Installing and Using

SPECTRUM®

for Solstice Enterprise Manager
on Solaris

CABLETRON SYSTEMS

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Contents

Chapter 1 Introduction to SPECTRUM for Solstice Enterprise Manager on Solaris

Chapter 2 Installing SPECTRUM for Solstice Enterprise Manager

Chapter 3 Getting Started

Chapter 4 Using the Stand-alone Launcher

Appendix A Cabletron Device MIB Agents

Index

Chapter 1

Introduction to SPECTRUM for Solstice Enterprise Manager on Solaris

How to use this guide; manual conventions; contacting the Cabletron Systems Global Call Center

SPECTRUM® for Solstice Enterprise Manager (SEM) adds comprehensive remote management support for all of Cabletron Systems' intelligent network management devices to Sun Microsystems' Solstice Enterprise Manager network management platform. The result is a versatile network management system, ideally suited to managing networks that contain Cabletron Systems devices.

At the heart of SPECTRUM for SEM are the graphical Hub and Bridge views — interactive displays of Cabletron Systems intelligent network devices and, where applicable, the hubs and modules they control. In addition to their graphical displays of device status and configuration, the Hub and Bridge views provide a wide variety of statistical information about the traffic passing through your devices, and provide access to a number of separate applications that allow you to monitor and manage each of the functions your intelligent devices can perform. Additional applications not available through the Hub or Bridge views can be accessed, like the Hub and Bridge

views themselves, via the **Glyph** menu; or, for operation in stand-alone mode, from the Stand-alone Launcher or the command line.

SPECTRUM for SEM also expands the graphical reporting capabilities of Solstice Enterprise Manager by providing pie chart and meter tools that allow you to dynamically display network data and performance statistics. You can run and control these visual tools through menu choices and dialog boxes within the SPECTRUM for SEM graphical user interface, or execute them in a stand-alone mode from the command line, specifying both the variables to depict and the properties of the chart or meter itself. The pie chart and meter tools are more thoroughly described in the **Charts, Graphs, and Meters** chapter of the ***SPECTRUM Portable Management Application (SPMA) Tools Guide***.

Using this Guide

This manual is designed to complement the Solstice Enterprise Manager manual set from Sun Microsystems, as well as the ***SPMA Tools Guide***, the ***Cabletron Systems' Network Troubleshooting Guide***, the ***SPMA System Message Reference Guide***, and the individual device- and application-specific ***User's Guides***; it describes how to install SPECTRUM for SEM, how to discover Cabletron devices on your network and how to properly define the glyphs that represent them, and how to access the **Glyph** menu, which serves as a gateway to each individual application available for your device. The ***Solstice Enterprise Manager User's*** and ***Reference*** guides describe how to use the basic features of Solstice: creating your network and network components, retrieving network data, specifying events, and so forth; the ***SPMA Tools Guide*** and the individual device- and application-specific ***User's Guides*** provide detailed information on how to operate each of the management applications available for your Cabletron intelligent devices; and the ***Network Troubleshooting Guide*** provides some guidelines that can help you interpret the statistical data provided by SPMA about the traffic on your network.

The ***System Message Reference Guide*** explains the source of a variety of error and informational messages you may see; corrective user action is also provided, where appropriate.

This manual assumes that you have a basic understanding of network management concepts and that you are familiar with Solaris, a Sun Microsystems version of the UNIX operation system, and the window manager (OpenWindows or the Common Desktop Environment) you have selected.

- Chapter 1, **Introduction to SPECTRUM for Solstice Enterprise Manager on Solaris**, describes this ***Installing and Using ...*** guide and the conventions used here and in other SPMA manuals, explains where to find information about SPMA applications and device management modules, and tells you how to contact the Cabletron Systems Global Call Center.
- Chapter 2, **Installing SPECTRUM for Solstice Enterprise Manager**, lists the hardware and software requirements for using SPECTRUM for Solstice Enterprise Manager, and outlines the procedures for installing SPECTRUM Portable Management Applications for use in conjunction with Solstice Enterprise Manager and in a stand-alone mode.
- Chapter 3, **Getting Started**, explains how to use SPMA Discover to create Cabletron Systems device glyphs in your Solstice Enterprise Manager database, how to create device glyphs from scratch without using SPMA Discover, and how to configure your glyphs to make the most of the features and functions available on each Cabletron device.
- Chapter 4, **Using the Stand-alone Launcher**, explains how to use the SPMA Stand-alone Launcher, how to access SPMA applications from the command line, and how to add third party applications to the Launcher menu; some basic information about MIB components and community names is also provided.
- Appendix A, **Selecting MIB Agent Files for Cabletron Devices**, provides a list of the ASN1 and GDMO files applicable to each Cabletron management device supported by SPMA; refer to this list when configuring glyphs for your Cabletron intelligent

devices. This Appendix also describes how to create a generic SNMP icon for general SNMP stack management of third-party devices.

What's NOT in this Guide . . .

This guide is intended to provide you with the information you need to install SPECTRUM for SEM on your workstation, locate Cabletron devices on your network and properly define their glyphs, and access the **Glyph** menu, which provides a gateway to each of the applications available for a particular device.

What you won't find in this guide are any detailed, step-by-step instructions on how to use the applications available for each of your devices; or how to discover devices and create a map or maps in Solstice Enterprise Manager. The latter can be found in your Solstice Enterprise Manager documentation; the former is located either in the ***SPMA Tools Guide***, which describes the operation of applications which are common to most devices, or in the device- and application-specific ***SPMA User's Guides***, which describe the rest of the applications available to each device. The entire document set — including this ***Installing and Using...*** guide — is provided in an electronic format; all appropriate documents are installed for you automatically.

This guide also includes instructions for installing SPECTRUM for SEM for operation in a stand-alone mode; instructions for starting each application from the command line are included in each chapter, both in the device- and application-specific guides and in the ***SPMA Tools Guide.***

Year 2000 Compliance

Previous users of SPMA will note a few display changes related to Year 2000 compliance. All SPMA applications now have the ability to display a four-digit year value where this information is available. For example, the Stand-alone Launcher window — which uses your

workstation's system time value to display the time and date of the last contact change — will now display these date values with eight digits (05/31/1998) instead of six (05/31/98).

Please keep in mind, however, that SPMA's ability to *display* a four-digit year value in device-specific windows — such as the Device Status window available from the Hub View or the Bridge View — is dependent on the firmware's ability to *provide* a four-digit value. Not all firmware versions support this ability; contact Cabletron Systems' Global Call Center for information specific to your device firmware.

Conventions

The family of SPECTRUM Portable Management Applications can work with a number of different network management systems running on several different operating systems and graphical user interfaces. This versatility presents two documentation problems: first, there is no standard terminology; and second, the appearance of the windows will differ based on the graphical interface in use. For the sake of consistency, the following conventions will be followed throughout this and other SPMA guides.

Screen Displays

SPMA runs under a variety of different operating systems and graphical user interfaces. To maintain a consistent presentation, screen displays in this and other SPMA guides show an OSF/Motif environment. If you're used to a different GUI, don't worry; the differences are minor. Buttons, boxes, borders, and menus displayed on your screen may look a bit different from what you see in the guide, but they're organized and labelled the same, located in the same places, and perform the same functions in all screen environments.

Some windows within SPMA applications can be re-sized; those windows will display the standard window resizing handles employed by your windowing system. Re-sizing a window doesn't

re-size the information in the window; it just changes the amount of information that can be displayed (see Figure 1-1). When you shrink a window, scroll bars will appear as necessary so that you can scroll to view all the information that is available.

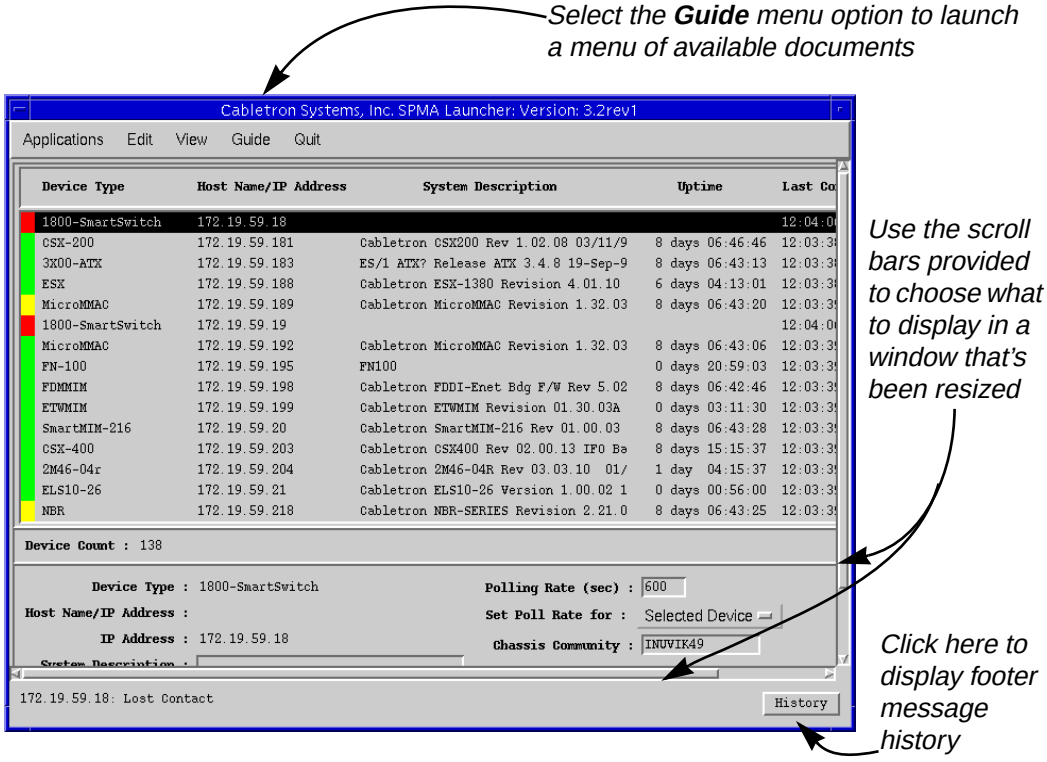


Figure 1-1. Window Conventions

Some windows will also contain a **History** button; selecting this button launches a History window (Figure 1-2) which lists all footer messages that have been displayed since the window was first invoked. This window can help you keep track of management actions you have taken since launching a management application.

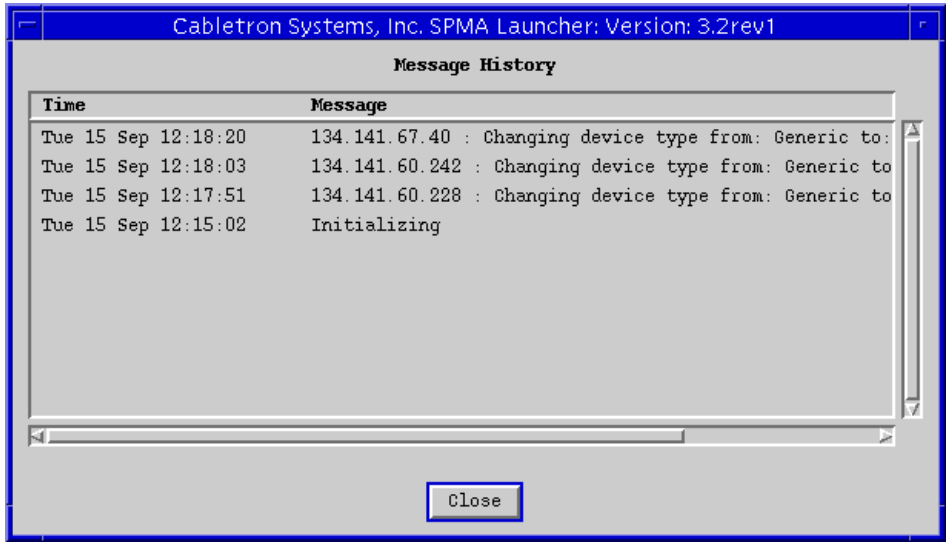


Figure 1-2. The History Window

Launching Documentation

The SPMA documentation set is now provided in electronic format and installed with your SPMA program files, along with Adobe's Acrobat Reader application. The **Guide** button or menu option available in many application windows — including all Hub Views, the Bridge View, and the Stand-alone Launcher — will launch the Acrobat Reader and open the appropriate document. From the Stand-alone Launcher, clicking the **Guide** button will launch a menu file which provides links to all other available documentation; you can also access this menu file (called **`SPMAdocs.pdf`**) directly from the Solstice Manager Viewer window via the **Tools—>SPMA Guide** menu option. Any document file can also be opened directly via Acrobat. Document files are stored in the **`/usr/ctron/documentation`** directory.

Using the Mouse

The UNIX mouse has three buttons. Procedures within the SPMA document set refer to these buttons as follows:

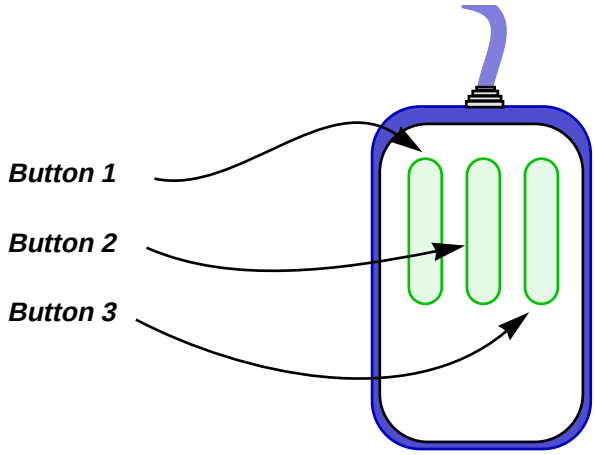


Figure 1-3. Mouse Buttons

If you're using a two-button mouse, don't worry. SPMA doesn't make use of mouse button 2. Just click the left button for button 1 and the right mouse button when instructed to use mouse button 3.

Whenever possible, we will instruct you on which mouse button to employ; however, menu buttons within SPMA applications will operate according to the convention employed by the active windowing system. By convention, menu buttons under the Motif windowing environment are activated by clicking the left mouse button (referred to as mouse button 1 in SPMA documentation), and there is no response to clicking the right button (mouse button 3). Under OpenWindows, menu buttons can be activated by clicking the right button, and convention dictates that the left button activates a default menu option; within SPMA, that default option will also display the entire menu. Because of this difference, references to activating a menu button will not include instructions about which

mouse button to use. All other panels from which menus can be accessed, and all buttons which do not provide access to menus, will operate according to SPMA convention, as documented.

Getting Help

If you need additional support related to SPMA, or if you have any questions, comments, or suggestions related to this manual, contact the Cabletron Systems Global Call Center. Before calling, please have the following information ready:

- The product name
- The version number of the program that you need help with. SPMA is modular, which means each application will have a specific revision number. Where applicable, an INFO button provides the version number; you can also view the version number for any application by typing the command to start the application followed by a **`-v`**.

You can contact the Cabletron Systems Global Call Center by any of the following methods:

By phone:	(603) 332-9400 *24 hours a day, 365 days a year*
By mail:	Cabletron Systems, Inc. PO Box 5005 Rochester, NH 03866-5005
By Internet mail:	support@ctron.com
By FTP	ctron.com (134.141.197.25)
Login	`anonymous`
Password	`your email address`
By BBS:	(603) 335-3358
Modem Setting	8N1: 8 data bits, 1 stop bit, No parity

For additional information about Cabletron Systems products, visit our World Wide Web site: **http://www.cabletron.com/**. For technical support, select **Service and Support**.

Chapter 2

Installing SPECTRUM for Solstice Enterprise Manager

Hardware and software requirements; installation procedures; installing SPMA modules for stand-alone operation

Beginning with the 3.2rev1 release, SPMA applications are now sold and shipped as a single part number which includes all available applications and device support. The files that will be extracted from the SPECTRUM Portable Management Application (SPMA) CD that you received will depend on which modules you choose to install. Along with the core applications (including the Stand-alone Launcher, the SPMA tool set, and the Solstice Enterprise Manager interface files) and the individual device modules you choose, the installation procedure will also install all related documentation and the version of Adobe's Acrobat Reader appropriate to your operating system. If you are a previous user of SPMA, you will notice a few new steps at the beginning of the install process; the rest of the process is unchanged.

This chapter divides the installation procedure into separate tasks:

Preparing Your Workstation for Installation

Before you run the Install script included on your SPECTRUM Portable Management Application CD, there are several operating parameters you must set on your workstation.

Installing SPMA Files on your Workstation

Whether you're installing SPECTRUM for Solstice Enterprise Manager on Solaris for the first time, or installing an additional device module or product upgrade, you follow the same simple procedure to install the SPMA files on your workstation — including choosing the modules you wish to install. All necessary directories and subdirectories are created for you automatically, and all appropriate documentation is installed along with the chosen modules.

Integrating SPMA with Solstice Enterprise Manager

You must also update a number of Solstice files and directories so that they contain the Cabletron information required to run SPMA.

Creating Environment Variables

If you wish, you can define the variable CTRONDB to store your SPMA-related database files in other than the default location.

Testing for and Correcting Potential NIS Problems

Certain SPMA applications make frequent use of IP address to host name mapping, which can slow application response time on some networks. The SPMA pnisd daemon is designed to enhance this response time on networks where this is a problem; we tell you how to test your network, and how to install the daemon if you need it.

Installation Prerequisites

Before you install SPMA, you must already have installed Solstice Enterprise Manager from Sun Microsystems. The SPMA installation creates some new directories and adds files to existing Solstice Enterprise Manager directories. You install the entire product — including all related documentation — from a single CD; all necessary directories are created for you automatically.

Hardware Requirements

SPMA requires a minimum of 48 megabytes of RAM, but 64 is recommended. At a minimum, swap space should be equal to twice the amount of RAM; however, if you plan to run several SPMA

applications simultaneously, you may improve performance by assigning additional swap space. The SPMA core product and device modules require hard disk space as specified below:

SPMA Core	71 megabytes
Device modules	from 4 to 43 megabytes; average size 27 megabytes
Entire product	248 megabytes

Be sure you have enough hard disk space over and above that required by Solstice Enterprise Manager to install the modules you need; note that size estimates include space for the associated documentation.

Software Requirements

SPMA has the following operating system and windowing system software requirements:

Solaris version 2.5.1 or 2.6
OpenWindows Version 3 (3.5.1 via **showrev -v**)
CDE version 1.0.2

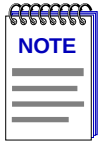
Solstice Enterprise Manager version 2.0

Preparing Your Workstation for Installation

Before you can successfully run the install script from the SPMA CD-ROM, there are several parameters you must set for your workstation. You must run the install as root; therefore, if display parameters have not been set for root, you may need to set the display environment variable to the hostname of your workstation. You may also need to give root permission to display the install windows by using the **`xhost`** command. These and other steps necessary to execute before installing from a local or remote CD-ROM drive are described below.

To Install from a Local CD-ROM Drive

1. Log on to the workstation as root.



*If you are running on Solaris with the **vold** process (volume manager daemon), skip **steps 2** and **3** below. When you insert a CD on a system running the volume manager daemon, the CD filesystem is automatically mounted by the system.*

2. Create a directory for the CD mount point by typing:

   ```
   mkdir /cdrom
   ```

3. Insert the CD into the CD-ROM drive and mount the CD filesystem using the following command:

   ```
   mount -r -F hsfs /dev/sr0 /cdrom
   ```

4. Check to make sure that the DISPLAY environment variable is set to the hostname of your workstation by typing **echo $DISPLAY**.

   If the DISPLAY environment variable is set to <your workstation's hostname>:0.0 or :0.0, you do not need to set the DISPLAY environment variable; proceed to step 5.

   If the DISPLAY is set to a hostname other than your own or not set at all, set the DISPLAY environment variable to the hostname of your workstation using one of the following commands:

   for C Shell
   ```
   setenv DISPLAY <hostname>:0
   ```

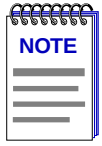
   for Korn and Bourne Shell
   ```
   DISPLAY=<hostname>:0 ; export DISPLAY
   ```

5. If you did not start the windowing environment as root you will also need to give root permission to display by switching to the username you used to launch the windowing environment, and typing the following from the command line:

   xhost +<hostname>

To Install from a Remote CD-ROM Drive

1. Log on to the CD-ROM host workstation as root.



*If you are running on Solaris with the **vold** process (volume manager daemon), skip **steps 2** and **3** below. When you insert a CD on a system running the volume manager daemon, the CD filesystem is automatically mounted by the system.*

2. Create a directory for the CD mount point by typing:

   mkdir /cdrom

3. Insert the CD into the CD-ROM drive and mount the CD filesystem using the following command:

   mount -r -F hsfs /dev/sr0 /cdrom

4. Export the CD ROM filesystem by adding the following line to your /etc/dfs/dfstab file:

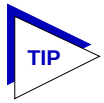
   share -F nfs -o ro /cdrom

   then type the following from the command line:

   shareall

   Or just type the following from the command line:

   share -F nfs -o ro /cdrom



Adding the line specified above to your /etc/dfs/dfstab file will permanently export the CD-ROM filesystem (until the line is removed); exporting from the command line only will export the CD-ROM filesystem until the next time you re-boot.

5. Log on to the target workstation as root.
6. Create a directory for the CD mount point by typing:

   `mkdir /cdrom`

7. Check to make sure that the DISPLAY environment variable is set to the hostname of your workstation by typing **echo $DISPLAY**.

   If the DISPLAY environment variable is set to <your workstation's hostname>:0.0 or :0.0, you do not need to set the DISPLAY environment variable; proceed to step 8.

   If the DISPLAY is set to a hostname other than your own or not set at all, set the DISPLAY environment variable to the hostname of your workstation using one of the following commands:

   for C Shell
   `setenv DISPLAY <hostname>:0`

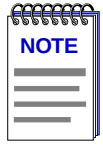
   for Korn and Bourne Shell
   `DISPLAY=<hostname>:0 ; export DISPLAY`

8. If you did not start the windowing environment as root you will also need to give root permission to display by switching to the username you used to launch the windowing environment, and typing the following from the command line:

   `xhost +<hostname>`

9. Mount the CDROM drive workstation using the following command:

   if you are using a Solaris machine as the CD drive workstation
   `mount -r -o hard,intr <remote hostname>:/cdrom/cdrom0 /cdrom`

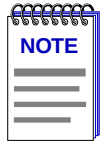


The commands above and below should each be entered as one line.

   if you are not using a Solaris machine as the CD workstation
   `mount -r -o hard,intr <remote hostname>:/cdrom /cdrom`

Installing SPMA

Follow the procedure below to install the SPMA program and documentation files to your workstation's hard drive; during installation, all necessary subdirectories will be created for you automatically. The following install procedures cover both the initial installation and any subsequent product additions or upgrades.



During the install process, you must choose which of the available SPMA modules you wish to install; the core applications are installed automatically. If you choose to install additional modules at a later time, the core files will automatically be re-installed, but you need not re-install any individual modules you have already installed.

1. To start the installation, type the following command:

   *if you are running the volume manager daemon (**vold** process):*
   `/cdrom/cdrom0/install.cd`

   if you are not running the volume manager daemon:
   `/cdrom/install.cd`

The Install Platform Selection window, Figure 2-1, will be displayed.

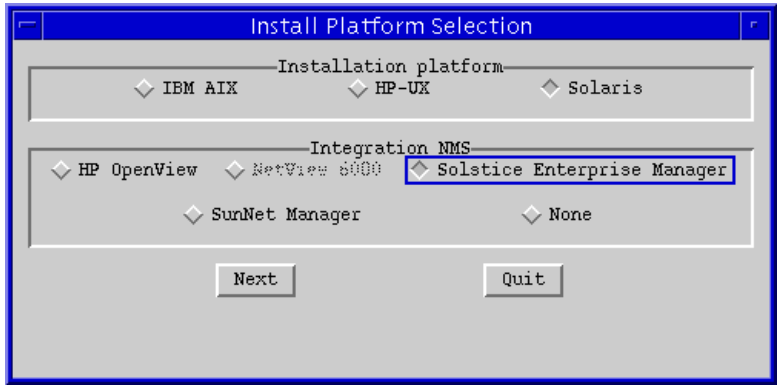
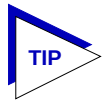


Figure 2-1. The Install Platform Selection Window

2. Click in the appropriate fields to select the operating system and network management system (if applicable) on which you will be running the SPMA applications. Based on information read from your workstation, these fields will try to default to the correct values; be sure to check the default settings and change them if necessary.

3. Click on **Next** to proceed with installation; the Install Product Selection window, Figure 2-2, will appear. You can use this window to select only those applications that you need, or you can leave the default selections and install the entire SPMA product. The associated document files will be automatically installed for each selected module. Click mouse button 1 on any module to select or de-select it. Note that the **Core** option cannot be de-selected; core application and documentation files will be installed automatically each time the installation procedure is run. You can also double-click on the list box title to select all available options.



Be sure you have adequate hard disk space to install the options you have selected; see ***Hardware Requirements****, page 2-2, for module size estimates.*

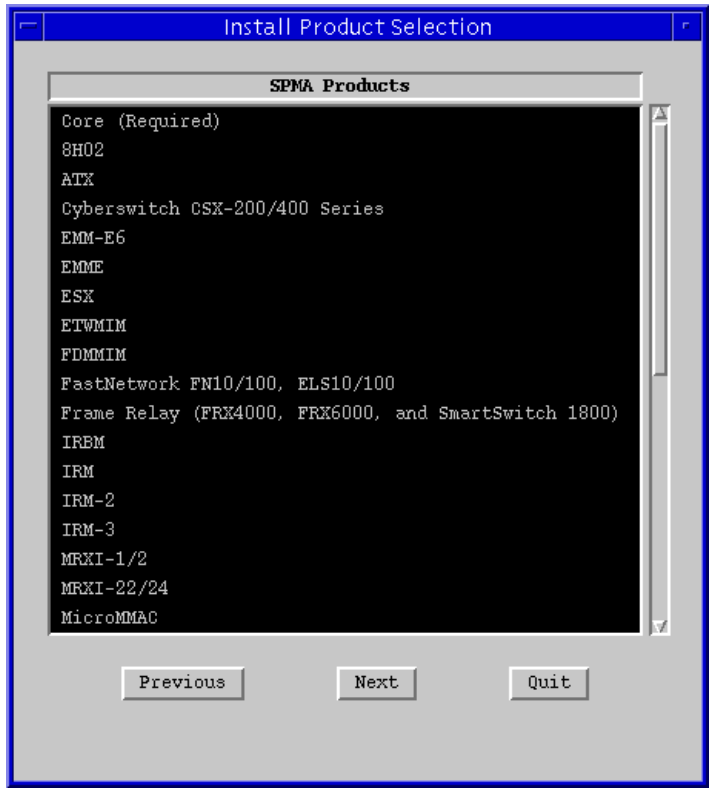


Figure 2-2. Install Product Selection Window

4. Click on **Next** to proceed with installation; an Install Configuration window like the example shown Figure 2-3 will appear. The directory you are installing *from* will be displayed in the **Install from:** field; the default install directory will be displayed in the **Install to:** field.

TIP

*You can also click on **Previous** to return to the Platform Selection window, and change any settings you have made there before continuing with the install procedure.*

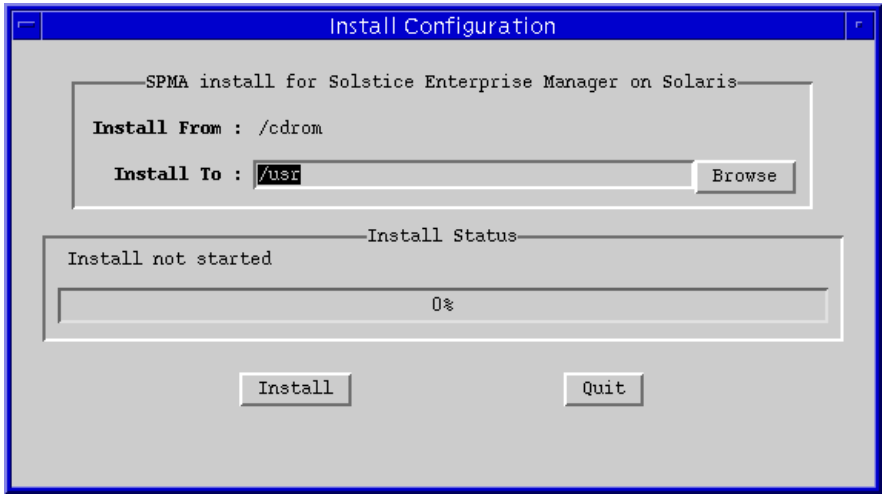


Figure 2-3. Install Configuration window

NOTE

*If you decide not to go on with the installation at any time, click on **Quit** from this or any of the preceding windows to stop the installation process.*

5. You can change the directory you are installing to by either clicking on **Browse** and selecting a new directory, or by typing in the path of the new directory in the **Install to:** field.

We strongly recommend that you install to the default **/usr** *directory. However, if you choose to install to a different directory, please keep the following cautions in mind:*

First, use care when typing in the directory name — if you mistype the name, the install will still create the directory for you, and your files may end up in an unexpected location; if you leave a space at the end of the path you specify, the install will succeed, but this kind of directory name is not recommended. If you choose to install to a path other than the default **/usr**, *we recommend that you first create the directory, then use the* ***Browse*** *button to select it in this window.*

Second, remember that if you install to a directory other than **/usr**, *the install routine will automatically attempt to create a link from the ctron directory within the directory you specified to* **/usr/ctron**. *If there is already a file, directory, or link named* **/usr/ctron**, *you will receive a warning message (see Figure 2-4) at the end of the install process indicating that the link could not be created. If you receive this warning, you must first either remove or rename the existing* **/usr/ctron**, *then manually make the link by typing the following command from the command line:*

```
ln -s <your install directory>/ctron /usr/ctron
```

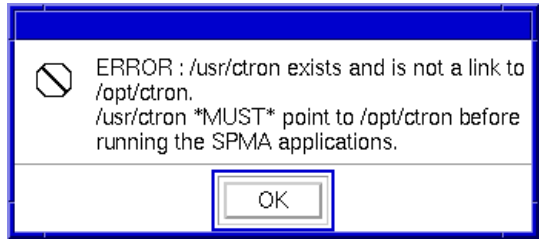


Figure 2-4. Sample Warning Message

For example, if you choose to install to **/data** *instead of the default* **/usr** *directory, the following link must be created either by the install process or manually after installation:*

```
ln -s /data/ctron /usr/ctron
```

6. To proceed with the installation click on **Install**. Progress will be reported via the status bar at the bottom of the Install Configuration window (see Figure 2-5).

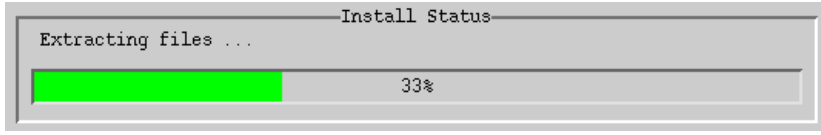


Figure 2-5. Installation Progress Indicator

7. When all of the SPMA application files have been copied, you will be prompted to integrate SPMA with your network management system. (See the following section for more information.)

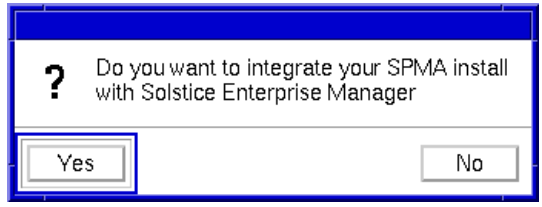


Figure 2-6. Integration window

TIP

Under certain special circumstances, you may want to run the install procedure without the user interface windows; in order to do this, however, you must first contact the Global Call Center and request specific instructions and an extraction key.

Integrating SPMA with Solstice Enterprise Manager

Several Solstice Enterprise Manager files and directories must be updated to include the information used to run SPMA. The integration process which immediately follows the install (or which can be run independently at any time) performs the following functions:

- Copies the necessary MIB agent and schema files and converts them to the ASN1 and GDMO format required by Solstice Enterprise Manager.
- Copies the necessary glyph files to the appropriate directory.
- Updates the glyph menu file, so that Cabletron glyphs can provide access to all appropriate management functions.
- Copies Cabletron trap information to the trap_maps file.
- Re-initializes Solstice using the **`em_services -r`** command, so that SPMA applications can be successfully run.

As displayed in Figure 2-6 above, you will be offered the option to integrate as part of the initial SPMA installation process; you may also opt to perform the integration separately at a later time. The integration process is the same in either case, and is described in detail below.

Choices to Make During Integration

During the integration process, you will be prompted to make two choices. First, you will be asked to select a numeric value to serve as the base ID for the Cabletron ASN1 and GDMO agent files which will be added to the appropriate directories. A default value of 52 is provided for you; you can accept this value, or select any other numerical value you want, as long as it is unique (that is, as long as it has not been assigned as a base ID for any other ASN1 or GDMO files you have installed).

Second, you will be prompted to re-initialize Solstice Enterprise Manager to complete the integration process. If you choose to re-initialize, the integration script will run the **`em_services -r`** command for you immediately, and SPMA will be ready to run. If you choose not to re-initialize as part of the integration, you must run the **`em_services -r`** command before SPMA can be run successfully from within Solstice.

Choosing Not to Integrate

If you choose not to integrate SPMA with Solstice Enterprise Manager at the time of your original installation of the SPMA files, you can do so at a later time, as follows:

1. From any command line, run the following script:

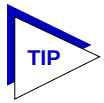
   `/usr/ctron/install/install`

The integration procedure is the same whether you run it at the time of installation or afterward, and you will be prompted during the integration to make the same two choices described in the previous section.

Specifying a Database Storage Directory: CTRONDB (optional)

SPMA is now installed, and all necessary environment variables have been set automatically during the installation; but you can, if you wish, define the variable CTRONDB to store your SPMA-related database files in other than the default location.

The procedures outlined below specify how this variable might typically be configured in three commonly-used shells: C shell, Korn shell, and Bourne shell. If you are using a different shell and/or you define environment variables in files or with commands other than those specified, simply adjust the commands accordingly. All that matters is that the necessary variable is correctly defined.



If you're not sure what shell you're using — and therefore which of the procedures below you should follow — type **echo $SHELL***; if the response comes back* **/bin/csh,** *you are using C shell; if it comes back* **/bin/ksh**, *you are using Korn shell; and if it comes back* **/bin/sh**, *you are using Bourne shell.*

The CTRONDB variable defines the directory in which SPMA will store the various database files created and maintained by its applications; these typically contain management information set by the user, such as default polling intervals, Token Ring security lists, bridge configuration parameters, and the database of devices used by the Stand-alone Launcher.

By default, this variable will be set to /usr/ctron/ctrondb, and the **ctrondb** directory will be created automatically during installation. However, if more than one user will be running SPMA applications from the same workstation, each may want to set the CTRONDB variable to a different location to protect other users' settings from being overwritten. Using separate CTRONDB definitions will also prevent any access problems resulting from each user's default permissions settings. SPMAs can be run with read-only access to database files, but you will not be able to save any configurations you make from the applications in a read-only database.

You can set this location to any directory. If you define CTRONDB as a directory which did not previously exist, be sure you create it and **make it writable** before running any SPMA applications.

The directory defined as CTRONDB **must not** *be across an NFS mount point from the workstation that is running the executable files (although the executable files themselves can be located across an NFS mount point from the workstation that is running them). If you use this kind of arrangement, application performance will be severely impaired, and may fail completely.*

For all shells, be sure you have logged in with the user name that you will use to run SPMA, then use your favorite text editor to do the following:

For C Shell
Make the following entry in your **.login** file:

```
setenv CTRONDB <any_rw_directory>
```

For Korn and Bourne Shell
Make the following entry in your **.profile** file:

```
CTRONDB=<any_rw_directory> ; export CTRONDB
```

Once you have made the entry specified above, save the appropriate file, **exit** your windowing environment, then **log out**, **log back in**, and re-start your windowing environment.

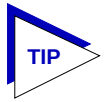
Copying the Necessary Files to a Custom CTRONDB Directory

If you have decided to set your CTRONDB definition to a location other than the default, there is one additional step you must perform:

1. cd to /usr/ctron/bin, and type the following command:

   ```
   init_spma_db [-q]
   ```

This command launches a script which will copy several files — including **viabase.cfg**, **viauser.cfg**, **viaerrs.err**, and a variety of **mibdb** files — from the default CTRONDB location to the location you have defined. These files must be in your current CTRONDB directory so that the MIBTree utility (described in the ***SPMA Tools Guide***) and the RMON applications (described in the ***SPMA RMON User's Guide***) will operate properly. If you run the script without the optional **-q** ("quiet") switch, you will be prompted before any existing files are overwritten. If you use the switch, files will be replaced without notification.



Be sure each user who will be running SPMA applications from the same workstation runs this script while logged in with the user name he or she will be using to run SPMA; the necessary files will only be copied once each time the script is run, to the location defined by the ***currently active*** *definition of CTRONDB!*

A Note About Environment Variables (For Previous Users Only!)

As mentioned above, all necessary environment variables are now set automatically (and temporarily) each time you launch an application. If you are launching an application from the command line, the command parameter **spmarun** launches a script which sets all necessary variables to the correct value based on the SPMA location defined during installation (ND_PATH, library path, etc.) or on the windowing system you are currently running (OIT_LOOK, OIT_WMGR).

This script is launched automatically when you type the command to start the Stand-alone Launcher, and when you launch any individual application from within the Launcher.

Note, too, that the installation procedure does not require you to add **/usr/ctron/bin** to your PATH variable. You may do this if you wish; if you choose not to, however, note that you will need to add /usr/ctron/bin/ to the beginning of each command sequence provided.

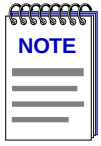
Testing for and Correcting Potential NIS Problems

*The following information concerns only those networks which use NIS; if your network uses DNS or any other network information service, you should **not** use the pnisd daemon described below.*

In some network environments, NIS servers can take a significant amount of time to resolve host names to IP addresses. Whether this is due to an anomaly in the server software or is simply the result of heavy network traffic, delays in the resolution of host names to IP addresses can severely degrade SPMA application performance. To address these problems, we have provided a special NIS daemon which will periodically dump the NIS database to your local machine, where it can be quickly accessed by SPMA. Before configuring your workstation to use this daemon, however, we recommend that you perform a simple test to determine if the problem exists on your network:

1. At any command line, type the following exactly as shown:

   `ypmatch xxxyyyzzz hosts`



*If your network is **not** using NIS, typing the above command will produce an error message. If this occurs, proceed to the next section.*

2. If your system takes less than one minute to return a “no match” response, you are not likely to experience NIS timeouts or degraded performance and need not use the special NIS daemon.

   If your system does ***not*** respond within one minute, you may experience severely degraded SPMA performance, and you should configure your workstation to run the **pnisd** daemon, as follows:

a. During installation, a default **rc.ctron** file was copied to the /usr/ctron/conf directory; move this file to the location and name specified below:

   `/usr/ctron/conf/rc.ctron` *to* **`/etc/rc3.d/S99rcctron`**

b. Using your favorite text editor, open the file. At the beginning of the file, you will find a line which allows you to define the SPMA environment variable:

   ```
   SPMA= ; export SPMA
   ```

   Uncomment the line, then enter the appropriate SPMA path, being sure to include the ctron subdirectory, as follows:

   ```
   SPMA=/usr/ctron; export SPMA
   ```

If you are a previous user of SPMA, be sure you check this parameter! Some earlier versions of SPMA did not require that you install to a particular directory; however, with this release you ***must*** *either install to* ***/usr/ctron*** *or create a link from your install directory to* ***/usr/ctron****. Therefore, you must be sure to define the $SPMA variable specified here as /usr/ctron, or the pnisd daemon will not launch.*

c. Near the end of the file, you will find a text description of the pnisd daemon and the problem it is designed to correct, as well as five command lines which have been commented out. To run the pnisd daemon, simply uncomment the following lines:

```
if  [ -f $SPMA/bin/pnisd ] ; then
    if $SPMA/bin/pnisd ; then
       echo “Starting pnisd daemon”
    fi
fi
```

By default, the pnisd daemon will copy the NIS database to the /tmp directory on the local machine, and will refresh the database every 5 minutes. To change these default values, follow the pnisd command with the following switches:

```
[-i minutes] [-d path]
```

where:

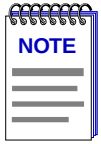
-i defines the refresh interval; the default is 5 minutes

-d defines the path to which the NIS database will be dumped on the local machine; the default directory is /tmp

If you add the switches, the correct lines will look like this:

```
if  [ -f $SPMA/bin/pnisd ] ; then
    if $SPMA/bin/pnisd -i <min> -d <path>; then
       echo “Starting pnisd daemon”
    fi
fi
```

d. Save and close the file, and re-boot your workstation for the above changes to take effect.

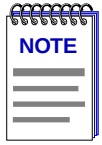


*For help information about this daemon, type **pnisd -h** at any command line; for version number information, type **pnisd -v.** Note that neither of these commands will start the pnisd daemon.*

Using SPMA Applications in a Stand-alone Mode

Although all of the SPECTRUM for Solstice Enterprise Manager Portable Management Applications are designed to run in conjunction with Solstice Enterprise Manager, you can also run any and all of them in a stand-alone mode either by using the Stand-alone Launcher or by typing the appropriate command sequence from any command line. To operate in stand-alone mode, you need make no adjustments to the

installation procedure described above. Specific commands for starting each application are included in the ***SPMA Tools Guide*** and in each device- and application specific ***User's Guide***; the Stand-alone Launcher is described in Chapter 4, **Using the Stand-alone Launcher**.



Note that the installation procedure does not require you to add ***/usr/ctron/bin*** *to your PATH variable. You may do this if you wish; if you choose not to, however, note that you will need to add /usr/ctron/bin/ to the beginning of each command sequence provided.*

What's Next?

Your SPECTRUM for Solstice Enterprise Manager installation is now complete. Turn to Chapter 3, **Getting Started**, to find out how to automatically discover or manually create Cabletron device glyphs within Solstice Enterprise Manager, and how to access SPMA applications and tools from the **Glyph** menu; turn to Chapter 4, **Using the Stand-alone Launcher**, to find out how to use the Stand-alone Launcher utility to create a database of your network devices and launch all applicable SPMA applications, tools, and documents, how to add third-party applications to the Launcher menus, and how to launch SPMA applications directly from the command line.

Chapter 3

Getting Started

Using SPMA Discover; manually creating Cabletron device glyphs; configuring glyph object properties; a few words about MIB components and community names

A Cabletron device glyph in a Solstice Enterprise Manager management database gives you the best of both worlds: the Solstice Enterprise Manager generic SNMP applications ***and*** SPMA tools and applications tailored specifically for your Cabletron devices.

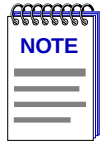
This chapter explains what you need to know to create Cabletron glyphs and launch SPMA tools from within a Solstice Enterprise Manager database.

Be sure to re-initialize Solstice Enterprise Manager by launching it with the **`em_services -r`** *command each time you install a new version of SPMA, or some SPMA changes will not take effect.*

Creating Cabletron Network Objects

As described in the ***Solstice Enterprise Manager User's Guide***, there are two methods that you can use to create network objects: manually, by using the Solstice Enterprise Manager Console **Tools—>Object Palette**, or automatically, by using the SEM Discover tool. If you create an object manually, you can choose from a list of specific object types which includes Cabletron Systems objects. The glyph that is created represents a distinct network component. If you

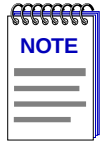
use the Solstice Enterprise Manager Discover tool to create your network objects, you automatically create glyphs that represent your network objects, including Cabletron devices; however, the SEM Discover tool cannot create Cabletron Systems glyphs. For that, you need SPMA Discover.



SPMA Discover will not discover any third-party devices in your SEM database; in addition, it will only "discover" and create Cabletron glyphs for those devices whose management modules you have installed. For complete SPMA support of all your Cabletron devices, be sure you have installed the necessary management modules. See ***Installing SPMA*** *in Chapter 2,* ***Installing SPECTRUM for Solstice Enterprise Manager****, for more information on selecting specific management modules for installation.*

Using the SPMA Discover Application

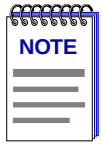
Unlike the Solstice Enterprise Manager Discover tool, SPMA Discover does not create new objects; it examines existing objects—every component in the current management database—to determine if they are Cabletron Systems components. When SPMA Discover recognizes a component, it replaces the existing generic glyph with the appropriate device-specific Cabletron Systems glyph.



After you have run SPMA Discover and converted all the appropriate objects to Cabletron-specific glyphs, you may still need to edit community name access to the device and/or select the appropriate MIB agent (ASN1 and GDMO) files associated with the device. See ***Assigning or Editing Community Names****, page 3-8, and* ***Selecting MIB Agent Files****, page 3-9, for details.*

Launching SPMA Discover

The SPMA Discover tool is located in the Solstice Enterprise Manager console **Tools** menu. It doesn't matter which console view window you have open when you launch SPMA Discover; SPMA Discover will examine every active (that is, pingable) component in the currently open management database before it stops.



SPMA Discover can only examine glyphs that represent active network devices — that is, devices which are up and running at the time SPMA Discover is launched.

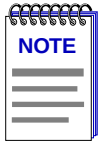
To launch SPMA Discover:

1. In the Solstice Enterprise Manager Console window, click on the **Tools** menu; drag down to **SPMA Discover**, and release. The SPMA Discover Program window will appear.
2. In the **SNMP Read Community** field, enter a community name which will provide at least Read access to all of the Cabletron devices you wish to discover.

If no single community name is available to provide Read access to all of your Cabletron devices, you can run the SPMA Discover application as many times as necessary to convert all of your Cabletron devices.

3. Click **Start** to begin the discover process.

As SPMA Discover "discovers" Cabletron devices in your current SEM management database, it will convert the generic glyph assigned by SEM Discover to the appropriate Cabletron device-specific glyph, and list the discovered devices in the Discover window. Glyphs will remain in their original positions in the display window.



When SPMA Discover converts an SEM glyph to a Cabletron glyph, it assigns to the new glyph the community name used in the discover process. If this community name does not provide adequate access to your Cabletron devices — for example, if it provides only Read access, but no Write capabilities — you will need to edit each glyph's Object Properties to assign the appropriate community names. See ***Assigning or Editing Community Names****, page 3-8, for more information.*

SPMA Discover and SmartSwitch 9000 Devices

Because each SmartSwitch 9000 module is an intelligent device with its own management capability and its own IP address, Solstice Enterprise Manager will discover each module individually, and SPMA discover will assign an individual, device-specific object for each — even if some or all of the modules are installed in the same SmartSwitch 9000 chassis. There are glyphs available that you can use to represent a SmartSwitch 9000 six- or 14-slot chassis; however, these must currently be added and configured manually (see **Manually Creating SmartSwitch 9000 Module and Chassis Glyphs**, page 3-10).

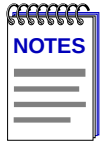
The exception to this rule is the SmartSwitch 9500 — a SmartSwitch 9000 chassis with the CTM backplane — with one or more 9A656 modules installed. Because the 9A656 modules support distributed chassis management (which allows you to assign a single IP address to a group of modules), SPMA discover will assign the SmartSwitch 9000 chassis icon to the single IP address, and will populate the chassis automatically. See the ***SmartSwitch 9000 Chassis*** and ***SmartSwitch 9000 Module*** user's guides for details.

Manually Creating a Cabletron Systems Glyph

To create glyphs for your Cabletron Systems devices without using SPMA Discover:

1. Open the SEM Console window in which you want to place the device.

2. Select **Tools—>Object Palette** to open the Object Palette Viewer.
3. In the Object Palette window, click to select the object you want. The Object Configuration Tool window, which allows you to configure object properties, will appear.



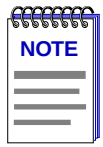
All Cabletron device names begin with the designation "csi," as in csiEMME.

Please note also that only those devices for which you have installed SPMA management modules will appear in the object palette. The generic SNMP component (csiGENSNMP) is included with the core package.

Once you have created the glyph, you must configure it with the appropriate community names; you may also want to select the agent (ASN1 and GDMO) files that will give Solstice Enterprise Manager's SNMP Browser access to the device's MIB information. See the following section for details.

Configuring Cabletron Glyph Properties

Whether you create a glyph manually (as described in the previous section) or by using SEM Discover and SPMA Discover, you may need to edit the glyph's properties via the Object Configuration Tool. If you created the glyph using the Discover tools, you may need to edit the community name assigned to the glyph to provide the appropriate level of management access to the device; for both manually-created and discovered glyphs, you may also want the specify the MIB agent (ASN1 and GDMO) files that will provide the Solstice Enterprise Manager SNMP Browser with access to the device's MIB information.



When SPMA Discover converts a generic SEM glyph to a Cabletron device-specific glyph, it will assign to that glyph the community name you used in the Discover window. If this community name does not provide adequate management access to your devices, you will need to edit the assigned community name via the Object Configuration Tool window, as described below.

To access the Object Configuration Tool window:

1. Click mouse button 3 on the glyph to display the Glyph menu.
2. Drag down to **Object Properties** and release; the glyph's Object Configuration Tool window, Figure 3-1, will appear.

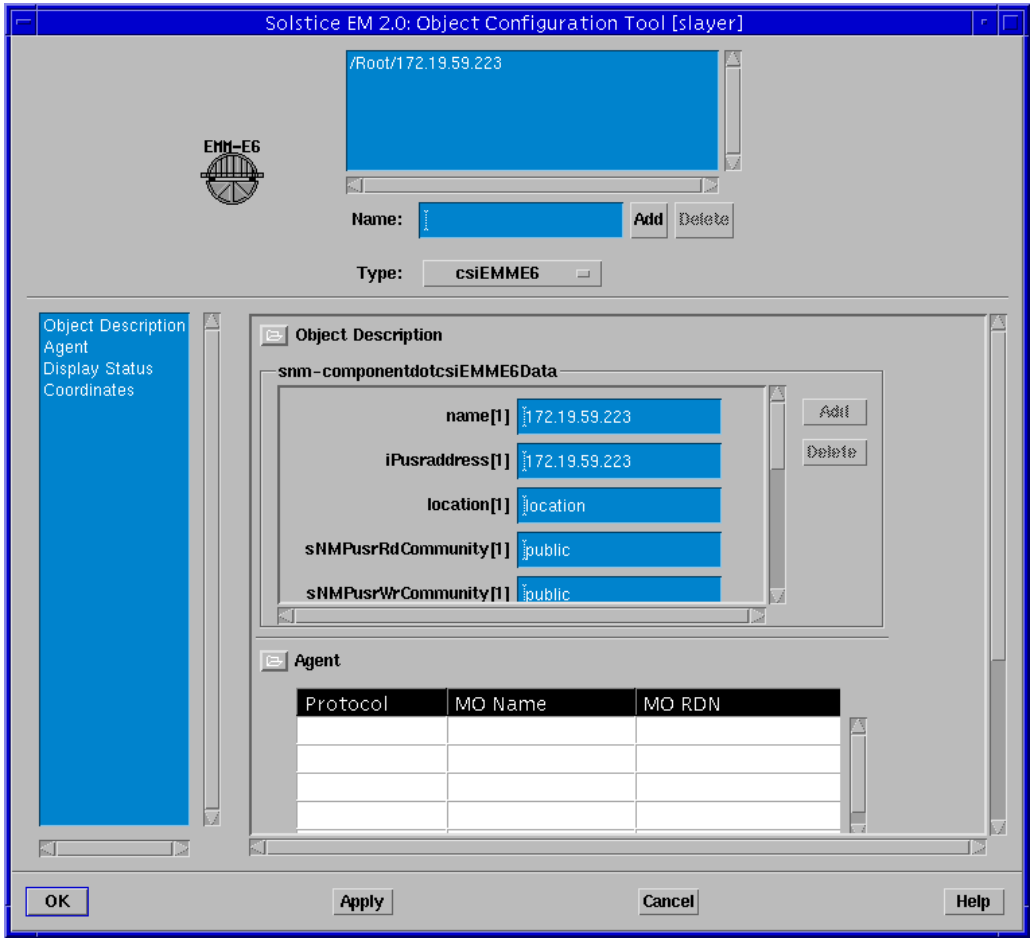
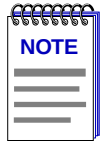


Figure 3-1. The Object Configuration Tool Window



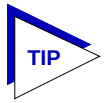
When you manually create a glyph using the Object Palette, the glyph's Configuration Tool window will appear automatically.

For a manually-created glyph, you *must* assign a glyph Name (either the IP address or hostname associated with the device you wish to model) and supply the appropriate community names (both the **sNMPusrRdCommunity** and **sNMPusrWrCommunity** for older-generation devices, or just **chassisusrCommunity** for newer devices). For a discovered glyph, you may need to edit the default community name(s) provided. And for either kind of glyph, you may want to specify the MIB agent (ASN1 and GBMO) files that will provide the Solstice SNMP Browser tool with access to the modeled device's MIB information.

Assigning a Device Name

For manually-created glyphs, you must assign a Name value that Solstice Enterprise Manager (and SPMA) can use to contact the device; this can be either an IP address or a hostname. Once this name is assigned, it cannot be changed.

To assign a name, enter the appropriate value in the **Name** field in the top portion of the window, then click on the **Add** button or press Return. The Name you have assigned will appear in the list box directly above the name field.



You can add multiple glyphs of the same type by adding additional hostnames or IP addresses in the Name field; see your Solstice Enterprise Manager documentation for details.

Assigning or Editing Community Names

There are three fields in the middle of the Object Configuration Tool window (in the **Object Description** section) that allow you to edit and/or set community name access for the device associated with the selected glyph:

sNMPusrRdCommunity and **sNMPusrWrCommunity**
For older Cabletron devices, use these lines to specify the community names that grant READ and WRITE access to the device. Enter a valid READ, WRITE, or SUPER-USER community name as it appears in the device's Local Management Community Names Table. For manually-created glyphs, no default value is provided; for SPMA-discovered glyphs, the community name used in the discover process will be inserted by default in both fields.

chassisusrCommunity
For newer Cabletron devices — whose MIB information is arranged in a series of components — the community name you enter on this line enables SPMA to access the device's Chassis MGR (or corresponding Module MGR) MIB component; access to the Chassis MGR MIB component also provides SPMA with parallel access to the other components of the device's MIB. (For more information about MIB components, see the appropriate device-specific ***SPMA User's Guide***; each has an appendix that describes the device's MIB organization.) Enter a valid READ, WRITE, or SUPER-USER community name as it appears in the device's Local Management Community Names Table. (The community names assigned via local management become the Chassis MGR MIB component community names, and vice versa.) Again, for manually-created glyphs, no default value is provided; for SPMA-discovered glyphs, the community name used in the discover process will be inserted by default.

All community names are case-sensitive!

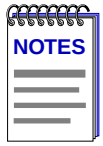
Selecting MIB Agent Files

If you plan to use the Solstice SNMP Browser tool against the Cabletron devices you are adding, you may want to assign the appropriate MIB agent files to each glyph so that the Browser can successfully query each device's MIBs.

Some Cabletron MIB agents are specific to a single device, such as the IIMCFN10-MIB and IIMCFN100-MIB. Others, such as IIMC-CHASSIS-MIB, can be used with many different devices. Still others are intended for use with a specific *type* of device: IIMCCTRON-BRIDGE-MIB for bridges, IIMCREPEATER-REV4-MIB for repeaters, and so on. The appendix at the end of this manual provides a complete list of SPMA-supported devices and the MIB agent files that apply to each one.

To select the appropriate MIB agent files for a selected glyph:

1. If necessary, click mouse button 3 on the glyph whose properties you wish to edit, and select **Object Properties** from the resulting glyph menu. (If you are just creating a new glyph, the Object Properties window will be displayed automatically.)
2. Use the scroll bars to display the Agent area of the window. Click on **Add...** . The Object SNMP Configuration window will appear.
3. Enter the device's IP address or hostname in the **Agent Name** field, and press Return. The IIMCRFC1213-MIB agent file will be added to the list box by default.
4. Click on the empty selection box beneath the agent file list box to display a list of available MIB agent files; select the file you wish to add, and click on **Add**. The selected agent file will be added to the list box.
5. Repeat as necessary to add additional MIB agent files to the selected glyph.



Please note that only those MIB agent files which apply to devices for which you have installed SPMA management modules will appear in the MIB agent list.

Also, note that selecting MIB agent files for your glyphs is entirely optional; all installed MIB agent files can always be accessed from the SNMP Browser tool. See your Solstice Enterprise Manager documentation for details.

Manually Creating SmartSwitch 9000 Module and Chassis Glyphs

You can create a glyph for any individual SmartSwitch 9000 module by selecting the appropriate component available in the **Tools—>Object Palette** window; these components are now available for each individual SmartSwitch 9000 module type. The SmartSwitch 9000 glyphs function like any other glyph: just configure the object properties as usual, being sure to assign a valid community name and to select the appropriate MIB agent files (if desired) as listed in **Appendix A**.

You can also create a glyph to represent a SmartSwitch 9000 six- or 14-slot chassis as a whole by selecting the appropriate *csi9000* component. To configure the SmartSwitch 9000 chassis glyph, you need only assign a name in the Object Configuration window; this can consist of any alphanumeric string that will help you identify the chassis. You need fill in no other fields in this window, and you need not select any agent files. Note that this glyph will not interact with Solstice Enterprise Manager with respect to contact status, since the chassis itself does *not* yet have its own IP address or its own intelligence; however, the *csi9000* glyphs *will* provide access to the SmartSwitch 9000 chassis Hub View, which can be manually configured to display each of the installed modules.

*Be sure you **don't** use an IP address or any valid hostname to name the SmartSwitch 9000 chassis glyph: if you use an IP or a valid hostname, SPMA will try to contact a device using that name, and will deny you access to the chassis Hub View if it receives no response.*

For more information about configuring and using the SmartSwitch 9000 chassis Hub View, consult the ***SPMA SmartSwitch 9000 Chassis User's Guide***.

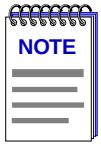
A Few Words about MIB Components and Community Names

As you might expect, the Solstice Enterprise Manager SNMP Browser, which provides access to device MIB data, requires that you supply the correct SNMP Community Name when accessing a device's MIB information. For older Cabletron devices, whose MIB information is contained in a single "component," any valid community name entered in these lines will provide complete access to the device's MIB data.

However, the MIB information for newer Cabletron devices — such as the EMME, the TRMM-4, or any SmartSwitch device — is organized into multiple components. In the *original* versions of these devices, each MIB component is protected by its own set of user-configurable Read Only, Read/Write, and SuperUser community names. These names determine the level of access (read only, read/write, or superuser) that will be granted to the information controlled by each component. Newer versions of devices with this component-based MIB architecture have been simplified somewhat; these devices support a single, *global* set of community names, but small modifications are still added automatically to accommodate multiple instances of the same MIB component (as occurs in multi-channel Ethernet repeaters or multi-ring Token Ring devices).

For these devices, if you want to retrieve information from or write information to a MIB component, you must supply the *specific* community name assigned to that component, including any automatic modifications that have been added.

You can display information about all of a device's MIB components, including the community names, by using the SPMA Community Names tool; see the **Community Names** chapter in the ***SPMA Tools Guide*** for details.



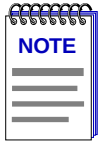
For more information about your device's MIB structure and what objects can be found in what components, consult the appendix at the end of your SPMA device-specific ***User's Guide.***

Starting SPMA Tools and Applications

Except for SPMA Discover, all SPMA tools and applications are accessible from the **Glyph** menu, from inside the Hub View or Bridge View, and/or from the command line (for stand-alone mode). The **Glyph** menu for each Cabletron device contains the SPMA tools and applications that are appropriate to that device. For example, repeater devices such as the IRM3 will have a Hub View menu item; bridging devices, such as the EMME, will also have a Bridge View menu item; devices that support Flash EPROM will include a TFTP Download selection.

To access the **Glyph** menu and launch an SPMA tool or application:

1. Click mouse button 3 on the Cabletron glyph to display the **Glyph** menu.
2. Drag down to select the tool or application you want to run.



Because they are intended for use with several different network management platforms, the instructions provided in the **SPMA Tools Guide** *and the device- and application-specific* **User's Guides** *for launching each application simply state that you should access the icon menu and drag down to find the desired selection. For Solstice Enterprise Manager, the equivalent of the icon menu is the Glyph menu.*

Additional instructions for launching each application are included at the beginning of each chapter in the ***SPMA Tools Guide*** and the device- and application-specific ***User's Guides.***

Launching Documentation

A new menu option available from the console Viewer window also provides access to all installed SPMA documentation files. (Documentation files are installed automatically based on the management modules you choose.) Selecting the **Tools—>SPMA Guide** option will launch a menu file (illustrated in Figure 3-2) that provides a link to all available documents. You can also access this menu file (called **`SPMAdocs.pdf`**) and any other document file directly via Acrobat Reader. Documentation files are installed in the **`/usr/ctron/documentation`** directory.

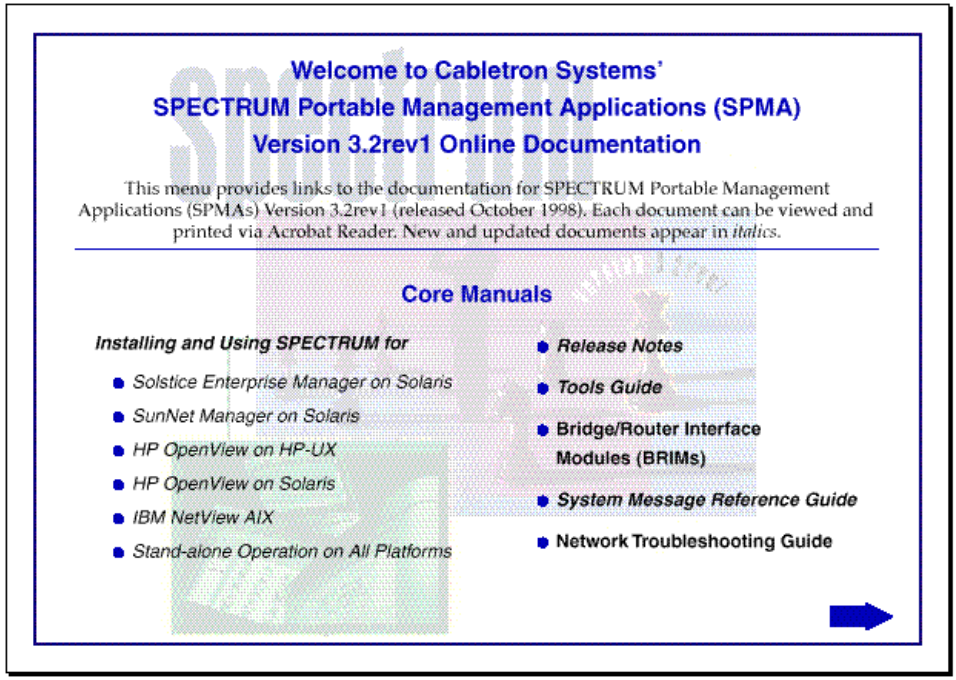
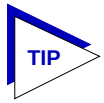


Figure 3-2. The **`SPMAdocs.pdf`** menu file



If you select a link via the SPMAdocs.pdf menu file for a document associated with a management module you have not installed, you will be prompted to re-run the install procedure and select the missing module. You cannot view the documentation for a module you have not installed.

Chapter 4

Using the Stand-alone Launcher

Adding devices to the Launcher database; how to assign the appropriate community names; discovering devices; launching applications from the Launcher and the command line; using and customizing the Launcher menus; viewing documentation

Outside the Solstice Enterprise Manager platform, SPMA applications can be accessed in either of two ways: directly from the command line (as specifically described in the ***SPMA Tools Guide*** and the device- and application-specific ***User's Guide***s); or via the Stand-alone Launcher utility. In addition to providing a convenient access to SPMA applications, the Stand-alone Launcher allows you to add third-party applications to its device-specific menus; you can also maintain a database of your Cabletron devices, which will automatically be loaded each time you use the Launcher utility. You can create your database by either manually adding devices to the Launcher or by using the Launcher's Discover tool, which will search one or more ranges of IP addresses for the devices you specify and automatically add the discovered devices to your launcher database. The Launcher will also allow you to add a Generic SNMP device to the database, and provide access to the MIB I, II application (described in the ***SPMA Tools Guide***).

About the Stand-alone Launcher

The Stand-alone Launcher serves as a kind of simple network map, providing you with a quick view of device status and a database in which to store information about each of the Cabletron management devices installed on your network. The Launcher also provides a list box- and menu-driven means of accessing the applications that are available for managing each device.

To access the Stand-alone Launcher:

1. From the command line, type

   `salaunch`

2. The Stand-alone Launcher window, Figure 4-1, will appear.

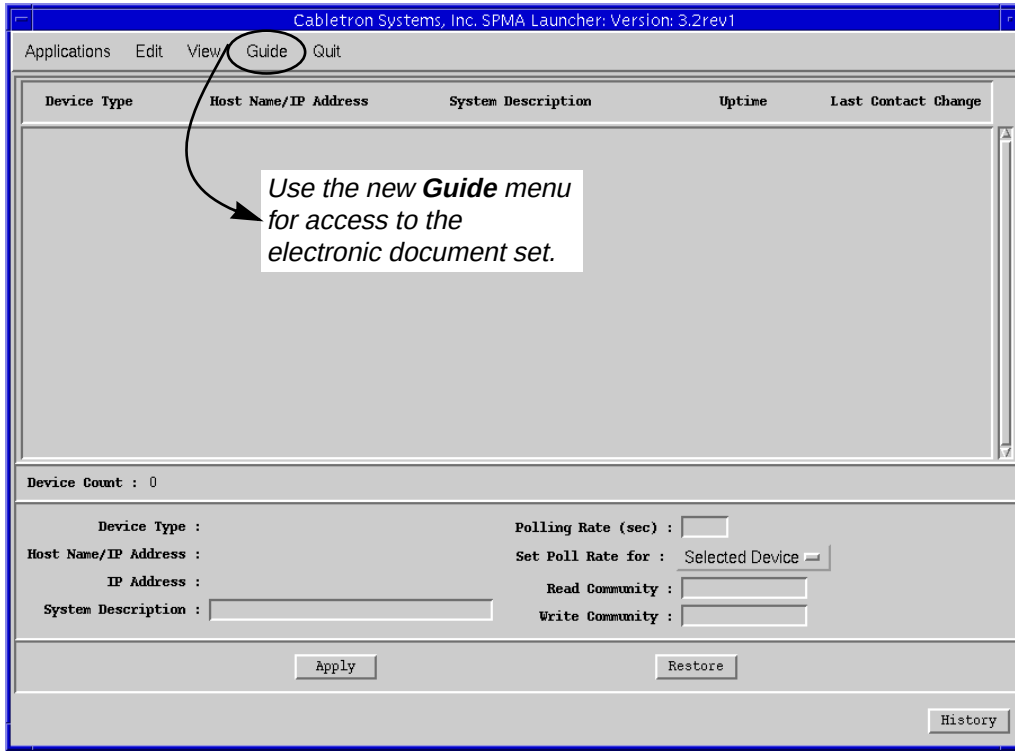


Figure 4-1. The Stand-alone Launcher Window, before adding devices

The database created by the Launcher will be stored, along with other SPMA configuration information, in the CTRONDB directory you defined during installation. If more than one user will be running SPMA applications from the same workstation and each wishes to maintain a separate database of devices, the CTRONDB variable must be set to a different location for each user. Multiple users using the same CTRONDB definition on the same workstation will all view and modify a single database of devices each time the Launcher is invoked. Using separate CTRONDB definitions will also prevent any access problems resulting from each user's default permissions settings.

*By default, the database is named **sal.db**; at present, it cannot be moved or renamed.*

The first time you open the Launcher window, the list box will be empty, as shown above; each subsequent time you start the Launcher, the database you have created by adding and/or discovering devices will automatically be loaded, and the following information about each device you have added will be displayed in the list box.

Contact Status

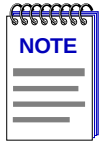
The color displayed in the box at the left edge of the list box indicates the status of the connection between SPMA and the device:

- **Green** means SPMA has established a valid SNMP connection with the device.
- **Yellow** means that the device is active and responds to PING requests, but will not respond to an SNMP request. This may mean you have used an invalid community name to define the device in the Launcher database.
- **Blue** means that SPMA is trying to reach the device, but doesn't yet know if the connection will be successful.
- **Red** means that SPMA is unable to contact or has lost contact with the device.

Device Type
Displays the device type: EMME, MRXI-24, TRMM, etc., as detected by the most recent successful poll.

Host Name/IP Address
Displays the hostname or IP address used to define the device when it was entered in the database. If there is a hostname mapped to your device's IP address, you can use that hostname in place of the IP address; note, however, that the hostname is ***not*** the same as the device name which can be assigned via Local Management and/or SPMA.

System Description
Displays the value of *sysDescr*, which typically includes a description of the device and the revision of firmware currently installed. This field displays the value from the **first** successful poll; if there has not been a successful poll, it will remain empty. (Note that the value is not updated after the first successful poll unless contact is lost, then re-established.) The system description for the highlighted device is also displayed in the System Description field in the lower portion of the window.



*The **System Description** field in the lower portion of the window is always a read-only field; however, once the Launcher has made contact with a device, you can place a cursor in the text box and use it to scroll the text, if necessary, to display the entire description.*

Uptime
Displays the amount of time, in an X days hours:minutes:seconds format, since the device was last reset. This field displays the value from the last successful poll; if there has not been a successful poll, the field will remain empty.

Last Contact Change
Displays the date and time of the last change in contact status detected by the Launcher. Note that this field displays the year as a four-digit value, if that value is provided by your workstation.

Adding Devices to the Launcher Database

There are two ways to add devices to the database: you can add them one at a time via the **Edit—>Add Device** menu option, or you can perform a discover on one or more network segments (see **Using the Discover Tool**, page 4-13, for more information on discovery). You can also add a SmartSwitch 9000 six- or 14-slot chassis to the launcher database, as described below.

Adding Devices Individually

The number of devices that can be added to the Launcher database is limited only by your workstation resources; if the list box is full, additional devices can be displayed by using the scroll bar.

Be aware that SPMA performance is significantly reduced when over 200 devices are loaded into the database.

To manually add a device to the Launcher Database:

1. From the Launcher menu bar, click to select **Edit** and drag down to **Add Device**.The SPMA Launcher: Add Device window, Figure 4-2, will appear.

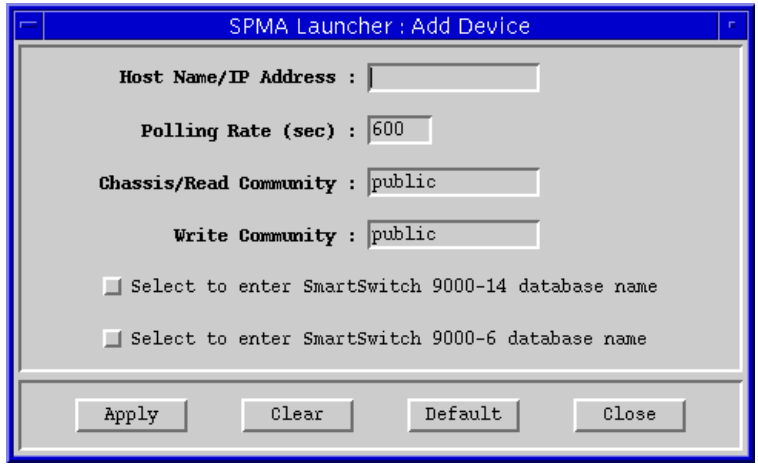


Figure 4-2. SPMA Launcher Add Device window

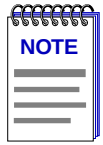
2. Enter the device's **Host Name** or **IP Address**, as desired, by clicking in the appropriate selection box to place the cursor in the text box, then entering the value.

NOTES

If you wish to use a hostname instead of an IP address, there must be a hostname mapped to your device's IP address; please note, however, that the hostname is not the same as the device name which can be assigned via Local Management and/or SPMA. You cannot use the device name in place of the IP address.

The Stand-alone Launcher will not allow you to use the same IP address twice.

3. Click to place the cursor in the **Polling Rate** text box, then enter the interval (in seconds) at which you want the Launcher to poll the device. The minimum polling time is 5 seconds, and the maximum is 65,535 seconds; the default value is 600 seconds.



SPMA generates network traffic with every poll; keep in mind that shorter intervals mean increased network traffic.

4. In the **Chassis/Read Community** and **Write Community** fields, enter the community name(s) you want the Launcher (and all other SPMA applications) to use when contacting the device:

   For newer devices — such as the EMM-E6, TRMM-4, or any SmartSwitch device — use the **Chassis/Read Community** field to enter the Chassis Manager community name which provides the appropriate level of access: Read Only, Read/Write, or SuperUser. For these devices, you need only provide a single community name; you may leave the **Write Community** field blank.

   For older-generation devices — such as the IRM2, IRM3, or MiniMMAC — you must supply both a Read and a Write community name, each in its own field. These community names need not be two different community names, or even two community names with different access privileges; for **Chassis/Read Community**, enter any community name which has at least Read access; for **Write Community**, enter any community name which has at least Read/Write access.

   For both fields, the default community name is **public.**

For more information on community names, see ***Assigning an Appropriate Community Name,*** *page 4-9,* *or the* ***Community Names*** *chapter in the* **SPMA Tools Guide**.

All community names are case-sensitive!

5. Click on **Apply** to add the device; if the entered IP address or host name is associated with an active device, the device entry will immediately appear in the list box with its contact status displayed, and will also be added to the database. The Add Device window will remain open, allowing you to add additional devices if desired.

   Click on **Clear** to delete the information you have entered into this window before adding new information. This will clear all the fields including the default values that automatically are entered into the Polling Rate and Community fields.

   Click on **Default** to restore the default values to the polling rate and community fields.

Repeat the above procedure to add additional devices; the maximum number of devices you can add is limited only by your system resources. Be sure to click on **Apply** after entering each device's information to add it to the database; click on **Clear** to cancel any changes that have not yet been applied.

When you have finished adding devices to your database, click on **Close** to exit the window.

Assigning an Appropriate Community Name

For all of Cabletron's newer devices — including the EMM-E6, TRMM-4, and all SmartSwitch devices — MIB information is organized into a series of "components," each of which controls a defined set of logically-grouped objects. In the *original* versions of these devices, each MIB component is protected by its own set of user-configurable Read Only, Read/Write, and SuperUser community names. These names determine the level of access (read only, read/write, or superuser) that will be granted to the information controlled by each component. Newer versions of devices with this component-based MIB architecture have been simplified somewhat; these devices support a single, *global* set of community names, with small modifications added automatically to

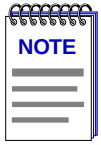
accommodate multiple instances of the same MIB component (as occurs in multi-channel Ethernet repeaters or multi-ring Token Ring devices).

When you enter one of the original devices with a component-based MIB structure into the Launcher database, you should use a community name which provides the appropriate level of access to the device's Chassis MGR (or, for some SmartSwitches, the Module MGR) MIB component; access to this component provides SPMA with parallel access to the other components of the device's MIB, even if those components have different community names. When you add one of the new-generation devices to the database, enter a valid community name as it appears in the device's Local Management Community Names Table: the single set of community names (read only, read/write, and superuser) you can assign via Local Management becomes the set applied to the Chassis MGR (or Module MGR) MIB component, and vice versa.

For older Cabletron devices whose MIB information is stored in a single component, simply enter community names from the Local Management Community Names Table that provide the appropriate level of access (read, read/write, or superuser).

All community names are case-sensitive!

You can display information about all of a device's MIB components, including the community names, by using the SPMA Community Names tool; see the **Community Names** chapter in the ***SPMA Tools Guide*** for details.



For more information about your device's MIB structure and what objects can be found in what components, consult the appendix at the end of your SPMA device-specific ***User's Guide.***

Adding a SmartSwitch 9000 Chassis

If you wish to add an individual SmartSwitch 9000 module to the Launcher, you may do so by following the instructions in the previous section; because each of these modules is an intelligent device with its own management capability and its own IP address, they are handled by the Launcher just like any other MMAC or stand-alone device.

You can also add an entry which represents a whole SmartSwitch 9000 six- or 14-slot chassis to your Launcher database. These entries will not be polled (since the SmartSwitch 9000 chassis does not currently support its own IP address), but they will give you access to the SmartSwitch 9000 Chassis View, which allows you to view the status of and launch management applications for all modules installed in the chassis. Note that, since these chassis entries themselves are not associated with any IP address and are not polled, their contact status will remain blue.

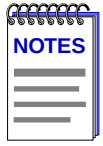
There is one exception in the SmartSwitch 9000 chassis family: the SmartSwitch 9500, a 9000 chassis with a CTM backplane. When certain modules are installed in a 9500 chassis, it can be identified by a single IP address. See ***A Special Note About the SmartSwitch 9500****, page 4-13, for more information.*

When you create an entry for a SmartSwitch 9000 Chassis, the *mplus* application creates a database in the CTRONDB directory in which it will store information about the individual modules present in the chassis. (You must add this information by configuring the Chassis View; see your ***SmartSwitch 9000 Chassis User's Guide*** for details.) In this database, each chassis entry's information is identified by the text description you assign when you created the Chassis View. You can create a new SmartSwitch 9000 Chassis View from the command line by assigning a text description as part of the command line arguments when you launch the *mplus* application; to re-launch the same Chassis View, you simply continue to use the same text description as a command line argument. When you create a SmartSwitch 9000 Chassis View icon in the Launcher, you assign the text description in place of the IP address.

You can add both new and previously-defined SmartSwitch 9000 Chassis Views to the Launcher database, as follows:

1. From the Launcher menu bar select **Edit** and drag down to **Add Device**.The SPMA Launcher: Add Device window (Figure 4-2, on page 4-7) will appear.

2. Enter the database name associated with the SmartSwitch 9000 chassis in the **Host Name/IP Address** field.

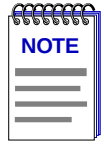


*When you enter a database name that is not currently associated with an entry in the **mplus.db**, a new Chassis View entry will be created; you must configure this view the first time you launch it. If you enter a database name that is already associated with an entry, the appropriate chassis information will be displayed when you launch the application.*

If you happen to enter a database name that is also a valid hostname or IP address, this will take precedence and the device that corresponds to the hostname or IP address will be added to the launcher database. If this IP address represents a SmartSwitch 9500 chassis (described in detail below), the appropriate chassis entry will be added to the launcher. See the Chassis View chapter in the **SmartSwitch 9000 Chassis User's Guide** *for more information on naming and defining a SmartSwitch 9000 Chassis.*

3. Click to select the **Select to enter SmartSwitch 9000-14 database name** option to add a 14-slot chassis, or on the **Select to enter SmartSwitch 9000-6 database name** option to add a six-slot chassis.

4. Click on **Apply** to add the chassis; it will immediately appear in the list box with its contact status blue.



Neither the polling rate nor the community names fields have any relevance when you are adding a SmartSwitch 9000 Chassis; you need not enter any values in these fields.

A Special Note About the SmartSwitch 9500

There is one special case in the SmartSwitch 9000 family of devices: the SmartSwitch 9500. The SmartSwitch 9500 chassis incorporates the CTM (cell transfer matrix) backplane, and was designed to support the 9A656 and other specially-designed ATM modules operating in a distributed chassis mode — a mode which allows you to assign a single IP address to a group of these modules installed in the same six- or 14-slot chassis. To add a SmartSwitch 9500 chassis to the Launcher, proceed as you would with any other *device* entry: simply use the Add Device window to enter the IP address assigned to the module group, supply an appropriate community name, and click **Apply**. An entry for the chassis will be added to the Launcher database; this entry will be polled like any other device, and will display the appropriate contact status. Launching the Hub View application against a SmartSwitch 9500 will launch a SmartSwitch 9000 Chassis View which will automatically populate with all installed 9A656 modules. Note that no entry will be made in the **mplus.db** database for a SmartSwitch 9500 chassis entry.

For more detailed information on managing the SmartSwitch 9500, see the ***SmartSwitch 9000 Chassis*** and ***SmartSwitch 9000 Module*** user's guides.

Using the Discover Tool

The SPMA Discover Tool allows you to locate devices on a network within one or more specified IP address ranges and automatically add these devices to the Launcher database. You can select the device types you wish to discover; you can also specify multiple community names to be used in SNMP queries to discovered devices.

To access the Discover window from the SPMA Launcher window:

1. Click on **View** at the top of the Launcher window.
2. Drag down to select **Discover**. The SPMA Launcher: Discover window, Figure 4-3, will appear.

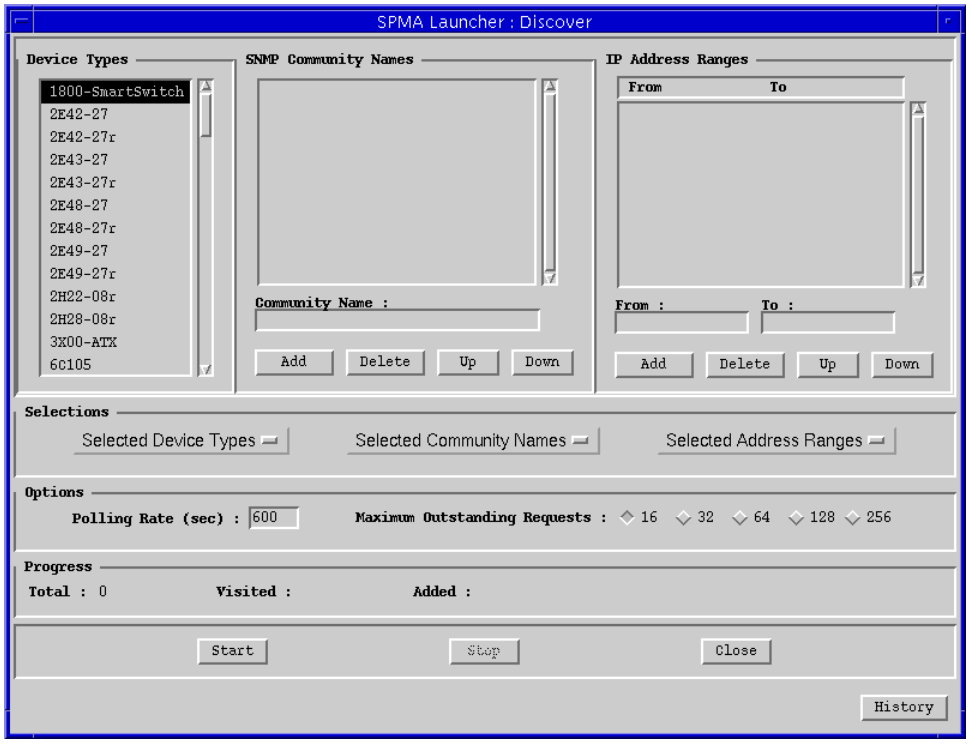


Figure 4-3. SPMA Launcher Discover window

The initial time you open the Discover window, only the Device Type list box will have any entries; once you have added Community Names and/or IP Address ranges, they will be saved in databases and will be listed each time you open the Discover window.

The databases created by the Discover tool will be stored, along with the Stand-alone Launcher database and other SPMA configuration information, in the CTRONDB directory you defined during installation. If more than one user will be running SPMA applications from the same workstation and each wishes to maintain a separate database of devices, the CTRONDB variable must be set to a different location for each user. Multiple users using the same CTRONDB definition on the same workstation will all view and modify the same database of devices each time the Discover tool is invoked. Using separate CTRONDB definitions will also prevent any access problems resulting from each user's default permissions settings.

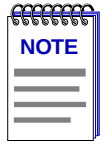
By default, the databases are named ***salip.db*** *and* ***salcomm.db****; at present, they cannot be moved or renamed.*

Discover Parameters

The SPMA Launcher Discover window, Figure 4-3, allows you to configure the following discovery parameters:

Device Types

Displays a list of all Device Types that are supported by SPMA. You can choose to discover all device types, or select particular device types you wish to discover.



You may discover any device type supported by SPMA, but you will only be able to launch "Generic" device type applications for the device types for which you have ***not*** *installed SPMA management.*

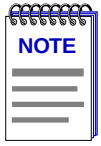
SNMP Community Names

During the discover process, the Discover tool will use the community names selected in this list box in SNMP queries to any devices it finds; only those devices for which one of the selected community names provides at least Read access will be discovered

and added to the database. You can add multiple SNMP Community Names to this list box, and select only those you wish to use for each discovery session.

IP Address Ranges

The Discover tool searches for Cabletron devices on your network by sending requests (first PING, then SNMP) to the IP addresses within the range or ranges you define here. You can set multiple ranges and use any number of them during any discover. The Discover tool will only search for devices within the ranges you select.

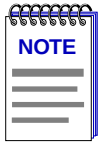


Please note that the larger the range, or the greater the number of ranges used in the discover process, the longer the discover process will take.

Selections

The three selection buttons allow you to select the Device Types, SNMP Community Names, and IP Address Ranges you want to search for during the discovery process:

- If you want to discover all device types, community names, or IP address ranges, click on the selection button under the appropriate list box, and select **All Device Types**, **All Community Names**, or **All Address Ranges**.
- If you only want to perform the search on one or several device types, community names, or IP ranges, click to highlight the device types, community names, or IP ranges you want to discover, then click on the selection button under the appropriate list box, and select **Selected Device Types**, **Selected Community Names**, or **Selected Address Ranges**.



The current selection state will display in each selection button.

Polling Rate (sec)
Displays the interval at which the Stand-alone Launcher will poll the discovered devices once they are added to the Launcher database. You can change the polling interval from this field; the default polling rate is 600 seconds. See **Changing the Polling Rate**, page 4-23, for more information.

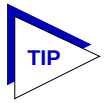
Maximum Outstanding Requests
Displays the maximum number of outstanding requests that can be present at any one time during the discover process; this value determines the maximum number of devices that can be queried by the discover tool at any one time. The higher you set this value, the more quickly the discover may take place, but your network load will also increase considerably. You can set this field to 16, 32, 64, 128 or 256 requests; the default is 16 requests.

Progress
Displays the total number of IP addresses within the IP range(s) selected for the current discovery process (**Total**), the number of IPs which have already been queried (**Visited**), and the number of devices which have been discovered and added to the database (**Added**). The Total field will update as IP ranges are selected and de-selected; the Visited and Added fields will update as discovery progresses.

Adding and Deleting SNMP Community Names

The first time you use the Discover tool, the SNMP Community Names list box will be empty. To add community names to the list:

1. Type a community name in the **Community Name** text field.
2. Press **Return** or click on **Add**. The community name will be added to the community names database available for the discover process and will be displayed in the list box each time you open the Discover window.
3. Repeat as desired to add additional community names to the list box.



*You can rearrange the list so that the community names are listed in a more logical order (e.g., decreasing order of use) by using the **Up** and **Down** buttons located below the list box. You may only move one entry at a time.*

To delete a community name from the list box:

1. Click on the **Delete** button while a community name is selected to delete a community name from the list box.

If you double-click on a highlighted item it will be deleted from the list box and from the corresponding database; however, it will remain in the Community Name text field where it can be edited and re-added to the database.

Adding and Deleting IP Address Ranges

The first time you use the Discover tool, the IP Address Ranges list box will be empty. To add IP Address Ranges to the list box:

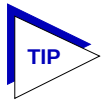
1. In the **From:** text box, enter the starting IP address of the range you wish to define.
2. In the **To:** text box, enter the ending IP address of the range you wish to define.

You may enter IP addresses with 0 or 255 in the address, but if a device is associated with that address it will not be discovered. For example, if you set the IP address range from 132.177.118.0 to 132.177.118.255, devices with the IP addresses 132.177.118.0 and 132.177.118.255 will not be discovered. If you have devices at these addresses you must add them manually.

*Also, the **From:** address must not be a higher address than the **To:** address in any IP address range, and both the From: and To: addresses must belong to the same network class.*

3. Press **Return** or click on the **Add** button to add the IP address range to the list box. The ranges you set in this window will be saved in an IP Address Range database and will appear in the list box for use each time you use the Discover Tool.

4. Repeat as necessary to add additional ranges to the list box.



*You can rearrange the list so that the IP Address Ranges are listed in a more logical order (e.g., decreasing order of use) by using **Up** and **Down** located below the list box. You may only move one entry at a time.*

To delete an entry from the IP Address Range list box:

1. Click to select the range you wish to delete, then click on the **Delete** button.

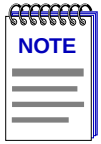
If you double-click on a highlighted item in the list box it will be deleted from the list box and from the corresponding database; however, it will remain in the IP Address text field where it can be edited and re-added to the database.

Setting the Discover Parameters

To set the parameters the Discover tool will use in the discovery process:

1. In the **Device Types** list box, click to select the device type(s) you want to search for during the discovery process. Use the selection button to determine whether the search will include all the device types or only selected device types.

2. In the **SNMP Community Names** list box, click to select the community name(s) you want to use in the discovery process. Use the selection button to determine whether the search will include all the community names or only selected community names.

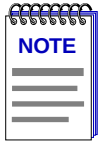


The community name used to discover the device will be used in the Launcher database as the Write or Chassis community name (as appropriate) when the device is added.

3. In the **IP Address Ranges** list box, click to select the IP Address Range(s) you want to use in the discovery process. Use the selection button to determine whether the search will include all the IP address ranges or only selected IP address ranges.
4. In the **Polling Rate** field, enter the interval (in seconds) at which you want the Launcher to poll the devices that are added to the database. The default polling rate is 600 seconds. See **Changing the Polling Rate**, page 4-23, for more information on setting the polling rate.
5. Click to select the maximum number of **Outstanding Requests** the discover process can have at any one time; remember, this number determines how many devices will be queried at once, and therefore affects both the speed of the discovery process and the network load.

Starting the Discovery Process

Once you have configured the necessary parameters, you can begin the discovery process by clicking on **Start**. If you need to stop discovery at any time during the process, click on **Stop**.



If you stop the discovery process before it finishes, any devices that have already been discovered will remain in your Launcher database.

As the discovery progresses, the **Progress** fields (**Visited** and **Added**) will increment as appropriate. Devices are added to the launcher in the order that they are discovered, even if the devices already existing in your database have been sorted; for more information, see **Sorting the Devices Listed in the Database**, page 4-24.

Figure 4-4 is an example of a working discover window.

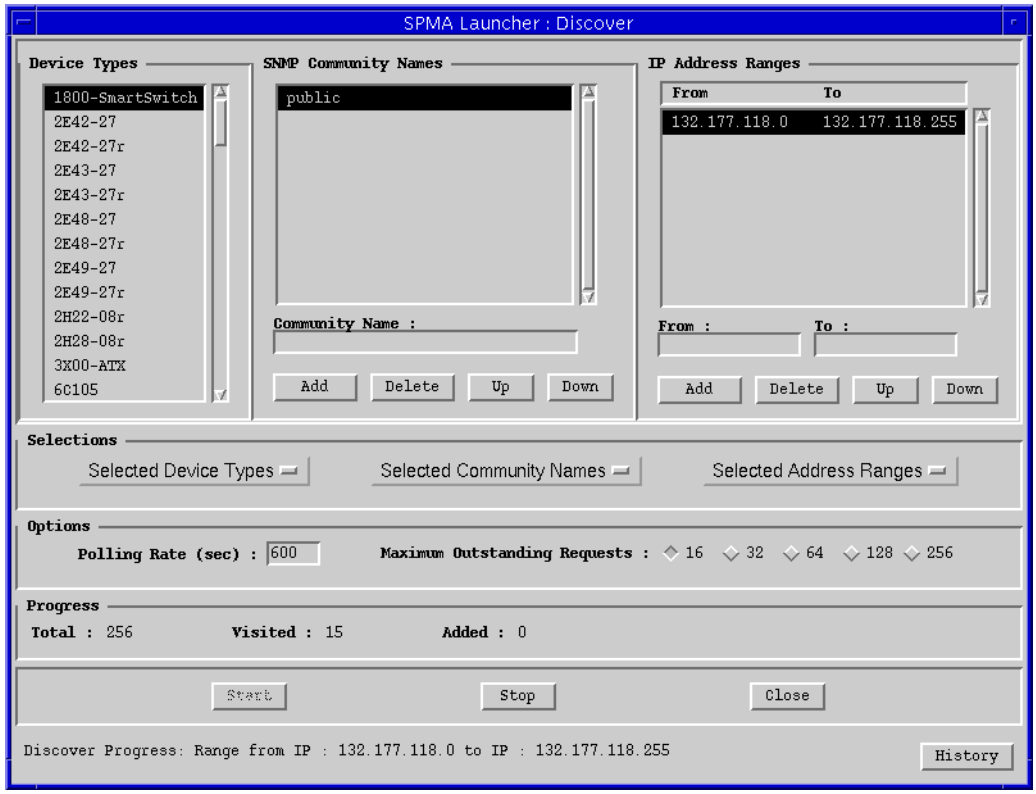
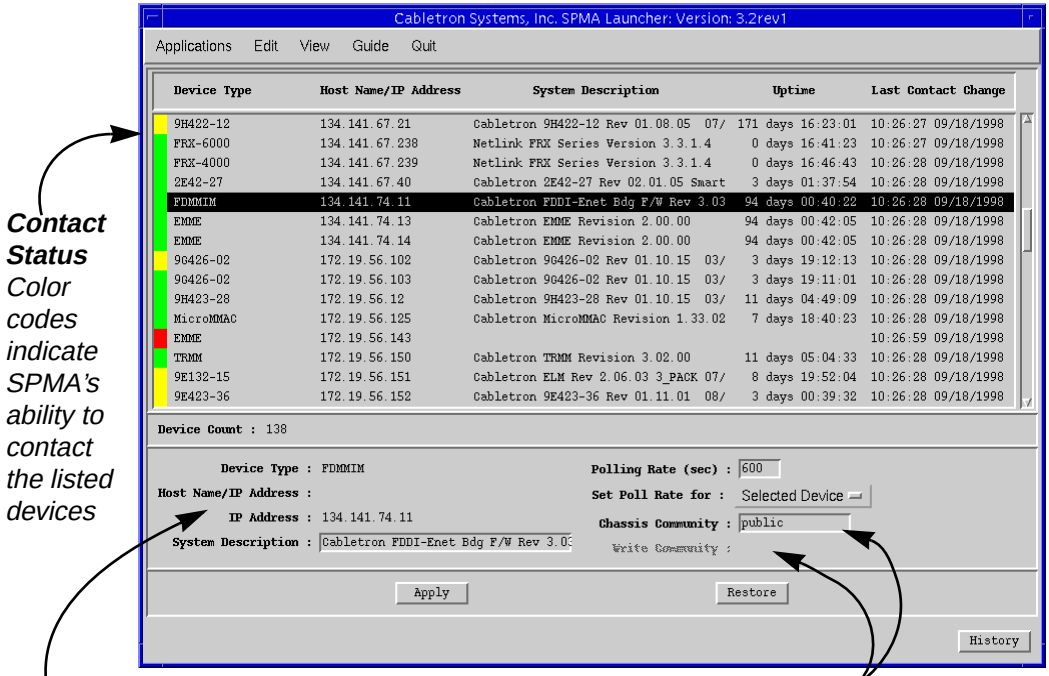


Figure 4-4. Sample Discovery Parameters

The SPMA Launcher Database

Once you have added your devices to the database, they will be displayed automatically each time you start the launcher, as illustrated in Figure 4-5.



Contact Status
Color codes indicate SPMA's ability to contact the listed devices

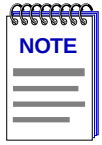
Lower Window Display
Note that the information displayed in the lower portion of the window applies to the highlighted device: an FDMMIM.

Community Names
Older-generation devices (like the IRM3) require that two community names be entered to establish contact; newer devices (like the FDMMIM) do not.

Figure 4-5. Stand-alone Launcher Window, with Database Loaded

Each time you start the Launcher, an attempt is made to determine the correct device type for all IP addresses in the database. If a device is improperly identified, the Launcher will change the entry to the correct device type (and display a footer message at the bottom of the window). This can occur due to re-assignment of IP addresses among devices.

The lower portion of the window will display information applicable to the device which is highlighted in the list box. Note that only the **Polling Rate**, and **Chassis Community** (or **Read Community** and **Write Community**) fields can be edited.



*The **System Description** field in the lower portion of the window is always a read-only field; however, once the Launcher has made contact with a device, you can place a cursor in the text box and use it to scroll the text, if necessary, to display the entire description.*

Changing the Polling Rate

Once you have added your devices to the Launcher database, you can change the polling rate for a single device or for all devices, as follows:

1. To change the polling rate for a single device, highlight that device in the list box.
2. Click to place your cursor in the **Polling Rate** field; backspace to delete the existing value, then enter the new polling rate in seconds.
3. By default, the **Set Poll Rate For:** field will display the **Selected Device** option; to change the poll rate for all devices in the database, click on the selection button, and drag to select **All Devices**.
4. Click **Apply** to save your changes.

Sorting the Devices Listed in the Database

Initially, devices will appear in the list box in the order they were added, either manually or via the Discover tool. To sort them alphabetically by device type, click on **Edit** in the Launcher menu bar, drag down to **Sort List by**, then across to select **Device Type** (multiple devices of the same type will be listed in a random order). To sort in IP address order, click on **Edit** in the Launcher menu bar, drag down to **Sort List by**, then across to select **Host Name/IP Address**.

Deleting Devices from the Database

To delete a device from the database:

1. Click to highlight the device you wish to delete in the list box.
2. Choose **Delete Device** from the **Edit** menu.
3. A pop-up window will appear, asking you to confirm your selection; click on **OK** to proceed with the deletion, or on **Cancel** to cancel.

The device information will be removed from both the list box and the database.

Using the Restore Button

If you change any of the values in any editable fields in the Launcher window but have not yet applied your changes, you can restore the fields to their original values by clicking on the **Restore** button. If you have already clicked on **Apply**, your changes have already been written to the Launcher database, and cannot be automatically restored.

Launching Applications

Once you have added your devices to the database, you can use the Applications menu to launch the applications which are available for the device currently selected in the list box.

To launch an application:

1. Click in the list box to select the device you wish to manage.
2. Click on **Applications** from the Launcher menu bar to display the Applications menu.
3. Drag down to select the application you want to launch, then release.

Once an application has been launched, it will operate as described in the device- or application-specific ***User's Guide*** or the ***SPMA Tools Guide***. The Launcher window will remain open so that you can continue to view the contact status of other devices in your database, or launch additional applications.

Note that the SPMA device- and application-specific ***User's Guides*** and the ***SPMA Tools Guide*** describe how to launch each application "from the icon"; for stand-alone use, the device descriptions in the list box serve as "icons," and the Application menu serves as the "icon menu."

Launching Applications from the Command Line

Although all of the SPMA applications can be accessed from the Stand-alone Launcher, each of them can also be launched directly from the command line by typing the appropriate command from any prompt:

```
spmarun <executable name> <IP address> <community name>
```

Just make sure you're in the right directory — /usr/ctron/bin — or that your path environment variable is set up so that all files can be located from any directory (/usr/ctron/bin must be included in the PATH line). Specific commands for starting each application are included in the ***SPMA Tools Guide*** and in each device- and application-specific ***User's Guide***.

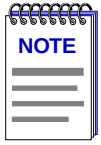
Customizing Launcher Menus

The /usr/ctron/lib directory contains files that specify which applications are available to each device type via the **Applications** menu. There is one file for each of the device types for which you have installed SPMA management, labelled with the device name and a .sa extension (e.g., emme.sa). You can edit these files to make additional third-party applications available via the Application menu.

Adding Access to Third-party Applications

If you have a third-party application you would like to add to the Application menu available for a particular device type or types, quit the Launcher and edit the appropriate .sa file(s) as follows:

1. cd to the /usr/ctron/lib directory.
2. Become root, if necessary.
3. Using your favorite text editor, open the appropriate .sa file; there is one of these files for each device type for which you have installed SPMA management.



If you wish to add an application to the Application menu for more than one device type, you must edit each device type's .sa file individually.

4. Following the pattern used in the original, add an additional line for each application in the following format:

   `Application <name> <executable path> [argument]`

   Where:

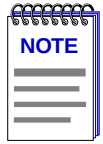
   `<name>` is the name of your application as you would like it to appear on the Application menu; note that there can be no white space between words.

   `<executable path>` is the full path to the executable file.

   `[argument]` is an optional entry; if it is required by your application, the Launcher will add one or more of the following arguments when launching your application:

   - **`IP`** — the IP address of the selected device;
   - **`ChassisMgr`** — the Chassis Manager community name entered for the device when it was added to the Launcher's database;
   - **`Read`** — the Read community name entered for the device when it was added to the Launcher's database;
   - **`Write`** — the Write community name entered for the device when it was added to the Launcher's database.

   If you use any of the above arguments after specifying the executable path to your application, the Launcher will use the appropriate information from that which was entered when the selected device was added to the database. For example, if you use the IP argument, the Launcher will launch your application by using the executable file plus the IP address of the selected device.



When they are added to the Launcher database, some Cabletron device types require a Chassis Manager community name; others require separate Read and Write community names. When adding an application to a device's menu, be sure to specify the arguments appropriate to the device. For example, an EMME requires only a Chassis Manager community name; if your application requires a community name, be sure to specify the Chassis Manager argument, not the Read and/or Write arguments. You cannot mix Chassis Manager and Read or Write arguments in the same .sa file.

If you use an argument that is not one of the above, the Launcher will use the argument exactly as you have entered it.

Be sure to backup any changes you make to your .sa files; these files will be rewritten each time you re-install your software or install additional modules.

Viewing Documentation

Beginning with release version 3.2rev1, the electronic documentation provided with SPMA has been more closely integrated with the program files themselves. Documentation files are now included on the same CD as the program files, and they will be automatically installed (along with the appropriate version of Adobe's Acrobat Reader) during the installation procedure; manuals can also be launched directly from many application windows via the new **Guide** menu option or button.

A core set of documents (including the ***Installing and Using...*** guides, the ***Tools Guide***, the ***BRIM User's Guide***, the ***System Message Reference Guide***, the ***Troubleshooting Guide***, and the ***Release Notes***) will be automatically installed with the core program files; the rest of the device- and application-specific manuals will be installed with their associated management modules (as selected during the installation process).

With its **Guide** menu, the Stand-alone Launcher window provides special access to a menu file (illustrated in Figure 4-6) that provides links to all available documents. You can also access this menu file (called **`SPMAdocs.pdf`**) and any other document file directly via Acrobat Reader. Documentation files are installed in the **`/usr/ctron/documentation`** directory.

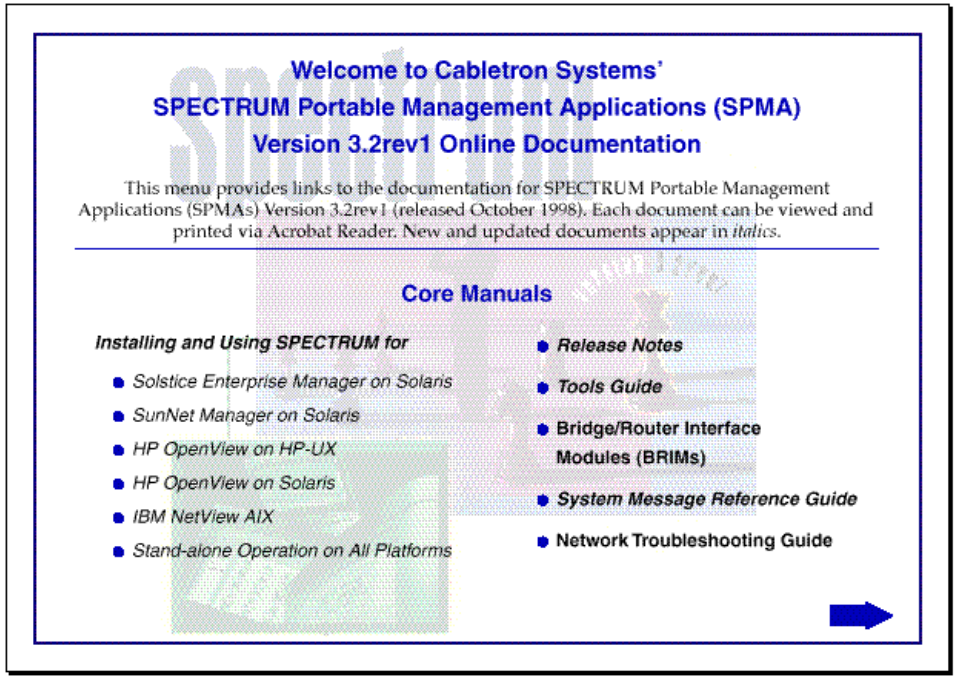


Figure 4-6. The **`SPMAdocs.pdf`** menu file

TIP

If you select a link via the SPMAdocs.pdf menu file for a document associated with a management module you have not installed, you will be prompted to re-run the install procedure and select the missing module. You cannot view the documentation for a module you have not installed.

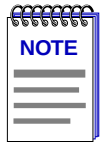
Appendix A

Cabletron Device MIB Agents

A complete list of the MIB agent files to select when manually creating a Cabletron device glyph; creating a generic SNMP glyph

Configuring a Manually-Created Glyph

If you plan to use Solstice Enterprise Manager's SNMP Browser to access information from Cabletron devices whose glyphs have been created manually (that is, without using Discover and SPMA Discover), you will need to select the appropriate MIB agent files in each device's Properties window in order to provide Solstice Enterprise Manager with the MIB information it needs.



Please note that selecting agent files in the Object Configuration Tool window does not affect the operation of any SPMA applications, as all the necessary MIB information is already built in to the software.

The tables on the following pages map the available MIB agent files to each SPMA-supported Cabletron device. There are three separate tables: one which lists MMAC and standalone devices, such as the EMME, IRM3, and MicroMMAC; one which lists BRIM and HSIM

modules, by topology type; and one which lists SmartSwitch 9000 modules, also grouped by topology type. When configuring a glyph for a device which has a BRIM or HSIM installed, be sure to check the BRIM/HSIM table for any additional files that should be selected.

Cabletron Device MIB Agent Tables

MMAC and Standalone Devices

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
8H02	• IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-IF-REMAP-MIB	• IIMCDLM-MIB • IIMCEVENT-ACTIONS-MIB • IIMCFAST-ETHERNET-MIB • IIMCSYSTEM-RESOURCE-MIB • IIMCTRAP-MIB
ELS-100	• IIMCCTELS100-MIB	
EMME	• IIMCCHASSIS-MIB • IIMCCTRON-AppleTalk-ROUTER-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-COMMON-MIB • IIMCCTRON-DECIV-ROUTER-MIB	• IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCDLM-MIB • IIMCREPEATER-REV4-MIB

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
EMM-E6	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-AppleTalk-ROUTER-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-CHASSIS-MIB • IIMCCTRON-CSMACD-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCCTRON-FRONTPANEL-MIB • IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCCTRON-UPS-MIB • IIMCDLM-MIB • IIMCREPEATER-REV4-MIB • IIMCTRAP-MIB
ESXMIM	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-CHASSIS-MIB	• IIMCCTRON-DOWNLOAD-MIB • IIMCDLM-MIB • IIMCTRAP-MIB
ETWMIM	• IIMCCHASSIS-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DEVICE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-ETWMIM-MIB	• IIMCCTRON-FNBTR-MIB • IIMCCTRON-WAN-MIB • IIMCCTRON-WAN-IMUX-MIB • IIMCCTRON-WAN-MULTI-IMUX-MIB
FDMMIM	• IIMCCHASSIS-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-COMMON-MIB	• IIMCCTRON-DOWNLOAD-MIB • IIMCCTSMTMIB-MIB
IRBM	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB
IRM	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB
IRM2	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
IRM3	• IIMCCOMMUNITY-MIB • IIMCCTRON-COMMON-MIB	• IIMCIRM3-MIB
MicroMMAC	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-AppleTalk-ROUTER-MIB • IIMCCTRON-CHASSIS-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCCTRON-UPS-MIB • IIMCDLM-MIB • IIMCREPEATER-REV4-MIB • IIMCTRAP-MIB
MicroMMAC-T	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-COMMON-MIB • IIMCCTRON-DEVICE-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCCTRON-FNBTR-MIB • IIMCDLM-MIB • IIMCDOT5-LOG-MIB • IIMCDOT5-PHYS-MIB
MiniMMAC	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB
MRXI MRXI-2	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB
MRXI-22/24	• IIMCCHASSIS-MIB • IIMCCTRON-COMMON-MIB	• IIMCDLM-MIB • IIMCREPEATER-REV4-MIB
NB20E NB25E	• IIMCCOMMUNITY-MIB	• IIMCCTRON-COMMON-MIB

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
NBR Series	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-AppleTalk-ROUTER-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-CHASSIS-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCCTRON-UPS-MIB • IIMCDLM-MIB • IIMCTRAP-MIB
SEHI	• IIMCCHASSIS-MIB • IIMCCTRON-CHASSIS-MIB • IIMCCTRON-DEVICE-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCDLM-MIB • IIMCREPEATER-REV4-MIB • IIMCTRAP-MIB
SEHI100TX	• IIMCCHASSIS-MIB • IIMCCTRON-DEVICE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCDLM-MIB	• IIMCFAST-ETHERNET-MIB • IIMCREPEATER-REV4-MIB • IIMCTRAP-MIB
SmartMIM-216	• IIMCCHASSIS-MIB • IIMCCTIF-EXT-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-COMMON-MIB	• IIMCCTRON-DOWNLOAD-MIB • IIMCCTSMTMIB-MIB • IIMCTRAP-MIB

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
SmartSwitch 2000	• IIMCCT-BROADCAST-MIB • IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-CHASSIS-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-IF-REMAP-2-MIB • IIMCCTRON-PORTMAP-MIB	• IIMCCTRON-PRIORITY-EXTENSIONS-MIB • IIMCCTSMTMIB-MIB • IIMCDLM-MIB • IIMCDOT5-LOG-MIB • IIMCEVENT-ACTIONS-MIB • IIMCFAST-ETHERNET-MIB • IIMCREPEATER-REV4-MIB • IIMCSYSTEM-RESOURCE-MIB • IIMCTRAP-MIB • IIMCUPS2-MIB
SmartSwitch 6000	• IIMCCT-BROADCAST-MIB • IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-ENVIRONMENT-MIB • IIMCCTRON-IF-REMAP-2-MIB • IIMCCTRON-PORTMAP-MIB	• IIMCCTRON-PRIORITY-EXTENSIONS-MIB • IIMCCTSMTMIB-MIB • IIMCDLM-MIB • IIMCDOT5-LOG-MIB • IIMCEVENT-ACTIONS-MIB • IIMCFAST-ETHERNET-MIB • IIMCREPEATER-REV4-MIB • IIMCSYSTEM-RESOURCE-MIB • IIMCTRAP-MIB • IIMCUPS2-MIB
SmartSwitch 7000	• IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DOWNLOAD-MIB	• IIMCCTSMTMIB-MIB • IIMCDLM-MIB • IIMCFAST-ETHERNET-MIB • IIMCTRAP-MIB

Table A-1. MMAC and Standalone Device MIB Agent Table

Device	Applicable MIB Agent Files	
STHI	• **IIMCCHASSIS-MIB** • **IIMCCTRON-COMMON-MIB** • **IIMCCTRON-DOWNLOAD-MIB**	• **IIMCCTRON-FNBTR-MIB** • **IIMCDOT5-LOG-MIB** • **IIMCDOT5-PHYS-MIB**
TRBMIM	• **IIMCCHASSIS-MIB** • **IIMCCTRON-BRIDGE-MIB** • **IIMCCTRON-COMMON-MIB** • **IIMCCTRON-DEVICE-MIB** • **IIMCCTRON-DOWNLOAD-MIB**	• **IIMCCTRON-FNBTR-MIB** • **IIMCDOT5-LOG-MIB** • **IIMCDOT5-PHYS-MIB**
TRMM **TRMMIM** **TRMMIM-1**	• **IIMCCHASSIS-MIB** • **IIMCCTRON-COMMON-MIB** • **IIMCCTRON-DEVICE-MIB** • **IIMCCTRON-DOWNLOAD-MIB**	• **IIMCCTRON-FNBTR-MIB** • **IIMCDOT5-LOG-MIB** • **IIMCDOT5-PHYS-MIB**
TRMM-1 **TRMM-2** **TRMM-4**	• **IIMCCHASSIS-MIB** • **IIMCCTRON-COMMON-MIB** • **IIMCCTRON-DEVICE-MIB** • **IIMCCTRON-DOWNLOAD-MIB**	• **IIMCCTRON-FNBTR-MIB** • **IIMCDOT5-LOG-MIB** • **IIMCDOT5-PHYS-MIB** • **IIMCTR-STNASSIGN-MIB** *(TRMM-2 only)*
TRXI	• **IIMCCHASSIS-MIB** • **IIMCCTRON-COMMON-MIB** • **IIMCCTRON-DEVICE-MIB** • **IIMCCTRON-DOWNLOAD-MIB**	• **IIMCDOT5-LOG-MIB** • **IIMCDOT5-PHYS-MIB**

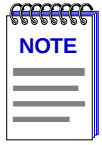
BRIM/HSIM Modules

If you are configuring a glyph for a device which has a BRIM or HSIM installed, be sure to check the chart below to determine if additional agent files should be selected.

Table A-2. BRIM/HSIM MIB Agent Table

BRIM/HSIM Module	Applicable MIB Agent Files	
ATM	• IIMCCTRON-ATM-MIB	• IIIMCCTRON-MIB2EXT-MIB
FDDI	• IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-FDDI-FNB-MIB • IIMCCTRON-FDDI-STAT-MIB	• IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCCTSMTMIB-MIB
Token Ring	• IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-IP-ROUTER-MIB	• IIMCCTRON-IPX-ROUTER-MIB • IIMCCTRON-ROUTERS-MIB • IIMCDOT5-LOG-MIB
WAN	• IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DECIV-ROUTER-MIB • IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-IPX-ROUTER-MIB	• IIMCCTRON-ROUTERS-MIB • IIMCCTRON-WAN-MIB • IIMCCTRON-WAN-IMUX-MIB • IIMCCTRON-WAN-MULTI-IMUX-MIB

SmartSwitch 9000 Devices



To create a glyph for any individual SmartSwitch 9000 module, select the appropriate component from the ***Edit—>Create—>Component*** *menu; configure the object as usual, assigning a valid community name and selecting the agent files listed on the chart that follows.*

To create a glyph for a SmartSwitch 9000 chassis, select the csi9000 six- or 14-slot chassis component. To configure a SmartSwitch 9000 chassis glyph, you need only assign a name in the Object Configuration Tool window; this can consist of any alphanumeric string that will help you identify the chassis. You need fill in no other fields in this window, and you need not select any agent files. Note that these glyphs will not interact with Solstice Enterprise Manager with respect to contact status, since the chassis itself does not yet have its own IP address or its own intelligence; however, the csi9000 glyph will provide access to the SmartSwitch 9000 chassis Hub View, which can be manually configured to display each of the installed modules.

For more information about configuring the SmartSwitch 9000 chassis Hub View, consult the ***SmartSwitch 9000 Chassis User's Guide.***

Table A-3. SmartSwitch 9000 Device MIB Agent Table

SmartSwitch 9000 Device Type	Applicable MIB Agent Files	
ATM (9A)	• **IIMCCHASSIS-MIB** *or* **IIMCCT-CONTAINER-MIB** • **IIMCCTIF-EXT-MIB** • **IIMCCT-PIC-MIB** • **IIMCCTRON-BRIDGE-MIB** • **IIMCCTRON-DOWNLOAD-MIB** • **IIMCCTRON-ENVIRONMENT-MIB** • **IIMCCTRON-FDDI-FNB-MIB** • **IIMCCTRON-FDDI-STAT-MIB**	• **IIMCCTRON-IP-ROUTER-MIB** • **IIMCCTRON-POWER-SUPPLY-MIB** • **IIMCCTRON-ROUTERS-MIB** • **IIMCCTRON-SFCS-MIB** *(9A6xx only)* • **IIMCCTSMTMIB-MIB** • **IIMCDLM-MIB** • **IIMCTRAP-MIB** • **IIMCUPS2-MIB**
Ethernet (9E) **Fast Ethernet (9H)** **Gigabit Ethernet (9G)**	• **IIMCCHASSIS-MIB** *or* **IIMCCT-CONTAINER-MIB** • **IIMCCT-ETHERNET-PARAMETERS-MIB** *(9G only)* • **IIMCCTIF-EXT-MIB** • **IIMCCT-PIC-MIB** • **IIMCCTRON-AppleTalk-ROUTER-MIB** • **IIMCCTRON-BRIDGE-MIB** • **IIMCCTRON-DECIV-ROUTER-MIB** • **IIMCCTRON-DOWNLOAD-MIB** • **IIMCCTRON-ENVIRONMENT-MIB** • **IIMCCTRON-FDDI-FNB-MIB** • **IIMCCTRON-IF-REMAP-MIB**	• **IIMCCTRON-IP-ROUTER-MIB** • **IIMCCTRON-IPX-ROUTER-MIB** • **IIMCCTRON-POWER-SUPPLY-MIB** • **IIMCCTRON-ROUTERS-MIB** • **IIMCCTSMTMIB-MIB** • **IIMCDLM-MIB** • **IIMCEVENT-ACTIONS-MIB** • **IIMCFAST-ETHERNET-MIB** • **IIMCREPEATER-REV4-MIB** • **IIMCSYSTEM-RESOURCE-MIB** • **IIMCTRAP-MIB** • **IIMCUPS2-MIB**

Table A-3. SmartSwitch 9000 Device MIB Agent Table

SmartSwitch 9000 Device Type	Applicable MIB Agent Files	
FDDI (9F)	• IIMCCHASSIS-MIB *or* IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-ENVIRONMENT-MIB • IIMCCTRON-FDDI-FNB-MIB • IIMCCTRON-FDDI-STAT-MIB	• IIMCCTRON-IP-ROUTER-MIB • IIMCCTRON-POWER-SUPPLY-MIB • IIMCCTRON-ROUTERS-MIB • IIMCCTSMTMIB-MIB • IIMCDLM-MIB • IIMCEVENT-ACTIONS-MIB • IIMCTRAP-MIB • IIMCUPS2-MIB
Token Ring (9T)	• IIMCCHASSIS-MIB *or* IIMCCT-CONTAINER-MIB • IIMCCTIF-EXT-MIB • IIMCCT-PIC-MIB • IIMCCTRON-BRIDGE-MIB • IIMCCTRON-DOWNLOAD-MIB • IIMCCTRON-ENVIRONMENT-MIB	• IIMCCTRON-FDDI-FNB-MIB • IIMCCTRON-POWER-SUPPLY-MIB • IIMCCTSMTMIB-MIB • IIMCDLM-MIB • IIMCDOT5-LOG-MIB • IIMCTRAP-MIB • IIMCUPS2-MIB

Creating and Using the Generic SNMP Glyph

Although third-party devices are not supported by SPECTRUM for Solstice Enterprise Manager, a generic SNMP glyph has been included to provide you with general SNMP management for any networking device which supports the SNMP stack, via both the Solstice Enterprise Manager SNMP Browser and the SPMA MIB I, II application.

To create and configure a generic SNMP glyph:

1. Click mouse button 3 on the **Edit** menu in the console window; drag down to **Create**, right to **Component**, then right again to select **csi-GENSNMP**.
2. Fill in the Object Configuration Tool window as described in **Chapter 3**, being sure to include valid community names on the appropriate lines.
3. Select any agent files that might apply to your particular device.

You can now use this glyph to access the SEM SNMP Browser and the SPMA MIB I, II application.

Index

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U

V

W

Y