



Configuring MIB Support

This chapter describes how to configure SNMP and MIB support for the Cisco 4451-X Integrated Services Router (ISR). It includes the following sections:

- [Determining MIB Support for Cisco IOS Releases, page 2-1](#)
- [Downloading and Compiling MIBs, page 2-1](#)
- [Enabling SNMP Support, page 2-3](#)

Determining MIB Support for Cisco IOS Releases

Follow these steps to determine which MIBs are included in the Cisco IOS release running on your router:

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|---------------|---|
| Step 1 | Go to the Cisco MIBs Support page:
http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml |
| Step 2 | Under Cisco Access Products, select Cisco 4451-X to display a list of MIBs supported on the Cisco 4451-X ISR. |
| Step 3 | Scroll through the list to find the release you are interested in. |
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Downloading and Compiling MIBs

The following sections provide information about how to download and compile MIBs for the Cisco 4451-X ISR:

- [Considerations for Working with MIBs, page 2-2](#)
- [Downloading MIBs, page 2-3](#)
- [Compiling MIBs, page 2-3](#)

Considerations for Working with MIBs

While working with MIBs, consider the following:

- Mismatches on datatype definitions might cause compiler errors or warning messages. Although Cisco MIB datatype definitions are not mismatched, some standard RFC MIBs do mismatch as in the following example:

```
MIB A defines: SomeDatatype ::= INTEGER(0..100)
MIB B defines: SomeDatatype ::= INTEGER(1..50)
```

This example is considered to be a trivial error and the MIB loads successfully with a warning message.

The following example is considered as a nontrivial error (even though the two definitions are essentially equivalent), and the MIB is not successfully parsed:

```
MIB A defines: SomeDatatype ::= DisplayString
MIB B defines: SomeDatatype ::= OCTET STRING (SIZE(0..255))
```

If your MIB compiler treats these as errors, or you want to delete the warning messages, edit one of the MIBs that defines this same datatype so that the definitions match.

- Many MIBs import definitions from other MIBs. If your management application requires MIBs to be loaded, and you experience problems with undefined objects, you might want to load the following MIBs in this order:

1. SNMPv2-SMI.my
2. SNMPv2-TC.my
3. SNMPv2-MIB.my
4. RFC1213-MIB.my
5. IF-MIB.my
6. CISCO-SMI.my
7. CISCO-PRODUCTS-MIB.my
8. CISCO-TC.my

- For additional information and SNMP technical tips, go to the Locator page and click **SNMP MIB Technical Tips** or go to the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

- For a list of SNMP object identifiers (OIDs) assigned to MIB objects, go to the following URL and click on **SNMP Object Navigator** and follow the links:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>



Note To access this tool, you must have a Cisco.com login account.

- For information about how to download and compile Cisco MIBs, go to the following URL:
http://www.cisco.com/en/US/tech/tk648/tk362/technologies_tech_note09186a00800b4cee.shtml

Downloading MIBs

Follow these steps to download the MIBs onto your system if they are not already there:

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- Step 1** Review the considerations in the “[Considerations for Working with MIBs](#)” section.
- Step 2** Go to one of the following Cisco URLs. If the MIB you want to download is not there, try the other URL; otherwise, go to one of the URLs in Step 5.
- <ftp://ftp.cisco.com/pub/mibs/v2>
<ftp://ftp.cisco.com/pub/mibs/v1>
- Step 3** Click the link for a MIB to download that MIB to your system.
- Step 4** Select **File > Save** or **File > Save As** to save the MIB on your system.
- Step 5** You can download industry-standard MIBs from the following URLs:
- <http://www.ietf.org>
 - <http://www.broadband-forum.org/>
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Compiling MIBs

If you plan to integrate the Cisco 4451-X ISR with an SNMP-based management application, then you must also compile the MIBs for that platform. For example, if you are running HP OpenView on a UNIX operating system, you must compile Cisco 4451-X ISR MIBs with the HP OpenView Network Management System (NMS). For instructions, see the NMS documentation.

Enabling SNMP Support

The following procedure summarizes how to configure the Cisco 4451-X ISR for SNMP support.

For detailed information about SNMP commands, see the following Cisco documents:

- *Cisco IOS Configuration Fundamentals Configuration Guide, Release 12.2*, Part 3 System Management, “Network Monitoring Using Cisco Service Assurance Agent”, available at the following URL:
http://www.cisco.com/en/US/docs/ios/12_2/configfun/configuration/guide/fcf017.html
- *Cisco IOS Configuration Fundamentals Command Reference, Release 12.2*, Part 3 System Management Commands, “Cisco Service Assurance Agent (SAA) Commands”, available at the following URL:
http://www.cisco.com/en/US/docs/ios/12_2/configfun/command/reference/frf017.html

To configure the Cisco 4451-X ISR for SNMP support, follow these steps:

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- Step 1** Set up your basic SNMP configuration through the command-line interface (CLI) on the router. Note that these basic configuration commands are issued for SNMPv2c. For SNMPv3, you must also set up SNMP users and groups. (See the preceding list of documents for command and setup information.)
- a. Define SNMP based read-only and read-write communities:

```
Router (config)# snmp-server community Read_Only_Community_Name ro
Router (config)# snmp-server community Read_Write_Community_Name rw
```

- b. Configure SNMP views (to limit the range of objects accessible to different SNMP user groups):

```
Router (config)# snmp-server view view_name oid-tree {included | excluded}
```

- Step 2** Identify (by IP address) the host to receive SNMP notifications from the router:

```
Router (config)# snmp-server host host
```

- Step 3** Configure the router to generate notifications. You can use keywords to limit the number and types of messages generated.

```
Router (config)# snmp-server enable traps [notification-type] [notification-option]
```
