



CHAPTER 2

Configuring MIB Support

This chapter describes how to configure SNMP and MIB support for the Cisco ASR 9000 Series router. It includes the following sections:

- [Downloading and Compiling MIBs, page 2-7](#)
- [Enabling SNMP Support, page 2-9](#)

Downloading and Compiling MIBs

The following sections provide information about how to download and compile MIBs for the Cisco ASR 9000 Series router:

- [Considerations for Working with MIBs, page 2-7](#)
- [Downloading MIBs, page 2-8](#)
- [Compiling MIBs, page 2-9](#)

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:

SNMPv2-SMI.my
SNMPv2-TC.my
SNMPv2-MIB.my
IF-MIB.my
CISCO-SMI.my

- 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.ipmplsforum.org/>

Compiling MIBs

If you plan to integrate the Cisco ASR 9000 Series router with an SNMP-based management application, then you must compile the MIBs for that platform. For example, if you are running HP OpenView on a UNIX operating system, you must compile Cisco ASR 9000 Series router MIBs with the HP OpenView Network Management System (NMS).

Enabling SNMP Support

The following procedure summarizes how to configure the Cisco ASR 9000 Series router for SNMP support.

For detailed information about SNMP commands, go to the following URL:

- http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k_r4.0/system_management/configuration/guide/b_yc40asr9k_chapter_01011.html provides general information about configuring and implementing SNMP support. It is part of the *Cisco IOS XR System Management Configuration Guide, Release 4.0*.
- http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k_r4.0/system_management/command/reference/b_yr40asr9k_chapter_01100.html provides information about SNMP commands. It is part of the *Cisco IOS XR System Management Command Reference, Release 4.0*.

To configure the Cisco ASR 9000 Series router for SNMP support, follow these steps:

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 read-only and read-write communities:

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

- 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 traps [notification-type] [notification-option]
```

For information about how to configure SNMP community strings, go to the following URL:

http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k_r4.0/system_management/command/reference/yr40asr9k_chapter12.html