies and Protocols
- IETF Repository Retrieval
- Cisco Technical Support & Downloads