



Sun Management Center 3.5 Update 1 Supplement

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Contents

Preface	5
1 New Features in Sun Management Center 3.5 Update 1	9
Installation and Configuration	9
Enhanced Java Console Navigation	10
Performance Reporting Manager (PRM)	10
Support for New Hardware Products	10
Java Console and Agent Available for Solaris x86 Architecture	11
Support for Microsoft Windows XP	11
2 Sun Management Center 3.5 Update 1 Installation and Configuration	13
Upgrade Path from 3.5 to 3.5 Update 1	13
Supported Platforms, Requirements, and Agent Resource Usage	14
Supported Platforms	14
JDK Version Requirements	14
Agent Resource Usage	15
Installation and Agent Update for x86	15
Installing the x86 Agent	15
Using the Agent-Update Image Feature for x86	17
Limitations to the x86 Agent	22
Documentation Installation	23
▼ To Install the Documentation Using pkgadd	23
▼ To Install the Documentation During Product Installation	24
▼ To View Documentation Directly From the Media	24
es-makeagent Operating System Selection	25

SNMP Encryption (Privacy)	25
Auto-Negotiate Feature	25
Enabling SNMP Encryption	26
Multiple Trap Destinations	27
Using the <code>es-trapdest</code> Command	27
Registration Trap Configuration	29
3 Alternative Methods for Accessing Java Console Functions	31
General Keyboard Navigation	31
Keyboard Shortcuts	32
Mnemonics	33
Images and Graphs	34
4 Performance Reporting Manager (PRM) Enhancements	35
System Uptime Statistics Reports	35
Automated CSV Generation	36
Additional Graph Options	37
Printing From the Java Console	37
5 Other Enhancements in Sun Management Center 3.5 Update 1	39
Developer Environment Enhancements	39
SMLogin Class Supports Alternate Locales	39
Production Environment Enhancements	39
Server Host Information	40
Licensing Information	40
Add-On Enhancements	40
Starting the Adaptor in Command Line Interface	40
Starting the Adapter in Graphical User Interface	40

Preface

The *Sun Management Center 3.5 Update 1 Supplement* describes new functionality in the Sun™ Management Center system management solution.

Note – In this document, the term “x86” refers to the Intel 32-bit family of microprocessor chips and compatible microprocessor chips made by AMD.

Who Should Use This Book

This book is intended for use by system administrators who have experience working with networks and understand networking terminology and technology. You should have a working knowledge of the Sun Management Center application and be familiar with the documentation for the Sun Management Center 3.5 core product and add-on products.

How This Book Is Organized

This document describes new functionality in Sun Management Center 3.5 Update 1. It contains the following chapters:

Chapter 1 provides an overview of the new features available in the Sun Management Center 3.5 Update 1 product.

Chapter 2 provides information about installation and configuration of the Sun Management Center 3.5 Update 1 product.

Chapter 3 describes alternative methods for accessing Java™ Console functions.

Chapter 4 describes enhancements to the Performance Reporting Manager (PRM).

Chapter 5 describes additional enhancements available in the Sun Management Center 3.5 Update 1 product.

Related Books

See the following Sun Management Center 3.5 documents for additional information about the procedures discussed in this supplement:

- *Sun Management Center 3.5 Installation and Configuration Guide*
- *Sun Management Center 3.5 Performance Reporting Manager User's Guide*

Note – For a complete list of related books, see the *Sun Management Center 3.5 Update 1 Release Notes* available only online at <http://docs.sun.com>.

Product Information

Information about this product is available at the Sun Management Center web site at <http://www.sun.com/sunmanagementcenter/>.

The Sun Management Center 3.5 Update 1 product includes open source software. To view license terms, attribution, and copyright statements for the open source software, see the copyright file located at the following default path:
`/cdrom0/image/Webserver/Solaris_9/SUNWtcatr/install/copyright.`

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Typographic Conventions

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

TABLE P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name% you have mail.</code>
AaBbCc123	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new terms, or terms to be emphasized	Read Chapter 6 in <i>User's Guide</i> . These are called <i>class</i> options. You must be <i>root</i> 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-2 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	#

New Features in Sun Management Center 3.5 Update 1

Note – For the latest information on Sun Management Center 3.5 Update 1, see the *Sun Management Center 3.5 Update 1 Release Notes* available only online at <http://docs.sun.com>.

The Sun Management Center 3.5 Update 1 product has new features in the following areas:

- “Installation and Configuration” on page 9
- “Enhanced Java Console Navigation” on page 10
- “Performance Reporting Manager (PRM)” on page 10
- “Support for New Hardware Products” on page 10
- “Java Console and Agent Available for Solaris x86 Architecture” on page 11
- “Support for Microsoft Windows XP” on page 11

Installation and Configuration

Sun Management Center 3.5 Update 1 provides several new features related to installation and configuration:

- Upgrade path from Sun Management Center 3.5 to Sun Management Center 3.5 Update 1
- SNMP encryption (privacy)
- Documentation installation as part of the product installation process
- Ability to specify an operating system as a parameter to the `es-makeagent` command

- Ability to configure agents to use multiple trap destinations by using the `es-trapdest` command
- Ability to configure agents to send the registration trap at a custom interval

For more information on these new features, see Chapter 2.

Enhanced Java Console Navigation

The Sun Management Center Java™ Console has been enhanced to provide alternative methods for accessing Java Console functions. For more information on these enhancements, see Chapter 3.

Performance Reporting Manager (PRM)

The Performance Reporting Manager (PRM) has been enhanced to provide the following features:

- New reports for system uptime statistics
- Scheduled reports can be generated in CSV (comma separated values) format
- New graphing options: stacked area charts and stacked bar charts
- Reports can be printed directly from the Java Console

For more information about these new features, see Chapter 4.

Support for New Hardware Products

Sun Management Center 3.5 Update 1 includes support for the following new platforms and products:

- Sun Fire™ V210, V240, V250, V440, E25K, E20K, E6900, and E4900 systems
- Sun Blade™ 1500, 2500 systems
- PCI+ support for Sun Fire Midrange systems
- UltraSPARC® IV CPU board support for 6800 and 4800 systems
- hPCI+ board and CP2140 system controller for Sun Fire High-End systems

For a list of other supported hardware, see the “Hardware-Specific Module Availability” in *Sun Management Center 3.5 Installation and Configuration Guide*.

Java Console and Agent Available for Solaris x86 Architecture

Sun Management Center 3.5 Update 1 supports the Java Console and the agent layer on Solaris™ x86 architecture. The Solaris x86 support is available on the Solaris 9 release only for the core product and specific add-ons.

The following add-ons are supported on x86:

- Advanced System Monitoring
- Performance Reporting Manager
- Service Availability Manager
- System Reliability Manager

The Java Console on x86 has the same look and feel as the Java Console running on SPARC™ architecture.

For more information on these features, see Chapter 2.

Support for Microsoft Windows XP

Sun Management Center 3.5 Update 1 now supports Microsoft Windows XP for the Java Console.

Sun Management Center 3.5 Update 1 Installation and Configuration

Sun Management Center 3.5 Update 1 is installed and configured with the same procedures as Sun Management Center 3.5 except for minor differences for the x86 agent. For information on installing, configuring, or upgrading from previous product releases, see the *Sun Management Center 3.5 Installation and Configuration Guide*.

This chapter discusses the following topics that pertain to the installation and configuration of Sun Management Center 3.5 Update 1:

- “Upgrade Path from 3.5 to 3.5 Update 1” on page 13
- “Supported Platforms, Requirements, and Agent Resource Usage” on page 14
- “Installation and Agent Update for x86” on page 15
- “Documentation Installation” on page 23
- “SNMP Encryption (Privacy)” on page 25
- “Multiple Trap Destinations” on page 27
- “Registration Trap Configuration” on page 29

Upgrade Path from 3.5 to 3.5 Update 1

Upgrading from Sun Management Center 3.5 to Sun Management Center 3.5 is similar to the upgrading procedure from Sun Management Center 3.0 to Sun Management Center 3.5. For details on upgrading, see “Upgrading From Sun Management Center 3.0” in *Sun Management Center 3.5 Installation and Configuration Guide*.

On an installed, set up, and running Sun Management Center 3.5 host, do the following:

1. Run `es-inst` from the 3.5 Update 1 source image.
This uninstalls Sun Management Center 3.5 and asks you whether to preserve the data.
2. Type `y` to preserve the data.

After uninstallation of Sun Management Center 3.5 components, the new packages for Update 1 are installed. The Installer takes you to setup. The setup detects the preserved data and asks you whether or not to migrate the data.

3. Type **y** to migrate the data.

The upgrade procedure is complete.

Supported Platforms, Requirements, and Agent Resource Usage

This section gives updated information on supported platforms, requirements, and agent resource usage for Sun Management Center 3.5 Update 1.

Supported Platforms

Sun Management Center 3.5 Update 1 supports the same operating environments as Sun Management Center 3.5. The following table lists the supported platforms. For more information, see the *Sun Management Center 3.5 Installation and Configuration Guide*.

TABLE 2-1 Supported Platforms

Sun Management Center 3.5 Update 1 Component	Operating System
Agent (SPARC)	Solaris 2.6, Solaris 7, Solaris 8, Solaris 9 releases
Agent (x86)	Solaris 9 release
Server	Solaris 8, Solaris 9 releases
Console	Solaris 2.6, Solaris 7, Solaris 8, Solaris 9 releases Microsoft Windows 98, Microsoft Windows NT SP 4 or later, Microsoft Windows 2000 Professional

JDK Version Requirements

Sun Management Center 3.5 Update 1 requires JDK 1.4.2 for the Sun Management Center server layer. The JDK 1.4.2 is shipped with Sun Management Center 3.5 Update 1 and can be found on the Sun Management Center 3.5 Update 1 Software CD 1 of 2 in the directory `JDK1.4.2_03`.

For more information, see the `README.html` file in the `JDK1.4.2_03/Solaris` directory and the “JDK Version Requirements” in the *Sun Management Center 3.5 Installation and Configuration Guide*.

Agent Resource Usage

The following table gives estimates of the agent CPU and RAM usage by system type and includes information for the x86 agent.

TABLE 2-2 Agent CPU and RAM Use Estimates by System Type

Server Type	Heavy or Light Configuration	CPU Usage			RAM Usage	
		Maximum	Minimum	Average	Average Size	Average Resident Size
Netra X1	Light	4.10%	0.0%	0.05%	10 Mbytes	9 Mbytes
Sun Enterprise 420R	Light	3.17%	0.0%	0.02%	9 Mbytes	8 Mbytes
Sun Blade 1000	Light	0.38%	0.0%	0.02%	10 Mbytes	9 Mbytes
Sun Blade 100	Heavy	9.16%	0.04%	0.65%	13 Mbytes	12 Mbytes
B100x with 1 CPU at 1533 MHz (x86)	Light	1.07%	0.06%	0.25%	3 Mbytes	3 Mbytes

Installation and Agent Update for x86

Installing and updating the x86 agent is similar to the SPARC procedures with some minor differences.

Installing the x86 Agent

You can install the x86 agent by using the command-line installation script, `es-inst`, or by using the graphic user interface installer, `es-guiinst`.

▼ To Install the x86 Agent Using the Command-Line Installation Script

1. Log in as root on the machine where you want to install the x86 agent.
2. In the `/etc/nsswitch.conf` file, ensure that the `group` entry has `files` as the first token.

```
group: files nis
```

3. Review the README file, either `/cd-rom-mount-point/disk1/x86/sbin/README.INSTALL` or `/cd-image-dir/disk1/x86/sbin/README.INSTALL`.

4. Run the command-line installer at the following location.

- If you are installing from CDs, insert disk 1 and then type:

```
cd-rom-mount-point/x86/sbin/es-inst
```

If you are prompted for disk 2, insert disk 2 and then type:

```
cd-rom-mount-point/x86/image
```

- If you are installing from a CD image, type:

```
cd-image-dir/disk1/x86/sbin/es-inst
```

where `cd-image-dir` is the directory where you copied the installation CD or where you downloaded and untarred the installation image from the Web.

5. Follow Steps 5 to 18 in “To Install Using the `es-inst` Script” in the *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Install the x86 Agent Using the GUI

1. Open a terminal window, then type the command `xhost +` in the terminal window.
Also, ensure that the `DISPLAY` environment variable is set to the machine’s display.

2. Log in as root on the machine where you want to install the x86 agent.
3. Make sure that the `group` entry in the `/etc/nsswitch.conf` has `files` as the first token.

```
group: files nis
```

4. Review the README file, either `/cd-rom-mount-point/disk1/x86/sbin/README.INSTALL` or `/cd-image-dir/disk1/x86/sbin/README.INSTALL`.

5. Run the GUI installer at the following location.

```
cd-rom-mount-point/x86/sbin/es-guiinst
```


If you are prompted for disk 2, insert disk 2 and then type:

```
cd-rom-mount-point/x86/image
```

6. **Follow Steps 6 to 18 in “To Install Sun Management Center 3.5 on the Solaris Platform” in the *Sun Management Center 3.5 Installation and Configuration Guide* as appropriate.**

Using the Agent-Update Image Feature for x86

When you use the agent update feature, you create a single image and apply it to multiple hosts. You need to create separate update images for SPARC and x86. The procedures for creating and applying agent-update images varies slightly for x86. For general information on creating an agent installation and update image, see “Creating Agent Installation and Update Images” in the *Sun Management Center 3.5 Installation and Configuration Guide*.

You can create the agent-update image by using the `es-gui-imagetool`, which has a graphical user interface, or by using the `es-imagetool`, which has a command-line interface.

▼ To Create an Agent-Update Image Using `es-gui-imagetool` for x86

1. **Log in as root on the Sun Management Center 3.5 Update 1 server machine.**
2. **Run the Sun Management Center 3.5 Update 1 GUI image tool by typing the following command:**

```
# /opt/SUNWsymon/sbin/es-gui-imagetool
```

The Welcome screen appears. Click Next. The Overview screen appears, listing the information that you might need to provide. Click Next.

The Select Update-Image Components screen appears.

3. **Select the update-image components.**

Four choices are provided:

- Base Agent Packages
- Add-on Agent Packages
- Base and Add-on Agent Packages
- Base and Add-on Agent Patches Only

Note – Any patches needed for a selected package are automatically included when you select the package. If you want to install base agent patches and add-on agent patches only, select Base and Add-on Agent Patches Only.

Select the type of update-image that you want to create, and then click Next. The Specify the Installation Files Source Directory screen appears.

4. Provide the name of a valid Sun Management Center 3.5 Update 1 source directory.

The installation source default `/cdrom/cdrom0/image` is displayed.

- If you are installing from CDs, insert Sun Management Center 3.5 Update 1 Software CD 1 of 2 in the CD-ROM drive.

Enter the following path:

`/cd-rom-mount-point/x86/image`

- If you are installing from a Sun Management Center 3.5 Update 1 image on disk, type the path to the `disk1/x86` in the Source Directory field. For example, type:

Source Directory: `cd-image-dir/disk1/x86/image`

Click Next.

5. Follow Steps 5 to 12 in “To Create an Agent-Update Image Using es-gui-imagetool” in the *Sun Management Center 3.5 Installation and Configuration Guide* as appropriate.

Note – When you are asked to provide a name for the agent update-image, it is recommended that you use a naming convention that indicates the x86 architecture, for example, **x86baseagent**.

6. Apply the agent-update image by following “To Install or Update Agents From an Agent-Update Image Using agent-update-bin for x86” on page 20.

▼ **To Create an Agent-Update Image Using es-imagetool for x86**

1. Log in as root on the Sun Management Center 3.5 Update 1 server machine.
2. Run the Sun Management Center 3.5 Update 1 command-line image tool by typing the following command:

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

3. Select the components to update.

You are prompted to select the components that you want to add to the update-image, for example:

```
Select the components you want to add to the update-image.
```

```
Do you want to upgrade components of Base Agent? [y|n|q] y
```

```
Do you want to install/upgrade components of Addons? [y|n|q] y
```

Type **y** to add the component to the update-image, or type **n** to exclude the component from the update-image.

You are prompted for a valid source directory.

4. Provide the name of a valid Sun Management Center 3.5 Update 1 source directory.

- If you are installing from CDs, insert Sun Management Center 3.5 Update 1 Software CD 1 of 2 in the CD-ROM drive and type the path to the Sun Management Center 3.5 Update 1 installation directory for x86.

```
Enter a valid source directory: /cdrom-mount-point/x86/image
```

- If you are installing from a Sun Management Center 3.5 Update 1 image on disk, type the path to the image disk1/x86/image directory. Type:

```
Enter a valid source directory: /cd-image-dir/disk1/x86/image
```

5. Follow Steps 5 to 9 in “To Create an Agent-Update Image Using es-imagetool” in the *Sun Management Center 3.5 Installation and Configuration Guide* as appropriate.

Note – When you are asked to provide a name for the agent update-image, it is recommended you use a naming convention that includes the x86 architecture. For example, type **x86baseagent**.

6. Apply the agent-update image by following “To Install or Update Agents From an Agent-Update Image Using agent-update-bin for x86” on page 20.

Note – Because Sun Management Center 3.5 Update 1 is the first version to have the x86 agent, you can update agents initially by using the `agent-update.bin` method only. For incremental add-on installations of agents, you can use the manage jobs tasks, described in “To Install Agents From an Agent-Update Image Using the Manage Jobs Task” in the *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Install or Update Agents From an Agent-Update Image Using `agent-update-bin` for x86

1. **Log in as root on the Sun Management Center 3.5 Update 1 server machine.**
2. **Create an agent-update image using either of the image tools.**
 - To create an agent-update image using `es-gui-imagetool`, follow the instructions in “To Create an Agent-Update Image Using `es-gui-imagetool` for x86” on page 17.
 - To create an agent-update image using `es-imagetool`, follow the instructions in “To Create an Agent-Update Image Using `es-imagetool` for x86” on page 18.
3. **Download the appropriate `agent-update.bin` from the Sun Management Center server to each target machine’s root directory.**
 - For x86 agents, the file is found in `/opt/SUNWsymon/base/bin/i386-sun-solaris/agent-update.bin`.
 - For SPARC agents, the file is found in `/opt/SUNWsymon/base/bin/sparc-sun-solaris/agent-update.bin`.
4. **Log in as root on the target machine.**
5. **Go to the directory where you downloaded `agent-update.bin`.**
6. **Type `./agent-update.bin -s server -r http-port -p image-name`, where**
 - `server` is the server that you logged into in Step 1.
 - `http-port` is the Sun Management Center 3.5 Update 1 Web server port.
 - `image-name` is the name of the agent-only image you created in Step 2.

For example, assume that the Sun Management Center 3.5 Update 1 server name is `Production1` and that the Web server port is `8080`. Also, assume that the agent-update image name is `x86baseagent`. You would then type:

```
# ./agent-update.bin -s Production1 -r 8080 -p x86baseagent
```

7. **Provide the security seed and the SNMPv1 community string.**

The agent-update process prompts you for the security seed and the SNMPv1 community string.

 - The security seed must be the same seed that you provided when you set up the Sun Management Center 3.5 Update 1 server and agent.
 - The SNMPv1 community string must be the same community string you provided when you set up the Sun Management Center 3.5 Update 1 server and agent.

The update process applies the update to the machine without prompting for further information.

When the update process completes, check the update status by viewing the log file `/var/opt/SUNWsymon/log/agent-update.log` on the target machine.

▼ To Create an Agent-Only Installation Image Using `es-makeagent` for x86

1. **Log in as root.**
2. **Put the Sun Management Center 3.5 Update 1 Software CD 1 of 2 in the CD-ROM drive.**
3. **Type the command `/opt/SUNWsymon/sbin/es-makeagent`.**
You are prompted for the installation source files directory.

4. **Type the source directory.**

If you are installing from CD-ROM, type:

```
cdrom-mount-point/x86/image
```

If you are installing from a CD image, type:

```
cdrom-image-dir/x86/image
```

5. **Type the name of the target directory.**

If the directory does not exist, you are asked whether you want to create it. Type **y** to create the directory, or type **n** or **q** to exit to the system prompt.

The directory you specify must have write permission for root.

For example:

```
# enter the target directory: /es-makeagent-image
Directory /es-makeagent-image does not exist
Do you want to create it (y|n|q) y
```

The `es-makeagent` script creates the subdirectories `disk1` and `disk2` in the directory you specified, and then copies the files required to the subdirectories.

When `es-makeagent` completes copying files from Sun Management Center 3.5 Update 1 Software CD 1 of 2, the CD is ejected, and you are prompted to insert the second CD or specify the source directory for disk 2.

- a. **Remove the first Sun Management Center 3.5 Update 1 installation CD.**

Place the Sun Management Center 3.5 Update 1 CD 2 of 2 in the CD-ROM drive, then close the drive.

- b. **When the CD-ROM drive LED turns off, press Return.**

`es-makeagent` copies the remaining files from the CD.

You are informed that the agent-only product is available in the directory you specified. The command required to install the agent on the local machine is also displayed.

Tip – Mount the target directory using NFS, so that the directory is accessible by other machines on your network.

6. Type the command `eject` to eject the CD.

You can now install the Sun Management Center 3.5 Update 1 x86 agent using any of the following methods.

- Use the `es-inst -a` command. When prompted for the installation source directory, provide the name of the agent-only installation image that you specified. Make sure that you have shared the agent-only installation image by using Network File Sharing.
- Apply the agent-only installation image using the JumpStart software.

Note – The agent-only installation image also contains a tar file that you can `ftp` to other agent machines and uncompress on each agent machine to create an installation image. The uncompressed installation image directory contains the subdirectories `disk1` and `disk2`. To install from the uncompressed image on each agent machine, change directory to the `disk1/sbin` directory, and use the `es-inst` command.

Limitations to the x86 Agent

The Solaris x86 agents do not support any hardware-specific add-ons. The x86 agents have modules under the Operating System, Local Applications, and Remote Systems categories of the Module Browser tab in the Host Details window. Features such as Physical View, Logical View, Hardware Diagnostic module, and the Config Reader module are not yet available on the Solaris x86 platform.

In the Java Console window, all x86 platforms have the same x86 icon. For example, two different x86 platform machines, such as the LX50 and the VX60, would both have the same icon.

You can filter by platform type when you use the Discovery feature, the Manage Jobs feature, or the PRM add-on. You can filter for the x86 platform by selecting x86 as the platform option.

For the Performance Reporting Manager (PRM) add-on, no system reports and hardware configuration reports are available.

Documentation Installation

Sun Management Center 3.5 Update 1 gives you the option of installing the product documentation packages (SUNWpsmd and SUNWsmc) during product installation. Both the GUI and command line installation ask you to specify whether you want the documentation to be installed into your own environment. Online help for is always installed with the product.

In addition, you can directly view the documentation in HTML or PDF from the Sun Management Center 3.5 Update 1 Software CD 2 of 2.

▼ To Install the Documentation Using pkgadd

1. **Log in as superuser (su) on the machine on which you want to install the documentation packages.**

This machine might be a documentation server or an administrative console.

2. **Ensure that the SUNWdocs package is already installed by typing:**

```
# pkginfo | grep SUNWdocs
```

If the package is installed, the system shows:

```
application SUNWdocs
```

3. **Insert the Software CD 2 of 2 CD into the CD-ROM drive.**

The Volume Manager (vold) should mount the media automatically.

4. **Change to the following directory:**

```
# cd /cdrom/cdrom0/image/PE/CommonForSolaris/Basic
```

5. **Install the packages by typing the following command:**

```
# pkgadd -d .
```

where -d means from the device and the period (.) means to install from the current directory.

6. **Select the documentation collections that you want to install from the list.**

All is the default.

The documentation is installed in `/var/opt/sun_docs/sundocs.html`.

7. **(Optional) View the documentation by opening**

`/var/opt/sun_docs/sundocs.html` in your web browser.

▼ To Install the Documentation During Product Installation

1. **Follow the directions in the *Sun Management Center 3.5 Installation and Configuration Guide*.**
For directions on using the graphical user interface installation `es-guiinst`, see Chapter 6.
For directions on using the command line installation `es-inst`, see Appendix B.
2. **After you select a language during installation, type `y` at the prompt that asks whether to install the product documentation:**
3. **(Optional) View the product documentation by opening `/var/opt/sun_docs/sundocs.html` in your web browser.**

▼ To View Documentation Directly From the Media

1. **Launch your browser.**
2. **Insert Sun Management Center 3.5 Update 1 Software CD 2 of 2.**
3. **Open the file by choosing the appropriate Open command from the File menu and typing:**
`cdrom-mount-point/image/index.html`
4. **At “Sun Management Center 3.5 Update 1 Software Collection,” select the appropriate language and format for the documentation.**

Note – Even though online help and other documentation were not revised for this release and are labeled for Sun Management Center 3.5, they still apply to the product. For documentation issues for the Sun Management Center 3.5 Update 1 collection, see the appropriate release notes and supplements and the *Sun Management Center 3.5 Update 1 Release Notes*.

es-makeagent Operating System Selection

When creating an agent-only installation image using the `es-makeagent` command, you can now specify which operating systems to include in the image. Only the packages specific to the specified operating systems are included in the image. You can specify the following versions of the Solaris software:

- Solaris 2.6
- Solaris 7
- Solaris 8
- Solaris 9

The Solaris 9 release supports x86 agents as well as SPARC agents.

SNMP Encryption (Privacy)

Sun Management Center 3.5 Update 1 supports encryption of SNMP communications between server and agent components of Sun Management Center. SNMP encryption support uses the CBC-DES symmetric encryption algorithm. Note the following:

- SNMP encryption on *both* the Sun Management Center server and agent hosts depends on the `SUNWcry` package. You must install this package separately.
- SNMP encryption is not supported on Sun Management Center 3.5 and earlier servers and agents even if `SUNWcry` is installed.
- SNMP encryption support is automatically configured during agent or server setup if the `SUNWcry` package is detected.
- If SNMP encryption is supported by the agent, SNMP encryption can be enabled on Sun Management Center servers using the `es-config` script. By using this script, you can turn on or off the auto-negotiate feature. For details, see “Enabling SNMP Encryption” on page 26.

Auto-Negotiate Feature

Sun Management Center 3.5 Update 1 servers that support encryption can be set up to support agents dynamically regardless of whether those agents support encryption. This feature is called auto-negotiate and can be set to on or off.

When you set the auto-negotiate feature to off, you ensure that the server *always* uses encryption when initiating communication with agents. Environments with strict security policies might prefer this set up. If you set auto-negotiate to off:

- If the agent supports encryption, the agent understands the encrypted SNMP messages.
- If the agent does not support encryption, the agent does not understand the encrypted message. Thus, a timeout occurs and a console message states, "Agent is not responding." The timeout is recorded in the agent log.

When you set the auto-negotiate feature to on, the server encrypts its SNMP communication with an agent only if the agent supports encryption. As a result, the one of the following events occurs:

- If the agent supports encryption, the agent understands the encrypted SNMP messages.
- If the agent does not support encryption, the SNMP messages are *authenticated only* and not encrypted.

Enabling SNMP Encryption

To find the current state of SNMP encryption, run the `es-config` command with no arguments.

▼ To Enable SNMP Encryption for Server Installations

1. **Make sure the `SUNWcry` package, which contains the `/usr/lib/libcrypt_d.so` encryption library, is installed on the system by typing:**

```
% pkginfo | grep SUNWcry
```

If the package is installed, the system shows:

```
application SUNWcry
```

Note – The `SUNWcry` package is part of the Solaris Encryption Kit. To obtain the Solaris Encryption Kit, see your Sun sales representative. For important information about administering secure systems, see your Solaris system administration documentation.

2. **Type the following command as superuser from the agent host:**

```
# es-config -r
```

The system detects whether the `SUNWcry` package is present and automatically stops all Sun Management Center components. The script then asks for the security

seed.

3. Type the security seed.

The script asks for the SNMPv1 community string.

4. When asked whether you want to initiate encrypted communication, type *y* to initiate encrypted communication or *n* to decline.

5. When asked whether you want to enable the auto-negotiate feature, type *y* to enable or *n* to decline.

For details on the auto-negotiate feature, see “Auto-Negotiate Feature” on page 25.

Note – If the `SUNWcry` package is added or is removed after the initial agent setup, use the `es-config` script to enable SNMP encryption for the agent.

Multiple Trap Destinations

You can specify multiple secondary trap destinations for Sun Management Center agents with the `es-trapdest` command. *Secondary* trap destinations (zero or more) receive the same set of traps that are sent to the primary trap destination. Secondary trap destinations do not receive event traps. By default, all traps sent to secondary destinations use SNMPv2c with a community of `public`. The security level for secondary destinations is `noauth`.

Using the `es-trapdest` Command

Secondary trap destinations are managed with the `es-trapdest` command. You can use the following options with the command.

TABLE 2-3 `es-trapdest` Options

To do this	Type
List the currently specified secondary trap destinations	<code>es-trapdest -l</code>
Delete a currently specified secondary trap destination	<code>es-trapdest -d n</code> where <i>n</i> is the number of the currently specified secondary trap destination you want to delete as displayed by the <code>es-trapdest -l</code> command.

TABLE 2-3 `es-trapdest` Options (Continued)

To do this	Type
Add a new secondary trap destination	<code>es-trapdest -a host:port</code> where <i>host</i> is the name of the destination host and <i>port</i> is the number of the destination port.

You can also specify the following optional parameters when adding a new secondary trap destination with the `es-trapdest -a` command:

- `-v version` Specify SNMP version: SNMPv1, SNMPv2c, or SNMPv2u
- `-u user` Specify the SNMP community or user name
- `-f filter` Specify the trap filter

Trap Filter Specification

Trap filters are specified as a list of criteria, which can be either a series of numerical OID prefixes or a series of these mnemonic trap names:

- `sunmcTraps`
- `snmpTraps`
- `coldStart`
- `warmStart`
- `linkDown`
- `linkUp`
- `authenticationFailure`

The trap name `sunmcTraps` represents the OID prefix for all Sun Management Center enterprise-specific traps, and the trap name `snmpTraps` represents the OID prefix for all the standard traps defined in the SNMP RFCs.

Trap filters can be either positive or negative. A *positive* filter specifies which traps to send. A negative filter specifies which traps should *not* be sent. A *negative* filter is defined by specifying `NOT` as the first criterion.

For example, to forward only standard SNMP traps to the secondary trap destination, specify the filter as `-f "snmpTraps"`.

To forward all traps *except* Sun Management Center enterprise-specific traps to the secondary trap destination, specify the filter as `-f "NOT sunmcTraps"`.

Note – Filter specifications that contain spaces must be enclosed in quotation marks to prevent misinterpretation by the shell.

The following command adds `machine02:162` as a secondary trap destination that only receives `warmStart` and `coldStart` traps for the Sun Management Center agent:

```
es-trapdest -a machine02:162 -f "warmStart coldStart"
```

Platform Agent Instances

Each instance of a platform agent can have its own set of secondary trap destinations. To specify secondary trap destinations for a particular instance of a platform agent, use the `-c instance` option to the `es-trapdest` command, where *instance* is the name of the platform agent instance. If the `-c` is not specified as an argument to the `es-trapdest` command, the `es-trapdest` command uses the default value of agent, which manages the secondary trap destinations for the Sun Management Center agent component.

Registration Trap Configuration

You can configure the agent to send the registration trap at a custom interval. The parameter `agentRegisterHoldOff` controls the initial delay in sending the first registration trap. By default, the value of this parameter is set to 90 seconds. You can change this parameter value in the file `/var/opt/SUNWsymon/cfg/domain-config.x`. For example, to set the value to 120 in the file, you would type:

```
agent = {
  agentServer = <myHostname>
  ..
  agentRegisterHoldOff = 120
}
```

The value for this parameter should be between the minimum of 60 seconds and a maximum of 300 seconds.

If for some reason the initial trap is lost and is not received by the configuration server, the parameter `agentRegisterRetry` controls the interval for resending of the agent registration trap. The parameter has a default value of 300 seconds. If the registration trap is lost, the agent resends the registration trap at the retry interval until it is received by the configuration server.

You can change the parameter value from a minimum of 300 seconds to a maximum of 900 seconds. For example, to set the value to 450 in the file, you would type:

```
agent = {
  agentServer = <myHostname>
  ..
```

```
agentRegisterRetry = 450  
}
```

If you specify a value below the minimum, the system uses the minimum value (300 seconds). If you specify a value higher than the maximum, the system uses the maximum value (900 seconds). If you do not specify any values, the system uses the default value of 300 seconds.

Alternative Methods for Accessing Java Console Functions

The Sun Management Center 3.5 Update 1 provides the following features. These enable you to perform management functions using your preferred interface mechanism (command line or Java-based console):

- All images have associated tooltips
- All fields have an associated Accessible Name
- All screens have an Accessible Description

In addition, the Java Console enables you to perform functions using your keyboard as well as your mouse.

This chapter describes the following features provided for the Java Console:

- “General Keyboard Navigation” on page 31
- “Keyboard Shortcuts” on page 32
- “Mnemonics” on page 33
- “Images and Graphs” on page 34

General Keyboard Navigation

The Java Console indicates the active window component, called the *focus*, by either a blinking cursor or, in the case of buttons or checkboxes, a blue border. On some screens, a default button might be identified by a black border. To change focus or activate a button, use the appropriate mechanism:

- To move from field to field within a window, use the Tab key. To move backward through the fields, use Shift+Tab. If you are in an element such as a field that allows tabs to be used, then use Ctrl+Tab and Ctrl+Shift+Tab to move through the fields.

- Within a group of components, use the arrow keys to move up and down. For example, once you have tabbed to a particular list-item field, use the arrow keys to move among the list items.
- To select a button on a window, change focus to the button, then use the spacebar to activate the button.
- When a default button is identified on a window, press the Return key to activate that function.
- To navigate through a hierarchical topology, use the up and down arrow keys to move between levels. Use the left arrow key to expand a level and the right arrow key to collapse a level.

Keyboard Shortcuts

Keyboard shortcuts are keystroke combinations that activate a menu item from the keyboard even if the menu for that command is not currently displayed. Keyboard shortcuts usually consist of a modifier key and a character key, like Ctrl+Z, or a few special keys, such as F1 and Delete. Unlike mnemonics, keyboard shortcuts do not display menus. They perform the indicated actions directly.

Table 3–1 provides a list of the standard keyboard shortcuts that the Java Console supports.

TABLE 3–1 Common Java Console Navigation and Activation Keys

Keyboard Operation	Action
Tab	Navigates to the next focusable component
Shift+Tab	Navigates to the previous focusable component
Control+Tab	Navigates to the next focusable component. This works even if the component that previously had focus accepts tabs.
Left Arrow	Moves focus left one character or component
Right arrow	Moves focus right one character or component
Up arrow	Moves focus up one line or component
Down arrow	Moves focus down one line or component
Page Up	Moves up one pane of information
Page Down	Moves down one pane of information

TABLE 3-1 Common Java Console Navigation and Activation Keys *(Continued)*

Keyboard Operation	Action
Home	Moves to the beginning of the data; in a table, moves to the beginning of a row
End	Moves to the end of the data; in a table, moves to the last cell in a row
Return	Activates the default command button
Escape	Dismisses a menu or dialog box without changes; cancels a drag-and-drop operation in progress
Spacebar	Activates the component that has keyboard focus

Mnemonics

Mnemonics provide another keyboard alternative to the mouse. A mnemonic is an underlined alphanumeric character in a menu title, menu item, or other interface component. A mnemonic reminds you how to activate the equivalent command by simultaneously pressing the Alt key and the character key that corresponds to the underlined letter or numeral.

When the keyboard focus is not in a text element, you do not always need to use the Alt key. For example, to choose the Exit command from the File menu, you can hold down the Alt key and press F to display the File menu, release the Alt key, and then press X.

Once you have displayed a menu with a keyboard sequence, any subsequent keypress activates a command only from that menu. For example, you can press Alt+F to display the File menu and then type A to activate the Save As command, or press Alt+E to display the Edit menu, and then type A to activate the Select All command.

All menu items in Sun Management Center 3.5 Update 1 have mnemonics. A given letter might apply to a different function, depending on the menu or the window.

Images and Graphs

Throughout the Java Console, images indicate screen navigation. These images contain alternative text that you can display when you move your mouse over the image or use other similar technology. In addition, some graphs also provide a text-only view of the data in tabular format. Look for this feature on the graph windows.

Performance Reporting Manager (PRM) Enhancements

Sun Management Center 3.5 Update 1 provides a number of enhancements to the Performance Reporting Manager (PRM). For a complete discussion of the concepts and terminology discussed in this chapter, see the *Sun Management Center 3.5 Performance Reporting Manager User's Guide*.

This chapter discusses the following enhancements to the Performance Reporting Manager in Sun Management Center 3.5 Update 1:

- "System Uptime Statistics Reports" on page 35
- "Automated CSV Generation" on page 36
- "Additional Graph Options" on page 37
- "Printing From the Java Console" on page 37

System Uptime Statistics Reports

PRM System Uptime Reports compute system uptime and downtime based on the records entered in the `/var/adm/wtmpx` file by Solaris commands like `shutdown`, `init`, and so on.

The PRM module on the agent maintains a timestamp updated every five minutes to account for system downtime caused by power outages or by commands that do not update the `wtmpx` file. When a condition does not put an entry into the `wtmpx`, then the last known timestamp is used as an approximate downtime record for computing the system downtime.

The PRM 3.5 Update 1 installation is required on the agent and server machines to account for system downtime caused by power outages or by commands that do not update the `wtmpx` file.

Three new standard reports based on uptime status are provided:

- Uptime Status Reports — Display the date ranges for which the system was up and the date ranges for which the system was down for the specified hosts for the specified date ranges.
- Percentage Uptime Reports — Display the uptime in percentage and the downtime in percentage for the specified hosts for the specified date range. Percentage Uptime Reports can be run in two modes: Detailed or Total.
 - Percentage Uptime (Detailed) — Detailed Percentage Uptime indicates the uptime or downtime in percentage for a system for a particular day, week, or month. Detailed Percentage Uptime indicates multiple values that represent either daily, weekly, or monthly *average* percentage uptime or downtime values depending on the level of data (daily, weekly, or monthly) that is available in the database for the specified date range.
 - Percentage Uptime (Total) — Total Percentage Uptime indicates the total uptime (or downtime) in percentage for a system for the specified date range. Total Percentage Uptime indicates a single total percentage uptime value.
- Total Uptime Reports — Display total number of uptime hours and downtime hours for specified hosts for the specified date range. Total Uptime Reports can be run in two modes: Detailed or Total.
 - Total Uptime (Detailed) — Detailed Total Uptime indicates the number of hours a system was up or down in a particular day, week, or month. Detailed Total Uptime indicates multiple values that represent either daily, weekly, or monthly *summed* uptime or downtime values in number of hours, depending on the level of data (daily, weekly, or monthly) that is available in the database for the specified date range.
 - Total Uptime (Total) — Total Uptime indicates the total number of hours a system was up or down for the specified date range. Total Uptime indicates a single total uptime value in number of hours.

Note – Uptime Status Reports, Percentage Uptime (Total) Reports, and Total Uptime (Total) Reports can be generated 90 minutes after the agent is added to the topology of the server host.

Percentage Uptime (Detailed) and Total Uptime (Detailed) reports can be generated one day after the server is started.

Automated CSV Generation

Two new report output formats have been added to the Report Request Creation screen to enable you to automate the generation of CSV (comma separated value) reports:

- Comma Separated Text
- Tab Separated Text

Reports in these formats can be used as follows:

- Saved as text files
- Previewed online
- Scheduled to run at predefined times or intervals
- Posted to the web server and viewed there
- Loaded into other applications such as spreadsheet programs

Additional Graph Options

Three new graph formats are provided:

- Area Chart
- Stacked Area Chart
- Stacked Bar Chart

Printing From the Java Console

You can now print report output directly from the Java Console. The Print Screen menu option prints the current screen or page. For multipage tabular reports, each page must be printed separately.

Other Enhancements in Sun Management Center 3.5 Update 1

Sun Management Center 3.5 Update 1 provides several additional enhancements to the Sun Management Center 3.5 software:

- “Developer Environment Enhancements” on page 39
- “Production Environment Enhancements” on page 39
- “Add-On Enhancements” on page 40

Developer Environment Enhancements

The Sun Management Center 3.5 Update 1 Developer Environment has been enhanced.

SMLogin Class Supports Alternate Locales

The `SMLogin` class now accepts an alternate locale setting as a parameter.

Production Environment Enhancements

The Sun Management Center 3.5 Update 1 Production Environment has been enhanced.

Server Host Information

Information about the server host is now available from the Java Console main menu. Choose View→User Session to obtain the User Login ID and the Server Host name.

Licensing Information

Licensing information about the currently installed version of Sun Management Center 3.5 Update 1 is available from the Java Console main menu. Choose Help→About Sun Management Center to view the licensing information.

Add-On Enhancements

The CA Integration TNG Unicenter add-on has been enhanced. You can run the Unicenter TNG adaptor without starting the graphical user interface.

Starting the Adaptor in Command Line Interface

To start the adaptor in a command line interface, use this syntax:

```
# SunMC_base_dir/SunMC-TNG/sbin/ea-start [ -h | help] [-f propertyfile \
[ -u username ] ]
```

Note – The UNIX token (\) indicates the continuation of a command line.

Here is an example of starting the CA Integration TNG Unicenter add-on in the command line interface :

```
# /opt/SUNWsymon/SunMC-TNG/sbin/ea-start -f \
/var/opt/SUNWsymon/SunMC-TNG/SunMCToTngAdaptorMain.cfg
```

Starting the Adapter in Graphical User Interface

To start the adaptor in the graphical user interface, use this syntax:

```
# SunMC_base_dir/SunMC-TNG/sbin/ea-start [-h help] [-ss serverhost] \
[-sp serverport] [-ts TNG hostname, TNG hostname...] \
[-tp TNG port] [-l log filepath] [-i pollinginterval] \
```


`[-u username]`

Here is an example of starting the CA Integration TNG Unicenter add-on in the graphical user interface:

```
# /opt/SUNWsymon/SunMC-TNG/sbin/ea-start -ss sunmcserv -ts tngserv
```

