



Configuring SNMP and MIB Support

This chapter describes how to configure Simple Network Management Protocol (SNMP) and Management Information Base (MIB) support for Cisco ASR routers. 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](#)
- [Using the Cisco MIB Locator, page 2-4](#)

Determining MIB Support for Cisco IOS Releases

The Cisco MIBS Support page provides information on the SNMP capabilities that are contained in most Cisco IOS software images. To access this web site, use the following procedure:

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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 your particular Cisco ASR platform to display a list of MIBs that are supported on the router. |
| Step 3 | Scroll through the list to find the Cisco IOS software 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 router:

- [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. For example, the OLD-CISCO-CPU-MIB, OLD-CISCO-MEMORY-MIB, and OLD-CISCO-SYSTEM-MIB each define the following OID differently:

```
OLD-CISCO-CPU-MIB.my
    1cpu OBJECT IDENTIFIER ::= {local 1 }
```

```
OLD-CISCO-MEMORY-MIB.my
    1env OBJECT IDENTIFIER ::= {local 1 }
```

To eliminate MIB compiler errors or warning messages for mismatched definitions, edit one of the MIB definitions to match the other. Other types of mismatches include:

```
MIB A
Datatype1 ::= INTEGER(0...100)
Datatype2 ::= INTEGER(1...50)

MIB B
Datatype1 ::= DisplayString
Datatype2 ::= OCTET STRING (SIZE(0...255))
```

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

```
SNMPv2-SMI.my
SNMPv2-TC.my
SNMPv2-MIB.my
RFC1213-MIB.my
IF-MIB.my
CISCO-SMI.my
CISCO-PRODUCTS-MIB.my
CISCO-TC.my
```

- To see a particular MIB's dependencies, use the "View and Download MIBs" tool, which is part of the SNMP Object Navigator on the Cisco IOS MIB Tools page, which is MIB Locator at the following URL:

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

- For information about trap definitions, alternative size definitions, and null OIDs, follow the link:

ftp://ftp.cisco.com/pub/mibs/app_notes/mib-compilers

For listings of OIDs assigned to MIB objects, follow the link:

<ftp://ftp.cisco.com/pub/mibs/oid>

Downloading MIBs

To download the MIBs onto your system, if they are not already there, use the following procedure:

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- Step 1** Go to the Cisco IOS MIB Tools page at the following URL:
- <http://tools.cisco.com/ITDIT/MIBS/servlet/index>
- If the MIB you want to download is not there, try one of the following URLs; or go to one of the URLs in Step 4.
- <ftp://ftp.cisco.com/pub/mibs/v2>
 - <ftp://ftp.cisco.com/pub/mibs/v1>
- Step 2** Click the link for the MIB Locator tool.
- Step 3** You can use the MIB Locator tool to show a particular MIB or to show all MIBs for a particular platform or for a particular software release.
- Step 4** You can also download industry-standard MIBs from the following URLs:
- <http://www.ietf.org>
 - <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>
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Compiling MIBs

If you plan to integrate the Cisco ASR 901 or ASR 901S router with an SNMP-based management application, you must also compile the MIBs for that platform. Some SNMP managers do this automatically when you place all of the MIBs in a specific location, while others require you to do this manually. For instructions, see the following section.

Enabling SNMP Support

This procedure summarizes how to configure the Cisco ASR 901 and ASR 901S for SNMP support.



Note

These basic configuration commands are issued for SNMPv2c. For SNMPv3, you must also set up SNMP users and groups.

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- Step 1** Set up your basic SNMP configuration through the CLI. (For command and setup information, see the list of documents that follows this procedure.)
- Step 2** Define SNMP 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
```
- Step 3** 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 4** If you plan to enable a number of traps, especially if you plan to enable traps for SYSLOG events and alarms, increase the trap queue size from its default of 10:

```
Router(config)# snmp-server queue-length queue-size
```

The value of *queue-size* can range from 1 to 1000 traps. We recommend a size of at least 100 for systems that are sending traps for SYSLOG events. The default is 10.

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

- “System Management” section of the *Cisco IOS Configuration Fundamentals Configuration Guide*, Release 12.3, available at :
http://www.cisco.com/en/US/docs/ios/12_3/featlist/cfun_vcg.html
- “System Management” section of the *Cisco IOS Configuration Fundamentals Command Reference*, Release 12.2, available at:
http://www.cisco.com/en/US/docs/ios/fundamentals/command/reference/cf_book.html

Using the Cisco MIB Locator

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use the Cisco MIB Locator found at the following URL:

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

To access Cisco MIB Locator, you must have an account on Cisco.com. You can establish an account on Cisco.com by following the directions found at this URL:

<https://tools.cisco.com/RPF/register/register.do>