# Chapter2 Using CiscoWorks on SNM

This chapter contains an overview of how CiscoWorks works with SunNet Manager (SNM). The following topics are discussed:

- Overview of SNM versus CiscoWorks features
- Starting CiscoWorks
- Using CiscoWorks
- Security options
- Understanding database synchronization

# **Overview of SNM Versus CiscoWorks Features**

CiscoWorks uses SunNet Manager (SNM) as its platform to provide you with software applications to manage your network.

*Note:* Knowledge of SNM features such as the **Create**, **Discover**, and **Change Type** commands is expected. Refer to your SNM documentation set for all SNM questions.

CiscoWorks schema files are installed directly into the SNM directory structure by using the CiscoWorks installation and configuration scripts. The default installation directory for SNM is */usr/snm*. The default installation directory for CiscoWorks is */usr/nms*. Refer to the *CiscoWorks Getting Started Guide* for detailed information on installing and configuring CiscoWorks.

During its installation and configuration, CiscoWorks adds customized schema files with Cisco-specific device types such as the Cisco AGS+ to the SNM schema files. CiscoWorks also adds its applications to the SNM Tools and Glyph menus.

**Note:** Read the appendix on the OPEN LOOK interface found in the *SunNet Manager* 2.0 *Reference Guide* to familiarize yourself with the OPEN LOOK standards. CiscoWorks uses these standards for all its graphical user interface components, such as using the mouse, opening windows and menus, and manipulating windows and icons.

It is important that you understand the SNM environment and how you can use SNM in conjunction with CiscoWorks. Be sure to refer to the SNM documentation set to answer your SNM network management questions.

### SNM Terms

The following list of SNM terms are defined in the SNM manual set. Refer to the glossary to help you to understand how SNM may refer to them.

- Agents
- Automatic Management
- Change Type command
- Component
- Discover tool
- Element
- Element Properties window
- Event/Trap reports
- Glyph menu
- Glyph state
- Instance
- Results Browser
- Results Grapher
- Run-time management database
- Schema
- Tools menu

# SNM Processes That Affect CiscoWorks

Some processes in SNM affect how CiscoWorks runs, depending on their configuration in SNM. The following list includes some of the important issues you should be aware of:

- 1. In SNM, you configure the operation of the console and other SNM tools, such as the Results Browser and Results Grapher. For example, you can configure the console to specify how device errors are indicated on the screen, either by visual or audible signals. To set this type of configuration, refer to your *SunNet Manager 2.0 User's Guide*.
- 2. In SNM, you can use the SNM Discover tool to automatically create your map (referred to by SNM as a run-time database). You can also manually add devices (referred to by Sun as components) to your map.

Especially important to CiscoWorks users is the SNM **Change Type** command. Change Type is found on the SNM Glyph menu. It enables you to change the device type. You might need to use this command if you have used the SNM Discover tool and SNM incorrectly classifies a device's element type. You want to classify device types accurately according to their specific product names, since availability and correct operation of many CiscoWorks applications depends on the correct classification of the device type.

3. If you are interested in creating a true network map (which includes different hierarchical views, devices, connections, and buses) you must use the *SunNet Manager 2.0 User's Guide* to walk you through the steps. You will also need to use the SNM **Create** command to create any additional devices as you add them to your network.

For a brief overview on how the SNM Discover tool is used, refer to your *CiscoWorks Getting Started Guide*. For a detailed description of the SNM Discover tool, refer to your *SunNet Manager 2.0 Reference Guide*.

### Setting Environment Variables

To use SNM and CiscoWorks, you need to ensure that the following environment variables have been set:

- DISPLAY—Tells programs which Xserver to connect to.
- MANPATH—Directory path for CiscoWorks manual pages.
- NMSROOT—Directory path for CiscoWorks software. The default is /usr/nms.
- PATH—Modify to include *\$NMSROOT/bin* and *\$SNMHOME/bin*.
- SNMHOME—Directory path for SNM software. The default is /usr/snm.
- SYBASE—Directory path for Sybase software. The default is *\$NMSROOT/sybase*.

Normally, you should set these variables before installing CiscoWorks. Refer to the *CiscoWorks Getting Started Guide* for information on setting environment variables.

# Configuring SNM Console Properties

SNM allows you to configure the SNM Console Properties. The SNM Console Properties windows enable you to set global preferences on how you want your SNM Console to operate.

We recommend that you configure Automatic Management in order to allow your system to automatically receive information about device status (up/down). The default for the SNM automatic node management feature is disabled. You must access the Console Properties Window and enable the automatic management feature by clicking the check box.

Refer to your *SunNet Manager 2.0 Reference Guide* for detailed information on SNM Console configuration.

# Starting CiscoWorks

This section briefly discusses how to start the SNM software. If CiscoWorks has been properly installed, starting SNM starts CiscoWorks as well. For a more detailed description and options, refer to the *SunNet Manager 2.0 User's Guide*.

You can use several different commands to start SNM. You must be running OPEN LOOK or X11.

*Note:* The following commands assume you have installed SNM in the default installation directory.

To start the SNM Console initially (when there is no database present) or when you want to bring up the last map file, enter the following:

hostname% snm

If problems occur, your PATH environment variable may not include a path to SNM executables. If this is the case, enter a fully qualified path. In the following example, */usr/snm/bi*n is the path to the executables:

hostname% /usr/snm/bin/snm

To load a database map file (in ASCII format) into the SNM Console, use the **Load** command on the SNM File menu.

To start the SNM Console without a database map file (which clears the run-time database), enter the following:

% snm -i



*Caution:* Using the snm -i command will cause the existing SNM database to be lost if you have not saved it to a file. Save your database to a map file before using this command.

To start SNM with a specified map file (*map\_name* is an ASCII database file), enter the following:

% **snm** map\_name

Refer to the *SunNet Manager 2.0 User's Guide* for more information on starting the SNM Console and troubleshooting problems with startup.

# Using CiscoWorks

This section briefly outlines what steps to complete in SNM before continuing with CiscoWorks tasks. Instructions for using specific CiscoWorks applications can be found later in this manual. Refer to the specific chapter when you have questions.

*Step 1:* Start SNM (if not started already).

Refer to "Starting CiscoWorks" earlier in this chapter.

*Step 2:* Access Security Management to turn on authentication checking and provide users and groups privileges to CiscoWorks applications.

Refer to the "Using Security Manager Tools" chapter.

*Step 3:* Set up your SNM run-time database using SNM Discover or manual creation of devices using SNM's **Create** command.

Refer to the *CiscoWorks Getting Started Guide* or the SNM documentation set for SNM Discover information.

*Step 4:* Use Sync w/Sybase to synchronize SNM database devices with the CiscoWorks Sybase database.

If you adding individual devices, use the CiscoWorks Device Management application or the Glyph menu Sync w/Sybase application to add device data to the database. Refer to the "Device Management" chapter for Sync w/Sybase and Device Management application information.

**Note:** The Sync w/Sybase application synchronizes, or adds, devices that exist in the SNM database to the CiscoWorks database. Sync w/Sybase does not add devices from the CiscoWorks database to the SNM database. To add devices created in CiscoWorks, you must manually add them using the **Create** command in SNM or the **Initialize** in Device Mgmt.

*Step 5:* Use any of the CiscoWorks applications to help you monitor and manage your network activity.

Table 2-1 lists some general network management tasks and associates the task with its responsible software application. Use this table to determine which documentation set to use if you have questions or need information. The "X" indicates this information can be found in the manual set for the tool or application.

Task	SNM Tool	CiscoWorks Application
Starting SNM Console	Х	
Using Discover	Х	
Traversing your network map (run-time database)	Х	
Creating or finding elements or element properties	Х	Device Mgmt
Modifying or changing elements or element properties	Х	Device Mgmt
Moving or connecting elements (devices)	Х	
Copying or deleting elements (devices)	Х	Device Mgmt
Saving your network map (run-time database)	Х	
Using SNM applications (such as Results Browser and Results Grapher)	Х	
Configuring OPEN LOOK Graphical Interface standards (such as window manipulation and mouse settings)	Х	
Modifying a graph display	Х	
Printing graphs, windows, or text files	Х	
Changing the state of a glyph	Х	
Specifying an event (condition of notification)	Х	Device Monitor
Checking the cause of an event	Х	Log Manager
Changing how glyph state changes propagate	Х	

#### Table 2-1 CiscoWorks Versus SNM Task Descriptions

Task	SNM Tool	CiscoWorks Application
Viewing or changing the status of requests	Х	
Viewing errors and traps	Х	Log Manager
Managing SNMP devices	Х	All CiscoWorks applications

# CiscoWorks Use of SNM Tools

CiscoWorks uses two SNM tools: the Result Browser and the Grapher. The following list briefly describes each tool and how it is used by CiscoWorks.

 The SNM Results Browser retrieves, organizes, and views network management data. The Results Browser is used in several CiscoWorks applications, including Polling Summary.

For example, the CiscoWorks Polling Summary application uses the Results Browser to display query reports on polled device groups. You can display report data or send this data to the SNM Grapher.

The Grapher presents real-time or logged network data in graphical format. The Grapher is used in the CiscoWorks Health Monitor and Real-Time Graphs applications to display data in graphical format. You can change the properties of your graph using SNM to reflect your customized colors, delta, absolute, or cumulative graphing formats, and so on.

For more detailed information on the Results Browser and Grapher, refer to your SNM documentation set.

# **GUI** Interface

CiscoWorks uses the OPEN LOOK Graphical User Interface (GUI) developed by Sun Microsystems. Since CiscoWorks bases its windowing structure on the Sun OPEN LOOK graphical user interface standards, both SNM and CiscoWorks windows are structured similarly.

For information on using OPEN LOOK (including using your mouse, opening windows and menus, and manipulating windows and icons), refer to the *SunNet Manager 2.0 Reference Guide*.

**Note:** If a window component is grayed out, the option or feature is either inactive or unavailable. For example, on the Health Monitor window, if a protocol button is gray, that protocol is not activated on the selected device. When accessing the network management windows, keep the following points in mind:

- Management operations are usually associated with a selected device on the map. Select an object in the map by clicking on any item with the left mouse button. Selecting an item deselects all other objects.
- Depending upon the amount of information the window presents and the location of and the bandwidth to the device, expect time delays in window presentation.
- You can quit an active window by pulling down the Quit button on the File menu. If several windows are present, you can close all popup windows. If all windows are primary windows, you must quit out of each window individually.

### Menu Structure of CiscoWorks

Most primary windows contain the following common menu options:

- File—Contains **Print**, **Version**, and **Quit** commands.
- Security—Contains Change User and Privilege commands. These commands only appear in the CiscoWorks applications that are secured.
- Help—Displays help text for this application.

Some primary windows contain specialized menu options. These menu options appear on the window between the File and Help menu buttons and include such menu items as Options and View. Individual menus are discussed in later chapters in the window components section for each application. Refer to the specific application for window descriptions.

#### File Menu

All primary windows contain a File menu. Figure 2-1 illustrates how to access the File menu.

Figure 2-1 File Menu

#### Print Command

Each CiscoWorks primary window contains a **Print** command. There are two types of print options available in CiscoWorks applications. One option prints text found in a window using the **lpr** command. The other option prints a screen or window image using the SNM Snapshot utility. The CiscoWorks application you are using will determine the popup window that appears after you press the **Print** command.

Refer to the SunNet Manager 2.0 User's Guide for more information on the Snapshot utility.

Table 2-2 lists which CiscoWorks applications use the Snapshot utility and which use the **lpr** print command. In general, all windows containing text browsers use the **lpr** command.

CiscoWorks Application	Snapshot Utility	lpr Command
Configuration Management		Х
Contacts		Х
Device Management	Х	
Device Monitor	Х	
Device Polling	Х	
Environment Monitor	Х	
Health Monitor	Х	
Log Manager		Х
Path Tool <sup>1</sup>	Х	Х
Polling Summary	Х	
Process Manager	Х	
Real-time Graphs	Х	
Security Manager	Х	
Show Commands		Х
Sybase DWB	Not Applicable	Not Applicable
Sync w/Sybase		Х

*Table 2-2* Print Command Options in CiscoWorks Applications

<sup>1</sup>The **Print** command used depends on which Path Tool window you are currently in.

**Note:** When you use the Snapshot utility, note that the image you print depends on where you place your arrow when pointing to the window to be printed. For example, pointing to a menu bar (near the top of the window) prints the full window. Pointing to a browser window inside a window causes only that browser to be printed.

When you select **Print** on a window that accesses the **lpr** command, Figure 2-2 appears:

#### Figure 2-2 Print Command Window

The system requires that you to enter the **Print** command. The exact print command syntax depends on your system resources and configuration. Enter your print command, including any path designations, and press **OK**.

If printer environment options exist, they appear in the dialog box in the Options field. As soon as you begin to type the new print command, the previous command is overwritten. If you change your mind about printing, click on **Cancel**.

*Note:* When you print a color image on a black and white printer, the colors are printed in various shades of gray.

#### Version Command

Use the **Version** command to view the current version of the specific CiscoWorks software application you are in. See Figure 2-3.

Figure 2-3 Version Command

#### Quit Command

Use the Quit command to exit the current CiscoWorks application window.

Quit closes the window from which it is invoked. If you quit from a primary window, you are returned to the SNM Console. If you quit from a secondary window, you are returned to the primary window. If multiple primary windows are opened, only the one in which Quit was invoked is closed; others remain open and active.

#### Security Menu

The Security menu appears in primary windows that use authority checking. Use the Security menu to access your user privileges or change your user ID.

Figure 2-4 illustrates how to access the Security menu.

Figure 2-4 Security Menu

#### Privilege Command

The **Privilege** command allows you to check your user privileges. When you select the **Privilege** command, the User Privilege window appears. See Figure 2-5.

#### Change User Command

The **Change User** command allows you to change your username. Use this command when you need to log in as another user (with special privileges) to access features you may not be able to perform.

*Note:* Figure 2-5 contains a grayed-out item (Modify passwords). The option or feature may be grayed out depending on your user ID privileges. An item in any CicsoWorks application that is grayed out represents an inactive or unavailable option or feature.

Figure 2-5 User Privilege Window

Help Menu

The Help menu accesses online help for the current application. See Figure 2-6.

*Figure 2-6* Help Window

Enter characters in the search string field. Then use the **Search Forward** and **Search Backward** buttons to find your search string in the displayed text.

# Recognizing CiscoWorks Application Icons

CiscoWorks applications have icons associated with each of the application windows. This is for easy recognition of an application when you turn the window into an icon. Figure 2-7 depicts each of the CiscoWorks application windows that are assigned an icon. These icons appear when you iconify the application window.

Admins	Env. Monitor	Polling Summary
Browser	Health Monitor	Process Mgr
Config Mgmt	Lines	Real-Time Graphs
Contacts	Locations	Security Mgr
Device Mgmt	Log Mgr	Show Commands
Device Monitor	Networks	Sync w/Sybase
Devices	Path Tool	Vendors
Device Polling	People	Generic Icon
Login, Logout, and Dialog Boxes		

Figure 2-7 CiscoWorks Application Window Icons

# Security Options

If you use the Security Manager to protect specified applications, all users will be required to enter a valid username and password to access the protected CiscoWorks applications. Refer to the "Using Security Manager Tools" chapter for detailed instructions on how to protect individual CiscoWorks applications.

When application security is enabled in the Security Management window, the Security Manager application requires a special Sybase or SA account name and password. If you do not have Sybase account permission, you will not have access to the Security Mgmt windows. If you set up security options using the Security Manager, any secured applications will require a username and a password.

# Logging In and Out

With security on, if you have previously used the Login application on the Tools menu to log into CiscoWorks, you will not see a user identification window. If you have not used the CiscoWorks Login application, each time you access any of the secured CiscoWorks applications, CiscoWorks prompts you for a username and password. This login controls access to the application.

If you have used Security Mgmt to secure your CiscoWorks applications, you can use the Login and Logout applications on the SNM Tools menu. For more information on logging in and out, refer to the "Using Security Manager Tools" chapter.



*Time Saver:* By using the Login application, you only need to log in once. If Login is not used, CiscoWorks will require user identification information (username and password) each time you attempt to start a secured application.

# Understanding Database Synchronization

CiscoWorks uses the Sybase relational database to supply network device information. SNM uses its own run-time database to store information about network devices; therefore, devices that appear in the SNM database might not appear in the Sybase database (unless you have synchronized the database).

Ensure that all devices that appear on your network map are in your CiscoWorks database. Use the Sync w/Sybase application to synchronize the database information. The Sync w/Sybase application appears on the SNM Tools and Glyph menus. For more information on how to use the Sync w/Sybase application, refer to the "Device Management" chapter. *Note:* It is important to keep your SNM run-time database and your CiscoWorks relational database synchronized and up to date. To do this, use the CiscoWorks application, Sync w/Sybase. Sync w/Sybase copies new or updated device information from the SNM database to the CiscoWorks database.

Figure 2-8 illustrates the differences between database creation in SNM and in CiscoWorks. Method 1 represents the three options you have to create an SNM database. Method 2 represents the two options you have to create a Sybase database for CiscoWorks.

#### Figure 2-8 Database Creation for SNM and CiscoWorks

For more detailed information about the database and the Sync w/Sybase application, refer to the "Device Management" chapter.