Sun Management Center 3.5 Service Availability Manager User's Guide

Adobe PostScript™

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Contents

Preface

The *Sun Management Center 3.5 Service Availability Manager User's Guide* provides instructions on how to use the modules in Service Availability Manager.

Audience

This document is intended for users familiar with the Sun Management Center product. Therefore, many terms and concepts specific to the Sun Management Center are not explained here. For more information about the Sun Management Center, refer to the *Sun Management Center 3.5 User's Guide*.

Contents of this Manual

This document describes all services offered by Service Availability Manager. It includes the following chapters:

- Chapter 1 provides an introduction to Service Availability Manager.
- Chapter 2 includes installation and setup instructions.
- Chapter 3 includes information regarding Synthetic Transaction Modules.
- Chapter 4 includes information regarding Service Element Modules.
- Chapter 5 includes information regarding using the Service Availability Manager graphical user interface.
- Appendix A provides reference information for Service Availability Manager.
- Appendix B includes installation and setup instructions using the command line.

To view license terms, attribution, and copyright statements for open source software included in this release, the default path is `/cdrom/sunmc_3_5_sparc/image/Webserver/Solaris_9/SUNWtcatr/install/copyright`. If you are using Solaris 8 software, substitute `Solaris_8` for `Solaris_9` in the path.

Access to Latest Information on Sun Management Center

For the latest information on the Sun Management Center 3.5 software and the Service Availability Manager add-on product, refer to `http://www.sun.com/sunmanagementcenter`.

Using UNIX Commands

This document does not contain information on basic UNIX® commands and procedures, such as shutting down the system, booting the system, and configuring devices. See one or more of the following for this information:

- *Solaris Handbook for Sun Peripherals*
- Online documentation for the Solaris™ operating environment
- Other software documentation that you received with your system

TABLE P–1 Shell Prompts

Shell	Prompt
C shell	*machine_name*%
C shell superuser	*machine_name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell superuser	#

Accessing Sun Documentation Online

The docs.sun.com^{SM} Web site enables you to access Sun technical documentation online. You can browse the docs.sun.com archive or search for a specific book title or subject. The URL is `http://docs.sun.com`.

Ordering Sun Documentation

Sun Microsystems offers select product documentation in print. For a list of documents and how to order them, see "Buy printed documentation" at http://docs.sun.com.

Typographic Conventions

The following table describes the typographic changes used in this book.

TABLE P–2 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `machine_name% you have mail.`
AaBbCc123	What you type, contrasted with on-screen computer output	`machine_name%` **su** `Password:`
AaBbCc123	Command-line placeholder: replace with a real name or value	To delete a file, type **rm** *filename*.
AaBbCc123	Book titles, new words, or terms, or words to be emphasized.	Read Chapter 6 in *User's Guide*. These are called *class* options. You must be *root* to do this.

Shell Prompts in Command Examples

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P–3 Shell Prompts

Shell	Prompt
C shell prompt	`machine_name%`
C shell superuser prompt	`machine_name#`
Bourne shell and Korn shell prompt	`$`
Bourne shell and Korn shell superuser prompt	`#`

Introduction to Service Availability Manager

This chapter discusses the following topics:

Service Availability Manager Overview

Service Availability Manager is an add-on to Sun Management Center 3.5 software that enables you to monitor the availability of Internet services. The monitored services can run either locally or remotely. Service Availability Manager enables you to measure and monitor the availability of the following Internet services:

- Web service using the HTTP protocol

- Directory service that uses the LDAP (Version 3), DNS, or NIS (Version 2) protocol

- Telnet service

- File transfer service that uses the FTP protocol

- Mail service that uses the SMTP, IMAP4, or POP3 protocol

- Solaris™ calendar service

Service Availability Manager uses the agent modules of Sun Management Center to measure and monitor the availability of the service. You need to load the agent modules to monitor different services locally and remotely. The modules used to monitor services locally are called *Service Element modules*. The modules used to monitor services remotely are called *Synthetic Transaction modules*. Once loaded, the modules display the status of the services.

The modules also send service requests periodically, according to the parameters of the requests, and measure the response times of the requests. You can also group a set of Sun Management Center modules that are monitoring various services and view the high-level summary of their status. The logical grouping of the modules monitoring the services are represented in a composite object called the *service object*. The high-level summary of the status of services is displayed in the graphical user interface (GUI) Service Manager. This GUI can be invoked from the Sun Management Center 3.5 Java™ console.

Before you can use Service Availability Manager, you must perform several tasks. An outline of the tasks is provided here. The detailed procedures are contained in the following chapters. In brief, the tasks you will need to perform are as follows:

1. Install the add-on software on all agents from which you want to monitor a service, as well as on the Sun Management Center 3.5 server layer.

2. Use the `setup` script or wizard to set up the software on the agent and server layers.

3. Load the Service Element modules on each host that is running a service, in order to monitor the service locally.

4. Load the Synthetic Transaction modules on the host, in order to monitor the services running remotely.

The Service Element and Synthetic Transaction modules enable you to monitor services. The host details view displays the information collected by the modules.

After you complete these tasks, you can now start viewing the availability status of services with Service Availability Manager. To look at the high-level summary of the available services and their status, you need to do the following tasks:

1. Create the service object on the host. You can do this either by using the discovery capabilities or by using the Create Object utility, both found in Sun Management Center 3.5.

2. Right-click the service object that you created. From the menu that appears, choose one of the following:

■ Modify Service Object – Use to customize the service object with a set of Service Element or Synthetic Transaction modules.

■ Service Manager – Use to view a high-level summary of the availability of services.

Synthetic Transaction Modules

To monitor services remotely, Service Availability Manager uses Synthetic Transaction modules. Synthetic (dummy) transactions simulate the use of the services. The synthetic transactions can be used to measure performance statistics such as DNS resolve time, the total time a transaction takes, or connect time. There are ten kinds of Synthetic Transaction modules included in Service Availability Manager. For more information, see "Synthetic Transaction Module Overview" on page 23.

Service Element Modules

To monitor services on the local system, Service Availability Manager uses Service Element modules. A Service Element module sends service requests periodically according to configuration parameters that you specify. In this way, both service availability and response time can be determined. There are ten kinds of Service Element modules included in Service Availability Manager. For more information, see "Service Element Modules Overview" on page 27. The following figure shows an example of the DNS Service Element module.
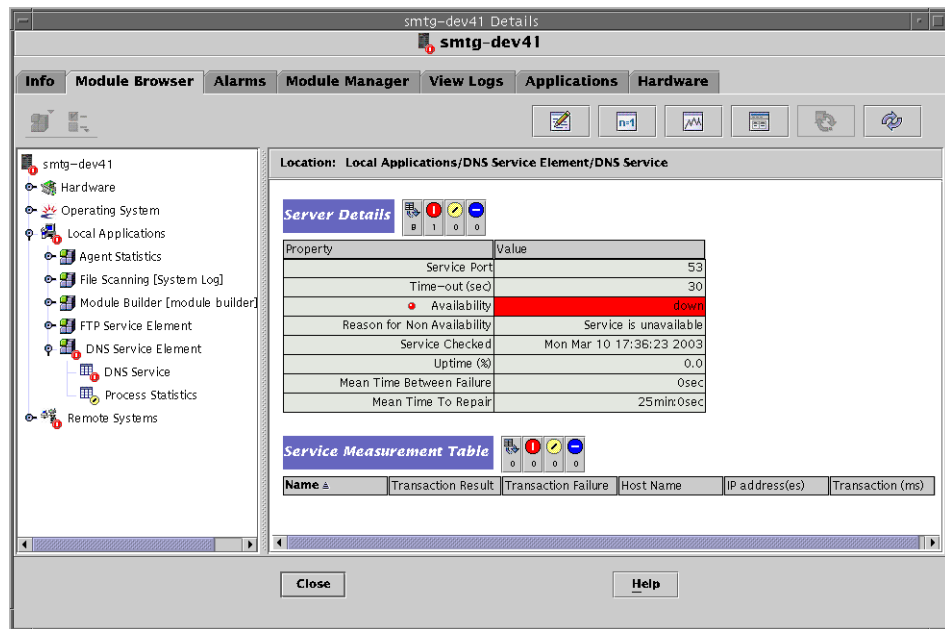
FIGURE 1–1 DNS Service Element Module

Service Object

A service object is a composite object containing Service Element modules and Synthetic Transaction modules. You customize a service object by selecting the set of modules wanted, using the Modify Service Object dialog box. For more information, see Chapter 5.

Service Manager GUI

The Service Manager GUI displays in a single view the availability of all the services contained in a service object. The GUI is linked to the Sun Management Center 3.5 Java console only.

Service Manager displays the availability of the different services locally and remotely. The data is dynamically updated in the table to reflect the real-time status of the services. For more information, see Chapter 5.

Configuration Example

The following illustration depicts an example of how Service Availability Manager can be used in a network.
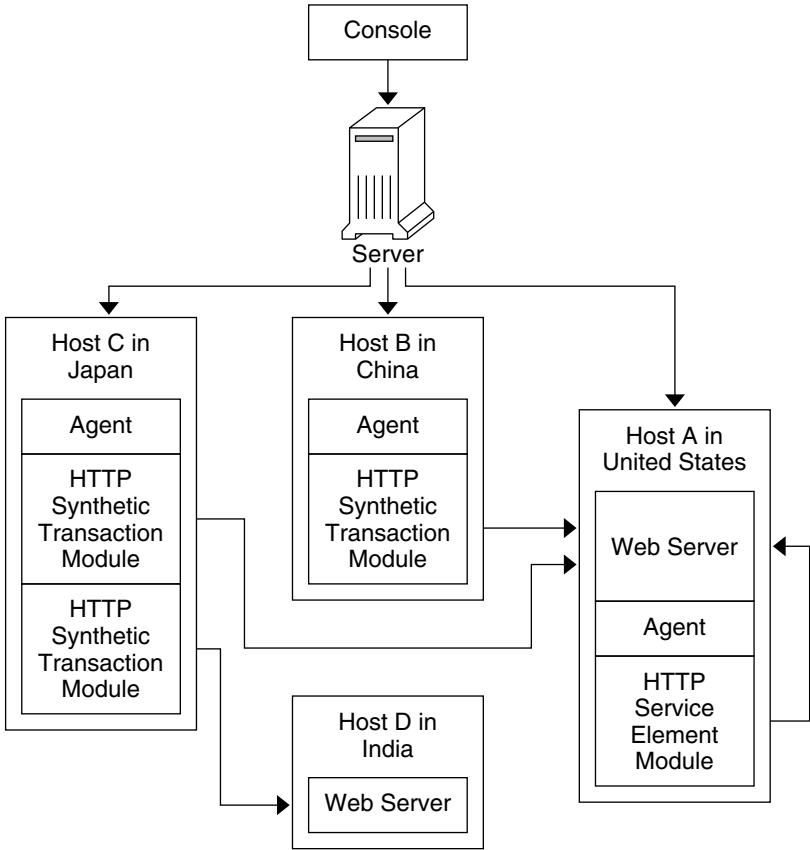
FIGURE 1–2 Configuration Example of Service Availability Manager

In this example, a single Sun Management Center server is shown with three agents:

- Host A is located in the United States. A web server is running. An HTTP Service Element module is loaded.
- Host B is located in China. An HTTP Synthetic Transaction module is loaded.
- Host C is located in Japan. Two HTTP Synthetic Transaction modules are loaded.

- Host D is located in India. The host does not have an agent. A web server is running.

With this configuration, the system administrator for Host A can monitor the web server that is running locally. The administrator can also check remotely from Hosts B and C on the status and performance of the web server on Host A. The HTTP Synthetic Transaction modules loaded on Hosts B and C enable this monitoring.

Host D has a web server running, but does not have an agent installed. The system administrator therefore cannot monitor the services locally. However, the services can be monitored remotely from Host C. The HTTP Synthetic Transaction modules loaded on Host C enables the remote monitoring of the web server on Host D.

Service Availability Manager Installation and Setup

This chapter discusses the following topics:

- "Service Availability Manager Software" on page 15
- "Installing Service Availability Manager" on page 16
- "Setting Up Service Availability Manager" on page 18
- "Upgrading to Service Availability Manager 3.5" on page 20
- "Agent Update Feature" on page 20
- "Uninstalling Service Availability Manager" on page 21

Service Availability Manager Software

Service Availability Manager is installed as an add-on to the Sun™ Management Center 3.5 software. The Service Availability Manager software runs on the following platforms:

- Solaris™ 2.6, Solaris 7, Solaris 8, and Solaris 9 operating environments

- All the platforms on which the Sun Management Center 3.5 agent can run and that are supported by Sun Management Center 3.5

The Service Availability Manager server layer runs on the Solaris 8 and Solaris 9 operating environments. The LDAP modules are supported only on the Solaris 7, Solaris 8, and Solaris 9 operating environments. For any late-breaking information, please see the *Sun Management Center 3.5 Release Notes*.

The Service Availability Manager add-on software consists of the following packages:

- `SUNWesaes` – Service Availability Manager package for Sun Management Center agent layer

- `SUNWesses` – Service Availability Manager package for Sun Management Center server layer

- `SUNWesces` – Service Availability Manager package for Sun Management Center console layer
- `SUNWeshes` – Service Availability Manager online help package for Sun Management Center server layer
- `SUNWessam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer
- `SUNWfrsam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer for French Localization
- `SUNWjasam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer for Japanese Localization
- `SUNWkosam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer for Korean Localization
- `SUNWcsam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer for Simplified Chinese Localization
- `SUNWhsam` – Service Availability Manager package for the Sun Management Center agent, console, and server layer for Traditional Chinese Localization
- `SUNWfrsmh` – Service Availability Manager online help package for Sun Management Center server layer for French Localization
- `SUNWjasmh` – Service Availability Manager online help package for Sun Management Center server layer for Japanese Localization
- `SUNWkosmh` – Service Availability Manager online help package for Sun Management Center server layer for Korean Localization
- `SUNWcsmh` – Service Availability Manager online help package for Sun Management Center server layer for Simplified Chinese Localization
- `SUNWhsmh` – Service Availability Manager online help package for Sun Management Center server layer for Traditional Chinese Localization

Installing Service Availability Manager

You can install the Service Availability Manager add-on software either using the installation wizard or the command line. This section discusses how to use the installation wizard. For information about installing using the command line, see Appendix B.

The Service Availability Manager software can be installed at the same time that you install the Sun Management Center 3.5 software. You can also perform installation after Sun Management Center 3.5 is already installed. Installation of Service Availability Manager follows the standard Sun Management Center 3.5 add-on software installation procedures.

Service Availability Manager must be installed on the following layers of Sun Management Center 3.5:

- Server layer
- Agent layer, on all hosts from which you want to monitor a service

Installation on the console layer is optional.

▼ To Install Service Availability Manager During Sun Management Center 3.5 Installation

● **For more information and detailed steps, see** *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Install Service Availability Manager Individually

Note – Perform this procedure only after the Sun Management Center 3.5 software has been installed.

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1. **As superuser (`su -`), launch the Sun Management Center 3.5 installation wizard by typing:**

   `# /opt/SUNWsymon/sbin/es-guiinst`

   where /opt is the directory in which Sun Management Center 3.5 is installed. Substitute the name of the actual directory if it is different on your system.

   The Sun Management Center 3.5 installation wizard appears.

2. **Provide the source directory of the Service Availability Manager files when prompted.**

   - If installing from the software CD-ROM and the path is not provided, type:

     `/cdrom/sunmanagementcenter_3_5/image`

   - If installing from a directory to which the software has been copied, type:

     disk1`/image`

     where *disk1* is the corresponding name of the location where the software was copied. You can also use the Browse button to locate the directory.

3. **If installing on the server layer, select the languages from the Select Language Support panel and click Next.**

The Checking for Available Products panel appears. When the progress bar is finished, the Products Already Installed panel appears.

4. **Review the list of products already installed and click Next.**

   The Select Add-on Products panel appears.

5. **Select Service Availability Manager from the list of add-on software to be installed and click Next.**

   The Add-on Products License Agreement panel appears.

6. **Read the license agreement. You must click the I Agree button to proceed with installation and then click Next.**

   The Confirmation Panel appears.

7. **Review the Confirmation Panel and click Next.**

   The Installation Complete panel is displayed when the software installation is complete.

   Once installation of the Service Availability Manager software is complete, the setup wizard guides you through the setup process for the software. For more information, see "Setting Up Service Availability Manager" on page 18.

Setting Up Service Availability Manager

After installation is complete, you must run the Service Availability Manager setup wizard to configure the server and agent layers. You can perform the setup procedure directly after the software installation is complete. You can also exit the installation wizard and perform the setup procedure later. The Sun Management Center 3.5 core server layer must be set up before starting the Service Availability Manager setup procedure.

The Sun Management Center 3.5 installation wizard can launch the Service Availability Manager setup wizard. The setup wizard appears after the Installation Complete panel when using the installation wizard. The Service Availability Manager setup wizard guides you through the setup procedure. For the command-line instructions for running the setup script, see Appendix B.

▼ To Set Up Service Availability Manager During Sun Management Center 3.5 Installation

● **For more information and detailed steps, see** *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Set Up Service Availability Manager Individually

Note – Perform this procedure only after the Sun Management Center 3.5 software has been already installed. This procedure assumes that you chose not to set up Service Availability Manager at the end of the Sun Management Center 3.5 installation process.

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1. **As superuser (`su -`), launch the Sun Management Center 3.5 setup wizard by typing:**

   `# /opt/SUNWsymon/sbin/es-guisetup`

   where `/opt` is the directory in which Sun Management Center 3.5 is installed. Substitute the name of the actual directory if it is different on your system.

   The Sun Management Center 3.5 setup wizard appears and guides you through the setup process for the software.

   Note – If you have installed more than one add-on product, the setup wizard for each product appears automatically. Each wizard guides you through the setup process for its add-on product. Each new setup wizard appears automatically after the setup process is completed for the previous add-on product. The setup wizard for the Service Availability Manager software may not be the first to appear, in this case.

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2. **The Overview panel appears first. Click Next to continue through the wizard panels.**

3. **Review the list in the Stopping Components panel and click Next.**

   The Sun Management Center components must be stopped before the setup process can continue.

4. **The Advanced Setup Options panel appears if you have completed the setup process for some of the add-on products installed. The remaining add-on software can be set up now. Select from the following options and click Next:**

   - Reconfigure All – The setup process is run again for the base Sun Management Center 3.5 software and all add-on software. All of the Sun Management Center software that was previously set up is set up again.

   - Configure Addons – The add-on software that was recently installed but not yet set up is now set up.

5. **Review the list of products in the Sun Management Center Base Product Setup Complete panel and click Next.**

The Select Add-on Products panel appears. All products newly installed on the system that will be set up are listed. You are also given the option to run setup again on any product that has already been set up.

6. **Confirm that Service Availability Manager appears as a product to be set up now and click Next.**

   The setup progress bar appears. Once the progress bar is done, the Add-on Products Setup panel appears.

   Once the setup procedure is complete, you have the option to start the Sun Management Center processes. For more information, see *Sun Management Center 3.5 Installation and Configuration Guide*.

Agent Update Feature

The Service Availability Manager 3.5 server layer must be installed before using the Sun Management Center 3.5 Agent Update feature to upgrade the agent layer. The update image wizard prompts you to select from the list of products to include in the update image. You must select Service Availability Manager for inclusion in the update image. For information about using the Agent Update feature, see *Sun Management Center 3.5 Installation and Configuration Guide*.

Upgrading to Service Availability Manager 3.5

If you have an installation of Service Availability Manager 3.0 on your system, the earlier software must be uninstalled first. The Sun Management Center 3.5 installation wizard asks you whether you want to preserve your data files before removing the software. The installation wizard then proceeds to install the Service Availability Manager 3.5 software. For more information, see *Sun Management Center 3.5 Installation and Configuration Guide*.

Uninstalling Service Availability Manager

Use the Sun Management Center 3.5 uninstall wizard to remove the Service Availability Manager software. The uninstall wizard removes both the Service Availability Manager packages and data and configuration changes made during setup. For more information about using the uninstall wizard, see *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Remove the Service Availability Manager Software

1. **As superuser (`su -`), launch the uninstall wizard by typing:**

   `# /opt/SUNWsymon/sbin/es-guiuninst`

   where `/opt` is the directory in which Sun Management Center 3.5 is installed. Substitute the name of the actual directory if it is different on your system.

   The Sun Management Center 3.5 uninstall wizard appears.

2. **Select Service Availability Manager from the list of software, and click Next.**

3. **Do not select to save the data files and click Next.**

   The Product Removal Screen appears.

4. **Review the names of the products selected for removal and click Next.**

   The Service Availability Manager packages, configuration files, and data files are removed. The Uninstall Summary panel appears when removal is completed.

5. **Click Close to exit the wizard.**

Synthetic Transaction Modules

This chapter discusses the following topics:

- "Synthetic Transaction Module Overview" on page 23
- "Using Synthetic Transaction Modules" on page 24

For more information about Service Element modules, see Chapter 4.

Synthetic Transaction Module Overview

Synthetic Transaction modules can monitor and measure the availability of services remotely. The modules use synthetic (dummy) transactions to simulate use of the service. These modules send service requests to the services periodically, according to defined settings, and simulate usage to monitor the service. Examples of response times that can be reported are connect time and total transaction time. All response times are reported in milliseconds. You can set alarm thresholds on response times. All Synthetic Transaction modules are multi-instance modules.

The following ten Synthetic Transaction modules are available:

- **HTTP** – Determines the service availability of web servers and the retrieval time for web pages using the HTTP protocol.
- **FTP** – Determines the FTP service availability. It also measures the ability to transfer files to and from the FTP servers. `FtpGet` gets a file that you define from the FTP server. `FtpPut` puts a file on the server.
- **Telnet** – Determines the availability of the Telnet service.
- **DNS** – Determines the availability of the DNS Service and the ability of the DNS daemon to resolve a host name.

- **NIS** – Determines the NIS service availability. It also determines the ability of the NIS daemon to resolve a name in a NIS domain. The supported name resolution types are user name, host name, group name, and mail alias.

- **LDAP** – Determines the LDAP service availability and the ability of the LDAP daemon to resolve a name.

- **SMTP** – Measures the availability of the SMTP mail service and its performance when sending mail. You must create at least one dummy email account on the target server for sending the test email. Remember to periodically delete the test email to ensure that the mailbox does not fill up.

- **POP3** – Measures the availability of POP3 mail service and its performance of retrieving mail.

- **IMAP4** – Measures the availability of IMAP4 mail service and its performance when retrieving mail.

- **Calendar** – Measures the availability of the Solaris calendar service and ability to retrieve calendar appointments from it.

Using Synthetic Transaction Modules

Note – The IMAP and POP3 modules require a dummy user name and password. The password is passed in clear text during the synthetic transactions. The password is therefore not secure. Be certain that the test user has no privileges.

Prior to loading a module, certain configuration parameters must be specified. For example, the service host name might be requested. For more information about the configuration parameters, see Appendix A.

Once a module is loaded, the state of the service is confirmed in the Server Details table. A service status is indicated in the Server Details table as one of three possible states:

- **Available (up)** – The service is running.

- **Unavailable (down)** – The service is unavailable. The reason for this result varies, depending on the circumstances. For example, the host name might not be resolved, the destination might be unreachable, or the service might not be running. A critical alarm is generated.

- **Degraded** – The service is running but the performance is not as expected. The module is able to run test transactions but the response times of the transactions exceeds the alarm thresholds specified. When the availability is degraded, an alarm is generated. The alarm severity is the highest severity of all alarms that is set on the response times of the transaction.

▼ To Load a Synthetic Transaction Module

1. **Load the module.**

   For detailed information on loading modules, see "To Load a Module" in *Sun Management Center 3.5 User's Guide*.

2. **Provide the required configuration parameters in the Module Loader dialog box for each module loaded.**

   For a complete list of the Synthetic Transaction modules available, see "Synthetic Transaction Module Overview" on page 23.

   Each module requires that specific parameter requirements be defined. Once the parameters are completed, the module is loaded in Sun Management Center under the Remote Systems category. For more information about the parameters, see Appendix A.

▼ To Access the Synthetic Transaction Modules

Note – The Synthetic Transaction module must be loaded before accessing it.

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1. **Click the Browser tab in the Sun Management Center 3.5 console window.**

2. **Double-click the Remote Systems category to expand it.**

   The Synthetic Transaction icons are displayed.

3. **Double-click the Synthetic Transaction icon.**

   Service Manager displays the applicable folders in the right panel.

4. **Double-click the applicable folder.**

   Service Manager can display the following tables as they relate to the module:

   - Server Details Table: Provides the details about the services monitored on the server.
   - Service Measurement Table: Provides the details about the synthetic transactions.

▼ To Activate a Synthetic Transaction

1. **In the Service Measurement Table, click mouse button 3 on a table row.**

   A pop-up menu appears.

2. **Choose New Row.**

   The New Row dialog box appears.

3. **Provide the applicable parameters to add the row.**

For additional information about parameter requirements, see Appendix A.

4. **Click OK.**

▼ To Delete or Edit a Synthetic Transaction

1. **In the Service Measurement Table, click mouse button 3 on the desired row.**
   A pop-up menu appears.

2. **Select the Delete Row or the Edit Row option, as appropriate.**

3. **Complete the edits, as appropriate.**

4. **Click OK.**

▼ To Edit the Server Details Table

● **Edit the applicable parameters in the Server Details table using the Edit Module feature of Sun Management Center 3.5.**

   ■ To access the Server Details table, see "To Access the Synthetic Transaction Modules" on page 25.

   ■ See "Working With Modules" in *Sun Management Center 3.5 User's Guide* for detailed information about the Edit Module feature.

Service Element Modules

This chapter discusses the following topics:

- "Service Element Modules Overview" on page 27
- "Using Service Element Modules" on page 28

For information about Synthetic Transaction modules, see Chapter 3.

Service Element Modules Overview

Service Element modules monitor and measure the availability of services locally. These modules are loaded under the Local Applications category in the Sun Management Center 3.5 console. Service Element modules are single-instance modules, except the module that monitors HTTP, which is multi-instance. You can set alarm thresholds on response times for these modules.

These modules send service requests to the services periodically, according to user configuration settings, to determine service availability and local response time.

This following ten Service Element modules are available:

- **HTTP** – Determines web server service availability and web page retrieval time using the HTTP protocol on a service site. The module provides process monitoring statistics for the HTTP daemon. This module also monitors the access log file and reports statistics such as the number of errors. The module also scans the log file.

- **FTP** – Determines the FTP service availability and ability to transfer files to and from the FTP servers on a service site locally. `FtpGet` gets a file from a server. `FtpPut` puts a file on the server.

- **Telnet** – Determines the availability of the Telnet service locally.

- **DNS** – Determines the availability of the DNS Service and the ability of the DNS daemon to resolve a host name. The module measures the server response time locally and provides process monitoring statistics for the DNS daemon.
- **NIS** – Determines the NIS service availability. It also determines the ability of the NIS daemon to resolve a name in a NIS domain. The supported name resolution types are user name, host name, group name, and mail alias.
- **LDAP** – Determines the LDAP service availability and the ability of the LDAP daemon to resolve a name. You can also measure server response time locally.
- **SMTP** – Measures the availability of SMTP mail service and server response time locally when sending email. You must create at least one dummy email account on the target server for sending the test email. Remember to periodically delete the test email to ensure that the mailbox does not fill up.
- **POP3** – Measures the availability of POP3 mail service and the server response time locally while retrieving mail.
- **IMAP4** – Measures the availability of IMAP4 mail service and the service response time locally for retrieving mail.
- **Calendar** – Measures the availability of the Solaris calendar service and ability to retrieve calendar appointments from it. You can also measure the service response time locally.

Using Service Element Modules

Note – The IMAP and POP3 modules each require a dummy user name and password. The password is passed in clear text during the synthetic transactions. The password is therefore not secure. Be certain that the test users has no privileges.

Before loading a module, you must specify certain configuration parameters. For example, a service port might be requested. For more information about the configuration parameters, see Appendix A.

Once a module is loaded, the state of the service is confirmed in the Server Details table. For more information, see Chapter 3.

▼ To Load the Module

1. **Load the module.**

   For detailed information on loading modules, see "To Load a Module" in *Sun Management Center 3.5 User's Guide*.

2. **Provide the required parameters for each module you want to load in the Module Loader dialog box.**

Each module has specific parameters that need to be defined. Once the parameters are completed, the module is loaded in Sun Management Center under the Local Applications category. For more information, see Appendix A.

▼ To Access the Service Element Modules

1. Click the Browser tab in the Sun Management Center console window.

2. Double-click the Local Applications category to expand this category.

3. Double-click the Service Element module.
Service Manager displays the applicable folders.

4. Double-click the applicable folder.

▼ To Activate a Service Element Transaction

● **Refer to "To Activate a Synthetic Transaction" on page 25.**

▼ To Delete or Edit a Service Element Module

● **Refer to "To Delete or Edit a Synthetic Transaction" on page 26.**

▼ To Edit the Server Details Table

● **Edit the applicable parameters in the Server Details table using the Edit Module feature.**

   ■ To access the Server Details table, see "To Access the Synthetic Transaction Modules" on page 25.

   ■ See "Working With Modules" in *Sun Management Center 3.5 User's Guide* for detailed information.

Service Availability Manager GUI

This chapter discusses the following topics:

- "Discovering Service Objects" on page 31
- "Service Manager GUI" on page 34
- "Filtering Services" on page 36

Discovering Service Objects

A service object is a Sun Management Center composite object. This composite object is an association of the local and network view of services. The service object consists of Synthetic Transaction modules and Service Element modules. For more information about Synthetic Transaction modules, see Chapter 3. For more information about Service Element modules, see Chapter 4. A service object should be created using the Sun Management Center discovery mechanisms. See the following figure for an example of the Modify Service Object dialog box.
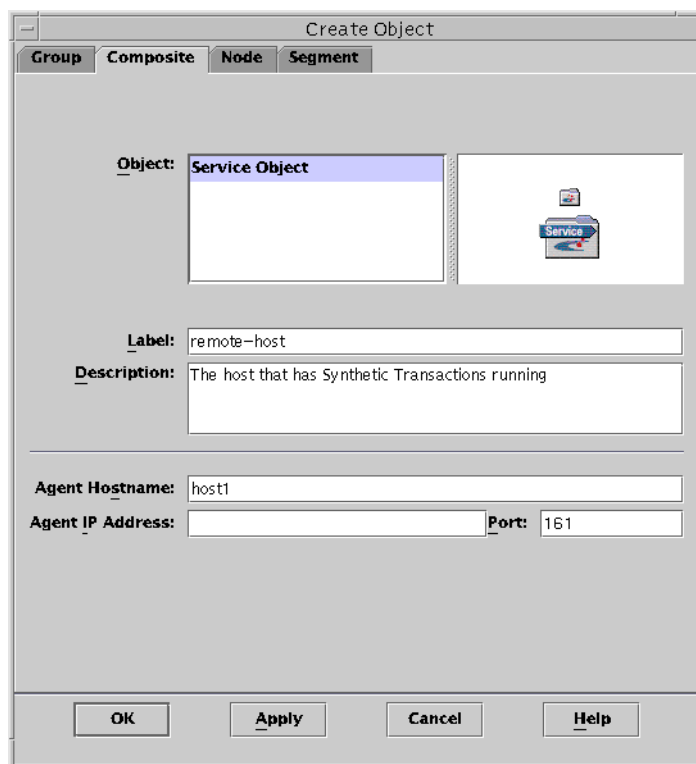
FIGURE 5–1 Creating a Service Object using the Create Object Utility

Use the Sun Management Center discovery mechanism to discover an object called the *service object*. A service object can also be created using the Create Node for Composite Object utility and selecting Service Object for the object type. For more information, see "Creating Objects" in *Sun Management Center 3.5 User's Guide*.

Modifying Service Objects

The Modify Service Object dialog box enables you to add or delete services from the service object. You must select a service object before accessing the Modify Service Object dialog box. You can perform multiple changes before exiting. Use only the Modify Service Object dialog box located in the Service Availability Manager GUI. Do not try to add or delete services using the Edit menu located in the Sun Management Center 3.5 console as doing so will affect the data integrity. See the following figure for an example of how to add a service object.
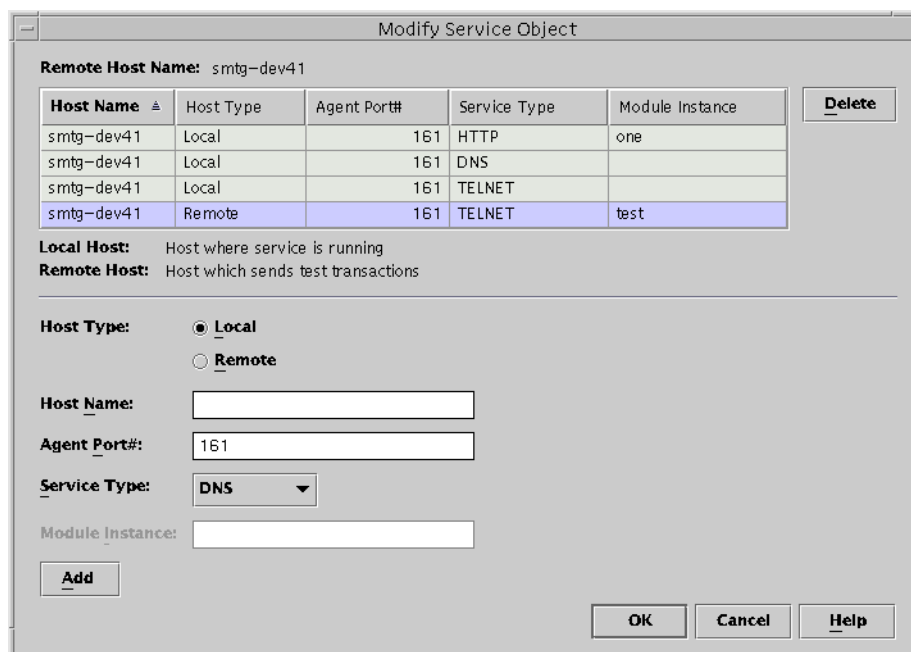
FIGURE 5–2 Adding a Service Object

▼ To Add a Service to the Service Object

1. **From the Sun Management Center 3.5 topology window menu, click mouse button three on the desired service object.**

   A pop-up menu appears.

2. **Choose Modify Service Object.**

   The Modify Service Object dialog box appears.

3. **Select the Local or Remote radio button in the Host Type field.**

4. **If needed, type the Host Name and Agent Port Number in the appropriate text fields.**

   For more information about these fields, see Appendix A.

5. **From the Service Type drop-down menu, select the name of the service you want to monitor.**

6. **If needed, provide the Module Instance in the text field.**

7. **Click Add.**

   Service Availability Manager enters the information to the table located at the top of the Modify Service Object dialog box. Verify that the information is correct.

8. **Click OK to add the entry to the service object and to exit.**

▼ To Delete a Service from the Service Object

1. **From the Sun Management Center 3.5 topology window menu, click mouse button three on the desired service object.**

   A pop-up menu appears.

2. **Choose Modify Service Object.**

   The Modify Service Object dialog box appears.

3. **Select the row that contains the service to be deleted.**

4. **Click the Delete button.**

   The row that contains the service is deleted from the table.

5. **Click OK to delete the entry from the service object and to exit.**

Service Manager GUI

The Service Manager GUI displays in a single view the availability of all the services contained in a service object. Service Manager is linked to the Sun Management Center 3.5 Java console only. Service Manager dynamically updates the data in the table to reflect the real time status of the services. You can choose to view details of a particular service, either from a local host or a remote host. You can also filter your display. For more information about filtering, see "Filtering Services" on page 36. See the following figure for an example of Service Manager.
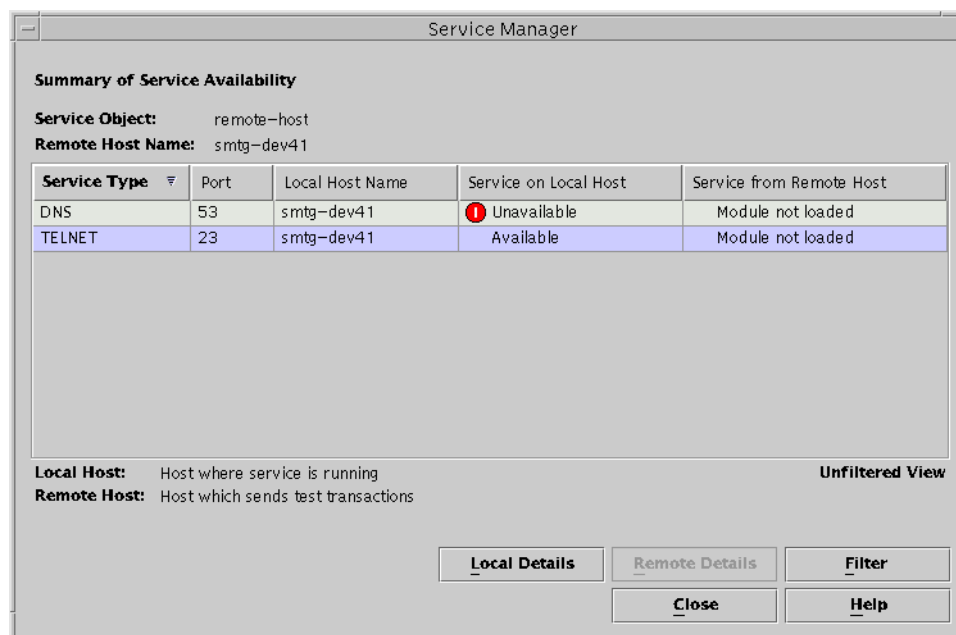
FIGURE 5–3 Service Manager

Use Service Manager or the Modify Service Object dialog box to access the services you are monitoring. You access Service Manager or the Modify Service Object dialogs boxes from a menu in the Sun Management Center 3.5 console.

▼ To Access Service Manager or Modify Service Object

1. **Discover a service object.**

   For more information, see "Creating Objects" in *Sun Management Center 3.5 User's Guide*

2. **Select the service object.**

3. **Click mouse button three to access the pop-up menu.**

   The menu lists two choices: Service Manager and Modify Service Object.

4. **From the menu, select either Service Manager or Modify Service Object.**

   - From Service Manager, you can view the status of the services you are monitoring.
   - From Modify Service Object, you can change the services contained in the service object.

Filtering Services

Service Availability Manager filters enable you to display only desired services. You can customize the display by choosing to filter by Alarms, Local Hosts, Available Services, Remote Host Access, or Local Host Access. A filtered view cannot be saved.

▼ To Filter a Service

1. **Access the Service Manager**

   For detailed steps, see "To Access Service Manager or Modify Service Object" on page 35.

2. **Click Filter in the Service Manager dialog box.**

   The Service Object Filter dialog box displays.

3. **Select the desired filtering options.**

   You cannot save a filtered view.

4. **Click OK to apply the filter and close the window.**

Configuration and Module Parameters Reference

The following table describes the configuration and module parameters for the Synthetic Transaction modules and Service Element modules.

TABLE A–1 Configuration and Module Parameters

Parameter Name	Parameter Description
Instance	Name of the module instance.
Description	Description of the instance.
Service Host	Name of the server where the service is running
Service Port	Port number where the service is running
Calendar	The name of a calendar which already exists on the calendar server to be monitored.
Time-out (sec)	Time-out interval for each request made to the server. Should have a positive value. Value of 0 nullifies the effect of timeout.
Login ID	Login ID to access the service. Required only for IMAP and POP3 modules.
Password	Password for the user. The IMAP and POP3 modules require a password. The password is passed in clear text during the synthetic transactions. The password is therefore not secure. Be certain that users for these modules have no privileges.
Domain Name	The domain name where the NIS lookup is done.

TABLE A–1 Configuration and Module Parameters   *(Continued)*

Parameter Name	Parameter Description
Email From	For the SMTP service, the email address of the sender of the mail. You should create an email account for each test on the system. The test email then has a destination. Failure to provide a destination may cause concurrent access problems, SMTP to reject mail requests. Undeliverable email will then end up at your root mail system.
Process Name	The name of the process to be monitored.
Argv Pattern of Process	Arguments to the process.
User ID of Process	The user ID of the process owner.
Process Count	The number of processes found matching process name, argv pattern of process and user ID of process.
Access Log File	The absolute path name of the HTTP server access log file. This file contains information about web server statistics. Only a file with common log file (CLF) format is supported. An alarm is displayed if the file does not exist, or if the file format is not CLF
Web Server Product Name	Product name of the web server.
Availability	Indicates the availability of the service. One of three states is returned: 1. Up: Indicates the service is available 2. Down: Indicates service is not available. Shows an alert if state is down. 3. Degraded: Indicates performance is not as expected. The module is able to run test transactions but the response times of the transactions exceeds the alarm thresholds specified. When the availability is degraded, an alarm is generated. The alarm severity is the highest severity of all alarms that is set on the response times of the transaction.
Reason for Non Availability	Indicates the likely reason for the service not being available. The reason the destination is unreachable indicates why the network or the host is unreachable. Not applicable is indicated when the service is not down.
Uptime (%)	The percentage of uptime for the corresponding server since the module started monitoring the service.

TABLE A–1 Configuration and Module Parameters   *(Continued)*

Parameter Name	Parameter Description
Mean Time To Recovery	The mean time to recovery since monitoring began. The value is calculated as the total downtime of service divided by the number of failures.
Mean Time Between Failure	The mean time between failure since you started monitoring. The value is calculated as the ideal uptime of the service divided by the number of failures.
Service Checked	Last time when the service was contacted.
Name	Row name.
Transaction Result	Indicates what happened to the transaction. One of two values is returned: 1. Success: Indicates that the transaction was successful. 2. Failure: Indicates that the transaction failed. Also lists the reason for failure, and displays a warning alarm.
Transaction Failure	If a transaction fails, this parameter indicates the reason for the failure. Examples of reasons are unknown server name, or unable to reach the server. Not applicable is indicated when the transaction was successful.
Lookup (ms)	Time taken to resolve the server name where service is running in milliseconds. You can set alarm thresholds on this property.
Connect (ms)	Total time to establish a connection with the service in milliseconds. You can set alarm thresholds on this property.
Data Transfer (Kbyte/sec)	Time from when the web page is requested until the web page is completely returned in kilobytes/second. You can set alarm thresholds on this property.
Transaction (ms)	Total time taken to complete whole transaction in milliseconds. This sum is the total network time plus the total server processing time. You can set alarm thresholds on this property.
Network (ms)	Total time spent in the network during the transaction in milliseconds. You can set alarm thresholds on this property.
Server processing (ms)	Total time taken in milliseconds by the server to process the transaction. You can set alarm thresholds on this property.
URL	HTTP page to test.

TABLE A–1 Configuration and Module Parameters   *(Continued)*

Parameter Name	Parameter Description
`Directory`	Directory on the FTP server in which to save the file in or to retrieve the file.
`Operation`	Indicates the type of FTP operation the user wants to monitor: 1. `get`, which indicates an FTP `get` operation. 2. `put`, which indicates an FTP `put` operation.
`File`	For FTP transactions, the name of file to `get` or `put`. For an FTP `put` operation, the file should first be `put` in `/var/opt/SUNWsymon/ftp/put`.
`Packet (KB)`	Size of the each packet during the FTP get/put operation in KB.
`Authentication (ms)`	Time to login to the server. FTP will log in as anonymous user.
`Data Transfer (ms)`	Time to transfer the file (`get` or `put`) in milliseconds.
`Host Name`	The host name to look up in the DNS server.
`IP address(es)`	IP address of the host.
`Host Lookup (ms)`	Time taken to resolve the host name in the DNS server in milliseconds.
`NIS Lookup`	Name to look up in the NIS domain. This could be a host, a user, a UNIX group, or a mail alias.
`NIS Map`	The NIS name services map. There are four default values: passwd, hosts, groups, and mail aliases. The name to be resolved should be one of these four types.
`Base DN`	The starting point for the search in the LDAP directory.
`Search Filter`	The filter is a string representation of the filter to apply in the search. Simple filters can be specified as attributetype=attributevalue.
`LDAP Lookup (ms)`	Time taken to resolve the name in the LDAP directory in milliseconds.
`Email To`	Email address to send the test message to.
`Email (KB)`	Size of the test message to be sent in KB.
`Message (KB)`	Size of the message to be retrieved from the mail servers. Default value is 1k. You can edit this row. The values are: 1k, 5k, 10k, 20k, and 25k.

TABLE A–1 Configuration and Module Parameters   *(Continued)*

Parameter Name	Parameter Description
`Get Message (ms)`	Time to retrieve a message from the mail server in milliseconds.
`User Name`	User name whose calendar has to be accessed. If this calendar does not exist in the server, you receive an error.
`Logfile`	Same as HTTP server's access log file.
`Total Operations`	Total number of operations performed by the service since it was started.
`Total Data Transferred (KB)`	Total data transferred in KB since the service was started.
`Total Files Transferred`	Total files transferred since the service was started.
`Total Errors`	Total errors encountered since the service was started.
`Total Server errors`	Total errors encountered with error code numbers 500 or higher since the service was started.

Installing Using the Command Line

This appendix contains procedures for installing and setting up the Service Availability Manager software using the command line. Command-line installation is provided as an alternative to using the installation wizard. For information about using the installation wizard, see Chapter 2.

This appendix discusses the following topics:

- "Installing the Service Availability Manager Software" on page 43
- "Setting Up Service Availability Manager" on page 45
- "Removing the Service Availability Manager Software" on page 45

For information about installing add-on software while installing Sun Management Center 3.5 at the same time, see *Sun Management Center 3.5 Installation and Configuration Guide*.

Installing the Service Availability Manager Software

Installation of the Service Availability Manager software using the command line follows the standard Sun Management Center 3.5 add-on software installation procedures. For more information about installation of add-on software using the command line, see *Sun Management Center 3.5 Installation and Configuration Guide*.

Service Availability Manager must be installed on the following layers of Sun Management Center 3.5:

- Server layer
- Agent layer, on all hosts from which you want to monitor a service

Installation on the console layer is optional.

The interactive `es-inst` installation script installs the correct Service Availability Manager packages for the agent and server layers. For the agent package, the module configuration files and libraries are stored in standard Sun Management Center locations.

▼ To Install Service Availability Manager During Sun Management Center 3.5 Installation

● **For information and detailed steps, see** *Sun Management Center 3.5 Installation and Configuration Guide***.**

▼ To Install Service Availability Manager Individually

1. **As superuser (`su -`), run the installation script by typing:**

   `# /opt/SUNWsymon/sbin/es-inst`

   where `/opt` is the directory in which Sun Management Center 3.5 is installed. Substitute the name of the actual directory if it is different on your system.

2. **Provide the source directory of the Service Availability Manager files when prompted.**

   ■ If installing from the software CD-ROM, type:

   `/cdrom/sunmanagementcenter_3_5/image`

   ■ If installing from a directory to which the software has been copied, type:

   disk1`/image`

   where *disk1* is the name of the location to where the software was copied.

3. **To install the Service Availability Manager, answer "Yes" when prompted.**

   The `es-inst` script installs Service Availability Manager.

   The `es-inst` script then automatically displays `setup` prompt.

4. **Determine whether you want to set up Service Availability Manager now or at a later time.**

   ■ To set up the software at a later time, answer n for "No". When you are ready to run the setup process, see "To Set Up Service Availability Manager Individually" on page 45.

   ■ To set up the software now, answer y for "Yes". The Sun Management Center 3.5 software is not setup again.

Setting Up Service Availability Manager

After installation is complete, you must run the Service Availability Manager `setup` script to configure the server and agent layers.

▼ To Set Up Service Availability Manager Individually

Note – This procedure assumes that you chose not to set up Service Availability Manager at the end of the installation process.

● **Run the Sun Management Center 3.5 `setup` script as superuser (`su -`). Choose one of the following options:**

  ■ To run setup on all components not yet set up, type:

    `# /opt/SUNWsymon/sbin/es-setup`

  ■ To run setup on the Service Availability Manager add-on software only, type:

    `# /opt/SUNWsymon/sbin/es-setup -p EServices`

  where `/opt` is the directory in which Sun Management Center 3.5 is usually installed. Substitute the name of the actual directory if it is different on your system.

Removing the Service Availability Manager Software

The `es-uninst` removal script removes the Service Availability Manager add-on software. This script removes the Service Availability Manager packages, and all data and configuration changes that were made during setup. You are given the option to preserve the data files before removing the software.

▼ To Remove Service Availability Manager Using `es-uninst`

1. **As superuser (`su -`), type:**

   `# /opt/SUNWsymon/sbin/es-uninst`

   where `/opt` is the directory in which Sun Management Center 3.5 is installed. Substitute the name of the actual directory if it is different on your system.

2. **Answer "No" to preserve the data files.**

3. **Select Service Availability Manager from the list of add-on software.**

   The Service Availability Manager packages, configuration files, and data files are removed.

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