Sun™ Management Center 3.5 Supplement for Starfire™ Servers

Please Recycle

Adobe PostScript™

Contents

Figures

Tables

Preface

This *Sun™ Management Center 3.5 Supplement for Starfire™ Servers* provides instructions on how to install, configure, and use Sun Management Center software on Sun Enterprise™ 10000 (Starfire) systems.

This book is intended for Starfire system administrators who install and use the Sun Management Center software to monitor their Starfire systems.

The Sun Management Center 3.5 software and documents for Starfire systems are available in French, Japanese, Korean, Simplified Chinese, and Traditional Chinese. However, the examples of screens in this supplement appear only in English.

Note – If you have trouble seeing all the text in your language in a given window, resize the window.

Before You Read This Book

Read this supplement after the *Sun Management Center 3.5 Installation and Configuration Guide*, which provides instructions for installing and configuring Sun Management Center 3.5 software and the *Sun Management Center 3.5 User's Guide*, which provides instructions for using Sun Management Center software.

Note – For the latest information about this product, go to the Sun Management Center Web site at `http://www.sun.com/sunmanagementcenter`.

How This Book Is Organized

Chapter 1 provides an overview of Sun Management Center software on the Starfire platform.

Chapter 2 shows you how to install Sun Management Center software on Starfire servers. Use this chapter with the *Sun Management Center 3.5 User's Guide*.

Chapter 3 shows you how to set up the add-on Starfire system software components. Use this chapter with the *Sun Management Center 3.5 User's Guide*.

Chapter 4 shows you how to create, modify, and discover Starfire system topology objects.

Chapter 5 helps you understand domain and platform data specific to Starfire systems that is shown in the Details windows.

Chapter 6 contains brief descriptions of each property in the Sun Management Center software modules in the Starfire server add-on components. It also provides information about how to change rule limits for the Starfire domain Config Reader and Starfire platform Config Reader.

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.

Using UNIX Commands

This document might not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

Refer to 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

Typographic Conventions

Typeface[1]	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
AaBbCc123	What you type, when contrasted with on-screen computer output	`%` **`su`** `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

1 The settings on your browser might differ from these settings.

Shell Prompts

Shell	Prompt
C shell	*machine-name*`%`
C shell superuser	*machine-name*`#`
Bourne shell and Korn shell	`$`
Bourne shell and Korn shell superuser	`#`

Related Documentation

Application	Title	Part Number
Installation	*Sun Management Center 3.5 Installation and Configuration Guide*	816-2678
Usage	*Sun Management Center 3.5 User's Guide*	816-2716
Issues, Limitations, and Bugs	*Sun Management Center 3.5 Release Notes*	816-2718
Usage	*Sun Management Center 3.5 Supplement for VSP High-End Entry Servers (Workgroup Servers)*	816-7259
Usage	*Sun Management Center 3.5 Supplement for Workstations*	816-7196
Usage	*Sun Management Center 3.5 Supplement for Netra Servers*	816-3407

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

`http://www.sun.com/documentation`

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

`http://www.sun.com/service/contacting`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

Sun Management Center 3.5 Supplement for Starfire Servers, part number 816-7379-10

Introduction

Sun Management Center 3.5 software is an open, extensible system monitoring and management application that uses Java™ software protocol and Simple Network Management Protocol (SNMP) to provide an integrated and comprehensive enterprise-wide management of Sun™ products and their subsystems, components, and peripheral devices.

The Starfire hardware configuration information resides on both the System Service Processor (SSP) and on each of the individual Starfire platform domains. Sun Starfire domain hosts can take advantage of the Sun Management Center services, since a Starfire host operates in the same manner as any other Solaris Operating Environment host.

Hardware configuration information is provided by platform-specific Sun Management Center agent Config Reader modules. The information provided by these Config Reader modules is displayed in the physical view and logical view of the Sun Management Center Details window. The add-on Starfire components provide this Config Reader support for Starfire domains and platforms.

Chapter 1 of the *Sun Management Center 3.5 User's Guide* includes definitions, explanations, and diagrams that clarify the Sun Management Center architecture. Refer to this chapter whenever you have questions about how consoles, servers, agents, domains, and modules interact.

Note – Sun Management Center 3.5 software for Starfire servers is not intended to replace `hostview`. Its primary purpose is to monitor your system components rather than manage them.

Note – Starfire Dynamic Reconfiguration (DR) is not supported in this Sun Management Center software release.

Installing Sun Management Center 3.5 Software for Starfire Systems

This chapter, used with the *Sun Management Center 3.5 Installation and Configuration Guide*, shows you how to install the Sun Management Center software on Starfire servers.

The Sun Management Center software is divided into base packages that provide the Sun Management Center infrastructure and basic support, and add-on components that add support for particular hardware platforms or other options.

Starfire support requires base packages and add-on Starfire packages that are installed during the Sun Management Center software installation described in this chapter. Once this software is installed, set up the Sun Management Center software using the instructions in Chapter 3.

Caution – Use the installation scripts and the setup scripts provided with the Sun Management Center 3.5 software. Do *not* manually add packages or manually change configuration files.

Your Sun Management Center 3.5 installation and setup scripts or graphical user interface (GUI) panels may not display exactly the same messages in exactly the same sequence as the examples shown in this chapter. However, these examples show the basic messages you receive in approximately the sequence you receive them. Your actual installation and setup scripts depend on the add-on components you choose to install and other choices you make.

Starfire System Add-On Component Packages

The add-on Starfire software includes the following packages for Sun Management Center software support of Starfire platforms (TABLE 2-1):

TABLE 2-1 Add-On Sun Management Center Packages for Starfire Servers

Package	Description
SUNWessfd	Sun Management Center Domain Agent Support for Starfire servers. This package provides libraries and configuration files needed to monitor the hardware configuration of Starfire domains.
SUNWessfp	Sun Management Center SSP Agent Support for Starfire servers. This package provides libraries and configuration files needed to monitor the hardware configuration of the entire Starfire platform.
SUNWessfs	Sun Enterprise Starfire Server Support for Starfire systems. This package provides files needed by the Sun Management Center server to display the physical view of the Starfire platform.
SUNWessfg	Sun Management Center Common Support for Starfire servers. This package provides master setup and uninstall scripts.
SUNWensfi	Sun Management Center English message file for Starfire servers.

Preparing to Install Sun Management Center Software for Starfire Systems

Your Starfire system must meet certain requirements before you install Sun Management Center 3.5 software for Starfire servers. These requirements are explained in the following sections.

Where to Install Sun Management Center Software for Starfire Systems

The Sun Management Center software must be installed on a number of hosts for Starfire support to be available. Sun Management Center components must be installed on:

- Sun Management Center server host
- SSP for the Starfire platform
- Spare SSP (if configured)
- Each Starfire domain you would like to monitor

See "Starfire Platform Objects" on page 49 for more information about main and spare SSPs.

In addition, the Sun Management Center console software must be installed on a host in your network. There are no add-on Starfire components for the console layer.

Sun Management Center online help can be installed on a Sun Management Center help server and viewed by web browsers on the network. There are no add-on Starfire components for the help server, but you do need to decide where to install the online Sun Management Center help server. Refer to "Sun Management Center Online Help" in the *Sun Management Center 3.5 User's Guide* for more information.

Caution – Only the Sun Management Center agent layer should be installed on the SSP. Do not install the Sun Management Center console or server layer on a Starfire SSP. SSP resources are dedicated to managing the Starfire platform; running additional functions on the SSP can result in the SSP software not running correctly.

Note – *(Optional)* Install Sun Management Center software on each Starfire domain if you want full monitoring capabilities.

Choosing Your Sun Management Center Server Host

Before installing the Sun Management Center software, determine which host is the Sun Management Center server host. The host chosen to be the Sun Management Center server for your network should be a system with high availability; when the Sun Management Center server is down, you are unable to use Sun Management Center software to manage your systems. Refer to the *Sun Management Center 3.5 Installation and Configuration Guide* for more information about server host requirements.

You can place any of the Sun Management Center layers (console, server, agent) on a Starfire domain. But if you want to be able to manage a Starfire platform when all domains are down, you should not place the Sun Management Center server layer on one of the Starfire platform domains.

For more timely platform monitoring of the Starfire domain hardware configuration, configure the SSP and the Starfire domain Sun Management Center agents to use the same Sun Management Center server.

Required Sun Management Center Version

The Sun Management Center 3.5 Starfire components must be installed and used with Sun Management Center 3.5.

Refer to "Sun Management Center Compatibility" in Chapter 1 of the *Sun Management Center 3.5 Installation and Configuration Guide* for more information.

The Sun Management Center 3.5 server supports monitoring of Sun Management Center 3.0 agents. If you upgrade Sun Management Center software on any component of a Starfire system from version 3.0 to version 3.5, upgrade all of those components to version 3.5. These components include:

- Starfire domains
- Starfire SSP
- Starfire spare SSP

System Requirements

The *Sun Management Center 3.5 Installation and Configuration Guide* provides information about general Sun Management Center prerequisites, including minimum disk space requirements. TABLE 2-2 shows the additional disk space required for the add-on Sun Management Center components for Starfire servers.

TABLE 2-2   Minimum Disk Space Required for Starfire Add-on Software

Layer	Minimum Disk Space Required (MB)
Starfire Domain Agent	0.5
Starfire Platform (SSP) Agent	0.7
Sun Management Center Server Starfire Support	0.5

Supported Operating Environments

You need to know which versions of the Solaris Operating Environment are running on each system on which you plan to install Sun Management Center 3.5 software. The following Solaris Operating Environments are supported by the Sun Management Center software add-on component for Starfire servers:

■ Solaris 8 Operating Environment (32-bit and 64-bit modes)

■ Solaris 9 Operating Environment (32-bit and 64-bit modes)

Supported SSP Releases

The Sun Management Center software add-on component for Starfire servers requires SSP version 3.5 software. Any of the supported operating environments may be used on the SSP.

Required SSP Memory Configuration

The SSP must have a minimum of 128 megabytes (MB) of memory.

Required Patches

Starfire domains running the Solaris Operating Environment may require Solaris software patches to run correctly with the Sun Management Center software. Refer to "Required Patches" in the *Sun Management Center 3.5 Release Notes* for general Sun Management Center patch information. Refer to any README files associated with these patches for information about any dependencies or prerequisites the patches may have.

Required Network Port Configuration

Sun Management Center software requires the use of network ports to communicate with various components of the system. The default port addresses for these components are shown in TABLE 2-3:

TABLE 2-3   Default Sun Management Center Port Addresses

Layer	Component	Default Port Number
Agent	Agent	161
Server	Trap handler	162
Server	Event manager	163
Server	Topology manager	164
Server	Configuration manager	165
Server	Server	2099
Agent	Platform agent	166

In some cases, this default port configuration conflicts with software already running on your system. The Starfire SSP always has a port 161 conflict, since the SSP `snmpd` agent or Solaris software `snmpdx` agent uses this port. Some Starfire domains may also have port 161 conflicts due to the presence of legacy SMNP agents. During the Sun Management Center software setup, specify a different network port to avoid this conflict. Refer to Appendix B of the *Sun Management Center 3.5 User's Guide* for information about how to determine what ports are in use.

To create and access topology objects, Sun Management Center software uses port 161 by default. If you configure an agent to use an alternate port, you must specify that port when the topology object is created or discovered. To simplify your Sun Management Center network configuration and management and enable more efficient discovery of Sun Management Center agents, select an alternate port number and use that number for all agent installations that cannot use the default port configuration.

The Starfire SSP has two Sun Management Center agents: the agent and the platform agent. The agent provides information about the SSP and the platform agent provides information about the Starfire platform. Usually there are no port conflicts with the default port configuration for the platform agent. When a platform topology object is created or discovered, the correct default port is provided and does not need to be specified.

SSP Config Reader Support

You can add Config Reader support for some SSP Sun Ultra™ workstation
architectures by installing and setting up the workstation add-on component of the
Sun Management Center software. Refer to the *Sun Management Center 3.5
Supplement for Workstations* for a complete list of supported workstations.

Note – Sun SPARCstation™ workstation architectures are not supported by the
workstation add-on component. Sun Management Center software can be installed
on a SPARCstation workstation, but no SSP hardware configuration information is
available.

If you want, you can install this add-on component during the installation and setup
of the Sun Management Center 3.5 software. If you install the base software from a
CD-ROM drive, the workstation add-on packages are installed during the base
installation. If you install from the Web, you must download and install the required
workstation images.

Sun Management Center Installation Files

The Sun Management Center 3.5 CD-ROM contains all files necessary to install Sun
Management Center software on Starfire servers. This software is also available from
the Sun Management Center Web site at:

`http://www.sun.com/sunmanagementcenter`

If you obtain this software from the Web site, be sure that you download:

■ Sun Management Center base packages
■ Add-on Starfire components
■ *(Optional)* Desktop add-on component for SSP
■ Documentation

When downloading Sun Management Center software from the Web, choose which
Solaris Operating Environment releases you need to support. Each operating
environment release has a separate set of downloadable images. If more than one
release is running anywhere in your Starfire configuration, you need to download
multiple versions for each software component.

Once you have downloaded all the required components, extract these files into a single directory. This builds an installation directory containing all the Sun Management Center software components you need, and allows you to install with one command the Sun Management Center base software, the add-on Starfire component and, optionally, the add-on Desktop component.

For detailed instructions on downloading and extracting these files, refer to the README file accompanying each downloadable installation package available on the Sun Management Center Web site at:

```
http://www.sun.com/sunmanagementcenter
```

Considerations When Installing Sun Management Center 3.5 Software on Starfire Systems

Detailed directions for installing and setting up Sun Management Center 3.5 software are provided in the *Sun Management Center 3.5 Installation and Configuration Guide.* For Starfire configurations, you should be aware that if you are installing the Sun Management Center software from a CD-ROM onto a Starfire domain, you must mount a remote CD-ROM drive since the Starfire host does not have a local CD-ROM drive. See "To Mount a Remote CD-ROM Drive" on page 10 for instructions.

▼ To Mount a Remote CD-ROM Drive

If you are installing from a CD-ROM, you first need to mount a remote CD-ROM drive from the SSP since the Starfire domain does not have a local CD-ROM drive and the SSP does.

1. **Log in to the SSP as superuser.**

2. **Insert the Sun Management Center 3.5 CD into the CD-ROM drive on the SSP.**

3. **Type the** share**(1M) command on the SSP to make the CD-ROM usable across the network.**

```
ssp# share -o ro,anon=0 -F nfs /cdrom/sun_management_center_3_0
```

4. **Log in to a Starfire domain as superuser.**

5. **Make a local directory, if it does not already exist, on which to mount the CD-ROM:**

```
# mkdir /cdrom
```

6. **Mount the SSP** /cdrom **directory on** /cdrom**:**

```
# mount ssp_hostname:/cdrom/sun_management_center_3_5/cdrom
```

7. **Change to the Sun Management Center software installation directory:**

```
# cd /cdrom/sun_management_center_3_5
```

Sun Management Center Software Licensing

Sun Management Center 3.5 software support for Starfire servers requires only the basic functionality included with Sun Management Center 3.5 software. No license is required for this basic functionality.

Installing the Sun Management Center 3.5 Software

For Starfire support, install the following Sun Management Center software on these Starfire platform hosts:

TABLE 2-4   Starfire Platform Hosts and Installed Layers

Host	Layer	Software Installed
Sun Management Center Server Host	Server	Base Sun Management Center server layer and Sun Management Center server add-on component for Starfire servers
Starfire Domain	Agent	Base Sun Management Center Agent layer and add-on Starfire Domain component
Main SSP	Agent	Base Sun Management Center Agent layer and Starfire Platform add-on component. No other Sun Management Center layers should be installed here.
Spare SSP (if configured)	Agent	Base Sun Management Center Agent layer and Starfire Platform add-on component. No other Sun Management Center layers should be installed here.

Note – In addition to the Sun Management Center agent layer, any of the Sun Management Center layers can be installed on Starfire domain hosts. See "Choosing Your Sun Management Center Server Host" on page 5 for more information.

You must also install the Sun Management Center console and online help somewhere on your network, as described in the *Sun Management Center 3.5 Installation and Configuration Guide*.

Starfire Software Installation Sequence

For best results, install the Sun Management Center software on the hosts in the following order:

1. Sun Management Center server host

2. Starfire domains

3. Main SSP

4. Spare SSP (if configured)

5. Sun Management Center console host

6. Sun Management Center online help (if not installed on the Sun Management Center console host)

Proceeding With the Installation

You are now ready to install the base Sun Management Center software. Follow the instructions in the *Sun Management Center 3.5 Installation and Configuration Guide* carefully. After selecting the Sun Management Center components to install, the required Sun Management Center software and the add-on Starfire components are installed on your host.

Remember to:

- Install the Sun Management Center software on the hosts in the sequence shown in "Starfire Software Installation Sequence" on page 12.
- For each host, install the Sun Management Center layers as described in TABLE 2-4.

Once the Starfire add-on components are installed, a setup confirmation message is displayed:

```
Do you want to run setup now? [y|n|q]
```

To set up the Sun Management Center software, answer **y** (for Yes) and continue with "Setting Up Sun Management Center 3.5 Components for Starfire Systems" on page 17.

Installing the Starfire Add-on Software Using the Sun Management Center 3.5 Installation Wizard

Chapter 6, "Installation and Setup" of the *Sun Management Center 3.5 Installation and Configuration Guide*, describes in detail how to install all the software. An overview of the process follows.

1. As superuser, run the Sun Management Center 3.5 Installation Wizard, `es-guiinst`, as described in Chapter 6, "Installation and Setup," of the *Sun Management Center 3.5 Installation and Configuration Guide*.

2. After the base software is installed, the Select Add-on Product screen provides a selectable list of add-on products that you can install. Select those add-ons that apply to Starfire systems, and click Next.

3. The Sun Management Center Setup Wizard starts automatically after all the software is installed.

Uninstalling Software Using the CLI

You can uninstall:

- All the Sun Management Center software (see "To Uninstall All Sun Management Center Software" on page 14)
- One, two, or all three modules of the Starfire add-on software (see "To Uninstall Individual Add-on Modules" on page 15)

▼ To Uninstall All Sun Management Center Software

1. **As superuser, type:**

```
# ./es-uninst
```

The system displays this message.

```
This script will help you to uninstall the Sun Management Center software.

Following Sun Management Center Products are installed:
--------------------------------------------------------------------------

PRODUCT                                              DEPENDENT PRODUCTS
--------------------------------------------------------------------------

Production Environment                               All Addons
Starfire Monitoring                                  None

Do you want to uninstall Production Environment? [y|n|q]
```

2. **Type** y **to uninstall Production Environment, which uninstalls all Sun Management Center software.**

The system displays this message.

```
This will uninstall ALL Sun Management Center Products. !!!

Do you want to change selection? [y|n|q]
```

3. **Do one of the following**

   ■ **Type** y **to change your selection.**

   The system displays your selection; go to the beginning of Step 2.

   ■ **Type** n **to** *not* **change your selection.**

   The system displays this message.

```
Do you want to preserve database? [y|n|q]
```

Note – If you answer **y** for yes, the system preserves any data in the database, including open and closed alarms, loaded modules and their configurations, discoveries, managed objects, and rule thresholds.

---

4. **Type** y **to keep any existing topology and event data; or type** n **to discard the data.**

The system displays this message.

```
Proceed with uninstall? [y|n|q]
```

5. **Type** y **to proceed with the uninstall; or type** n **to** *not* **proceed with the uninstall.**

If you type **y** to proceed, the system displays the list of packages to be uninstalled, the packages as they are uninstalled, the status of the uninstallation, and the location of the log file.

▼ To Uninstall Individual Add-on Modules

1. **As superuser, type:**

```
# ./es-uninst
```

The system displays this message.

```
This script will help you to uninstall the Sun Management Center software.

Following Sun Management Center Products are installed:
--------------------------------------------------------------------------

PRODUCT                                                  DEPENDENT PRODUCTS
--------------------------------------------------------------------------

Production Environment                                   All Addons
Starfire Monitoring                                      None

Do you want to uninstall Production Environment? [y|n|q]
```

2. **Type** n **to** *not* **uninstall the Production Environment; in other words, type** n **to uninstall individual modules.**

   The system displays this message.

```
Do you want to uninstall Starfire Monitoring? [y|n|q]
```

3. **Type** y **beside Starfire Monitoring if you do want to uninstall it, or** n **beside Starfire Monitoring if you do** *not* **want to uninstall.**

   The system displays the module that will be uninstalled and this message.

```
Do you want to change selection? [y|n|q]
```

4. **Do one of the following:**

   ■ **Type** y **to change the selections.**

   The system displays your selections; go to the beginning of Step 3.

   ■ **Type** n **to** *not* **change your selections.**

   The system displays this message.

```
Proceed with uninstall? [y|n|q]
```

5. **Type** y **to proceed with the uninstall; or type** n **to** *not* **proceed with the uninstall.**

   If you type **y** to proceed, the system displays the list of packages to be uninstalled, the packages as they are uninstalled, the status of the uninstallation, and the location of the log file.

Setting Up Sun Management Center 3.5 Components for Starfire Systems

Now that you have installed the Sun Management Center software, as described in the previous chapter, you are ready to set up the add-on components. The setup script runs automatically after you complete the installation unless you indicate that you do not want to run setup at that time.

To set up the add-on components separately from performing an installation, see "To Run the Setup Script" on page 34.

For more information, refer to "Setting Up Sun Management Center Component Layers" in the *Sun Management Center 3.5 Installation and Configuration Guide*.

Setting Up the Starfire Add-On Software Using the CLI

For information about where the Starfire add-on components are installed, see TABLE 2-4.

The setup script detects which base Sun Management Center components are currently installed. For example:

```
You have the following Sun Management Center components installed

Sun Management Center Server
Sun Management Center Agent
Sun Management Center Console
```

Then the setup script asks you questions and provides information. Instructions for setting up each of the Starfire components are provided in the next sections.

▼ To Set Up a Starfire Domain Add-On Component

You are prompted to confirm that you want to set up the Starfire domain add-on component:

```
--------------------------------------------------
Starting Sun Management Center Starfire Domain Setup
--------------------------------------------------
Would you like to setup this Sun Management Center package? [y|n|q]
```

1. **Type** y **for Yes.**

   The setup script queries the platform SSP SNMP agent in an effort to get the platform name for this Starfire domain and supply it without your intervention. For example:

```
Query the SSP for the Starfire platform name...
The Starfire platform name is allsdsim3.
```

2. **If the query is unable to determine the SSP name, type the SSP name when prompted.**

3. **If the query is unable to determine the platform name from the SSP, type the platform name when prompted.**

   A reminder that the Sun Management Center agent port number for this domain must be correctly configured during the Starfire platform setup is displayed:

```
Added module Config-Reader4u1D to /var/opt/SUNWsymon/cfg/base-
modules-d.dat.

Remember, when setting up the Sun Management Center Starfire SSP
platform package (SUNWessfp) to add port 1161 to the list of
Starfire domain ports.
```

▼ To Set Up a Starfire Platform (SSP) Add-On Component

You are prompted to confirm that you want to set up the Starfire platform (SSP) add-on component:

```
-----------------------------------------------------
Starting Sun Management Center Starfire Platform Setup
-----------------------------------------------------


Would you like to setup this Sun Management Center package? [y|n|q]
```

1. **Type** y **for yes.**

   Forwarding SSP snmpd traps to the Sun Management Center software requires stopping and then restarting the SNMP daemon. The setup script identifies this process for you and enables you to restart it automatically by answering y (for Yes) when prompted. For example:

```
Added SSP Sun Management Center trap forwarding.
Sun Management Center trap server sdsim1-b7, trap server port 162.

----------------------- IMPORTANT ------------------------
In order to complete SSP trap forwarding setup, the SSP snmpd
process must be restarted. The interruption to SSP services due to
restarting snmpd is brief. However, restarting the SSP snmpd
process may delay or cause to fail SSP operations which require
snmpd. Commands affected include hpost(1m) and bringup(1m).

No bringup or hpost processes are currently running.

If you choose to not restart snmpd now, you must restart snmpd
before you start the Sun Management Center agents.

Would you like to restart the SSP snmpd process now? [y|n|q]
```

If `bringup` or `hpost` processes are running, the message displays the process numbers. For example:

```
Added SSP Sun Management Center trap forwarding, Sun Management
Center trap server sdsim1-b7, trap
server port 162.

----------------------- IMPORTANT -----------------------
In order to complete SSP trap forwarding setup, the SSP snmpd
process must be restarted. The interruption to SSP services due to
restarting snmpd is brief. However, restarting the SSP snmpd
process may delay or cause to fail SSP operations which require
snmpd. Commands affected include hpost(1m) and bringup(1m).

bringup or hpost processes are currently running:
 UID    PID PPID C STIME    TTY     TIME CMD
 ssp 10511 21978 0 15:13:35 pts/26 0:00 /usr/bin/sh
/opt/SUNWssp/bin/bringup -A off
 ssp 10619 10511 6 15:15:00 pts/26 0:00 hpost

If you choose to not restart snmpd now, you must restart snmpd
before you start the Sun Management Center agents.

Would you like to restart the SSP snmpd process now? [y|n|q]
```

If you refuse to restart the SSP `snmpd` process when prompted, you must manually restart the SSP `snmpd` process before you start the Sun Management Center agents on this host. See "Restarting the SSP `snmpd` Process" on page 32 for more information.

2. **Type** `y` **(for Yes) when prompted to restart the SSP** `snmpd` **process.**

The setup script stops the `snmpd` process, wait for it to be restarted, and display the new `snmpd` process number. The setup script usually determines the platform name automatically from SSP configuration files. For example:

```
Would you like to restart the SSP snmpd process now? [y|n|q] y
Waiting for SSP snmpd process to restart...
SSP snmpd restarted, process id 10644.

SSP snmpd SNMP port 5050

platform name is: allxf2
```

3. **If the setup script is unable to determine the platform name from the SSP, type the platform name when prompted.**

> **Note –** Be sure to enter the correct platform name. This name is used during Sun Management Center operations to access SSP information and identify the Starfire platform.

The setup script automatically determines which SNMP port is configured to be used by the Sun Management Center agent and displays it. For example:

```
Checking Sun Management Center Agent configuration.
Sun Management Center Agent port: 161
```

4. **If the Sun Management Center agent is configured to use port 161, type an alternate network port when prompted to do so.**

   See "Required Network Port Configuration" on page 8 for more information.

   The setup script automatically determines if the platform agent port was properly configured by the base Sun Management Center setup file, and ensures that the configured port is not currently in use. For example:

```
Checking Sun Management Center Platform agent configuration.
Verifying port number: 166
Sun Management Center Platform Agent port: 166
```

5. **If the platform agent port is in use, select a different network port when prompted to do so.**

```
Warning, port 166 is currently in use.
You need to either pick a different port, or insure that port 166
is available when you next start Sun Management Center.
Do you still wish to use port 166? [y|n|q] n
Enter new Sun Management Center Agent port: 1166
```

See "Required Network Port Configuration" on page 8 for more information.

If you modify the SNMP port for either the Sun Management Center agent or platform agent, the setup script prompts you to regenerate the Sun Management Center security keys. The Sun Management Center security keys must be regenerated before you start the Sun Management Center agents on this host if the SNMP port numbers are modified.

6. **Type** y **(for Yes) to regenerate the security keys when prompted to do so:**

```
The Sun Management Center agent and platform agent security keys
must be regenerated because the agent port numbers used have been
changed.

Do you want to regenerate the security keys now? [y|n|q] y
```

Set up the security keys as described in the "Security Seeds" section of Chapter 3 in the *Sun Management Center 3.5 User's Guide*. If you refuse to regenerate the Sun Management Center security keys when prompted, you are warned that you must manually regenerate them before starting Sun Management Center software.

The setup script asks you if your Starfire platform is configured with a spare SSP:

```
Is this Starfire platform configured with a spare SSP? [y|n|q]
```

7. **Type** y **(for Yes) if this platform has a spare SSP. Type** n **(for No) if this platform does not have a spare SSP.**

Note – The Sun Management Center agent and the add-on Starfire components should be installed on both the main and spare SSP when a spare SSP is configured. The same installation and setup instructions apply to both the main and spare SSP. Answer y (for Yes) to this question when configuring *both* the main and the spare SSP. In addition, both the main and spare SSP *must* use the same network port configuration.

The spare SSP configuration information is used to create Starfire topology objects. See Chapter 4 for more information.

8. **(Optional) If you have a spare SSP, type the name of the alternate SSP when prompted. When setting up Sun Management Center software on the main SSP, the alternate SSP is the spare SSP. When setting up the spare SSP, the alternate SSP is the main SSP.**

The script describes which ports to specify when configuring the Sun Management Center agent and platform agent on the alternate SSP:

```
Please enter the alternate SSP hostname (not xf2-ssp) for this
platform.
Alternate SSP hostname: xf2-ssp2
Remember on SSP xf2-ssp2 the Agent must be configured to use port
1161.
Remember on SSP xf2-ssp2 the Platform Agent must be configured to
use port 166.
```

The Starfire platform obtains information from each of its Starfire domains by checking the SNMP ports associated with them. This information is used to create Starfire topology objects and is required to access hardware configuration information gathered by the Starfire domain add-on component. See "Starfire Topology Objects" on page 43 for more information.

The setup script displays the current default ports and prompts you to change the list of ports:

```
This Platform Config Reader will optionally acquire data from the
Sun Management Center Config-Reader modules loaded on Starfire
domains.

The default ports to be checked for Starfire Domains are: 161

Do you want to change the ports that will be checked? [y|n|q]
```

By default, Sun Management Center agents are installed on port 161. But due to port 161 conflicts, you may have configured the Starfire domain agents to use a different port or ports.

9. **If all Starfire domain agents use the default port 161, type** n **for No. If you configured one or more other ports, type** y **(for Yes) and type the Starfire domain agent network port (or ports, separated by spaces) when prompted. For example:**

```
Do you want to change the ports that will be checked? [y|n|q] y
Use space to separate multiple port numbers, just press <Enter> to
check no ports.
Enter port numbers: 161 1161
```

Be sure that this list contains all the ports on which Starfire domain Sun Management Center agents are configured.

The setup script displays the added modules and completes the setup. For example:

```
Updating alarm limits with SSP information.
Updating temperature alarm limits.
Updating voltage alarm limits.

Added module Config-Reader4u1P to
/var/opt/SUNWsymon/cfg/platform-modules-d.dat.
Added module sspStatus to
/var/opt/SUNWsymon/cfg/base-modules-d.dat.
Updated symon.conf information.
Updated Discovery Table information.
```

Setting Up the Starfire Add-on Software Using the Sun Management Center 3.5 Software Setup Wizard

This section describes how to set up the Starfire add-on software using the Sun Management Center 3.5 Setup Wizard. For more details about the entire software setup process, refer to Chapter 6, "Installation and Setup," of the *Sun Management Center 3.5 Installation and Configuration Guide*.

Note – When the Back button at the bottom of a panel is enabled (not grayed out), you can click on it to take you back to the previous operation. When the back button is grayed out (not enabled), you cannot go back to the previous operation.

> **Note –** Be sure you click Store Response Data during the Sun Management Center 3.5 base software setup process if you want to use the `setup-responses-file` to duplicate the setup on the current machine on other machines. That way all of your responses will be stored in `/var/opt/SUNWsymon/install/setup-responses-file`. For more information, refer to "Setting Up Base Products and Add-ons on the Solaris Platform" in the *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Set Up Starfire Domain Add-on Software Using the Setup Wizard

Set up the Starfire domain agent on any Starfire domain where you have installed it.

1. **From a Starfire domain, type** `es-guisetup` **to start the Sun Management Center 3.5 Setup Wizard.**

   Once the Sun Management Center base software setup is complete, the Select Add-on Products panel appears with a list of add-on products by platform installed on your system. In this example, Starfire Monitoring is the product or platform.

   ```
   The following add-on products are newly installed on this system
   and will be set up.

     - Starfire Monitoring
   ```

2. **Click Next to continue.**

   The following Starfire Domain Setup panel appears:
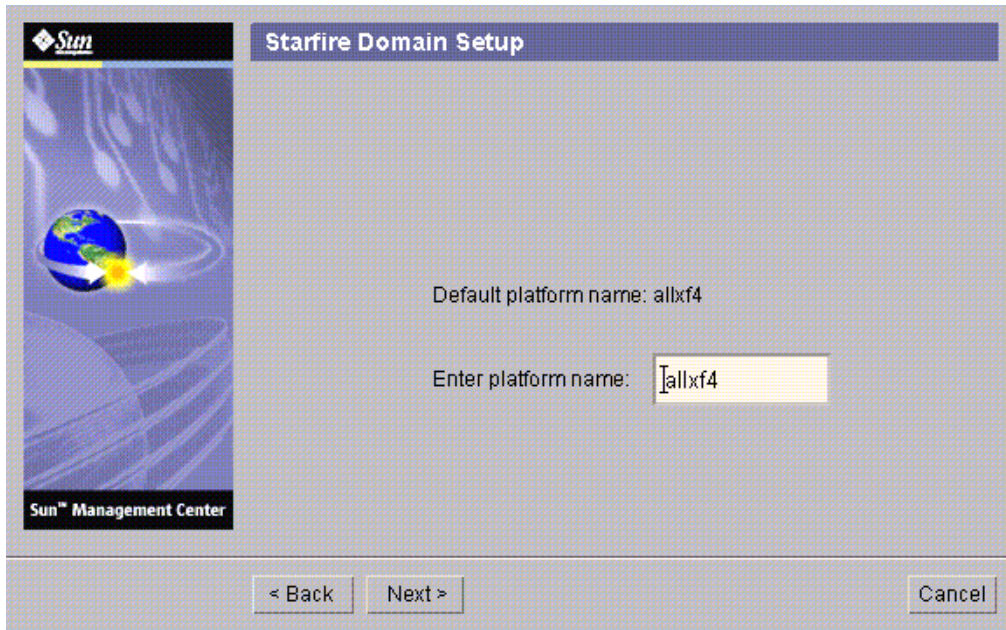
FIGURE 3-1   Default Platform Name Panel

The setup script attempts to retrieve the platform name for this Starfire domain from the platform agent on the system service processor.

3. **If the query is unable to determine the platform name from the SSP, type the platform name when prompted.**

4. **Click Next to continue.**

The Starfire Domain Setup panel displays this message.

```
Starfire domain setup is complete.

When setting up SSP platform add port 161 to Starfire domain ports list.
```

▼ To Set Up Starfire Platform Add-on Software Using the Setup Wizard

Set up the Starfire platform agent on any machine where you have installed it.

1. **Type** `es-guisetup` **on a machine where the platform agent is installed to start the Sun Management Center Setup Wizard.**

   Once the Sun Management Center base software setup is complete, the Wizard displays the following message:

   ```
   Select Add-on Products

   The following add-on products are newly installed on this system
   and will be set up.

      - Starfire Platform Administration
   ```

2. **Click Next to continue.**

   The Starfire Platform Setup panel displays this message.

Starfire Platform Setup

In order to complete SSP trap forwarding setup, the SSP snmpd process must be restarted. The interruption to SSP services due to restarting snmpd is brief. However, restarting the SSP snmpd process may delay or cause to fail SSP operations which require snmpd. Commands affected include hpost (1m) and bringup (1m).

Would you like to restart the SSP snmpd process now?

○ Yes   ○ No

Status: SSP snmpd restarted, process id 28811

< Back   Next >   Cancel

FIGURE 3-2   Restart snmpd Panel

3. **Do one of the following:**

   - **Click the radio button to the left of Yes to restart the SSP snmpd process now.**

     If you do not start this process now, you must manually restart the SSP snmpd process before you start the Sun Management Center agents on this host. See "Restarting the SSP snmpd Process" on page 32 for more information.

- **Click the radio button to the left of No to *not* restart the SSP snmpd process now.**

4. **Click Next to continue.**

   One of the following occurs:

   - If the setup script is able to determine the platform name from the SSP, the platform name is displayed.
   - If the setup script is not able to determine the platform name from the SSP, the Starfire Platform Setup panel asks you to enter the platform name.
     - **Enter the platform name.**

       Be sure to enter the correct platform name. This name is used during Sun Management Center operations to access SSP information and identify the Starfire platform.

5. **Click Next to continue.**

   The setup script automatically determines which SNMP port is configured to be used by the Sun Management Center agent and displays it.

6. **If the Sun Management Center agent is configured to use port 161, type an alternate network port when prompted to do so; for example:**
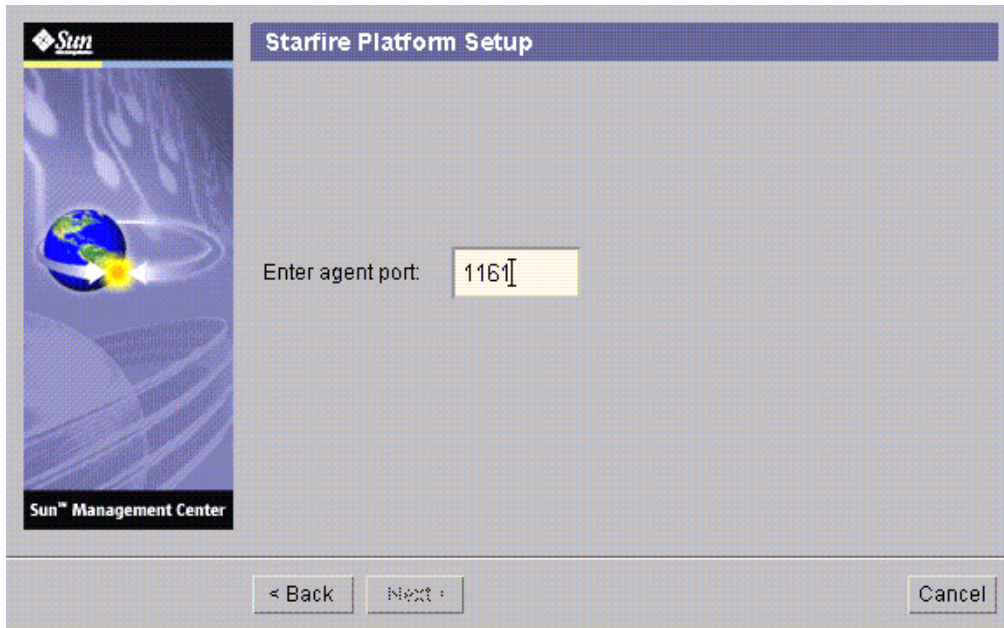
FIGURE 3-3   Enter Agent Port Panel

See "Required Network Port Configuration" on page 8 for more information.

7. **Click Next to continue.**

   The setup script automatically determines whether the configured port is not currently in use.

8. **If the platform agent port is in use, enter a different network port when prompted to do so.**

9. **Click Next to continue.**

   If you modify the SNMP port, the setup script prompts you to regenerate the Sun Management Center security keys.

FIGURE 3-4   Generate Security Keys Panel

   ■ **Enter and re-enter the seed to initialize the security keys.**

      For more information about setting up security keys, refer to the *Sun Management Center 3.5 User's Guide*. If you choose not to regenerate the security keys now, you must manually regenerate them before starting Sun Management Center software.

10. **Click Next to continue.**

    The Starfire Platform Setup panel displays this message.
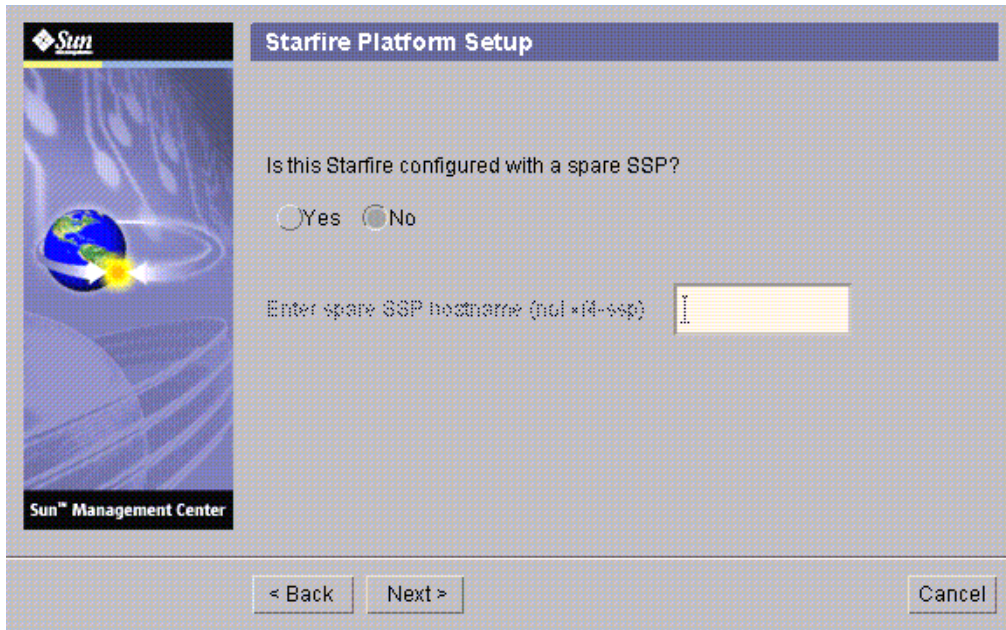
FIGURE 3-5   Spare SSP Panel

     11. Do one of the following:

- **Click the radio button to the left of No if this Starfire is *not* configured with a spare SSP.**

- **Click the radio button to the left of Yes if this Starfire is configured with a spare SSP.**

Note – The Sun Management Center agent and the add-on Starfire components should be installed on both the main and spare SSP when a spare SSP is configured. The same installation and setup instructions apply to both the main and spare SSP. Click Yes when configuring both the main and the spare SSP. In addition, both the main and spare SSP must use the same network port configuration.

The spare SSP configuration information is used to create Starfire topology objects. See Chapter 4 for more information.

     12. Click Next to continue.

The Starfire Platform Setup Panel displays the current default ports and asks if you want to change the list of ports.
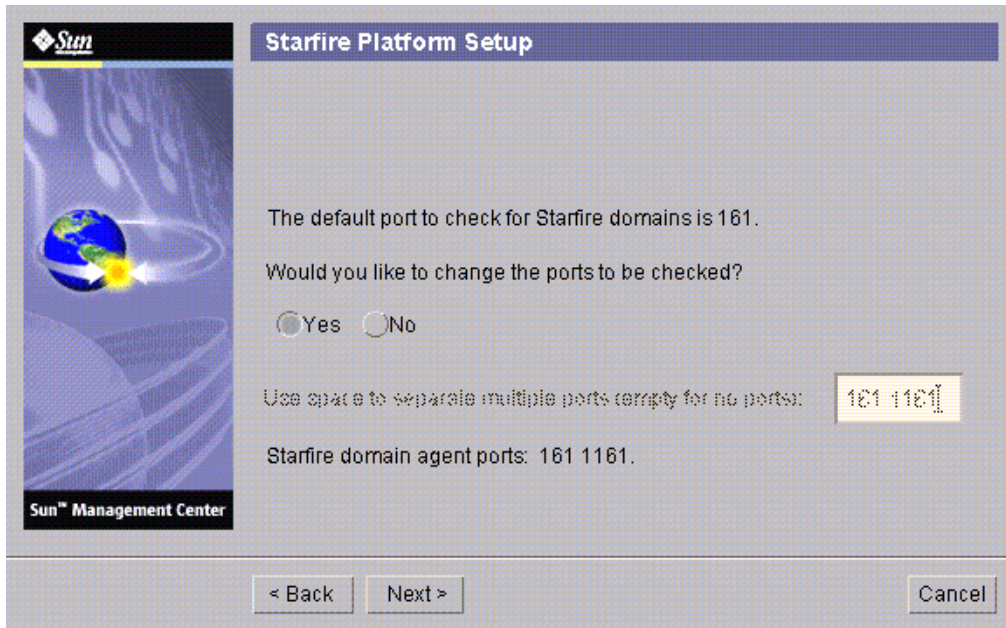
FIGURE 3-6   Check Domain Ports Panel

By default, Sun Management Center agents are installed on port 161. But because of port 161 conflicts, you might have configured the Starfire domain agents to use a different port.

13. **Do one of the following:**

   - **If all Starfire domain agents use the default port 161, click the radio button to the left of No.**
   - **If you configured one or more other ports, click the radio button to the left of Yes. Enter the Starfire domain agent network port (or ports, separated by spaces).**

     Be sure that this list contains all the ports on which Starfire domain Sun Management Center agents are configured.

14. **Click Next to continue.**

   The setup script displays the added modules and completes the setup.

Restarting the SSP `snmpd` Process

To make changes to SSP `snmpd` trap forwarding, the SSP `snmpd` process must be restarted after the SSP `snmpd` configuration file is changed. Changes are required to the SSP `snmpd` configuration file when the Sun Management Center package setup script for the Starfire Platform is run, and when the Sun Management Center package is removed.

Restarting `snmpd` During Starfire Platform Package Setup

The Sun Management Center package setup script for the Starfire Platform prompts you to automatically restart the SSP `snmpd` process. If you do not want the script to restart the SSP `snmpd` process, you must manually restart the SSP `snmpd` process before starting the Sun Management Center agents.

Restarting `snmpd` After Starfire Platform Package Removal

When the Sun Management Center Starfire platform package is removed, the trap forwarding entry is removed from the SSP `snmpd` configuration file. However, you must restart the SSP `snmpd` process before the changes in the configuration file are effective. The package remove script does *not* restart the SSP `snmpd` process. SSP `snmpd` traps continue to be forwarded until the SSP `snmpd` process is restarted.

If you are permanently removing Sun Management Center software from your SSP, rather than upgrading to a new release, be sure to restart the SSP `snmpd` process as described in "Restarting the SSP `snmpd` Process" on page 32.

Risks in Restarting `snmpd`

The SSP `snmpd` process is essential to SSP functionality, and SSP software automatically restarts the SSP `snmpd` process if it detects that the process has died on a main SSP.

Restarting the SSP `snmpd` process causes a slight delay in SSP services. Do not kill the SSP `snmpd` process while either `hpost`(1M) or `bringup`(1M) are running, as it can cause those commands to fail.

> **Note –** Once the SSP snmpd process has been killed and restarted, subsequent hpost(1M) and bringup(1M) commands are not affected.

How to Restart snmpd

There are two ways to restart snmpd:

- Reboot the SSP
- Kill the SSP snmpd process

In both cases, the SSP software automatically restarts the SSP snmpd process.

▼ To Kill snmpd

1. **Log in to the main SSP as superuser.**

2. **Find the** snmpd **process number by typing:**

```
# ps -ef | grep snmpd
```

A message similar to this is displayed:

```
root process_id 1 0 Jun 17 11:31 snmpd
```

3. **If** snmpd **is running, kill the** snmpd **process by typing:**

```
# kill process_id
```

where *process_id* is the process identification (pid) number shown in the results of Step 2.

> **Caution –** Make sure you type the *process_id* number correctly.

Reconfiguring Starfire Setup Parameters

You can reconfigure the Starfire setup parameters at any time by running the setup script again. You must reconfigure the appropriate Starfire setup parameters if certain changes occur:

- Reconfigure the Starfire domain and platform (SSP) component if the Starfire platform name is changed.
- Reconfigure the Starfire platform (SSP) component if the Sun Management Center agent port configuration for the Starfire domains changes.
- Reconfigure the Starfire platform (SSP) component if a spare SSP is added or removed from the platform configuration.
- Reconfigure the Starfire platform (SSP) component if the Sun Management Center server host or trap agent port configuration changes.
- Reconfigure the Starfire platform (SSP) component if the SSP software is reinstalled or the default voltage or temperature alarm limits contained in the SSP `ssp_resource` file are modified.

For information about where these components are located, see TABLE 2-4.

▼ To Run the Setup Script

1. **Log in as superuser and stop the components you are reconfiguring.**

   The command you use to stop the component depends on which component you are reconfiguring. TABLE 3-1 shows a list of Starfire components and the commands used to stop them.

   TABLE 3-1   Starfire Components and the Commands Used to Stop Them

Component	Command Used to Stop Operation of the Component
Starfire domain agent	`/opt/SUNWsymon/sbin/es-stop -a`
Starfire SSP agents	`/opt/SUNWsymon/sbin/es-stop -al`
Sun Management Center server	`/opt/SUNWsymon/sbin/es-stop -s`

2. **Type the appropriate command from** TABLE 3-1**.**

3. **Run the setup script to set up the component layers:**

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

> **Note –** If you installed the Sun Management Center software in a different directory than `/opt`, use that directory instead.

4. **Follow the instructions in "Setting Up the Starfire Add-On Software Using the CLI" on page 17.**

5. **Restart the components that you stopped.**

Updating Multiple Hosts Using Agent Update

This section describes how to update multiple hosts at once using Agent Update. The Agent Update process itself must be run on the Sun Management Center server machine. You also need to ensure that Sun Management Center 3.5 agents are running on all the target hosts.

Before You Start the Agent Update Process

To use Agent Update to fully install and set up the Starfire platform agent modules, you must create an Agent Update configuration file for the module on the target hosts, *before* you run the Agent Update Process on the Sun Management Center server machine.

> **Note –** Be sure you click Store Response Data during the Sun Management Center 3.5 base software setup process if you want to use the `setup-responses-file` to duplicate the setup on the current machine on other machines. That way all of your responses will be stored in `/var/opt/SUNWsymon/install/setup-responses-file`. For more information, refer to "Setting Up Base Products and Add-ons on the Solaris Platform" in the *Sun Management Center 3.5 Installation and Configuration Guide*.

▼ To Create the Agent Update Configuration File on the Target Hosts

1. **Ensure the Starfire platform agent modules are installed on the target hosts.**

2. **Ensure that the Starfire platform agent modules are set up on the target hosts using either the** `es-setup` **script or the** `es-guisetup` **Wizard.**

   After this has been done, subsequent platform agent setup operations using Agent Update will work automatically, using the host-specific information provided initially.

Using the Agent Update Process

Using the Agent Update process, create an Image File of the add-on components to be distributed to the target machines, and then add a New Job to Manage Jobs Task list to be run when you specify.

Supported Update Configurations

Using Agent Update you can update the following configurations:

- "To Update From Sun Management Center 3.5 Add-on Software" on page 36
- "To Update From No Add-on Software or Sun Management Center 3.0 Platform Update 4 Add-on Software" on page 40

▼ To Update From Sun Management Center 3.5 Add-on Software

This procedure applies *only* to updating from Sun Management Center 3.5 add-on software.

1. **Create an Image File of the desired Starfire add-on components to be distributed to the desired agent machines using one of the base Sun Management Center scripts** `es-gui-imagetool` **or** `es-imagetool`**.**

   Refer to Chapter 8, "Post-Installation Tasks," in the *Sun Management Center 3.5 Installation and Configuration Guide* for detailed instructions about using either the Wizard or the CLI Image Tool.

2. From your main Sun Management Center console window, select the Manage Jobs... option from the Tools menu.

The system displays the Manage Jobs panel (FIGURE 3-7), which allows you to distribute the Image File.
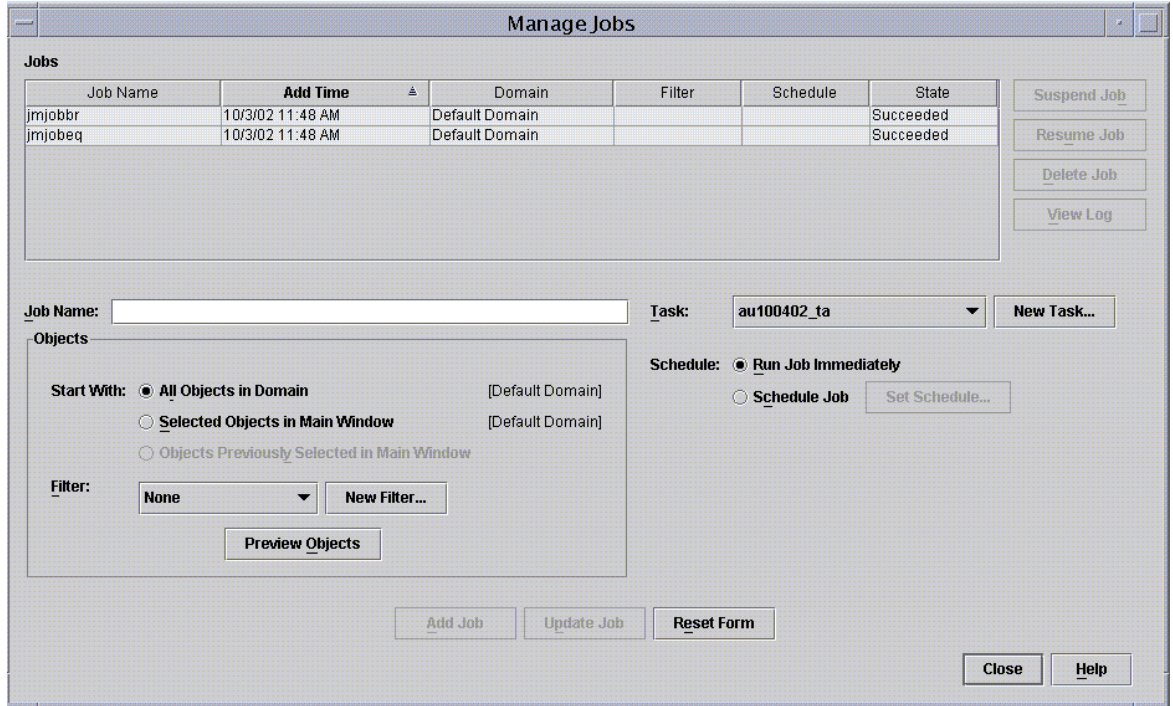
FIGURE 3-7 Manage Jobs Panel

3. In the Manage Jobs panel, select the New Task... button.

The system displays the New Task panel (FIGURE 3-8), which allows you to specify the Agent Update Image File to distribute.
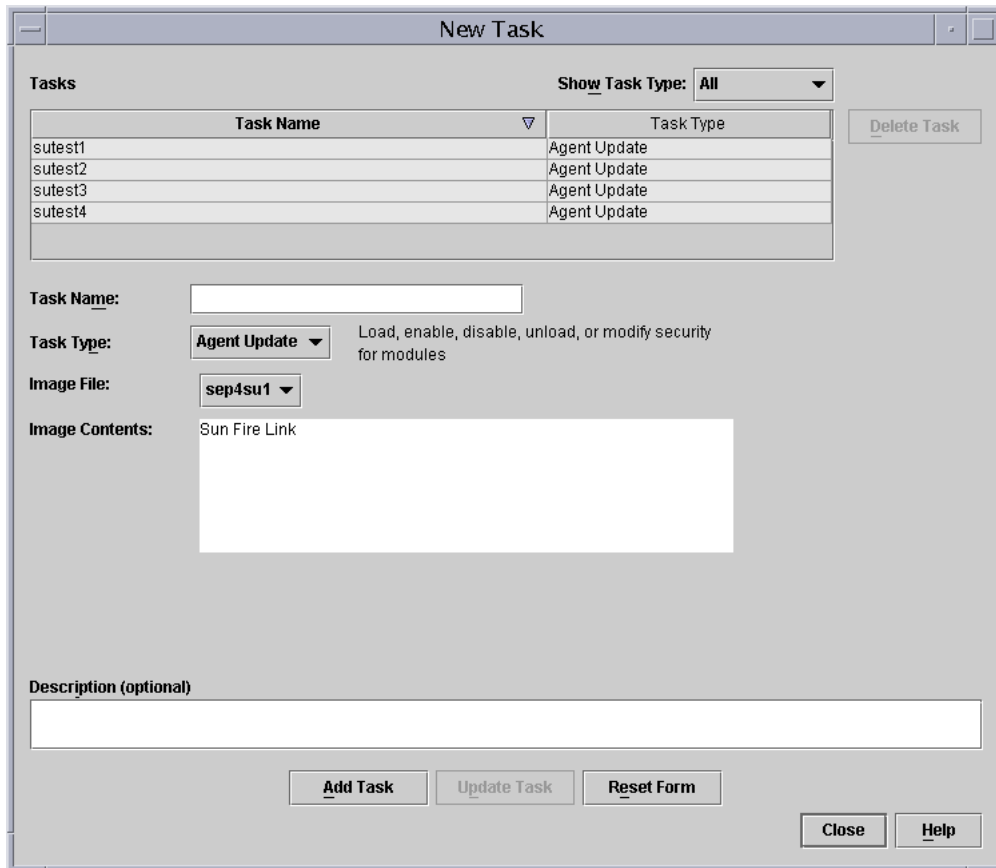
FIGURE 3-8   New Task Panel

4. **In the New Task panel (**FIGURE 3-8**), do the following:**

   a. **Select Agent Update for the Task Type.**

   b. **Select the Image File you created in Step 1.**

   c. **Enter the Task Name.**

   d. **Click the Add Task button.**

   e. **Click the Close button.**

5. **In the Manage Jobs panel (**FIGURE 3-7**), do the following:**

   a. **Enter a Job Name.**

   b. **Select the Task you created in Step 4.**

c. **Do one of the following to schedule when you want the Task to run.**

   ■ **If you want the Task to run immediately, click the radio button to the left of Run Immediately.**

   ■ **If you want to set a schedule for when the Task is to run, click the radio button to the left of Schedule Job, and set the schedule.**

Note – Before you select objects (agent machines) where you want the Image File, you can create a group object containing all your agent machines. That way you do not have to select one agent machine at a time. Refer to Chapter 3, "To Create a Group," in the Sun Management Center 3.5 User's Guide for more information about creating object groups.

---

d. **Do one of the following to select the objects (agent machines) to which you want to distribute the Image File.**

   ■ **Click the radio button to the left of All Objects in Domain to select all objects, and specify any filter you want to use to further select objects.**

   ■ **Click the radio button to the left of Selected Objects in Main Window to select one object at a time.**

e. **Preview the objects (agent machines) you have selected and redo your selections if necessary.**

f. **Click the Add Job button.**

   The job starts and distributes the Image File to the objects (agent machines) you selected. When the job is running, it appears in the Job list of the Manage Jobs panel. The panel shows the status of the job when running and when complete.

Note – When updating multiple hosts, any failure of a host results in a `Failed` status even though the majority of the hosts might have been updated successfully. Click on View Log to the right of the Jobs list on the Manage Jobs panel to see an individual list of the updates that succeeded and the updates that failed. If the Agent Update process did succeed, the Sun Management Center agents should restart automatically. You can open a host Details window on the Sun Management center console to each of the targeted hosts, and verify that the expected modules are present and working.

▼ To Update From No Add-on Software or Sun Management Center 3.0 Platform Update 4 Add-on Software

This procedure applies to either:

- Updating from no add-on software to Sun Management Center 3.5 add-on software
- Updating from Sun Management Center 3.0 Platform Update 4 add-on software to Sun Management Center 3.5 add-on software

1. **Log in as root on the Sun Management Center 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`" in the *Sun Management Center 3.5 Installation and Configuration Guide*.

   - To create an agent-update image using `es-imagetool`, follow the instructions in "To Create an Agent-Update Image Using `es-imagetool`" in the *Sun Management Center 3.5 Installation and Configuration Guide*.

3. **Download the file** `/opt/SUNWsymon/base/bin/agent-update.bin` **to each target machine's root directory.**

   If you installed Sun Management Center in a different directory than `/opt`, download `/installdir/SUNWsymon/base/bin/agent-update.bin`, where *installdir* is the install directory you specified.

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 Web server port.

   - *image-name* is the name of the agent-only image you created in Step 2.

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 sent up the Sun Management Center server and agent.

   - The SNMPv1 community string must be the same community string you provided when you set up the Sun Management Center 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 server host.

Note – You need to re-run `./es-setup -F` to set up the platform agent.

Starting Sun Management Center Software Using the CLI

The `es-start` command requires different command arguments, depending on which component you are starting.

▼ To Start Sun Management Center Software on Starfire Systems

1. **On the SSP, start the Sun Management Center agents:**

```
# /opt/SUNWsymon/sbin/es-start -al
```

This starts both the regular and platform agents. The platform agent provides all the Starfire platform information to Sun Management Center software.

Note – If you installed the Sun Management Center software in a different directory than `/opt`, use that directory instead.

---

2. **For the Starfire domain with only the Sun Management Center agent layer installed, start the Sun Management Center agent:**

```
# /opt/SUNWsymon/sbin/es-start -a
```

> **Note –** If you installed the Sun Management Center software in a different directory than /opt, use that directory instead.

3. **For the Sun Management Center server host that has all layers installed, start all the Sun Management Center components:**

```
# /opt/SUNWsymon/sbin/es-start -A
```

> **Note –** If you installed the Sun Management Center software in a different directory than /opt, use that directory instead.

> **Note –** After the Sun Management Center components are started, it may take a few minutes to initialize. If you encounter problems using Sun Management Center software immediately after a component is started, wait a few minutes and try again.

> **Note –** Upon rebooting, all Sun Management Center agents start automatically.

4. **To start the console:**

```
# /opt/SUNWsymon/sbin/es-start -c
```

> **Note –** If you installed the Sun Management Center software in a different directory than /opt, use that directory instead.

Refer to "Starting the Sun Management Center Software" in the *Sun Management Center 3.5 Installation and Configuration Guide* for more detailed information about startup procedures.

Starfire Topology Objects

This chapter shows you how to create, modify, and discover Starfire topology objects. Refer to the *Sun Management Center 3.5 User's Guide* for general information about creating and monitoring Sun Management Center objects.

Starfire Platform Composites

A Starfire composite is a Sun Management Center group object that contains all the hosts associated with a Starfire platform. This composite includes the SSP, spare SSP if one is configured, and the Starfire domains. Additionally, a Sun Management Center object represents the Starfire platform information gathered from the SSP. The Starfire composite groups all these objects together to enable easier management of all components of the Starfire platform (FIGURE 4-1).
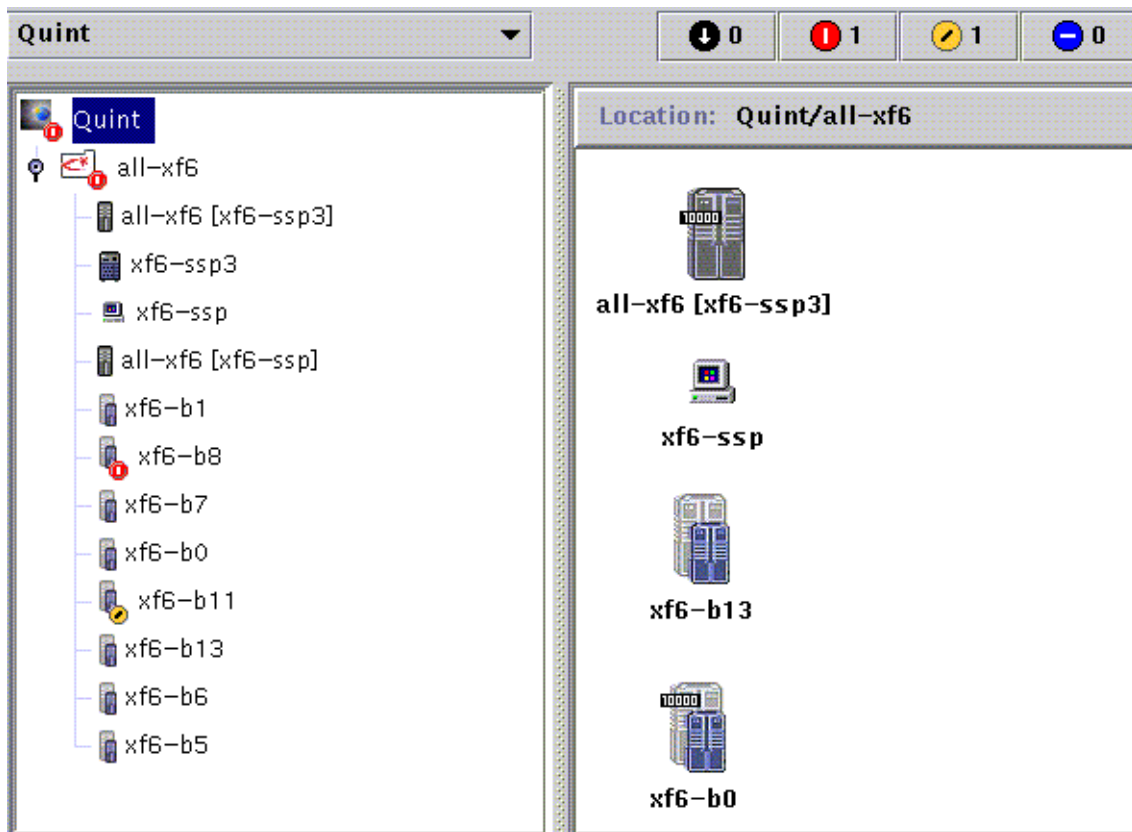
FIGURE 4-1 Starfire Composite and Objects It Contains

> **Note –** Icons for hosts monitored by Sun Management Center agents include a
> machine model badge, such as the 10000 badge shown for the bottom icon in the
> illustration. The icon for a host that is not monitored by a Sun Management Center
> agent host, such as the first domain icon in the illustration, displays no badge.

The SSP provides information to the Sun Management Center software about which
objects to include in the Starfire platform composite. When creating a Starfire
composite, you must supply the SSP host name and agent port number.

SSP and Starfire domain hosts in a Starfire platform composite can be included in
multiple groupings in the Sun Management Center topology, so that you can view
the hosts by their Starfire platform association, as well as by their network grouping.
When Starfire hosts are found by a discovery request, they are placed in the

topology according to their network groupings. In addition, when the main SSP is found by a discovery request, the Starfire domain and SSP hosts are also placed into the Starfire platform composite grouping.

To monitor Starfire domains and platforms, create a Sun Management Center Starfire composite from the Create Topology Object window, or use a Sun Management Center discovery request.

▼ To Create a Starfire Composite Object

1. **In the hierarchy view of the main console window, change levels to the level in the Sun Management Center domain topology where you want to create the new composite object.**

2. **In the main console window, select Create an Object from the Edit menu.**

3. **Click the Composite tab in the Create Topology Object window.**

4. **Type a label (usually the Starfire platform name with which the SSP software was configured), the SSP host name, and the port number on which the SSP Sun Management Center agent is configured.**

5. **Select OK.**

   This message is displayed:

   ```
   Creating composite object... Please Wait.
   ```

   The amount of time this operation requires depends upon how many Starfire domains are configured and whether those domains are running.

   The Starfire folder is added to the current location in the Sun Management Center domain topology. If the Starfire composite is not created, follow the steps in "To Troubleshoot a Composite Creation Failure" on page 48.

6. **Open this folder to see all the objects associated with the Starfire platform.**

▼ To Discover a Starfire Composite

1. **Create a Sun Management Center discovery request that includes the Starfire SSP IP address. Be sure to include the Sun Management Center agent port in the list of network ports.**

2. **Run this discovery request.**

   The Starfire composite is added to the root level of the Sun Management Center domain topology. In addition, the SSP is added to the Sun Management Center topology network grouping.

3. **If the Starfire composite is not created, follow the steps in "To Troubleshoot a Composite Creation Failure" on page 48.**

Note – If the SSP was busy at the time the discovery request was made, run the discovery request again, or increase the discovery request SNMP time-out value.

You can use the following discovery request filter options to customize your Starfire composite discovery request:

- The platform type filter criteria enable you to include or exclude Starfire domain, Starfire platform, and Starfire composite object types.
- Starfire domain hosts and the SSP within the composite can be filtered by the host names and operating environment filter criteria. The host names and operating environment filter criteria do not filter Starfire platform objects.
- If the SSP is excluded by a filter criterion, the Starfire composite objects are still examined by the Discovery Manager for inclusion in the Sun Management Center domain.

Updating a Starfire Platform Composite

Once you have created the Starfire platform composite, the contents and type of the composite Sun Management Center topology objects do not change. The composite objects must be updated if:

- Starfire domains are added to or deleted from the platform configuration.
- Spare SSP is added to or deleted from the platform configuration.
- Sun Management Center monitoring for an object no longer shows the correct monitor type. For example, if the Sun Management Center agent or the Starfire domain is not running at the time the composite was created, an Internet Control Message Protocol (ICMP) Ping monitoring type host object is created for the Starfire domain. Once the host and Sun Management Center agent are running again, the Starfire domain host object needs to be updated so that it can be monitored as a Sun Management Center Agent - Host type.

Note – If Starfire domain hosts running the Sun Management Center agent are monitored as any type other than a Sun Management Center Agent - Host, verify that you have specified the correct Starfire domain ports during SSP platform setup. This configuration can be examined from the Starfire platform Details window in the Starfire Agent Status object of the Config Reader (Starfire Platform) module.

▼ To Update a Starfire Composite Created by Create Topology Object

1. **If the Starfire platform composite was created using the Create Topology Object window, you must perform all updates to the composite manually.**

   - If Starfire composite objects have been added or deleted, delete or create the objects as described in the *Sun Management Center 3.5 User's Guide*.
   - If the monitoring type has changed, modify the topology object as described in the "Modifying Objects" section of the *Sun Management Center 3.5 User's Guide*.

2. **If the changes are numerous, it may be easier to delete the current Starfire composite object from the topology and recreate it. See "To Create a Starfire Composite Object" on page 45 for instructions.**

▼ To Update a Starfire Composite Created by Discovery

1. **If the Starfire platform composite was created by the Discovery Manager, many of the updates can be made by running a discovery request for the main SSP. This discovery request can either be started manually or scheduled for periodic running.**

   Running the discovery request makes these changes:

   - New Starfire objects such as Starfire domains and a spare SSP are added to the platform composite.
   - If an object monitoring type has changed to a level of higher monitoring capability, the monitoring type is updated. Monitoring capability increases from the ICMP Ping monitoring type to the SNMP Ping monitoring type to the Sun Management Center Agent - Host monitoring type.

   Running a discovery request does not make certain other changes:

   - Topology objects are not deleted from the platform composite.
   - If any of the topology objects have been modified from the Sun Management Center console window, the object monitoring type is not updated.

2. **If you prefer, you can create an updated platform composite by deleting the Starfire platform composite from the topology and running a discovery request.**

▼ To Troubleshoot a Composite Creation Failure

If you are unable to create a Starfire platform composite, check for the following problems:

1. **Verify that the correct SSP host name and Sun Management Center agent port number were specified in the Create Topology Object procedure or discovery request.**

Note – The SSP must be the main SSP for the platform, not the spare SSP.

---

2. **Log in to the SSP and verify that the two Sun Management Center agents are running:**

```
ssp# ps -ef | grep esd
root 21020 1 2 Mar 10 ? 84:03 esd – init agent -dir
/var/opt/SUNWsymon
root 21858 1 3 Mar 10 ? 103:07 esd – init platform -dir
/var/opt/SUNWsymon
```

3. **Try rerunning the discovery request or increasing the discovery request SNMP time-out value.**

4. **Create the Starfire platform object directly by creating a node as described in "To Create a Starfire Platform Object" on page 51.**

5. **Examine the Browser tab of the platform Details window to confirm that the Config Reader (Starfire Platform) module is loaded under Hardware and that the module is not disabled. The Discovery Object Table provided by this module defines the objects that are to be included in the Starfire platform composite.**

6. **On the SSP, run this command to ensure that the Discovery Table was created correctly.**

```
ssp# /opt/SUNWsymon/sbin/es-dt -v
```

If the output is not present or does not have the information contained in the following example, the Discovery Table was *not* created correctly.

```
Label             Starfire
Host              <host name>
Port              <port number>
OID               1.3.6.1.4.1.42.2.85.1.1.22
Node Object Type  Starfire-platform-group
```

If you do not see this type of output, repeat the process starting with Step 5. If that still does not work, contact your Sun service representative.

Starfire Platform Objects

Starfire platform information is provided by a Sun Management Center platform agent running on the main SSP. When a spare SSP is configured, two Starfire platform objects are present in the Starfire platform composite. Starfire platform information is only available from the platform object associated with the main SSP. When a platform object is created as part of a composite, the platform object name includes the associated SSP name in square brackets. The spare SSP object and its associated Starfire platform topology objects are marked with a Disabled alarm icon to distinguish the spare and main topology objects (FIGURE 4-2).
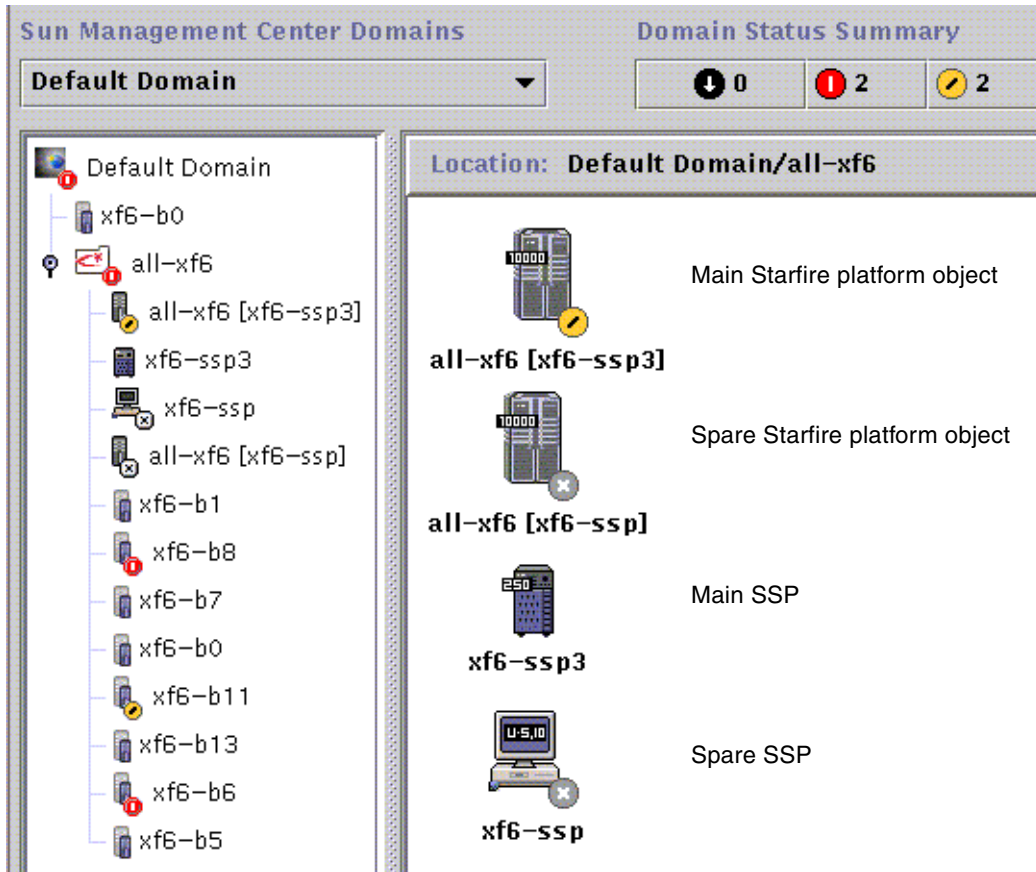
FIGURE 4-2   Main and Spare Starfire Platform and SSP Icons

Note – If a higher severity alarm exists for the spare SSP or Starfire platform, the higher severity alarm is displayed on the object instead of the Disabled alarm icon.

Notice that the icons for the SSP and spare SSP differ in appearance, since in this case the main SSP is a workgroup server and the spare SSP is an Ultra workstation. Notice also that in this case the main platform object is displaying an alert status.

Once Sun Management Center has been installed and set up on the main and spare SSPs and the Starfire platform objects have been created, no Sun Management Center configuration changes are required when the spare SSP becomes the acting main SSP.

When this switch from spare to acting main SSP occurs, the platform agent on the acting main SSP becomes active and collects current information about the Starfire platform.

Not all the information that was available prior to this switch is available from the newly active platform agent. The number of arbitration stops (arbstops) encountered are reset to zero. A current error, such as a high temperature, is reported if the condition still persists.

The Sun Management Center agents on the spare and main SSP are not automatically synchronized. If you modify any of the default limits, attributes, or loaded modules of the Sun Management Center agents on either the main or spare SSP, you should also make those changes to the agents operating on the other SSP.

▼ To Create a Starfire Platform Object

Starfire platform objects are created as part of the Starfire composite. You can also create the platform objects directly.

1. **Follow the instructions in "Creating a Node" in Chapter 3 of the** *Sun Management Center 3.5 User's Guide* **instructions to create a Starfire platform object.**

2. **In Step 3 of that procedure, select the Agent - Platform monitoring type from the pull-down menu (Monitor Via).**

3. **In Step 4 of that procedure, type the name or IP address of the main SSP.**

Note – The default platform agent port number is port 166. Do not change this port number unless the platform agent was configured on a different port during Sun Management Center setup.

---

4. **Click OK.**

Starfire System Details Windows

The add-on Starfire components consist of the following Sun Management Center agent modules that are viewable from the Starfire System Details windows:

TABLE 5-1   Sun Management Center Agent Modules

Module Name	Details Window
Config Reader (Starfire Domain)	Starfire Domain
Config Reader (Starfire Platform)	Starfire Platform
SSP Status	SSP
Discovery Table	SSP

These modules provide Starfire hardware monitoring capability and provide information about the Starfire composite configuration. See "Starfire Agent Modules" on page 63 for detailed information about the objects and properties provided by these modules.

This chapter provides details about the Starfire domain and platform information shown in the Details window. Three related chapters in the *Sun Management Center 3.5 User's Guide* provide general information about using the Sun Management Center Details window:

- Chapter 5, "Sun Management Center Software Main Console Window," shows you how to use the main Sun Management Center console window.
- Chapter 6, "Browser," shows you how to display the Details window from the main Sun Management Center console window.
- Chapter 13, "Details," shows you how to use the Details window.

Starfire Domain Details Window

The Starfire domain Details window resembles the host Details window described in the *Sun Management Center 3.5 User's Guide*, except that additional information is shown by the Hardware tab.

Note – If your Starfire domain Details window does not include a Hardware tab, Starfire support has not been installed correctly on your Sun Management Center server host. Confirm that the add-on Starfire components have been installed and set up, and that the Sun Management Center server process has been restarted following installation.

The Hardware tab displays information provided by the Starfire domain Config Reader module. This module provides up-to-date information about the system boards and the components that reside on those boards including:

- Processors
- Memory
- Attached I/O devices

Only the system boards allocated to the Starfire domain are included in this information. Information about the hardware configuration of the entire platform can be viewed from the Starfire platform Details window. See "Starfire Platform Details Window" on page 56 for more information.

Starfire Domain Configuration Resources

The Resources view of the Starfire domain Hardware tab provides information about the platform components of which this Starfire domain is a part, as well as summary information about domain hardware resources (FIGURE 5-1).
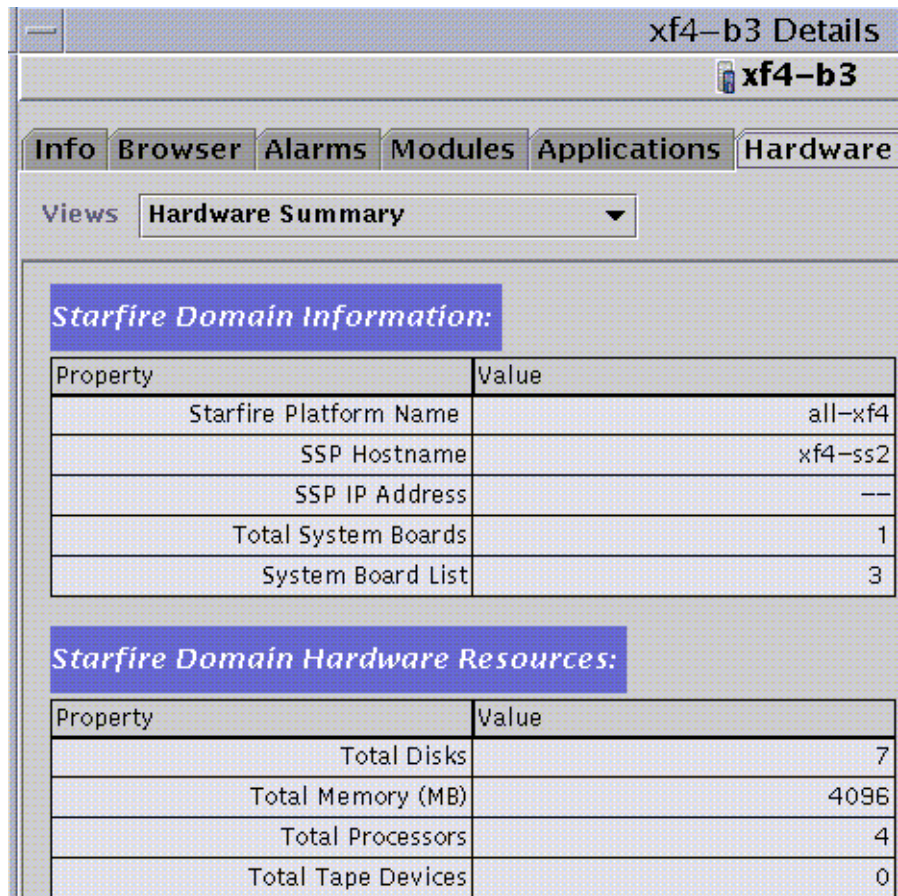
FIGURE 5-1   Starfire Domain Information and Hardware Resource Summary

The Starfire Domain Information shown above includes these properties (TABLE 5-2):

TABLE 5-2   Starfire Domain Information

Property	Description
Starfire Platform Name	Name given to the platform during SSP software configuration.
SSP Hostname	Host name of the main SSP.
SSP IP Address	SSP IP address.
Total System Boards	Number of systems boards assigned to this Starfire domain.
System Board List	List of the system boards assigned to this Starfire domain.

The Starfire Domain Hardware Resources shown above includes these properties (TABLE 5-3):

TABLE 5-3   Starfire Domain Hardware Resources

Property	Description
Total Disks	Number of disks present in the system
Total Memory (MB)	Total memory, in megabytes
Total Processors	Number of processors. This includes all processors allocated to the domain, including processors not configured by POST.
Total Tape Devices	Number of tape devices present in the system

Interaction With Starfire Domain Devices

The Starfire domain Config Reader module periodically opens and immediately closes Starfire domain disk and tape devices to determine the physical presence of these devices. These actions may cause the following behavior:

- When devices have been configured into the system but are no longer physically attached or are turned off, the Starfire domain Config Reader module operation may be delayed while the device open call attempts to contact the missing device. This may lead to sluggish refreshing of the hardware configuration information or displaying the black star or "splat" icon on the Starfire domain Config Reader module. Resolve this problem by removing the entries for the missing devices in `/dev/rdsk` and `/dev/rmt` or reconfiguring the system devices; see `drvconfig`(1M).

- Dynamic Reconfiguration detach operations may occasionally fail, due to board devices being momentarily busy due to this Config Reader activity. In the rare event that a DR detach operation fails, retrying the detach operation is usually successful.

Starfire Platform Details Window

The Sun Management Center Details window for a Starfire platform displays information about the entire platform hardware. This window includes the following tab buttons, which are explained in the *Sun Management Center 3.5 User's Guide*:

- Info
- Browser

- Alarms
- Hardware

Note – If your Starfire platform Details window does not include each of these tab buttons, Starfire support has not been correctly installed on your Sun Management Center server host. Confirm that the add-on Starfire components have been installed and set up, and that the Sun Management Center server process has been restarted following installation.

The Starfire platform is monitored by a Sun Management Center platform agent on the SSP. The platform agent is dedicated to this task, so you cannot load or unload agent modules from the Starfire platform Details window.

The Hardware tab displays information provided by the Starfire platform Config Reader module. This module provides up-to-date information about platform hardware, including:

- Voltage and temperature
- All boards
- Power supplies
- Fan trays
- Hardware errors encountered, such as `recordstop`, `arbstop`, and `watchdog`.

Both the Starfire platform and Starfire domain Config Reader modules provide information about the system board configuration. This duplicated information may cause the Starfire domain and platform Details window to report duplicate alarms for a single condition. This enables you to see alarms quickly, regardless of which Details window you are watching.

The Starfire platform Config Reader module does not provide configuration information for the I/O devices attached to the platform. To see this information, open a Starfire domain Details window for each domain whose I/O devices you want to check.

Determining the Complete Platform Configuration

The complete Starfire platform hardware configuration cannot be determined from the SSP alone. The Starfire platform Config Reader module queries the Starfire domain Config Reader module for the following system board information:

- Memory configuration
- I/O configuration
- Processor details
- Components which failed power-on self-test (POST)

If the platform Config Reader cannot access the Starfire domain Config Reader information, the detailed configuration for a system board assigned to that Starfire domain is unknown.

> **Caution –** The Starfire platform Config Reader accesses Starfire domain information using SNMP. If you use the Attribute Editor to change the security attributes of the Starfire domain Config Reader module and exclude access by the "public" SNMP community, the platform Config Reader module is unable to access any Starfire domain configuration information.

Once the detailed system board configuration is determined, this information is available from the Starfire platform Details window even if the Starfire domain Config Reader is inaccessible. All hardware components whose configuration is unknown are clearly marked.

The system board configuration information gathered from the Starfire domain is cached and time-stamped so you can determine how current it is. This information is periodically checked and updated when it has changed. It is discarded whenever either of these events occurs:

- System board is physically removed from the Starfire platform.
- Starfire platform agent is stopped.

> **Note –** There may be a delay of a few minutes before the Starfire platform Config Reader module is updated with the most current Starfire domain information.

Starfire Platform Configuration Resources

The Resources view of the Starfire platform Hardware tab provides information about the hosts associated with this Starfire platform and a summary of the platform's hardware configuration (FIGURE 5-2).
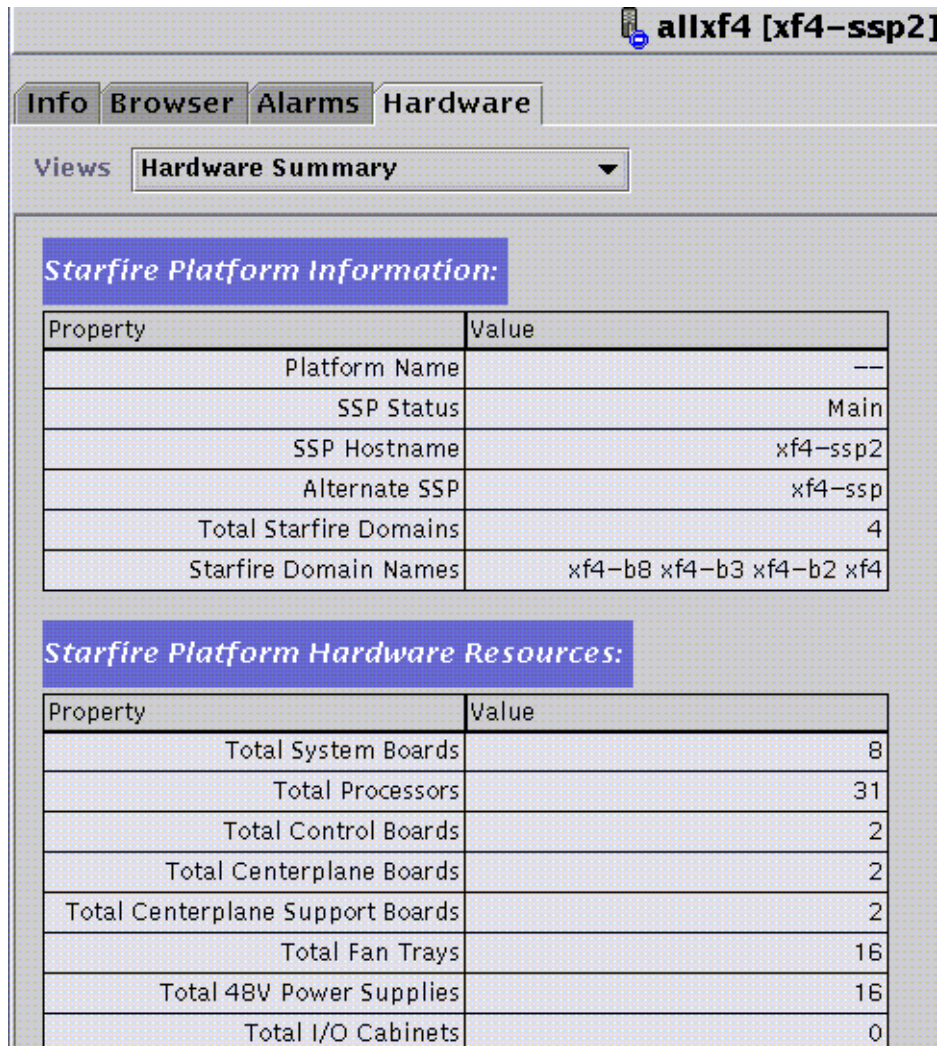
FIGURE 5-2   Starfire Platform Information and Hardware Resource Summary

The Starfire Platform Information table includes these properties (TABLE 5-4):

TABLE 5-4   Starfire Platform Information

Property	Description
Platform Name	Name given to the platform during SSP software configuration
SSP Status	Status, either main or spare, of the SSP associated with this platform topology object
SSP Hostname	Host name of the SSP associated with this platform topology object
Alternate SSP	Host name of the alternate SSP for this platform, if one is configured
Total Starfire Domains	Number of Starfire domains configured for this platform
Starfire Domain Names	List of the domains configured on this Starfire platform

The Starfire Platform Hardware Resources table includes these properties (TABLE 5-5):

TABLE 5-5   Starfire Platform Hardware Resources:

Property	Description
Total System Boards	Number of system boards
Total Processors	Number of processors
Total Control Boards	Number of control boards
Total Centerplane Boards	Number of centerplane boards
Total Centerplane Support Boards	Number of centerplane support boards
Total Fan Trays	Number of fan trays
Total 48V Power Supplies	Number of power supplies
Total I/O Cabinets	Number of I/O cabinets

Starfire Physical and Logical Views

In the Starfire domain physical view, the chassis picture has some grayed-out areas rather than the photo-realistic image shown in the Starfire platform physical view (FIGURE 5-3). This difference reminds you that only Starfire domain system board information is available from the Starfire domain.

Domain   Platform

FIGURE 5-3   Physical Views of a Starfire Domain and a Starfire Platform

---

Note – Display the Starfire platform physical view if you want more information about the entire platform.

The Starfire platform physical view "watermarks" the system board memory and I/O modules whose presence is unknown with a question mark indicator (FIGURE 5-4).

FIGURE 5-4   Unknown Module With Question Mark Indicator

The physical and logical view highlight components that have open alarms but, when displayed, the physical and logical view property detail information does not identify which property is currently in an alarm state. Many Starfire components are characterized by multiple properties that have rules and potential alarms. To determine which component properties have open alarms, examine the Alarm or Browser tab of the Details window.

The physical view shows only components that are visible in the platform chassis. For example, centerplane boards and I/O devices are not shown in the physical view. To view information on these devices, examine the logical view or browser displays.

SSP Details Window

No changes specific to Starfire servers have been made to the SSP Details window. Two additional local application modules, SSP Status and Discovery Table, are configured for loading into the SSP agent during Starfire platform setup. These modules display the main or spare status of the SSP and provide Starfire composite information.

Note – If the SSP status module and Discovery Table are not loaded, perform Starfire platform setup again.

Starfire Agent Modules

This chapter provides specific information about the agent modules contained in the Starfire add-on components:

- Starfire Domain Config Reader (`Config-Reader4u1D`)
- Starfire Platform Config Reader (`Config-Reader4u1P`)
- SSP Status module (`sspStatus`)

This chapter also provides specific information about how to change rule limits for the Starfire domain Config Reader and Starfire platform Config Reader.

Appendix D of the *Sun Management Center 3.5 User's Guide* describe the base Sun Management Center modules that monitor various components of your system, including your hardware, operating environment, local applications, and remote systems.

Chapter 10 in the *Sun Management Center 3.5 User's Guide* provides general information about how to use the Attribute Editor to set alarm limits.

Module Properties

The tables in this chapter provide brief descriptions of each property in a module. If a property is monitored by a Sun Management Center rule, the name of that rule is shown in the table. For descriptions of these rules, see "Starfire Config Reader Rules" on page 91.

A field-replaceable property means that the component can be replaced on-site.

A hot-plug property means that the component can be removed from the platform without shutting the system down.

Properties that can be graphed are noted in the property description. Refer to Chapter 9 of the *Sun Management Center 3.5 User's Guide* for more information about graphing properties.

Note – It is not always possible for Sun Management Center software to determine the value for a particular property. When the value is unknown, the property value is displayed as --.

Starfire Domain Config Reader Module

The Starfire Domain Config Reader module provides the hardware configuration for Starfire domains. During Starfire domain add-on setup, this module is configured for automatic loading into the Starfire domain agent and is displayed under the Browser hardware icon.

Module Refresh Intervals

Sun Management Center agent modules refresh their data at periodic intervals and the browser periodically retrieves the current value of agent data. This combination of periodic refreshes and updates provides a current view of module information from the Details window.

The Starfire domain Config Reader module is refreshed every minute, and the refresh of all module data is driven by the refresh of the System folder. When viewing the module data from the browser, you can request an immediate refresh of the module data. See "To Refresh Starfire Domain Config Reader Data" on page 64 for more information.

You can also change the periodic interval at which the module refreshes its data. This periodic interval balances getting timely notification of changes to your system configuration with using system resources to accomplish this periodic refresh. See "To Change the Starfire Domain Config Reader Refresh Interval" on page 65 for more information.

▼ To Refresh Starfire Domain Config Reader Data

1. Open the Starfire domain Details window and select the Browser tab.

2. **Select any property within the System folder and refresh that data.**

   This causes the Starfire domain Config Reader module to refresh all its data.

3. **If you want to view information not contained in the System folder, select that property in the browser and refresh the data.**

   This updates the browser with the latest value of that property.

▼ To Change the Starfire Domain Config Reader Refresh Interval

1. **Open the Starfire domain Details window and select the Browser tab.**

2. **Select any property within the System folder and invoke the Attribute Editor.**

Caution – Do not change the refresh interval to a value less than its default value.

---

3. **Select the Refresh tab and change the refresh interval.**

Starfire Domain Config Reader Properties

The tables in this section describe each of the visible properties for each Starfire Domain Config Reader object.

System

The following table provides a brief description of the properties for the Starfire Domain Config Reader System (TABLE 6-1):

TABLE 6-1   Starfire Domain Config Reader System

Property	Rule (if any)	Description
Name		"system"
Hostname		Starfire domain host name
Host ID		Host identification number
Operating System		Operating Environment running in the Starfire domain
OS Version		Version of the operating environment running
System Clock (MHz)		Clock frequency in megahertz

TABLE 6-1   Starfire Domain Config Reader System *(Continued)*

Property	Rule (if any)	Description
Architecture		Machine architecture (SPARC)
Machine Type		Machine type (sun4u)
Platform Type		Platform type (SUNW, Ultra Enterprise 10000)
Last Update		Time the configuration information was last updated
Total Disks		Number of disks present in the system
Total Memory (MB)		Total memory, in megabytes
Total Processors		Number of processors. This includes all processors allocated to the domain, including processors not configured by POST.
Total Tape Devices		Number of tape devices present in the system

Starfire Platform

The following table provides a brief description of the properties for the Starfire Domain Config Reader Platform (TABLE 6-2):

TABLE 6-2   Starfire Domain Config Reader Platform

Property	Rule (if any)	Description
Name		"starfire_platform"
Starfire Platform Name		Name of the Starfire platform of which this Starfire domain is a part
SSP Hostname		Name of the main SSP for the Starfire platform
SSP IP address		IP address of the main SSP for the Starfire platform
Total System Boards		Number of the system boards allocated to this Starfire domain
System Board List		A list of all system boards allocated to this Starfire domain

System Boards

The following table provides a brief description of the properties for Starfire Domain Config Reader System Boards (TABLE 6-3):

TABLE 6-3   Starfire Domain Config Reader System Boards

Property	Rule (if any)	Description
Name		system-board(n) where n is the system board number
System Board		System board number
POST Status	e10kpost	POST status for the entire system board
Memory (MB)		System board memory size in megabytes
Processors		Number of processors on this system board
I/O Adaptors		Number of I/O adaptors on this system board
Field Replaceable		"yes"
Hot Plug		"yes"

System Board ASIC POST Status

The following table provides a brief description of the properties for Starfire Domain Config Reader System Board ASIC POST Status (TABLE 6-4):

TABLE 6-4   Starfire Domain Config Reader System Board ASIC POST Status

Property	Rule (if any)	Description
Name		ASIC(n) where n is the system board number
System Board		System board number
CIC0	e10kpost	POST status for the coherency interface controller 0 ASIC and, more generally, this system board's ability to operate with global address bus 0.
CIC1	e10kpost	POST status for the coherency interface controller 1 ASIC and, more generally, this system board's ability to operate with global address bus 1.
CIC2	e10kpost	POST status for the coherency interface controller 2 ASIC and, more generally, this system board's ability to operate with global address bus 2.
CIC3	e10kpost	POST status for the coherency interface controller 3 ASIC and, more generally, this system board's ability to operate with global address bus 3.

TABLE 6-4 Starfire Domain Config Reader System Board ASIC POST Status *(Continued)*

Property	Rule (if any)	Description
LDPATH0	e10kpost	POST status for the local data router lower 72 bits ASIC and, more generally, this system board's ability to operate with global data bus 0.
LDPATH1	e10kpost	POST status for the local data router upper 72 bits ASIC and, more generally, this system board's ability to operate with global data bus 1.
PC0	e10kpost	POST status for the port controller 0 ASIC
PC1	e10kpost	POST status for the port controller 1 ASIC
PC2	e10kpost	POST status for the port controller 2 ASIC
XDB0	e10kpost	POST status for the data buffer 0 ASIC
XDB1	e10kpost	POST status for the data buffer 1 ASIC
XDB2	e10kpost	POST status for the data buffer 2 ASIC
XDB3	e10kpost	POST status for the data buffer 3 ASIC

Processor Modules

The following table provides a brief description of the properties for Starfire Domain Config Reader Processor Modules (TABLE 6-5):

TABLE 6-5 Starfire Domain Config Reader Processor Modules

Property	Rule (if any)	Description
Name		cpu-unit(n), where n is the Processor ID
Processor Module		$n.m$ where n is the system board number and m is the system board processor module number (0-3)
Processor ID		Processor identifier
POST Status	e10kpost	POST status for this processor
Processor Status	e10kproc	Processor on-line/off-line status
Clock (MHz)		Processor clock frequency in megahertz
Ecache Size (MB)		External cache size in megabytes
Dcache Size (KB)		Data cache size in kilobytes
Icache Size (KB)		Instruction cache size in kilobytes

TABLE 6-5 Starfire Domain Config Reader Processor Modules *(Continued)*

Property	Rule (if any)	Description
Processor Type		Processor type
Model		Processor model type
Field Replaceable		"yes"

Memory Modules

The following table provides a brief description of the properties for Starfire Domain Config Reader Memory Modules (TABLE 6-6):

TABLE 6-6 Starfire Domain Config Reader Memory Modules

Property	Rule (if any)	Description
Name		mem-unit(*n*), where *n* is the memory module number
Memory Module		System board number this memory module is on
POST Status	e10kpost	POST status of this memory module
Size (MB)		Memory module size in megabytes
Field Replaceable		"yes"

Memory Groups

The following table provides a brief description of the properties for Starfire Domain Config Reader Memory Groups (TABLE 6-7):

TABLE 6-7 Starfire Domain Config Reader Memory Groups

Property	Rule (if any)	Description
Name		mem-group(*n.m*), where *n.m* is the memory group number
Memory Group		*n.m* where *n* is the memory module number and *m* is the memory group number (0-3)
POST Status	e10kpost	POST status of this memory group
Size (MB)		Memory group size in megabytes

DIMM Table

The following table provides a brief description of the properties for Starfire Domain Config Reader DIMM Table (TABLE 6-8):

TABLE 6-8 Starfire Domain Config Reader DIMM Table

Property	Rule (if any)	Description
Name		dimm(*i.j.k*), where *i.j.k* is the DIMM number
DIMM		*i.j.k* where *i* is the memory module number, *j* is the memory group number, and *k* is the DIMM number (0-7)
ECC Errors	e10kmerr	(graphable) Number of ECC errors detected in `/var/adm/messages` for this DIMM.
Size (MB)		DIMM size in megabytes
Board Reference		Part location silk-screened on the memory module mezzanine board
Field Replaceable		"yes"

I/O Modules

The following table provides a brief description of the properties for Starfire Domain Config Reader I/O Modules (TABLE 6-9).

TABLE 6-9 Starfire Domain Config Reader I/O Modules

Property	Rule (if any)	Description
Name		io-unit(*n*), where *n* is the I/O module number
I/O Module		System board number this I/O module is on
I/O Module Type		I/O module type is either SBus or PCI. The type is displayed as unknown (--) if no board I/O adaptors or controllers were configured by POST.
I/O Adaptors		Number of I/O adaptors on this I/O module
Field Replaceable		"yes"

I/O Controllers

The following table provides a brief description of the properties for Starfire Domain Config Reader I/O Controllers (TABLE 6-10):

TABLE 6-10   Starfire Domain Config Reader I/O Controllers

Property	Rule (if any)	Description
Name		When the I/O controller is configured by POST, the name is either sbus(n) or pci(n) where n is the kernel assigned instance number for the controller. If not configured by POST, the name is io-controller($n.m$) where $n.m$ is the I/O controller number
I/O Controller		$n.m$ where n is the I/O module number and m is the host bus controller number (0-1)
POST Status	e10kpost	POST status for this I/O controller
UPA Portid		UPA portid for this I/O controller displayed in hexadecimal
Clock (MHz)		I/O controller clock frequency in megahertz
Model		Model name
Version Number		Version number

Note – I/O controllers for empty I/O adaptor slots are not included in the I/O Controllers table.

I/O Adaptors

The following table provides a brief description of the properties for Starfire Domain Config Reader I/O Adaptors (TABLE 6-11):

TABLE 6-11   Starfire Domain Config Reader I/O Adaptors

Property	Rule (if any)	Description
Name		io-adaptor($i.j.k$), where $i.j.k$ is the I/O adaptor number
I/O Adaptor		$i.j.k$ where i is the I/O module number, j is the I/O controller number, and k is the adaptor slot number (0-1)
POST Status	e10kpost	POST status for this I/O adaptor

TABLE 6-11 Starfire Domain Config Reader I/O Adaptors *(Continued)*

Property	Rule (if any)	Description
Model		If known, the model name for this I/O adaptor
Device Summary		Summary of I/O device drivers and devices supported by this I/O adaptor
Disk Count		Number of disks supported by this I/O adaptor
Network Count		Number of configured network interfaces supported by this I/O adaptor
Tape Count		Number of tape devices support by this I/O adaptor
Field Replaceable		"yes"

I/O Device Drivers

The following table provides a brief description of the properties for Starfire Domain Config Reader I/O Device Drivers (TABLE 6-12):

TABLE 6-12 Starfire Domain Config Reader I/O Device Drivers

Property	Rule (if any)	Description
Name		Device driver name and kernel assigned instance number, such as `isp(2)`. If an instance number has not been assigned, the device name and register properties are used instead.
I/O Adaptor		I/O adaptor number for this device
Device Type		Device type, if known, such as SCSI or network.

Tape Devices

The following table provides a brief description of the properties for Starfire Domain Config Reader Tape Devices (TABLE 6-13):

TABLE 6-13 Starfire Domain Config Reader Tape Devices

Property	Rule (if any)	Description
Name		Device name and kernel assigned instance number, such as `st(0)`
Tape Name		`/dev` name for this tape device
I/O Adaptor		I/O adaptor number for this device

TABLE 6-13   Starfire Domain Config Reader Tape Devices *(Continued)*

Property	Rule (if any)	Description
Status		Current status, such as "ok" or "drive present, but busy"
Tape Warnings	e10ktwrn	(graphable) Number of tape warnings detected in `/var/adm/messages` for this tape.
Model		Model name for this tape device, if known
Target Number		Tape target number
Field Replaceable		"yes"

Network Devices

The following table provides a brief description of the properties for Starfire Domain Config Reader Network Devices (TABLE 6-14):

TABLE 6-14   Starfire Domain Config Reader Network Devices

Property	Rule (if any)	Description
Name		Device name and kernel assigned instance number such as `le(0)`. If an instance number has not been assigned, the device name and register properties are used instead.
Interface Name		Network interface name
I/O Adaptor		I/O adaptor number for this device
Symbolic Name		Host name associated with this network interface
Internet Address		IP address for the network interface
Ethernet Address		Ethernet address for the network interface

Disk Devices

The following table provides a brief description of the properties for Starfire Domain Config Reader disk devices (TABLE 6-15):

TABLE 6-15   Starfire Domain Config Reader Disk Devices

Property	Rule (if any)	Description
Name		Device name and kernel assigned instance number, such as sd(0)
Disk Name		`/dev` name for this disk
I/O Adaptor		I/O adaptor number for this device
Disk Warnings	e10kdwrn	(graphable) Number of disk warnings detected in `/var/adm/`messages for this disk.
Target Number		Disk target number
Field Replaceable		"yes"

Starfire Platform Config Reader Module

The Starfire Platform Config Reader module provides information about the hardware configuration for the entire Starfire platform. During Starfire platform add-on setup, this module is configured for automatic loading into the SSP platform agent and is displayed under the Browser Hardware icon.

This module is automatically disabled when the SSP becomes the spare SSP, and is enabled when the SSP becomes the main SSP. When the module is disabled, no platform information is available.

Module Refresh

The Starfire Platform Config Reader module gathers its data from two primary sources: the SSP `snmpd` agent and the Starfire domain Config Reader modules. SNMP traps are monitored by the module to get prompt notification of system configuration changes. In addition, the configuration information is updated at periodic intervals in case an SNMP trap is missed.

Gathering so much data at one time consumes too many system resources, so the platform agent does not gather it all at once. A complete refresh of the module data requires a span of 3–12 minutes, depending on the system configuration.

Using the browser from the platform Details window, you can refresh any module property, but doing so only retrieves the current value of the property from the platform agent. It does not force a recalculation of the data.

The Refresh Model properties described in "Refresh Model" on page 89 enable you to start a refresh of the SSP or Starfire domain model data.

Starfire Platform Config Reader Properties

Platform Config Reader information gathered from the Starfire domain Config Reader is identified in the property description. Tables that have information gathered from the Starfire domain Config Reader have a Cache Updated property that is a time stamp of when this information was gathered from the Starfire domain.

Note – Since the Starfire domain configuration information is updated only when it changes and Starfire domain data changes infrequently, the Cache Updated time stamp may appear old even though the data is current.

If the Cache Updated property has a value of --, Starfire domain information for that table row is unavailable.

Note – A Cnotation refers to temperatures measured in degrees Celsius.

System

The following table provides a brief description of the properties for the Starfire Platform Config Reader System (TABLE 6-16):

TABLE 6-16   Starfire Platform Config Reader System

Property	Rule (if any)	Description
Name		"system"
Platform Name		Name assigned to this Starfire platform during SSP software configuration
Ambient Temp (C)	e10ktemp	(graphable) Ambient temperature as measured by a sensor on the master control board
Total Starfire Domains		Number of Starfire domains configured
Total System Boards		Number of system boards

TABLE 6-16   Starfire Platform Config Reader System *(Continued)*

Property	Rule (if any)	Description
Total Processors		Number of processors
Total Control Boards		Number of control boards
Total Centerplane Boards		Number of centerplane boards
Total Centerplane Support Boards		Number of centerplane support boards
Total I/O Cabinets		Number of I/O cabinets
Total Fan Trays		Number of fan trays
Total 48V Power Supplies		Number of power supplies
Master Control Board		Master control board number
SysClk Control Board		System clock is provided by this control board
System Clock Frequency (MHz)		Clock frequency in megahertz
Last Update		Last time the configuration information for the System object was updated

System Boards

The following table provides a brief description of the properties for Starfire Platform Config Reader System Boards (TABLE 6-17):

TABLE 6-17   Starfire Platform Config Reader System Boards

Property	Rule (if any)	Description
Name		system-board(*n*) where *n* is the system board number
System Board		System board number
Power Status	e10kpowr	Indicates whether the board power is on or off.
Starfire Domain		Name of the Starfire domain this board is assigned to. A '--' is displayed if the board is not assigned to any Starfire domain.
POST Status	e10kpost	(Starfire domain) POST status for the entire system board
Memory (MB)		(Starfire domain) System board memory size in megabytes

TABLE 6-17 Starfire Platform Config Reader System Boards *(Continued)*

Property	Rule (if any)	Description
Processors		Number of processors on this system board
I/O Adaptors		(Starfire domain) Number of I/O adaptors on this system board
CIC0 Temp (C)	e10ktemp	(graphable) Temperature of the CIC0 ASIC
CIC1 Temp (C)	e10ktemp	(graphable) Temperature of the CIC1 ASIC
MC Temp (C)	e10ktemp	(graphable) Temperature of the MC ASIC
XDB2 Temp (C)	e10ktemp	(graphable) Temperature of the XDB2 ASIC
XDB3 Temp (C)	e10ktemp	(graphable) Temperature of the XCB3 ASIC
Proc0 Temp (C)	e10ktemp	(graphable) Temperature of the processor unit 0
Proc1 Temp (C)	e10ktemp	(graphable) Temperature of the processor unit 1
Proc2 Temp (C)	e10ktemp	(graphable) Temperature of the processor unit 2
Proc3 Temp (C)	e10ktemp	(graphable) Temperature of the processor unit 3
3.3VDC Temp (C)	e10ktemp	(graphable) Temperature of the board 3.3VDC power supply
VDC Core Temp (C)	e10ktemp	(graphable) Temperature of the board VDC core power supply
5VDC Temp (C)	e10ktemp	(graphable) Temperature of the system board 5VDC power supply
3.3VDC Voltage (V)	e10kvolt	(graphable) Voltage level for the board 3.3VDC power
5VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC housekeeping power
5VDC Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC power
VDC Core Voltage (V)	e10kvolt	(graphable) Voltage level for the board VDC core power
3.3VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 3.3VDC housekeeping power
Serial Number		System board serial number. Due to the manner in which this information is collected, a -- is displayed if the system board has not been thermally calibrated
Cache Updated		Time the Starfire domain data was last updated
Field Replaceable		"yes"
Hot Plug		"yes"

System Board ASIC POST Status

The values in this table are retrieved from the corresponding Starfire domain Config Reader module. These properties are described in TABLE 6-4. An additional Cache Updated property in this table displays the time that the information was gathered from the Starfire domain.

Processor Modules

The following table provides a brief description of the properties for Starfire Platform Config Reader Processor Modules (TABLE 6-18):

TABLE 6-18   Starfire Platform Config Reader Processor Modules

Property	Rule (if any)	Description
Name		cpu-unit(n), where n is the Processor ID
Processor Module		n.m where n is the system board number and m is the system board processor module number (0-3)
Processor ID		Processor identifier
POST Status	e10kpost	(Starfire domain) POST status for this processor
Processor Status	e10kproc	(Starfire domain) Processor on-line/off-line status
Clock (MHz)		(Starfire domain) Processor clock frequency in megahertz
Ecache Size (MB)		(Starfire domain) External cache size in megabytes
Dcache Size (KB)		(Starfire domain) Data cache size in kilobytes
Icache Size (KB)		(Starfire domain) Instruction cache size in kilobytes
Processor Type		(Starfire domain) Processor type
Model		(Starfire domain) Processor model type
Cache Updated		Time Starfire domain data was last updated
Field Replaceable		"yes"

Memory Modules

When system board configuration information from a Starfire domain is unavailable, it is unknown whether the board has a memory module configured and a table entry is created for the memory module. The memory module properties have a value of -- to indicate that the information is unavailable.

When this Starfire domain information becomes available, the table is updated. If the memory module is not present, the table entry for the memory module is removed.

The following table provides a brief description of the properties for Starfire Platform Config Reader Memory Modules (TABLE 6-19):

TABLE 6-19 Starfire Platform Config Reader Memory Modules

Property	Rule (if any)	Description
Name		mem-unit(n), where n is the memory module number
Memory Module		System board number this memory module is on
POST Status	e10kpost	(Starfire domain) The POST status of this memory module
Size (MB)		(Starfire domain) Memory module size in megabytes
Cache Updated		Time Starfire domain data was last updated
Field Replaceable		"yes"

Memory Groups

The values in this table are retrieved from the corresponding Starfire domain Config Reader module. These properties are described in TABLE 6-7. An additional Cache Updated property in this table displays the time the information was gathered from the Starfire domain.

DIMM Table

The values in this table are retrieved from the corresponding Starfire domain Config Reader module. These properties are described in TABLE 6-8. An additional Cache Updated property in this table displays the time the information was gathered from the Starfire domain.

I/O Modules

When system board configuration information from a Starfire domain is unavailable, it is unknown whether the board has an I/O module configured and a table entry is created for the I/O module. The I/O module properties have a value of -- to indicate that the information is unavailable.

When this Starfire domain information becomes available, the table is updated. If the I/O module is not present, the table entry for the I/O module is removed.

The following table provides a brief description of the properties for Starfire Platform Config Reader I/O Modules (TABLE 6-20):

TABLE 6-20 Starfire Platform Config Reader I/O Modules

Property	Rule (if any)	Description
Name		io-unit(*n*), where *n* is the I/O module number
I/O Module		System board number this I/O module is on
I/O Module Type		(Starfire domain) I/O module type is either SBus or PCI. Type is displayed as unknown (--) if no board I/O adaptors or controllers were configured by POST.
I/O Adaptors		(Starfire domain) Number of I/O adaptors on this I/O module
Cache Updated		Time Starfire domain data was last updated
Field Replaceable		"yes"

I/O Controllers

The values in this table are retrieved from the corresponding Starfire domain Config Reader module. These properties are described in TABLE 6-10. An additional Cache Updated property in this table displays the time the information was gathered from the Starfire domain.

I/O Adaptors

The values in this table are retrieved from the corresponding Starfire domain Config Reader module. These properties are described in TABLE 6-11. An additional Cache Updated property in this table displays the time the information was gathered from the Starfire domain.

Centerplane Boards

The following table provides a brief description of the properties for Starfire Platform Config Reader Centerplane Boards (TABLE 6-21):

TABLE 6-21   Starfire Platform Config Reader Centerplane Boards

Property	Rule (if any)	Description
Name		centerplane(n), where n is the centerplane board number
Centerplane Board		Centerplane board number (0-1)
Temp 0 (C)	e10ktemp	(graphable) Temperature at sensor 0 on the centerplane
Temp 1 (C)	e10ktemp	(graphable) Temperature at sensor 1 on the centerplane
Temp 2 (C)	e10ktemp	(graphable) Temperature at sensor 2 on the centerplane
Temp 3 (C)	e10ktemp	(graphable) Temperature at sensor 3 on the centerplane
Temp 4 (C)	e10ktemp	(graphable) Temperature at sensor 4 on the centerplane
Temp 5 (C)	e10ktemp	(graphable) Temperature at sensor 5 on the centerplane
Temp 6 (C)	e10ktemp	(graphable) Temperature at sensor 6 on the centerplane
Temp 7 (C)	e10ktemp	(graphable) Temperature at sensor 7 on the centerplane
Temp 8 (C)	e10ktemp	(graphable) Temperature at sensor 8 on the centerplane
Temp 9 (C)	e10ktemp	(graphable) Temperature at sensor 9 on the centerplane
Field Replaceable		"yes"

Centerplane Support Boards

The following table provides a brief description of the properties for the Starfire Platform Config Reader Centerplane Support Boards (TABLE 6-22):

TABLE 6-22   Starfire Platform Config Reader Centerplane Support Boards

Property	Rule (if any)	Description
Name		centerplane-support-board(n), where n is the centerplane support board number
Centerplane Support Board		Centerplane support board number (0-1)
Power Status	e10kpowr	Indicates whether the board power is on or off

TABLE 6-22 Starfire Platform Config Reader Centerplane Support Boards *(Continued)*

Property	Rule (if any)	Description
3.3VDC1 Temp (C)	e10ktemp	(graphable) Temperature of the 3.3VDC power supply (sensor 1)
3.3VDC 2 Temp (C)	e10ktemp	(graphable) Temperature of the 3.3VDC power supply (sensor 2)
5VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC housekeeping power
3.3VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 3.3VDC housekeeping power
3.3VDC Voltage (V)	e10kvolt	(graphable) Voltage level for the board 3.3VDC power
Field Replaceable		"yes"

Control Boards

The following table provides a brief description of the properties for the Starfire Platform Config Reader Control Boards (TABLE 6-23):

TABLE 6-23 Starfire Platform Config Reader Control Boards

Property	Rule (if any)	Description
Name		control-board(*n*), where *n* is the control board number
Control Board		Control board number (0-1)
Power Status	e10kpowr	Indicates whether the board power is on or off
Control Board Hostname		Host name associated with the IP address of the control board
5VDC Temp (C)	e10ktemp	(graphable) Temperature of the board 5VDC power supply
5VDC Peripheral Temp (C)	e10ktemp	(graphable) Temperature of the board 5VDC peripheral power supply
5VDC Fan Temp (C)	e10ktemp	(graphable) Temperature of the board 5VDC fan power supply
Sensor 0 Temp (C)	e10ktemp	(graphable) Ambient temperature at sensor 0
Sensor 1 Temp (C)	e10ktemp	(graphable) Ambient temperature at sensor 1
Sensor 2 Temp (C)	e10ktemp	(graphable) Ambient temperature at sensor 2
5VDC Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC power

TABLE 6-23 Starfire Platform Config Reader Control Boards *(Continued)*

Property	Rule (if any)	Description
5VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC housekeeping power
3.3VDC/HK Voltage (V)	e10kvolt	(graphable) Voltage level for the board 3.3VDC housekeeping power
5VDC Peripheral Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5VDC peripheral power
5VDC Fan Voltage (V)	e10kvolt	(graphable) Voltage level for the board 5V fan power
Field Replaceable		"yes"

Fan Trays

The following table provides a brief description of the properties for the Starfire Platform Config Reader Fan Trays (TABLE 6-24):

TABLE 6-24 Starfire Platform Config Reader Fan Trays

Property	Rule (if any)	Description
Name		fantray(n), where n is the fan tray number
Fan Tray		Fan tray number
Power Status	e10kpowr	Indicates whether the fan power is on or off
Field Replaceable		"yes"
Hot Plug		"yes"

Fans

The following table provides a brief description of the properties for Starfire Platform Config Reader Fans (TABLE 6-25):

TABLE 6-25 Starfire Platform Config Reader Fans

Property	Rule (if any)	Description
Name		fanunit(n), where n is the fan unit number
Fan Tray		Fan tray number (0-15)

TABLE 6-25 Starfire Platform Config Reader Fans *(Continued)*

Property	Rule (if any)	Description
Fan		Fan number (0-1)
Status	e10kpowr	Indicates whether the fan power is on, off, or failed
Speed		Fan speed. Either Nominal (low speed) or Fast (high speed)

48V Power Supplies

The following table provides a brief description of the properties for Starfire Platform Config Reader 48V Power Supplies (TABLE 6-26):

TABLE 6-26 Starfire Platform Config Reader Power Supplies

Property	Rule (if any)	Description
Name		bulkpower(n), where n is the power supply number
Power Supply		Power supply number (0-15)
Status	e10kpowr	Power status is either Ok or Failed
Field Replaceable		"yes"
Hot Plug		"yes"

AC Power Input Modules

The following table provides a brief description of the properties for Starfire Platform Config Reader AC Power Input Modules (TABLE 6-27):

TABLE 6-27 Starfire Platform Config Reader AC Power Input Modules

Property	Rule (if any)	Description
Name		acpower(n), where n is the AC power input module number
AC Power Input Module		AC power input module number (0-7)

I/O Cabinet Table

The following table provides a brief description of the properties for the Starfire Platform Config Reader I/O Cabinet (TABLE 6-28):

TABLE 6-28   Starfire Platform Config Reader I/O Cabinet Table

Property	Rule (if any)	Description
Name		io(*n*), where *n* is the I/O cabinet number
I/O Cabinet		I/O cabinet number
Power Status	e10kpowr	Power status is either on or off
Field Replaceable		"yes"

SSP Information

The SSP Information table is only viewable from the Browser tab in the Starfire platform Details window. It is not part of the hardware tree displayed in the physical and logical views.

The following table provides a brief description of the properties for Starfire Platform Config Reader SSP Information (TABLE 6-29):

TABLE 6-29   Starfire Platform Config Reader SSP Information

Property	Rule (if any)	Description
SSP Hostname		Host name of the SSP associated with this platform object
SSP Status		Status, main or spare, of the SSP associated with this platform object. Platform information is not available from this platform object when its SSP status is spare; use the platform object associated with the main SSP.
snmpd Last Updated		Last time SNMP operations with the SSP snmpd process were successfully completed
snmpd Communication Errors	rCompare	(graphable) Number of consecutive SNMP communication errors which have occurred when accessing the SSP snmpd platform data. This error count may reflect a transient problem, such as increased SSP activity causing SNMP time-outs, or a more persistent problem with snmpd SNMP communications.

TABLE 6-29   Starfire Platform Config Reader SSP Information *(Continued)*

Property	Rule (if any)	Description
snmpd Traps Received		"yes" if SSP snmpd traps have been received, or -- if no traps have been received yet. A value of -- does not necessarily indicate an error in the SSP snmpd trap forwarding configuration.
Alternate SSP		Host name of the alternate SSP for this platform
SSP Software Version		SSP software version

Starfire Domains

The Starfire Domains table is only viewable from the Browser tab in the Starfire platform Details window. It is not part of the hardware tree displayed in the physical and logical views.

The following table provides a brief description of the properties for Starfire Platform Config Reader Starfire Domains (TABLE 6-30):

TABLE 6-30   Starfire Platform Config Reader Starfire Domains

Property	Rule (if any)	Description
Domain Name		Starfire domain host name
IP Address		IP address for this domain
Arbstop Count	e10kdtrp	(graphable) Number of arbstops detected for this domain
Recordstop Count	e10kdtrp	(graphable) Number of recordstop events detected for this domain
Watchdog Count	e10kdtrp	(graphable) Number of watchdog events detected for this domain
Total System Boards		Number of system boards allocated to this Starfire domain
System Board List		List of the system boards allocated to this Starfire domain
Configured System Board List		List of the system boards configured by POST for this Starfire domain
Boot Processor		Boot processor number for the Starfire domain. If the value is -1, the Starfire domain is not configured or booted.

Agent Status

The Agent Status information is only viewable from the Browser tab in the Starfire platform Details window. It is not part of the hardware hierarchy displayed in the physical and logical views.

The Starfire platform Config Reader module communicates with the Starfire domain Sun Management Center agent to determine the Starfire composite topology object type (Agent Host or ICMP Ping) for the Starfire domain and to gather the Starfire domain-resident system board configuration information. This agent status information is presented largely for diagnostic purposes and consists of the Starfire Domain Ports property and the Agent Status Table.

The following table provides a brief description of the properties for the Starfire Platform Config Reader Starfire Domain Ports (TABLE 6-31):

TABLE 6-31   Starfire Platform Config Reader Starfire Domain Ports

Property	Rule (if any)	Description
Starfire Domain Ports		List of Sun Management Center Agent network ports for the platform's Starfire domains. This list is supplied during the setup of the Starfire platform add-on component.

The following table provides a brief description of the properties for the Agent Status Table (TABLE 6-32):

TABLE 6-32   Agent Status Table

Property	Rule (if any)	Description
Hostname		Host name of the Starfire domain
Agent Port		Network port on which the Starfire domain Sun Management Center agent is configured. This port is determined by sending the agent a message and receiving a response. If this value is --, communication with the agent has not been established.

TABLE 6-32   Agent Status Table *(Continued)*

Property	Rule (if any)	Description
Status		If agent communication has been established, indicates the current status of communications.
SNMP Communication Errors	rCompare	(graphable) The number of consecutive SNMP communication errors which have occurred when accessing the Starfire domain Config Reader data. This error count may reflect a transient problem, such as increased system activity causing SNMP time-outs, or a more persistent problem with SNMP communications.
Last Update Time		Last time successful communications with the Starfire domain agent occurred

Values for the Status property are shown in TABLE 6-33:

TABLE 6-33   Status Property Values

Value	Description
--	Communication with the agent is not established
ok	Sun Management Center agent is present; no errors
Host Not Responding	Starfire domain is down or not responding
Agent Not Responding	Starfire domain is up; the agent is not present or not responding
Module Not Responding	Starfire domain is up and the agent is up; the requested module is not loaded or is not responding

Discovery Object

The Discovery Object table is only viewable from the Browser tab in the Starfire platform Details window. It is not part of the hardware hierarchy displayed in the physical and logical views.

The Discovery Object Table provides information used by the Discovery Manager and the Create Topology Object GUI to create Starfire composites. This information is presented largely for diagnostics purposes and contains information not directly relevant to the Sun Management Center software user. This information consists of a table identifier (the Magic Number), followed by a table containing information for each topology object created as part of the Starfire composite. A Magic Number value of 53444f54 identifies the following table as a valid Discovery Object Table.

The following table provides a brief description of the properties for the Starfire Platform Config Reader Discovery Object Table (TABLE 6-34):

TABLE 6-34 Starfire Platform Config Reader Discovery Object Table

Property	Rule (if any)	Description
Topology ID		Encoded topology identification
Topology Parent		Topology identification of the parent of this object
Discovery Type		Encoded discovery type
IP Address		IP address for this topology object
Agent Port		Network port number for this topology object
Family Type		Topology object family type
Label		Object label displayed in the Sun Management Center topology
Description		Optional description of the object

Note – A -1 value for the Agent Port indicates that the object is a Platform Group object.

Refresh Model

The two properties in this table describe the way the Starfire platform Config Reader module is refreshed. Using the browser, you can select a property and refresh it. This starts a refresh cycle for the selected information.

The following table provides a brief description of the properties for the Starfire Platform Config Reader Refresh Model (TABLE 6-35):

TABLE 6-35 Starfire Platform Config Reader Refresh Model

Property	Rule (if any)	Description
Refresh SSP Model		Number displayed is a count of SSP model refresh operations
Refresh Starfire Domain Model		Number displayed is a count of Starfire Domain model refresh operations

SSP Status Module

The SSP Status module monitors the main or spare status of the SSP. During Starfire platform add-on setup, this module is configured for automatic loading in the SSP agent and is displayed under the Browser local applications icon.

The following table provides a brief description of the properties for the SSP Status Module (TABLE 6-36):

TABLE 6-36 SSP Status Module

Property	Rule (if any)	Description
SSP Status	rSspStatus	Status, either main or spare, of the SSP
SSP Hostname		Host name of the SSP

The `rSspStatus` rule raises a disabled alarm if the status is spare SSP.

Discovery Table Module

The Discovery Table module provides information to the Discovery Manager and Create Topology Object GUI necessary to create composite objects. During Starfire platform add-on setup, this module is configured for automatic loading in the SSP agent and is displayed under the Browser local applications icon.

This information is presented largely for diagnostic purposes and contains information not directly relevant to the Sun Management Center software user. This information consists of a table identifier (the Magic Number), which is 534454, followed by a table containing information for each composite object hosted by this system (TABLE 6-37):

TABLE 6-37 Discovery Table

Property	Rule (if any)	Description
IP Address		IP address where the composite information table is located
Port		Network port used with the IP address
OID		SNMP OID used with the IP address

TABLE 6-37   Discovery Table *(Continued)*

Property	Rule (if any)	Description
Method		Flag indicating how to decode the table
Version		Version indicating how to decode the table
Family		Type of object which is created
Object		Object label

Starfire Config Reader Rules

Appendix E of the *Sun Management Center 3.5 User's Guide* lists the Sun Management Center rules for base Sun Management Center modules. The following section describes the rules for the Config Reader modules contained in the Starfire add-on components.

POST Status Rule (`e10kpost`)

Power-on self-test (POST) occurs whenever the Starfire domain is booted. The POST status properties for components can have the following values, which generate alarms as noted (TABLE 6-38):

TABLE 6-38   POST Status Rule

POST Status	Alarm Level	Meaning
Good		Component was tested by POST and placed in the Starfire domain configuration.
Failed	Critical	Component was tested and failed POST. The configuration of subcomponents of the failed component is unknown.
Unused		Component is not needed in the Starfire domain configuration due to other components which are either not physically present or were not configured by POST.
Blacklisted	Caution	Component was blacklisted during POST configuration. The physical presence of blacklisted components is unknown.
Redlisted	Caution	Component was redlisted during POST configuration. The physical presence of redlisted components is unknown.

Processor Status Rule (`e10kproc`)

The Processor Status Rule raises a caution alarm if the processor status is offline.

Tape Warnings Rule (`e10ktwrn`)

The Tape Warnings Rule raises an alarm when the number of tape warnings detected in `/var/adm/messages` exceeds the given limits. The Tape Warnings property value for a tape device that generates an alarm is set to zero when the alarm is acknowledged. This property value is also cleared when the Sun Management Center agent is restarted.

Please examine the `/var/adm/messages` file to determine the exact cause of the warning.

The default limits for this rule are shown in TABLE 6-39. See "Changing Config Reader Rule Limits" on page 96 for information about how to customize these alarm limits.

TABLE 6-39   Tape Warnings Rule Limits

Alarm Level	Number of Warnings
Caution	5

Disk Warnings Rule (`e10kdwrn`)

The Disk Warnings Rule raises an alarm when the number of disk warnings detected in `/var/adm/messages` exceeds the given limits. The Disk Warnings property value for a disk that generates an alarm is set to zero when the alarm is acknowledged. This property value is also cleared when the Sun Management Center agent is restarted.

Please examine the `/var/adm/messages` file to determine the exact cause of the warning.

The default limits for this rule are shown in TABLE 6-40. See "Changing Config Reader Rule Limits" on page 96 for information about how to customize these alarm limits.

TABLE 6-40   Disk Warnings Rule Limits

Alarm Level	Number of Warnings
Alert	20
Caution	7

Memory ECC Errors Rule (`e10kmerr`)

The Memory ECC Errors Rule raises an alarm when the number of ECC errors detected in `/var/adm/messages` exceeds the given limits.

The ECC Errors property value for a DIMM that generates an alarm is set to zero when the alarm is acknowledged from the Starfire domain Details window. This property value is also cleared when the Sun Management Center agent on the Starfire domain is restarted.

Note – The property value is not cleared when the alarm is acknowledged from the Starfire platform Details window.

ECC errors are not always generated due to hardware failures, but may instead indicate normal transient memory errors. In addition, the component cited in the ECC error may not be the cause of the problem, but only the component in which the problem was detected. Examine the cause of the ECC errors as reported in the Starfire domain's `/var/adm/messages` to determine if the reported DIMM ECC errors represent a component which is failing.

The default limits for this rule are shown in TABLE 6-41. See "Changing Config Reader Rule Limits" on page 96 for information about how to customize these alarm limits.

TABLE 6-41   Memory ECC Error Rule Limits

Alarm Level	Number of ECC Errors
Caution	3

Starfire Domain Trap Rule (`e10kdtrp`)

The Starfire Domain Trap Rule raises an alarm when a domain trap of the appropriate type occurs. Critical alarms are raised for `arbstop` and `watchdog` traps. A caution alarm is raised for `recordstop` traps. The property value for the trap count is set to zero when the alarm is acknowledged. This property value is also cleared when the Sun Management Center agent is restarted.

Temperature Rule (`e10ktemp`)

The Temperature Rule monitors the temperature of the various hardware components and the ambient room temperature. For ASICs, processors, and power supplies, alarms are generated when the temperature exceeds the limits shown in TABLE 6-42:

TABLE 6-42 Temperature Rule Levels (Degrees Celsius)

Component	Caution	Alert	Critical
ASICs	80.0 C	85.0 C	90.0 C
Processors	80.0 C	85.0 C	90.0 C
Power Supplies	80.0 C	85.0 C	90.0 C

The ambient temperature is monitored and a critical alarm is generated if it drops below 10.0 degrees Celsius or rises above 35.0 degrees Celsius.

Boards that have not been thermally calibrated report ASIC temperatures of -1, which raises a critical alarm. In the unlikely event that you experience this problem, contact your service provider.

If a component such as a processor is not present, its temperature is reported as 0 degrees.

Note – During setup of the Starfire platform (SSP) component, the SSP `ssp_resource` file is read to determine the rule levels shown in TABLE 6-42. The limit shown in this table may be different from your system configuration. Be sure to rerun the Starfire platform (SSP) setup if the limits in the `ssp_resource` file change.

Note – Temperature alarm limits cannot be modified from the Attribute Editor window.

Power Rule (`e10kpowr`)

The power status is monitored and an alarm is generated for the following situations (TABLE 6-43):

TABLE 6-43 Power Rule Levels

Power Status	Alarm Level
Off	Caution
Failed	Critical

Voltage Rule (`e10kvolt`)

Voltage levels are monitored and an alert alarm is generated if the voltage falls outside the following ranges:

TABLE 6-44 Voltage Rule Levels for System Boards

System Board Voltage	Minimum	Maximum
3.3VDC	3.130	3.470
3.3VDC/HK	3.130	3.470
5VDC	4.750	5.250
5VDC/HK	4.750	5.250
VDC Core	2.522	2.678
VDC Core (400 MHz processors)	1.843	1.957

TABLE 6-45 Voltage Rule Levels for Control Boards

Control Board Voltage	Minimum	Maximum
3.3VDC/HK	3.130	3.630
5VDC	4.750	5.250
5VDC/HK	4.750	5.250
5VDC Peripheral	4.949	5.460
5VDC Fan	4.850	5.350

TABLE 6-46 Voltage Rule Levels for Centerplane Support Boards

Centerplane Support Board Voltage	Minimum	Maximum
3.3VDC	3.130	3.470
3.3VDC/HK	3.130	3.630
5VDC/HK	4.750	5.250

Note – During setup of the Starfire platform (SSP) component, the SSP `ssp_resource` file is read to determine the rule levels shown in TABLE 6-44, TABLE 6-45, and TABLE 6-46. The limit shown in these tables may be different from your system configuration. Be sure to rerun the Starfire platform (SSP) setup if the limits in the `ssp_resource` file change.

Note – Voltage levels cannot be modified from the Attribute Editor window.

Comparison Rule (`rCompare`)

The comparison rule monitors a property for various standard comparisons such as greater than or less than. When examining the property in the browser display, you can also examine and edit the rule limits for each property, using the Sun Management Center Console Attribute Editor. See "Changing Config Reader Rule Limits" on page 96 for information about how to customize these alarm limits.

Changing Config Reader Rule Limits

The rule limits shown for each rule are the default limits for that rule. If the property is contained within a table, these limits apply to all the rows in that table. Using the Sun Management Center console, you can change the limits for a row instance of the property as shown in "To Edit Rule Parameters" on page 97. If you want to change the default limits for all rows contained in a table, you can edit configuration files as shown in "To Change Default Rule Limits" on page 99.

▼ To Edit Rule Parameters

You can use the Sun Management Center console Attribute Editor to change the rule limits for a specific instance of a property:

1. **Display the Host Details Console.**

2. **Using the browser, select the property whose rule limits you want to change.**

3. **Open the Attributes Editor.**

4. **Click on the Alarms tab button.**

5. **Change and save the desired threshold values.**

   Refer to Chapter 10, "Attribute Editor" in the *Sun Management Center 3.5 User's Guide* for more specific instructions on using the Attribute Editor to modify alarm limits.

Changing Default Rule Limits

To change the default rule limits for all rows within a table, you must change the default limit in the appropriate configuration file. All rule limits are specified as `alarmlimit` variables. The following example sets the `e10kmerr-info` `alarmlimit` variable to 3:

```
alarmlimit:e10kmerr-info      =3
```

For general purpose rules such as the `rCompare` rule, the `alarmlimit` variable must be defined within the context of the property it applies to. In the following example, the context is `status.snmpErrorCount`:

```
status = {
        snmpErrorCount = {
                alarmlimit:info-gt =
                alarmlimit:warning-gt = "5"
                alarmlimit:error-gt = "25"
                }
}
```

Note – If no alarm limit is specified for an alarm level, Sun Management Center software does not check for that alarm level.

The default versions of the configuration files are located in
/opt/SUNWsymon/modules/cfg. You can change the alarmlimit variables for
the Starfire configuration files shown in the tables that follow.

Note – If you installed the Sun Management Center software in a different directory
than /opt, use that directory instead.

Starfire Domain Config Reader Module alarmlimit Variables

TABLE 6-47 shows the variables whose limits you can modify for each alarm level in
the Config-Reader4u1D-ruleinit-d.x configuration file:

TABLE 6-47   Starfire Domain Config Reader alarmlimit Variables

Rule	Caution	Alert	Critical
e10kdwrn	e10kdwrn-info	e10kdwrn-warning	e10kdwrn-error
e10kmerr	e10kmerr-info	e10kmerr-warning	e10kmerr-error
e10ktwrn	e10ktwrn-info	e10ktwrn-warning	e10ktwrn-error

Starfire Platform Config Reader Module alarmlimit Variables

TABLE 6-48 shows the variables whose limits you can modify for each alarm level in
the Config-Reader4u1P-ruleinit-d.x configuration file:

TABLE 6-48   Starfire Platform Config Reader alarmlimit Variables

Rule	Caution	Alert	Critical
e10kmerr	e10kmerr-info	e10kmerr-warning	e10kmerr-error

Note – The rule limits for the e10kmerr rule should be the same for both the
Starfire domain and Starfire platform Config Reader modules.

TABLE 6-49 shows the rCompare alarmlimits you can modify for each alarm level in the Config-Reader4u1P-d.def configuration file:

TABLE 6-49 Starfire Platform Config Reader rCompare alarmlimits

Folder / Property Name	Property Context	Caution	Alert	Critical
SSP Information / snmpd Communications Errors	status.snmpErrorCount	info-gt	warning-gt	error-gt
Starfire Domains / Arbstop Count	domain.dom.domainEntry.arbstop	info-gt()	warning-gt()	error-gt()
Starfire Domains / Recordstop Count	domain.dom.domainEntry.recordstop	info-gt()	warning-gt()	error-gt()
Starfire Domains / Watchdog Count	domain.dom.domainEntry.watchdog	info-gt()	warning-gt()	error-gt()
Starfire Sun Management Center Agent Status / SNMP Communications Errors	agent.agentTable.agentTableEntry.snmpErrorCount	info-gt()	warning-gt()	error-gt()

▼ To Change Default Rule Limits

1. **Log in as superuser to the host whose alarm limits you want to change.**

2. **If the configuration file you want to modify is not present in the** /var/opt/SUNWsymon/cfg **directory, type:**

```
# cd /var/opt/SUNWsymon/cfg
# cp /opt/SUNWsymon/modules/cfg/_configuration_file_ .
# chmod 644 _configuration_file_
```

Note – If you installed the Sun Management Center software in a different directory than /opt, use that directory instead in the path to the configuration file you are copying. The /var/opt directory remains the same, regardless of where you installed the Sun Management Center software.

3. **Edit the configuration file to change the alarm limit values as described in "Changing Default Rule Limits" on page 97.**

4. **Observe these rules when replacing values:**
   - Alarm limits must be unsigned integers.
   - Alarm limit values should increase as the alarm severity increases. A critical limit should be larger than the alert limit for the same alarm limit variable, which in turn should be larger than its caution limit.

5. **Save the file when you have finished changing it.**

6. **To activate these changes, stop and then restart the Sun Management Center agent into which the module is loaded, using the commands in** TABLE 6-50**:**

TABLE 6-50   Commands to Stop and Restart Sun Management Center Agents

Module Name	Command to Stop Agent	Command to Start Agent
Config Reader (Starfire Domain)	`/opt/SUNWsymon/sbin/es-stop -a`	`/opt/SUNWsymon/sbin/es-start -a`
Config Reader (Starfire Platform)	`/opt/SUNWsymon/sbin/es-stop -l`	`/opt/SUNWsymon/sbin/es-start -l`

Reading Sun Management Center Log Files

The Sun Management Center agent and platform agents write to the following log files, which may be viewed as described in Appendix B of the *Sun Management Center 3.5 User's Guide*. These files may contain diagnostic information if problems are encountered running the Starfire modules. All of these files are contained in the directory `/var/opt/SUNWsymon/log`:

TABLE 6-51   Sun Management Center Log Files

File	Agent that writes to this file
`agent.log`	Starfire domain and SSP agents
`configd4u1D.log`	Starfire domain agent. Contains information related to the Config-Reader4u1D module data collection.
`platform.log`	Starfire platform agent. Contains information related to the Config-Reader4u1P module data collection.