



System Management Services (SMS) 1.2 Installation Guide and Release Notes for the Sun Fire™ 15K/12K Systems

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Adobe PostScript

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Preface

This guide contains initial installation instructions as well as release notes for the System Management Services (SMS) 1.2 software. With the introduction of SMS, both the initial install instructions and the upgrade instructions apply to the Sun Fire™ 15K/12K server system.

Before You Read This Book

This guide is intended for the Sun Fire system administrator, who has a working knowledge of UNIX® systems, particularly those based on the Solaris™ operating environment. If you do not have such knowledge, read the Solaris User and System Administrator documentation provided with this system, and consider UNIX system administration training.

All members of the next-generation Sun Fire server family can be configured as loosely-coupled clusters. However, it is currently outside of the scope of this document to address system management for Sun Fire cluster configurations.

How This Book Is Organized

This guide contains the following chapters:

Chapter 1 describes reinstallation and upgrade of System Management Services (SMS) software.

Chapter 2 contains the SMS release notes.

Using UNIX Commands

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

See one or more of the following for this information:

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

Typographic Conventions

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

Shell Prompts

Shell	Prompt
C shell	<i>sc_name</i> : <i>sms-user</i> : > or <i>domain_id</i> : <i>sms-user</i> : >
C shell superuser	<i>sc_name</i> :# or <i>domain_id</i> : #
Bourne shell and Korn shell	>
Bourne shell and Korn shell superuser	#

Related Documentation

Application	Title	Part Number
Administrator Guide	<i>System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems</i>	816-5259-05
Reference (man1M)	<i>System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems</i>	816-5260-05
Options	<i>System Management Services (SMS) 1.2 Dynamic Reconfiguration User Guide</i>	816-5076-10
	<i>Sun Fire 15K/12K Dynamic Reconfiguration User Guide</i>	816-5075-10
	<i>Sun Fire 15K/12K System Site Planning Guide</i>	806-3510-11
	<i>Solaris 9 Installation Guide</i>	816-5102-10
	<i>System Administrator Guide: IP Services</i>	806-4075-10

Application	Title	Part Number
	<i>OpenBoot™ 4.x Command Reference Manual</i>	816-1177-10
	<i>System Administration Guide: Naming and Directory Services (DNS, NIS, LDAP)</i>	816-4856-10
	<i>System Administration Guide: Resource Management and Network Services</i>	816-4882-10

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SMS 1.2 on the Sun Fire 15K/12K Server Systems

This chapter contains reinstallation and upgrade instructions for System Management Services 1.2 software under the Solaris operating environment. These instructions apply to the Sun Fire 15K/12K server systems.

The SMS reinstall and upgrade setup focuses on setting up group IDs used for credential checking, and setting up and running control scripts that start SMS when the Solaris operating environment boots.

This chapter includes:

- To Download Software From the Web
- To Download Software From a CD-ROM
- To Backup Your SMS Environment
- To Install SMS Packages Using Web Start
- To Manually Install the SMS Software Packages
- To Restore Your SMS Configuration
- To Install the Solaris Operating Environment
- To Configure the Management Network (MAN) Using `smsconfig(1M)`
- To Update the Flash PROMs
- To Enable Failover
- To Activate the Domain
- To Bring Up a Console for the Domain
- To Set up the Network Install Server on the System Controller
- To Set Up the Domain as an Install Client
- To Install the Solaris Operating Environment on the Domain
- To Set Up OpenBoot PROM Environment Variables for the Domain
- To Configure Domain Networks
- To Disable Failover
- To Install Additional Software Packages

- To Configure the NTP Packages
- To Manually Stop and Restart SMS

Introduction

SMS 1.2 first became available on Solaris 8 02/02. That version (SMS 1.2_s8) will *not* run on the Solaris 9 operating environment. This version of SMS 1.2 (SMS 1.2_s9) will *not* run on Solaris 8 02/02 software.

The SMS packages use approximately 18GBytes each of disk space on two disks on the server. The following table lists the total size of the SMS software by partition.

TABLE 1-1 SMS Software Approximate Partition Sizes

Partition	Size
0 / (root)	8 Gbytes
1 /swap	2 Gbyte
4 OLDS/LVM database (metadb)	10 Mbytes
5 OLDS/LVM database (metadb)	10 Mbytes
7 /export/install	8 Gbytes

SMS requires two drive partitions with at least 10 Mbytes be dedicated to each metadevice state database copy.

The following sections contain overviews of the reinstallation and upgrade process, which require you to use sections from different publications and files. You should ensure that you have the following publications and printouts before you start the reinstallation or upgrade.

- *Solaris 9 Installation Guide*
- *Sun Fire 15K/12K System Site Planning Guide*

Refer to the *Sun Fire 15K/12K System Site Planning Guide* when reconfiguring your MAN network.

- A copy of your `/etc/group` file.

Print a copy of your `/etc/group` file to refer to when repopulating your user groups. This file is not restored during a reinstallation or upgrade and must be recreated. Disregard if you will be changing user group memberships.

- Check the *Solaris 9 (SPARC Platform Edition) Release Notes*, the *Solaris 9 Release Notes Supplement for Sun Hardware* and www.sunsolve.com for the latest information on issues, late-breaking news and patch availability.

Note – You must run the same version of SMS on both SCs.

Note – Any patches to the Solaris operating system should be applied before re-installing SMS software.

For the examples in this guide:

Prompt	Definition
<code>sc0:#</code>	Superuser on SC, initially the main SC
<code>sc1:#</code>	Superuser on SC1, initially the spare SC
<code>domain_id:#</code>	Superuser on the domain
<code>sc_name:sms-user:></code>	User prompt on the SC. <i>sms-user</i> is the <code>user-name</code> of an administrator, operator, configurator or service personnel logged in to the SC.
<code>domain_id:sms-user:></code>	User prompts on the domain <i>sms-user</i> is the <code>user-name</code> of the administrator, operator, configurator or service personnel logged in to the domain.

Preparing to Reinstall

Your Sun Fire 15K/12K system is preinstalled with SMS 1.2 for Solaris 9 (SMS1.2_s9) software when you receive it. The reinstallation instructions in this section assume that your system is already running the Solaris 9 operating environment.

Performing a Reinstallation

To reinstall SMS 1.2_s9 software on your Sun Fire 15K/12K system you will need to perform the following procedures:

- Download your SMS 1.2_s9 packages. See “To Download Software From the Web” on page 8 or “To Download Software From a CD-ROM” on page 9.
- Backup SMS software. See “Backing Up Your SMS Environment” on page 10.

Turn off failover on the main SC (SC0).

Stop SMS on the spare SC (SC1).

Backup the current SMS software using smsbackup.

- Install SMS 1.2_s9 software packages on the spare SC (SC1). See “To Install SMS Packages Using Web Start” on page 12 or “To Manually Install the SMS Software Packages” on page 19.
- Restore your SMS 1.2 configuration on the spare SC. “Restoring Your SMS Configuration on the Spare SC” on page 22.
- Configure the MAN network on the spare SC. “Configuring the MAN Network on the Spare SC” on page 25.
- Configure your SMS user groups on the spare SC. See “Adding Users to SMS” on page 46.
- Switch control to the spare SC. See “Switch Control to the Spare SC” on page 31.
- Reinstalling the Former Main SC. See “Reinstalling or Upgrading the Former Main SC” on page 33.

Backup the current SMS software using smsbackup on the former main SC (SC0).

Install SMS 1.2_s9 software packages on the former main SC.

- Restore your SMS 1.2 configuration on the former main SC (SC0). See “Restore your SMS configuration on the former main SC.” on page 36.
- Configure the MAN network on the former main SC. See “Configuring the MAN Network on the Former Main SC” on page 38.
- Configure your SMS user groups for the former main SC. See “Adding Users to SMS” on page 46.
- Reboot the former main (SC0). See “Reboot the Former Main SC” on page 44.
- Turn on failover on the new main SC (SC1). See “Enabling Failover on the Main SC (SC1)” on page 46.

To begin reinstallation proceed to “Downloading SMS Software” on page 8.

Preparing to Upgrade

The following table contains a high level overview of the possible SMS software combinations on a single Sun Fire 15K/12K SC and their upgrade paths:

Note – SMS 1.1 is not available on the Sun Fire 12K system. The SMS 1.1 upgrade information refers to the Sun Fire 15K system only.

Current Version	New Version	OS Installation Type	Path
Solaris 8/SMS 1.1	Solaris 9/SMS 1.2_s9 (for Solaris 9)	Fresh Install-Type 1	Backup your SMS 1.1 configuration Install Solaris 9 Install SMS 1.2_s9 Restore your SMS 1.1 configuration
Solaris 8/SMS 1.1	Solaris 9/SMS 1.2_s9	Upgrade - Type 2	Backup your SMS 1.1 configuration Install SMS 1.2_s9 Switch versions Restore your SMS 1.1 configuration Upgrade Solaris 9
Solaris 8/ SMS 1.2_s8 (for Solaris 8)	Solaris 9/SMS 1.2_s9	Fresh Install-Type 1	Backup your SMS 1.2_s8 configuration Install Solaris 9 Install SMS 1.2_s9 Restore your SMS 1.2_s8 configuration
Solaris 8/ SMS 1.2_s8	Solaris 9/SMS 1.2_s9	Upgrade - Type 1	Backup your SMS 1.2_s8 configuration Upgrade Solaris 9 Install SMS 1.2_s9 Restore your SMS 1.2_s8 configuration

Note – `smversion` does not support a return to SMS 1.1 or SMS 1.2_s8 in this release of SMS 1.2 for Solaris 9. To return to SMS 1.1 or SMS 1.2_s8 you must return to the *applicable* Solaris 8 operating environment.

Performing a Type 1 Installation

To *fresh install* the Solaris 9 operating environment with SMS 1.2_s9 software from Solaris 8 with SMS 1.1 or 1.2_s8 software; or to upgrade from Solaris 8 with SMS 1.2 software, you will be performing the following procedures:

- Download your SMS 1.2_s9 packages. See “To Download Software From the Web” on page 8 or “To Download Software From a CD-ROM” on page 9.
- Backup SMS software. See “Backing Up Your SMS Environment” on page 10.
 - Turn off failover on the main SC (SC0).
 - Stop SMS on the spare SC (SC1).
 - Backup the current SMS software using `smsbackup`.
- Fresh Install or upgrade your Solaris operating environment on the spare SC.
 - Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.
- Install SMS 1.2_s9 software packages on the spare SC (SC1). See “To Install SMS Packages Using Web Start” on page 12 or “To Manually Install the SMS Software Packages” on page 19.
- Restore your SMS 1.1 or SMS 1.2 configuration on the spare SC. See “Restoring Your SMS Configuration on the Spare SC” on page 22.
- Configure the MAN network on the spare SC. See “Configuring the MAN Network on the Spare SC” on page 25.
- Configure your SMS user groups for the spare SC (SC1). See “Adding Users to SMS” on page 46.
- Switch control to the spare SC. See “Switch Control to the Spare SC” on page 31.
- Update the SC and CPU flash PROMs on the new main SC. See “Updating the Flash PROMs on the Spare SC and the System Boards” on page 31.
- Reinstall or upgrade the former main SC (SC0). See “Reinstalling or Upgrading the Former Main SC” on page 33.
 - Backup the current SMS software using `smsbackup` on the former main SC (SC0).
 - Fresh install or upgrade your Solaris operating environment on the former main SC (SC0). Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.
 - Install SMS 1.2_s9 software packages on the former main SC (SC0).

- Restore your SMS 1.1 or SMS 1.2 configuration on the former main SC (SC0). See “Restore your SMS configuration on the former main SC.” on page 36.
- Configure the MAN network on the former main. See “Configuring the MAN Network on the Former Main SC” on page 38.
- Configure your SMS user groups for the former main SC. See “Adding Users to SMS” on page 46.
- Reboot the former main (SC0). See “Reboot the Former Main SC” on page 44.
- Update the SC flash PROMs on the former main SC. See “Updating the Flash PROMs on the Former Main SC” on page 44.
- Turn on failover on the new main SC (SC1). See “Enabling Failover on the Main SC (SC1)” on page 46.

To begin Type 1 upgrade proceed to “Downloading SMS Software” on page 8.

Performing a Type 2 Installation

To *upgrade* from the Solaris 8 and SMS 1.1 software to the Solaris 9 operating environment and SMS 1.2 software, or to upgrade from the SMS 1.2_s8 to SMS 1.2_s9 software, perform the following procedures:

- Download your SMS 1.2_s9 packages. See “To Download Software From the Web” on page 8 or “To Download Software From a CD-ROM” on page 9.
- Backup SMS software. See “Backing Up Your SMS Environment” on page 10.
 - Turn off failover on the main SC (SC0).
 - Stop SMS on the spare SC (SC1).
 - Backup the current SMS software using smsbackup.
- Install SMS 1.2_s9 software packages on the spare SC (SC1). See “To Install SMS Packages Using Web Start” on page 12 or “To Manually Install the SMS Software Packages” on page 19.
- Restore your SMS 1.1 configuration. See “Restoring Your SMS Configuration on the Spare SC” on page 22.
 - Switch versions from SMS 1.1 to SMS 1.2 on the spare SC (SC1).
 - Restore your SMS 1.1 configuration on the spare SC.
- Configure the MAN network on the spare SC (SC1). See “Configuring the MAN Network on the Spare SC” on page 25.
- Configure your SMS user groups for the spare SC (SC1). See “Adding Users to SMS” on page 46.
- Upgrade your Solaris 9 operating environment. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.
- Switch control to the spare SC. See “Switch Control to the Spare SC” on page 31.

- Update the SC and CPU flash PROMs on the new main SC. See “Updating the Flash PROMs on the Spare SC and the System Boards” on page 31.
- Reinstalling the Former Main SC. See “Reinstalling or Upgrading the Former Main SC” on page 33.
 - Backup the current SMS software using smsbackup on the former main SC (SC0).
 - Install SMS 1.2_s9 software packages on the former main SC (SC0).
- Restore your SMS 1.1 configuration on the former main SC. See “Restoring Your SMS Configuration on the Former Main SC” on page 36.
 - Switch versions from SMS 1.1 to SMS 1.2 on the former main SC.
 - Restore your SMS 1.1 configuration on the former main SC (SC0).
- Configure the MAN network on the former main SC (SC0). See “Configuring the MAN Network on the Former Main SC” on page 38
- Configure your SMS user groups for the former main SC (SC0). See “Adding Users to SMS” on page 46.
- Upgrade your Solaris 9 operating environment. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.
- Reboot the former main (SC0). “Reboot the Former Main SC” on page 44.
- Update the flash PROMs on the main SC (SC0). See “Updating the Flash PROMs on the Former Main SC” on page 44.
- Turn on failover on the main (SC0). See “Enabling Failover on the Main SC (SC1)” on page 46.

To begin Type 2 upgrade proceed to “Downloading SMS Software” on page 8.

Downloading SMS Software

You can retrieve SMS software from either the web or on the Software Supplement CD.

▼ To Download Software From the Web

1. **Using your web browser, go to** <http://www.sun.com/servers/sw/>
2. **Click the System Management Services (SMS) link.**
3. **Click the** [Click here to download link](#).
The file that is then downloaded is named `sms_1_2_sparc.zip`.
4. **Log in to the SC as superuser.**

5. Change directory to the location where you downloaded the software:

```
sc1:# cd /download_directory
```

6. Extract the downloaded file by typing:

```
sc1:# unzip sms_1_2_sparc.zip
```

The SMS 1.2 packages are located in
`/download_directory/sms_1_2_sparc/System_Management_Services_1.2/Product`.

7. Proceed to “Backing Up Your SMS Environment” on page 10.

▼ **To Download Software From a CD-ROM**

1. Insert the Software Supplement for the Solaris 9 Operating Environment CD-ROM into the CD-ROM drive.

Allow time for the Volume Manager to mount the CD-ROM.

The SMS 1.2 packages are located in
`/cdrom/cdrom0/System_Management_Services_1.2/Product`.

2. Log in to the system controller as superuser.

3. Change to the `Product` installation directory:

```
sc1: # cd /cdrom/cdrom0/System_Management_Services_1.2/Product
```

4. Proceed to “Backing Up Your SMS Environment” on page 10.

Synchronize the SCs

Prior to reinstalling, fresh installing or upgrading any software you should ensure that the SCs are in sync. Failure to do so could result in a domain panic or dstop.

▼ To Synchronize the SCs

1. Verify that failover is enabled:

```
scl:sms-user:> /opt/SUNWSMS/bin/showfailover -v
SC Failover Status: ACTIVE
Clock Phase Locked: .....YES
...(Status continued)....
```

If failover is disabled, enable it:

```
scl:sms-user:> /opt/SUNWSMS/bin/setfailover on
```

2. Verify that all files are propagated:

```
scl:sms-user:> /opt/SUNWSMS/bin/showdatasync -Q
scl:sms-user:>
```

You should not see any files in the queue. If there are files in the queue, you must wait until they have finished propagating before proceeding.

3. Proceed to “Backing Up Your SMS Environment” on page 10.

Backing Up Your SMS Environment

If this SC has a working SMS environment, you should do the following before attempting to reinstall the SMS software:

▼ To Backup Your SMS Environment

On the main SC:

1. Make certain your configuration is stable.

Being stable means no commands are running and no hardware is changed during the reinstallation or upgrade process.

2. Log in to the main SC as a user with `platadm` privileges.

3. Deactivate failover:

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover off
```

On the spare SC:

1. Log in to the spare as superuser.
2. Stop SMS on the spare SC (SC1):

```
scl:# /etc/init.d/sms stop
```

3. Backup the system on the spare SC.

Run `smsbackup` before proceeding or have the latest copy of the `smsbackup` file (`sms_backup.X.X.cpio`) accessible to the disk.

```
scl:# /opt/SUNWSMS/bin/smsbackup directory_name
```

where:

directory_name is the name of the directory in which the backup file is created. The *directory_name* requires the absolute path name for the file. This file can reside in any directory on the system, connected network or tape device to which you have read/write privileges. If no *directory_name* is specified, a backup file is created in `/var/tmp`.

The *directory_name* specified must be mounted on as a UFS file system. Specifying a TMPFS file system, such as `/tmp`, will cause `smsbackup` to fail. If you are not certain that your *directory_name* is mounted as a UFS file system, type:

```
scl:# /usr/bin/df -F ufs directory_name
```

A UFS file system will return directory information. Any other type of file system will return a warning.

Type 1 Installation or Upgrade of the SMS Software on the Spare SC

Note – Do this now only if you are performing a Type 1 installation. Otherwise proceed to “Installing SMS Packages” on page 12.

▼ To Install the Solaris Operating Environment

1. **Install or upgrade the Solaris 9 operating environment according to the Solaris installation instructions. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.**

The instructions in the following sections assume that your system is running the `Entire Distribution` software group (or higher) of the Solaris 9 operating environment. SMS 1.2_s9 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. Any relevant patches should be applied according to each patch's instructions.

Note – You must select the English, 'C,' locale when reinstalling the Solaris operating environment on a system controller. SMS does not support any Solaris locale other than English on the SC.

2. **Once your operating environment has been successfully installed proceed to “Installing SMS Packages” on page 12.**

Installing SMS Packages

To install SMS software packages, follow the steps in the procedure “To Install SMS Packages Using Web Start” on page 12 or “To Manually Install the SMS Software Packages” on page 19.

▼ To Install SMS Packages Using Web Start

You can use Web Start to perform a reinstall from the web or CD-ROM.

1. **Log in to the spare SC as superuser.**

2. Set the DISPLAY environment variable to your current host.

For sh(1) or ksh(1), type:

```
sc1: # DISPLAY=hostname:0
sc1: # export DISPLAY
```

where:

hostname is the host name of the machine used to graphically display Web Start.

For csh(1) type:

```
sc1: # setenv DISPLAY hostname:0.0
```

where:

hostname is the host name of the machine used to graphically display Web Start.

3. Change directory to the location of the SMS 1.2 package:

- If you downloaded software from the Web:

```
sc1: # cd /download_directory/sms_1_2_sparc/
```

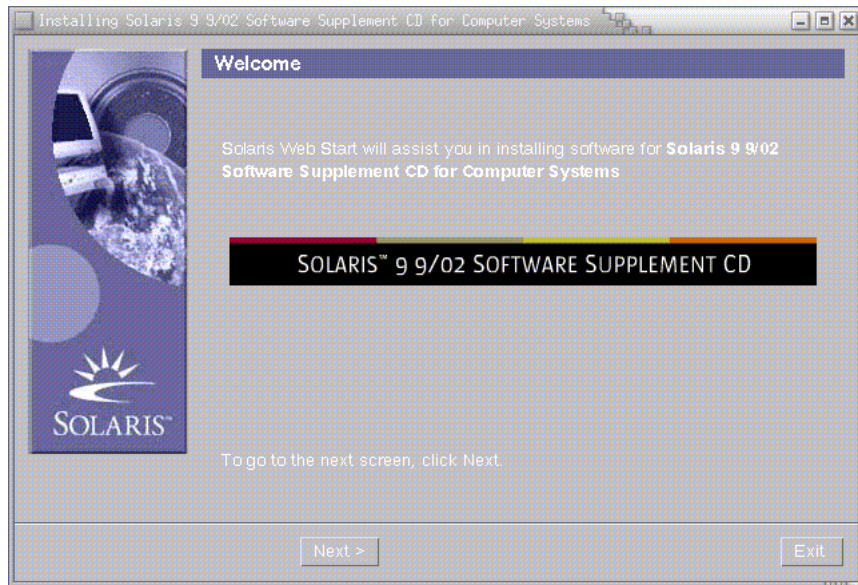
- If you are installing the software from the CD-ROM:

```
sc1: # cd /cdrom/cdrom0
```

4. Begin Web Start by typing:

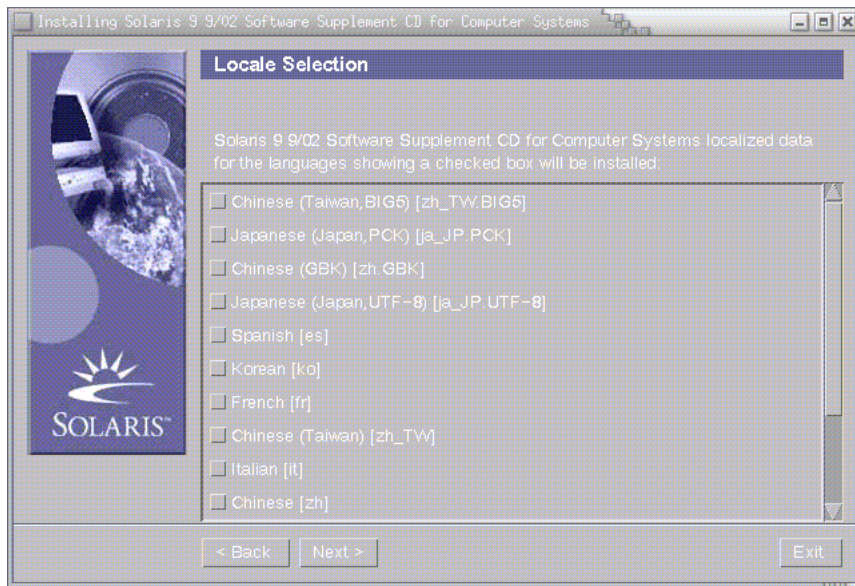
```
sc1: # ./installer
```

The Welcome screen appears:



5. Click on Next.

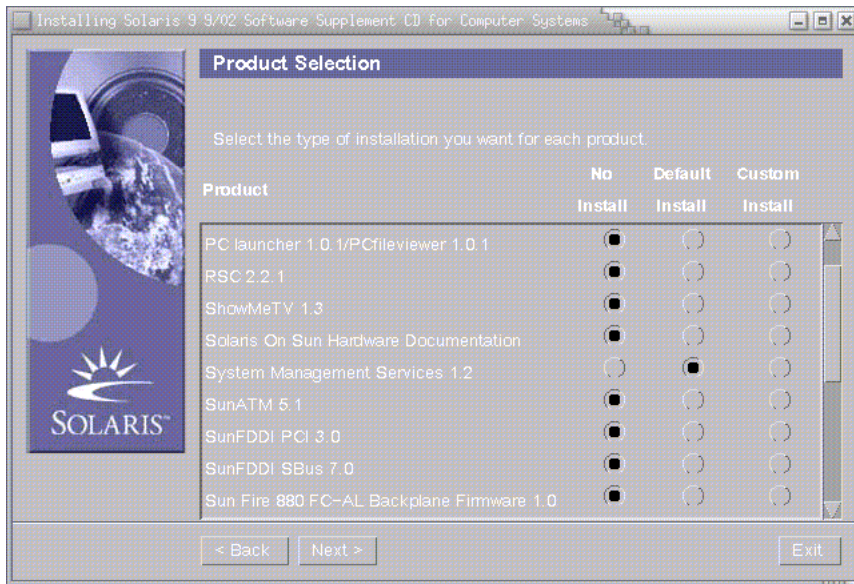
The Locale Selection dialog box appears:



Note – SMS 1.2 is not available in any language other than English. English is the default, do *not* check a language box. Click on next.

6. Click on Next.

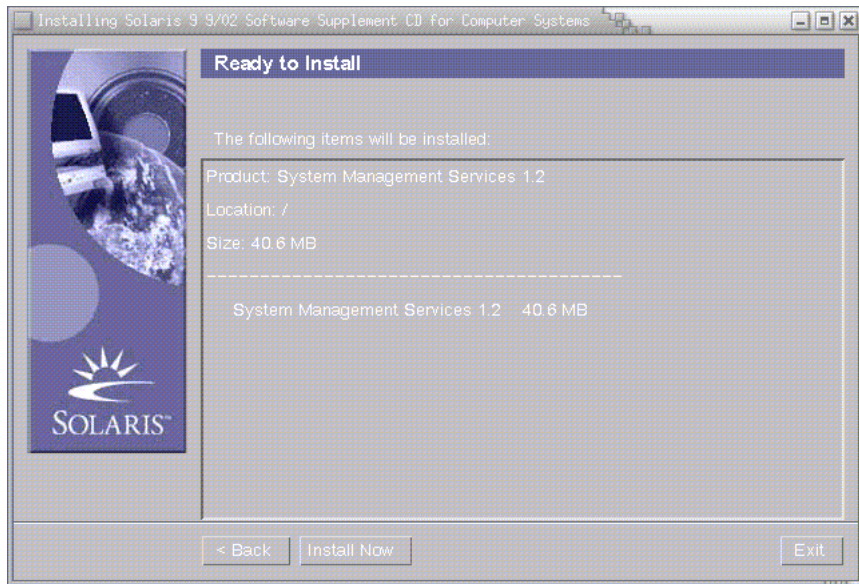
The Product Selection dialog box appears:



Make sure all products but SMS are set to No Install. Choose Default Install for SMS.

7. Click on Next.

The Ready to Install dialog box appears:



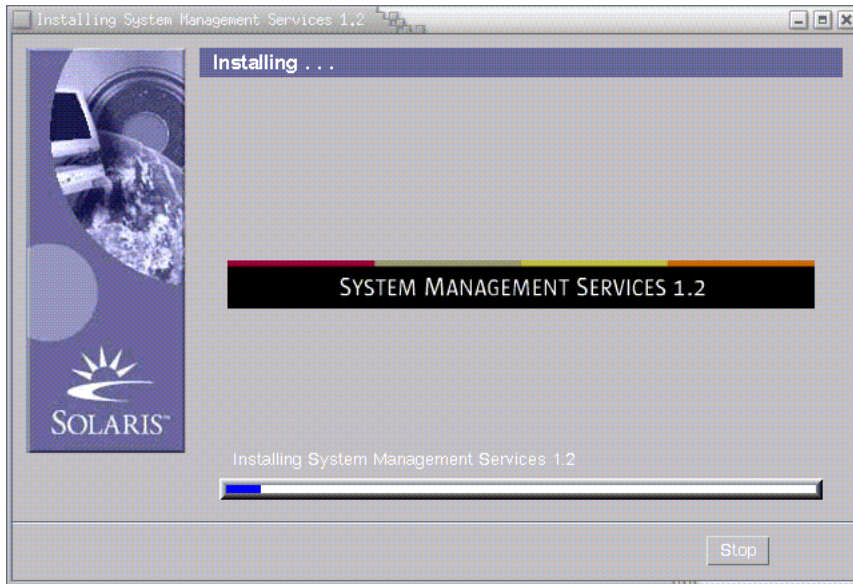
8. Verify that you have sufficient disk space to cover the requirements displayed on the Ready to Install dialog box:

```
scl:# df -lk /
```

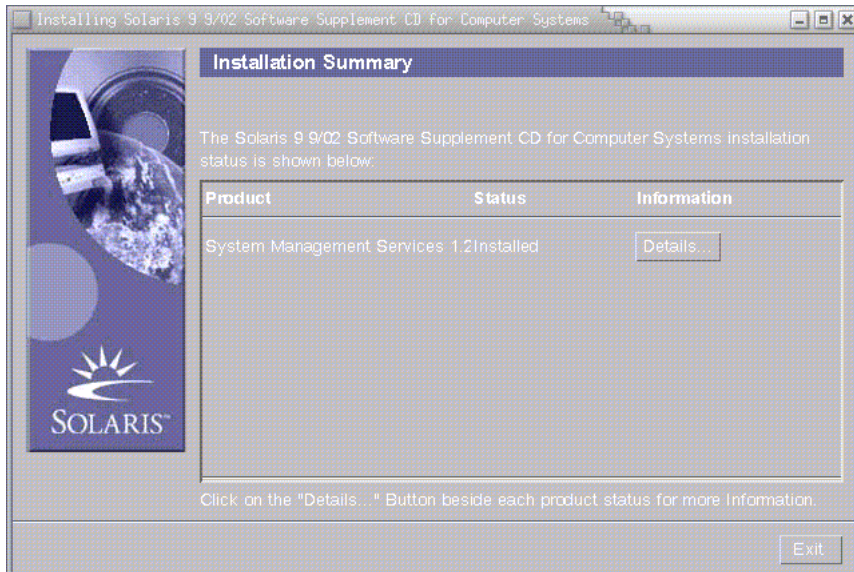
Note – Web Start automatically installs the online System Management Services (SMS) Reference Manual (man) pages in `/opt/SUNWSMS/man/sman1m`. To avoid conflicts, do *not* change this location.

9. Click on Install Now.

The Installing screen appears:



Wait until the installation is complete and the Installation Summary dialog box is displayed.



10. Click on Exit.

11. Apply any relevant patches, unless otherwise noted in the patch instructions.

See “Patches” on page 63. Once the patches have been successfully installed you can proceed to Step 10.

12. Proceed to “To Restore Your SMS Configuration” on page 22.

▼ **To Manually Install the SMS Software Packages**

1. Log in to the spare SC as superuser.

2. Change directory to the location of the SMS 1.2 package:

- If you downloaded software from the Web, type:

```
sc1: # cd
/download_directory/sms_1_2_sparc/System_Management_Services_1.2/Prod
uct
```

- If you are installing software from the CD-ROM; place the Solaris 9 Supplemental CD into the SC’s CD-ROM drive and type:

```
sc1: # cd /cdrom/cdrom0/System_Management_Services_1.2/Product
```

Note – The `pkgadd(1M)` command automatically installs the online System Management Services (SMS) Reference Manual (`man`) pages in `/opt/SUNWSMS/man/sman1m`. To avoid conflicts, do *not* change this location.



Caution – It is extremely important that you install the `SUNWSMSr` package *first* and then the `SUNWSMSop` package *second*. All other packages can be installed in any convenient order after the first two.

Package Number	Package Name	Package Description
11	SUNWSMSr	System Management Services (Root)
7	SUNWSMSop	System Management Services Core Utilities
1	SUNWSMSdf	System Management Services Data Files
2	SUNWSMSjh	System Management Services On-Line Javahelp
3	SUNWSMSlp	System Management Services LPOST object files
4	SUNWSMSmn	System Management Services On-Line Manual Pages
5	SUNWSMSob	System Management Services OpenBoot PROM

Package Number	Package Name	Package Description
6	SUNWSMSod	System Controller OpenBoot PROM
8	SUNWSMSpd	System Controller Power On Self Test
9	SUNWSMSpo	System Management Services POST Utilities
10	SUNWSMSpp	System Management Services picld(1M) Plug-in Module
12	SUNWSMSsu	System Management Services Service User Environment
13	SUNWscdvr.u	Sun Fire 15K System Controller drivers
14	SUNWufrx.u	User Flash PROM Device Driver (Root) (64-bit)
15	SUNWufu	User Flash PROM Device Driver Header Files

3. Add packages using the `pkgadd(1M)` command.

```
scl: # pkgadd -d .
```

The system displays the list of available packages.

```
The following packages are available:
 1 SUNWSMSdf System Management Services Data Files
   (sparc) 1.2.0,REV=2001
 2 SUNWSMSjh System Management Services On-Line Javahelp
   (sparc) 1.2.0,REV=2001
 3 SUNWSMSlp System Management Services LPOST object files
   (sparc) 25.0.0,REV=2.0.0
 4 SUNWSMSmn System Management Services On-Line Manual Pages
   (sparc) 1.2.0,REV=2001
 5 SUNWSMSob System Management Services OpenBoot PROM
   (sparc) 1.2.0,REV=2001
 6 SUNWSMSod System Controller OpenBoot PROM
   (sparc) 1.2.0,REV=2001
 7 SUNWSMSop System Management Services Core Utilities
   (sparc) 1.2.0,REV=2001
 8 SUNWSMSpd System Controller Power On Self Test
   (sparc) 1.2.0,REV=2001
 9 SUNWSMSpo System Management Services POST Utilities
   (sparc) 1.2.0,REV=2001
10 SUNWSMSpp System Management Services picld(1M) Plug-in Module
   (sparc) 1.2.0,REV=2001
11 SUNWSMSr System Management Services, (Root)
   (sparc) 1.2.0,REV=2001
12 SUNWSMSsu System Management Services Service User Environment
   (sparc) 1.2.0,REV=2001
13 SUNWscdvr.u Sun Fire 15K System Controller drivers
   (sparc) 1.2.0,REV=2001
14 SUNWufrx.u User Flash PROM Device Driver (64-bit), (Root)
   (sparc) 2.0,REV=2001
15 SUNWufu User Flash PROM Device Driver Header Files
   (sparc) 2.0,REV=2001
```

4. Enter the list of package numbers that you want to install, separated by commas.

In this example, 11 and 7 are SUNWSMSr and SUNWSMSop respectively and must be listed first and second.

```
Select package(s) you wish to process (or 'all' to process all
packages). (default: all) [?,??,q]: 11,7,1-6,8-10,12-15
```

5. Answer y (yes) to all package installation queries.
6. Verify that all the packages were completely installed.

```
scl: # pkginfo -c SMS
```

```
scl: # pkginfo -i SUNWufrx SUNWufu
```

7. (Optional) List the names of any packages that are partially installed.

```
scl: # pkginfo -p
```

If any packages are listed, remove and reinstall them. If this does not correct the problem, contact your Sun service representative.

8. You have completed the manual installation of software packages.
9. Apply any relevant patches, unless otherwise noted in the patch instructions.
See “Patches” on page 63. Once the patches have been successfully installed you can proceed to Step 10.
10. Proceed to “To Restore Your SMS Configuration” on page 22.

Restoring Your SMS Configuration on the Spare SC

▼ To Restore Your SMS Configuration

1. Restore your SMS configuration.

Note – You must have Patch 112547 installed on the system for `smsrestore` to work correctly.

For Reinstallation or Type 1 installation:

Run `smsrestore` to restore the `smsbackup` file, then proceed to “To Configure the Management Network (MAN) Using `smsconfig(1M)`” on page 25.

```
sc1:# /opt/SUNWSMS/bin/smsrestore filename
```

where:

filename is the absolute path to the backup file that was created by `smsbackup(1M)`. The *filename* must contain the full path name for the file. This file can reside anywhere on the system, connected network or tape device. If no *filename* is specified, you will receive an error.

Note – Once `smsrestore` completes you will see the following message: “Please set the desired SMS failover state.” Ignore this message.

For Type 2 installation:

Run `smsversion` then `smsrestore`.

```
scl:#/opt/SUNWSMS/bin/smsversion
smsversion: Active SMS version <1.1>
smsversion: SMS version 1.1 installed
smsversion: SMS version 1.2 installed

Please select from one of the following installed SMS versions.
1) 1.1
2) 1.2
3) Exit
Select version: 2
You have selected SMS Version 1.2

Is this correct? [y,n] y
smsversion: Upgrading SMS from <1.1> to <1.2>.
To move to a different version of SMS an archive of
critical files will be created. What is the name of
the directory or tape device where the archive will be stored?
[/var/tmp][return]

smsversion: Backup configuration file created:
/var/tmp/sms_backup.1.1.cpio
smsversion: Switching to target version <1.2>.
smsversion: New Version <1.2> Active
smsversion: Active SMS version <1.2>
To use the previous SMS configuration settings type:
smsrestore /var/tmp/sms_backup.1.1.cpio

NOTE: When switching to another SMS version, the user must choose
(via use of smsrestore) to restore the configuration settings
from the previously active version.
```

```
scl:# /opt/SUNWSMS/bin/smsrestore filename
```

where:

filename is the absolute path to the backup file that was created by `smsbackup(1M)`. The *filename* must contain the full path name for the file. This file can reside anywhere on the system, connected network or tape device. If no *filename* is

specified, you will receive an error.

Note – Once `smsrestore` completes you will see the following message: “Please set the desired SMS failover state.” Ignore this message.

2. Proceed to “To Configure the Management Network (MAN) Using `smsconfig(1M)`” on page 25.

Configuring the MAN Network on the Spare SC

▼ To Configure the Management Network (MAN) Using `smsconfig(1M)`

To correctly configure the management network, you need to do the following:

- Run `smsconfig -m`
- Edit the `/etc/nsswitch.conf`
- Edit your Solaris Naming software.
- Reboot the SC.

1. Be sure you have read and filled out the information in the *Sun Fire 15K/12K System Site Planning Guide*.

Note – A domain can be excluded from the I1 network configuration by using the word NONE as the `net_id`. This applies only to the I1 network.

2. Read the `smsconfig(1M)` man page.
3. Log into the spare SC as superuser.
4. To display, review, or change the Management Network settings, type:

```
scl: # /opt/SUNWSMS/bin/smsconfig -m
```

5. Answer the questions based on the information gathered for your site in the *Sun Fire 15K/12K System Site Planning Guide*.

The following example shows IPv4 and accepts the default settings provided with the Solaris 9 Supplemental CD. An IPv6 network example differs slightly. There will be no prompts for `netmasks` and `/etc/ipnodes` will be modified in addition to `/etc/hosts`.



Caution – The IP addresses shown in the following example are *examples only*. Refer to your *Sun Fire 15K/12K System Site Planning Guide* for valid IP addresses for your network. Using invalid network IP addresses could, under certain circumstances, render your system unbootable!

Note – The IP addresses on the external network for failover, hme0 and eri1 on each SC must be unique. The floating IP address is the same on both SCs.

For more information on `smsconfig -m` refer to the “MAN Configuration” section of the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems* and the `smsconfig man` page.

```
scl: # smsconfig -m

The platform name identifies the entire host machine to the SMS
software. The platform name occupies a different name space than
domain names (hostnames of bootable systems).

What is the name of the platform this SMS will service [sun15]?
sun15
Configuring the External Network for Community C1

Do you want to define this Community? [y,n] y
Enter NICs associated with community C1 [hme0 eri1]: [Return]

Enter Logical/Floating IP hostname for community C1 [sun15-sc-
C1]:[Return]
Enter IPMP IP address for sun15-sc-C1:10.1.1.50
Enter Netmask for community C1: 255.255.255.0

Enter IPMP hostname for community C1 failover address [sun15-sc0-
C1-failover]:[Return]
Enter IPMP IP address for sun15-sc0-C1-failover:10.1.1.51

Enter IPMP hostname for hme0 [sun15-sc0-hme0]:[Return]
Enter IPMP IP address for hme0: 10.1.1.52

Enter IPMP hostname for eri1 [sun15-sc0-eri1]:[Return]
Enter IPMP IP address for sun15-sc0-eri1: 10.1.1.53

Hostname                               IP Address (platform=sun15)
-----                               -
sun15-sc-C1                             10.1.1.50
sun15-sc0-C1-failover                   10.1.1.51
```

```
sun15-sc0-hme0      10.1.1.52
sun15-sc0-eri1     10.1.1.53
```

Do you want to accept these network settings? [y,n] **y**

Configuring the External Network for Community C2

Do you want to define this Community? [y,n] **n**

Configuring I1 Management Network - 'I1' is the Domain to SC MAN.
MAN I1 Network Identification

Enter the IP network number (base address) for the I1 network:
10.2.1.0

Enter the netmask for the I1 MAN network
[255.255.255.224]:**[Return]**

Hostname	IP Address (platform=sun15)
-----	-----
netmask-i1	255.255.255.224
sun15-sc-i1	10.2.1.1
sun15-a	10.2.1.2
sun15-b	10.2.1.3
sun15-c	10.2.1.4
sun15-d	10.2.1.5
sun15-e	10.2.1.6
sun15-f	10.2.1.7
sun15-g	10.2.1.8
sun15-h	10.2.1.9
sun15-i	10.2.1.10
sun15-j	10.2.1.11
sun15-k	10.2.1.12
sun15-l	10.2.1.13
sun15-m	10.2.1.14
sun15-n	10.2.1.15
sun15-o	10.2.1.16
sun15-p	10.2.1.17
sun15-q	10.2.1.18
sun15-r	10.2.1.19

Do you want to accept these network settings? [y,n] **y**

Configuring I2 Management Network - 'I2' is for SC to SC MAN.
MAN I2 Network Identification

Enter the IP network number (base address) for the I2 network:
10.3.1.0

Enter the netmask for the I2 MAN network
[255.255.255.252]:**[Return]**

```

Hostname          IP Address    (platform=sun15)
-----
netmask-i2       255.255.255.252
sun15-sc0-i2     10.3.1.1
sun15-sc1-i2     10.3.1.2

Do you want to accept these settings? [y,n] y
Creating /.rhosts to facilitate file propagation...done
MAN Network configuration modified!
Changes will take effect on next reboot.
The following changes are about to be applied to the "/etc/hosts"
hosts file.
-----
ADD: 10.2.1.2    sun15-a #smsconfig-entry#
ADD: 10.2.1.3    sun15-b #smsconfig-entry#
ADD: 10.2.1.4    sun15-c #smsconfig-entry#
ADD: 10.2.1.5    sun15-d #smsconfig-entry#
ADD: 10.2.1.6    sun15-e #smsconfig-entry#
ADD: 10.2.1.7    sun15-f #smsconfig-entry#
ADD: 10.2.1.8    sun15-g #smsconfig-entry#
ADD: 10.2.1.9    sun15-h #smsconfig-entry#
ADD: 10.2.1.10   sun15-i #smsconfig-entry#
ADD: 10.2.1.11   sun15-j #smsconfig-entry#
ADD: 10.2.1.12   sun15-k #smsconfig-entry#
ADD: 10.2.1.13   sun15-l #smsconfig-entry#
ADD: 10.2.1.14   sun15-m #smsconfig-entry#
ADD: 10.2.1.15   sun15-n #smsconfig-entry#
ADD: 10.2.1.16   sun15-o #smsconfig-entry#
ADD: 10.2.1.17   sun15-p #smsconfig-entry#
ADD: 10.2.1.18   sun15-q #smsconfig-entry#
ADD: 10.2.1.19   sun15-r #smsconfig-entry#
ADD: 10.2.1.1    sun15-sc-i1 #smsconfig-entry#
ADD: 10.1.1.50   sun15-sc-C1 #smsconfig-entry#
ADD: 10.1.1.51   sun15-sc0-C1-failover #smsconfig-entry#
ADD: 10.1.1.52   sun15-sc0-hme0 #smsconfig-entry#
ADD: 10.1.1.53   sun15-sc0-eril #smsconfig-entry#
ADD: 10.3.1.1    sun15-sc0-i2 #smsconfig-entry#
ADD: 10.3.1.2    sun15-sc1-i2 #smsconfig-entry#
-----
Update the hosts file, "/etc/hosts", with these changes? [y,n] y
Hosts file "/etc/hosts" has been updated.

The following information is about to be applied to the
"/etc/netmasks" file.
-----
ADD network: 10.1.1.50, mask: 255.255.255.0
ADD network: 10.2.1.0, mask: 255.255.255.224
ADD network: 10.3.1.0, mask: 255.255.255.224

```

```
-----  
Update the netmasks file, "/etc/netmasks", with these changes?  
[y,n] y  
Netmasks files "etc/netmasks" has been updated.  
  
scl:#
```

Note – Any changes made to the network configuration on one SC using `smsconfig -m` must be made to the other SC as well. Network configuration is not automatically propagated.

6. Configure the Name Services for SMS

7. Log in to the SC as superuser.

8. Edit the `/etc/nsswitch.conf` file.

- a. The first entry for `passwd`, `group`, `hosts`, `netmasks` and `ethers` should be files. List other naming services in use, such as `nis` or DNS, next.**

The following example shows the correct partial contents of an `/etc/nsswitch.conf` file on the spare SC. The look-up order for the database entries is first files then naming services.

```
scl: # vi /etc/nsswitch.conf  
...  
passwd:      files nis  
group:       files nis  
...  
hosts:       files nis  
...  
netmasks:   files nis  
...  
ethers:      files nis  
...
```

Note – `smsconfig` automatically updates the `/etc/netmasks` and the `/etc/inet/hosts` file with all the private host names and logical addresses for the SC.

9. Update your Solaris Naming software (NIS, NIS+, DNS, etc), as appropriate.

10. Configure SMS groups. See “To Add Users to SMS Groups and Configure Directory Access” on page 48.

Note – In order to correctly set the ACLs you must repopulate the user groups using `smsconfig -a`. Manually editing or copying over an old `/etc/group` can limit or deny access to users.

11. After adding users to your SMS Groups:

If you are performing a reinstallation or Type 1 installation, proceed to “To Switch Control to the Spare SC” on page 31.

If you are performing a Type 2 installation, proceed to “To Upgrade the Solaris Operating Environment” on page 30.

Type 2 Upgrade of the Solaris Operating Environment on the Spare SC

Note – Do this now only if you are performing a Type 2 installation. Otherwise proceed to “Installing SMS Packages” on page 12.

▼ To Upgrade the Solaris Operating Environment

1. **Install or upgrade the Solaris 9 operating environment according to the Solaris installation instructions. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.**

The instructions in the following sections assume that your system is running the `Entire Distribution` software group (or higher) of the Solaris 9 operating environment. SMS 1.2_s9 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. Any relevant patches should be applied according to each patch’s instructions.

Note – You must select the English, ‘C,’ locale when reinstalling the Solaris operating environment on a system controller. SMS does not support any Solaris locale other than English on the SC.

2. **Once your operating environment has been successfully installed proceed to “To Switch Control to the Spare SC” on page 31.**

Switch Control to the Spare SC

▼ To Switch Control to the Spare SC

1. Log in to the main SC (SC0) as superuser.
2. Stop SMS on the main SC:

```
sc0:# /etc/init.d/sms stop
```

3. Log in to the spare SC (SC1) and drop to the OpenBoot PROM prompt.

```
sc1:# shutdown -y -g0 -i0  
...[system message]  
ok
```

4. Boot the spare SC.

```
ok boot -rv
```

You must reboot the SC in order for the changes to take effect. Once you have rebooted the system, network configuration is complete and SMS will start and SC1 will become the main SC.

5. Next:

For reinstallation, proceed to “To Reinstall or Upgrade the Former Main SC” on page 33.

For Type 1 and Type 2 installations, Proceed to “To Update the Flash PROMs” on page 31.

Updating the Flash PROMs on the Spare SC and the System Boards

▼ To Update the Flash PROMs

When you upgrade the SMS software you must update the SC flash PROMs on both SCs. You must also update the CPU flash PROMs on the system boards. Updating the flash PROMs should be done as soon as you have created system privileges. You must have platform privileges to run the `flashupdate(1M)` command.

Updating flash PROMs is not necessary for software reinstallation.

Note – In order to update your SC PROMs you must have access to the following drivers:

```
sc1:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 16 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 16 20:30 /dev/uflash1 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,800000:uflash1
```

Note – If the drivers are not available you must run the following command as superuser on each SC:

```
sc1:# /usr/sbin/devfsadm -i uflash
```

1. **Log in to the new main SC as a user with platadm privileges.**
2. **Upgrade the SC Flash PROMs.**

Update the SC PROMs using flashupdate.

```
sc1:sms-user:> flashupdate -f /opt/SUNWSMS/firmware/SCOBPing.di
sc1/fp0
sc1:sms-user:> flashupdate -f /opt/SUNWSMS/firmware/SSCPOST.di
sc1/fp1
```

For more information on flashupdate(1M) refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* or the flashupdate man page.

3. **Upgrade the CPU Flash PROMs.**

Update all CPU Flash PROMs using flashupdate.

```
sc1:sms-user:> flashupdate -f /opt/SUNWSMS/hostobjs/sgcpu.flash
location
```

For more information on flashupdate(1M) refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* or the flashupdate man page.

4. Drop to the OpenBoot PROM prompt.

```
scl:sms-user:> su -  
password: [superuser passwd]  
scl:# shutdown -y -g0 -i0  
...[system message]  
ok
```

5. Reboot the SC. Type:

```
ok boot -rv
```

6. Proceed to “To Reinstall or Upgrade the Former Main SC” on page 33.

Reinstalling or Upgrading the Former Main SC

▼ To Reinstall or Upgrade the Former Main SC

1. Log in to the former main as superuser.

2. Backup the system on the former main SC (SC0).

Run `smsbackup` before proceeding or have the latest copy of the `smsbackup` file (`sms_backup.X.X.cpio`) accessible to the disk.

```
sc0:# /opt/SUNWSMS/bin/smsbackup directory_name
```

where:

directory_name is the name of the directory in which the backup file is created. The *directory_name* requires the absolute path name for the file. This file can reside in any directory on the system, connected network or tape device to which you have read/write privileges. If no *directory_name* is specified, a backup file is created in `/var/tmp`.

The *directory_name* specified must be mounted on as a UFS file system. Specifying a TMPFS file system, such as `/tmp`, will cause `smsbackup` to fail. If you are not certain that your *directory_name* is mounted as a UFS file system, type:

```
sc0:# /usr/bin/df -F ufs directory_name
```

A UFS file system will return directory information. Any other type of file system will return a warning.

3. Next:

For Type 1 installations, proceed to “Type 1 Installation or Upgrade of the SMS Software on the Spare SC” on page 11.

For reinstallation or Type 2 installation, proceed to “Installing SMS 1.2 Software on the Former Main SC” on page 35.

Type 1 Installation of the Solaris Operating Environment on the Former Main SC

Note – Do this now only if you are performing a Type 1 installation. Otherwise proceed to “Installing SMS 1.2 Software on the Former Main SC” on page 35.

▼ To Install the Solaris Operating Environment

1. **Install or upgrade the Solaris 9 operating environment according to the Solaris installation instructions. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.**

The instructions in the following sections assume that your system is running the `Entire Distribution` software group (or higher) of the Solaris 9 operating environment. SMS 1.2 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. Any relevant patches should be applied according to each patch's instructions.

Note – You must select the English, 'C,' locale when reinstalling the Solaris operating environment on a system controller. SMS does not support any Solaris locale other than English on the SC.

2. **Once your operating environment has been successfully installed proceed to “To Install SMS 1.2 Software” on page 35.**

Installing SMS 1.2 Software on the Former Main SC

▼ To Install SMS 1.2 Software

1. **Install the SMS software packages on the former main SC (SC0) using Web Start or CD-ROM.**

To install the SMS software packages on the former main SC, see “To Install SMS Packages Using Web Start” on page 12 or “To Manually Install the SMS Software Packages” on page 19 and substitute the main SC wherever you see the spare SC.

To mount the CD-ROM on the spare SC, see “To Share SMS Packages on the Spare SC to the Main SC” on page 70.

When you have successfully exited Web Start or completed the manual installation of the SMS packages and applied all relevant patches, proceed to “To Restore Your SMS Configuration” on page 36.

Restoring Your SMS Configuration on the Former Main SC

▼ To Restore Your SMS Configuration

1. Restore your SMS configuration on the former main SC.

Note – You must have Patch 112547 installed on the system for `smsrestore` to work correctly.

For reinstallation and Type 1 installations:

Run `smsrestore`.

```
sc0: #/opt/SUNWSMS/bin/smsrestore filename
```

where:

filename is the absolute path to the backup file that was created by `smsbackup(1M)`. The *filename* must contain the full path name for the file. This file can reside anywhere on the system, connected network or tape device. If no *filename* is specified, you will receive an error.

Note – Once `smsrestore` completes you will see the following message: “Please set the desired SMS failover state.” Ignore this message.

For Type 2 installations:

Run `smsversion` then `smsrestore`.

```
sc0:#!/opt/SUNWSMS/bin/smsversion
smsversion: Active SMS version <1.1>
smsversion: SMS version 1.1 installed
smsversion: SMS version 1.2 installed

Please select from one of the following installed SMS versions.
1) 1.1
2) 1.2
3) Exit
Select version: 2
You have selected SMS Version 1.2

Is this correct? [y,n] y
smsversion: Upgrading SMS from <1.1> to <1.2>.
To move to a different version of SMS an archive of
critical files will be created. What is the name of
the directory or tape device where the archive will be stored?
[/var/tmp][return]

smsversion: Backup configuration file created:
/var/tmp/sms_backup.1.1.cpio
smsversion: Switching to target version <1.2>.
smsversion: New Version <1.2> Active
smsversion: Active SMS version <1.2>
To use the previous SMS configuration settings type:
smsrestore /var/tmp/sms_backup.1.1.cpio

NOTE: When switching to another SMS version, the user must choose
(via use of smsrestore) to restore the configuration settings
from the previously active version.
```

```
sc0:#!/opt/SUNWSMS/bin/smsrestore filename
```

where:

filename is the absolute path to the backup file that was created by `smsbackup(1M)`. The *filename* must contain the full path name for the file. This file can reside anywhere on the system, connected network or tape device. If no *filename* is

specified, you will receive an error.

Note – Once `smsrestore` completes you will see the following message: “Please set the desired SMS failover state.” Ignore this message.

2. Proceed to “To Configure the Management Network (MAN) Using `smsconfig(1M)`” on page 38.

Configuring the MAN Network on the Former Main SC

▼ To Configure the Management Network (MAN) Using `smsconfig(1M)`

To correctly configure the management network, you need to do the following:

- Run `smsconfig -m`
- Edit the `/etc/nsswitch.conf`
- Edit your Solaris Naming software.
- Reboot the SC.

1. Be sure you have read and filled out the information in the *Sun Fire 15K/12K System Site Planning Guide*.

Note – A domain can be excluded from the I1 network configuration by using the word `NONE` as the `net_id`. This applies only to the I1 network.

2. Read the `smsconfig(1M)` man page.
3. Log into the former main SC as superuser.
4. To display, review, or change the Management Network settings, type:

```
sc0: # /opt/SUNWSMS/bin/smsconfig -m
```

5. Answer the questions based on the information gathered for your site in the *Sun Fire 15K/12K System Site Planning Guide*.

The following example shows IPv4 and accepts the default settings provided with the Solaris 9 Supplemental CD. An IPv6 network example differs slightly. There will be no prompts for `netmasks` and `/etc/ipnodes` will be modified in addition to `/etc/hosts`.



Caution – The IP addresses shown in the following example are *examples only*. Refer to your *Sun Fire 15K/12K System Site Planning Guide* for valid IP addresses for your network. Using invalid network IP addresses could, under certain circumstances, render your system unbootable!

Note – The IP addresses on the external network for failover, hme0 and eri1 on each SC must be unique. The floating IP address is the same on both SCs.

For more information on `smsconfig -m` refer to “MAN Configuration section of the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems* and the `smsconfig` man page.

```
sc0: # smsconfig -m

The platform name identifies the entire host machine to the SMS
software. The platform name occupies a different name space than
domain names (hostnames of bootable systems).

What is the name of the platform this SMS will service [sun15]?
sun15
Configuring the External Network for Community C1

Do you want to define this Community? [y,n] y
Enter NICs associated with community C1 [hme0 eri1]: [Return]

Enter Logical/Floating IP hostname for community C1 [sun15-sc-
C1]: [Return]
Enter IPMP IP address for sun15-sc-C1: 10.1.1.50
Enter Netmask for community C1: 255.255.255.0

Enter IPMP hostname for community C1 failover address [sun15-sc0-
C1-failover]: [Return]
Enter IPMP IP address for sun15-sc0-C1-failover: 10.1.1.51

Enter IPMP hostname for hme0 [sun15-sc0-hme0]: [Return]
Enter IPMP IP address for hme0: 10.1.1.52

Enter IPMP hostname for eri1 [sun15-sc0-eri1]: [Return]
Enter IPMP IP address for sun15-sc0-eri1: 10.1.1.53

Hostname                               IP Address (platform=sun15)
-----                               -
sun15-sc-C1                             10.1.1.50
sun15-sc0-C1-failover                   10.1.1.51
```

```
sun15-sc0-hme0          10.1.1.52
sun15-sc0-eri1          10.1.1.53
```

Do you want to accept these network settings? [y,n] **y**

Configuring the External Network for Community C2

Do you want to define this Community? [y,n] **n**

Configuring I1 Management Network - 'I1' is the Domain to SC MAN.
MAN I1 Network Identification

Enter the IP network number (base address) for the I1 network:

10.2.1.0

Enter the netmask for the I1 MAN network

[255.255.255.224]:**[Return]**

```
Hostname              IP Address (platform=sun15)
```

```
-----
```

```
netmask-i1           255.255.255.224
```

```
sun15-sc-i1          10.2.1.1
sun15-a               10.2.1.2
sun15-b               10.2.1.3
sun15-c               10.2.1.4
sun15-d               10.2.1.5
sun15-e               10.2.1.6
sun15-f               10.2.1.7
sun15-g               10.2.1.8
sun15-h               10.2.1.9
sun15-i               10.2.1.10
sun15-j               10.2.1.11
sun15-k               10.2.1.12
sun15-l               10.2.1.13
sun15-m               10.2.1.14
sun15-n               10.2.1.15
sun15-o               10.2.1.16
sun15-p               10.2.1.17
sun15-q               10.2.1.18
sun15-r               10.2.1.19
```

Do you want to accept these network settings? [y,n] **y**

Configuring I2 Management Network - 'I2' is for SC to SC MAN.
MAN I2 Network Identification

Enter the IP network number (base address) for the I2 network:

10.3.1.0

Enter the netmask for the I2 MAN network

[255.255.255.252]:**[Return]**


```

Hostname          IP Address      (platform=sun15)
-----
netmask-i2       255.255.255.252
sun15-sc0-i2     10.3.1.1
sun15-sc1-i2     10.3.1.2

Do you want to accept these settings? [y,n] y
Creating /.rhosts to facilitate file propagation...done
MAN Network configuration modified!
Changes will take effect on next reboot.
The following changes are about to be applied to the "/etc/hosts"
hosts file.
-----
ADD: 10.2.1.2    sun15-a #smsconfig-entry#
ADD: 10.2.1.3    sun15-b #smsconfig-entry#
ADD: 10.2.1.4    sun15-c #smsconfig-entry#
ADD: 10.2.1.5    sun15-d #smsconfig-entry#
ADD: 10.2.1.6    sun15-e #smsconfig-entry#
ADD: 10.2.1.7    sun15-f #smsconfig-entry#
ADD: 10.2.1.8    sun15-g #smsconfig-entry#
ADD: 10.2.1.9    sun15-h #smsconfig-entry#
ADD: 10.2.1.10   sun15-i #smsconfig-entry#
ADD: 10.2.1.11   sun15-j #smsconfig-entry#
ADD: 10.2.1.12   sun15-k #smsconfig-entry#
ADD: 10.2.1.13   sun15-l #smsconfig-entry#
ADD: 10.2.1.14   sun15-m #smsconfig-entry#
ADD: 10.2.1.15   sun15-n #smsconfig-entry#
ADD: 10.2.1.16   sun15-o #smsconfig-entry#
ADD: 10.2.1.17   sun15-p #smsconfig-entry#
ADD: 10.2.1.18   sun15-q #smsconfig-entry#
ADD: 10.2.1.19   sun15-r #smsconfig-entry#
ADD: 10.2.1.1    sun15-sc-i1 #smsconfig-entry#
ADD: 10.1.1.50   sun15-sc-C1 #smsconfig-entry#
ADD: 10.1.1.51   sun15-sc0-C1-failover #smsconfig-entry#
ADD: 10.1.1.52   sun15-sc0-hme0 #smsconfig-entry#
ADD: 10.1.1.53   sun15-sc0-eril #smsconfig-entry#
ADD: 10.3.1.1    sun15-sc0-i2 #smsconfig-entry#
ADD: 10.3.1.2    sun15-sc1-i2 #smsconfig-entry#
-----
Update the hosts file, "/etc/hosts", with these changes? [y,n] y
Hosts file "/etc/hosts" has been updated.

The following information is about to be applied to the
"/etc/netmasks" file.
-----
ADD network: 10.1.1.50, mask: 255.255.255.0
ADD network: 10.2.1.0, mask: 255.255.255.224
ADD network: 10.3.1.0, mask: 255.255.255.224

```

```
-----  
Update the netmasks file, "/etc/netmasks", with these changes?  
[y,n] y  
Netmasks files "etc/netmasks" has been updated.  
  
sc0:#
```

6. Configure the Name Services for SMS

7. Log in to the SC as superuser.

8. Edit the `/etc/nsswitch.conf` file.

- a. **The first entry for password, group, hosts, netmasks and ethers should be files. List other naming services in use, such as nis or DNS, next.**

The following example shows the correct partial contents of an `/etc/nsswitch.conf` file on the spare SC. The look-up order for the database entries is first files then naming services.

```
sc0: # vi /etc/nsswitch.conf  
...  
passwd:      files nis  
group:       files nis  
...  
hosts:       files nis  
...  
netmasks:   files nis  
...  
ethers:      files nis  
...
```

Note – `smsconfig` automatically updates the `/etc/netmasks` and the `/etc/inet/hosts` file with all the private host names and logical addresses for the SC.

9. Update your Solaris Naming software (NIS, NIS+, DNS, etc), as appropriate.

10. Configure SMS groups. See “To Add Users to SMS Groups and Configure Directory Access” on page 48.

Note – In order to correctly set the ACLs you must repopulate the user groups using `smsconfig -a`. Manually editing or copying over an old `/etc/group` can limit or deny access to users.

11. After adding users to your SMS Groups:

For reinstallation and Type 1 installations, proceed to “To Reboot the Former Main SC” on page 44.

For Type 2 installations, proceed to “To Upgrade the Solaris Operating Environment” on page 43.

Type 2 Upgrade of the Solaris Operating Environment on the Former Main SC

Note – Do this now only if you are performing a Type 2 installation. Otherwise proceed to “Installing SMS Packages” on page 12.

▼ To Upgrade the Solaris Operating Environment

1. **Upgrade the Solaris 9 operating environment according to the Solaris installation instructions. Refer to the *Solaris 9 Installation Guide* for detailed installation instructions.**

The instructions in the following sections assume that your system is running the `Entire Distribution` software group (or higher) of the Solaris 9 operating environment. SMS 1.2_s9 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. Any relevant patches should be applied according to each patch’s instructions.

Note – You must select the English, ‘C,’ locale when reinstalling the Solaris operating environment on a system controller. SMS does not support any Solaris locale other than English on the SC.

2. **Proceed to “Reboot the Former Main SC” on page 44.**

Reboot the Former Main SC

▼ To Reboot the Former Main SC

1. **Log in to the former main SC (SC0) as superuser and drop to the OpenBoot PROM prompt.**

```
sc0:# shutdown -y -g0 -i0
...[system message]
ok
```

2. **Boot the former main SC.**

```
ok boot -rv
```

You must reboot the SC in order for the changes to take effect. Once you have rebooted the system, network configuration is complete.

3. **Next:**

For reinstallation, proceed to “To Enable Failover” on page 46.

For Type 1 and Type 2 installations, Proceed to “To Update the Flash PROMs” on page 44.

Updating the Flash PROMs on the Former Main SC

▼ To Update the Flash PROMs

When you upgrade the SMS software you must update the SC flash PROMs on both SCs. This is not necessary for software reinstallation.

Note – You do not need to update the CPU flash PROMs. This was done earlier and is not repeated.

Updating the SC flash PROMs should be done as soon as you have created system privileges. You must have platform privileges to run the `flashupdate(1M)` command.

Note – In order to update your SC PROMs you must have access to the following drivers:

```
sc0:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 16 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 16 20:30 /dev/uflash1 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,800000:uflash1
```

Note – If the drivers are not available you must run the following command as superuser on each SC:

```
sc0:# /usr/sbin/devfsadm -i uflash
```

1. Log in to the main SC as a user with `platadm` privileges.
2. Upgrade the SC Flash PROMs.

Update the SC PROMs using `flashupdate`.

```
sc0:sms-user:> flashupdate -f /opt/SUNWSMS/firmware/SCOBPimg.di
sc0/fp0
sc0:sms-user:> flashupdate -f /opt/SUNWSMS/firmware/SSCPOST.di
sc0/fp1
```

For more information on `flashupdate(1M)` refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* or the `flashupdate` man page.

3. Drop to the OpenBoot PROM prompt.

```
sc0:sms-user:> su -
password: [superuser passwd]
sc0:# shutdown -y -g0 -i0
...[system message]
ok
```

4. Reboot the main SC (SC0). Type:

```
ok boot -rv
```

5. Proceed to “To Enable Failover” on page 46.

Enabling Failover on the Main SC (SC1)

▼ To Enable Failover

1. Login in the new main SC (SC1) as a user with `platadmin` privileges.
2. Turn on failover.

```
sc1:sms-user:> /opt/SUNWSMS/bin/setfailover on
```

Your reinstallation or upgrade is now complete! You are now ready to proceed to “Creating a Domain” on page 51.

Adding Users to SMS

The SMS security model uses group membership to provide users with the authority to perform various system management tasks. The level and type of system management available depends on a user’s group membership. For more information, refer to Chapter 2, “SMS Security” in the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems*.

Note – Adding users using `smsconfig` must be performed on both the main and spare SCs once software installation and network configuration are completed.

The SMS user group IDs are created during initial installation. The following table lists the user groups that are set up for you:

User Group ID	User Group Description
platadm	Platform Administrator Group
platsvc	Platform Service Group
platoper	Platform Operator Group
dmnaadm	Domain A Administrator Group
dmnbadm	Domain B Administrator Group
dmncadm	Domain C Administrator Group
dmndadm	Domain D Administrator Group
dmneadm	Domain E Administrator Group
dmnfadm	Domain F Administrator Group
dmngadm	Domain G Administrator Group
dmnhadm	Domain H Administrator Group
dmniadm	Domain I Administrator Group
dmnjadm	Domain J Administrator Group
dmnkadm	Domain K Administrator Group
dmnladm	Domain L Administrator Group
dmnmadm	Domain M Administrator Group
dmnnadm	Domain N Administrator Group
dmnoadm	Domain O Administrator Group
dmnpadm	Domain P Administrator Group
dmnqadm	Domain Q Administrator Group
dmnradm	Domain R Administrator Group
dmnarcfg	Domain A Configuration Group
dmnbrcfg	Domain B Configuration Group
dmncrcfg	Domain C Configuration Group
dmndrcfg	Domain D Configuration Group
dmnercfg	Domain E Configuration Group
dmnfrcfg	Domain F Configuration Group
dmngrcfg	Domain G Configuration Group
dmnhrcfg	Domain H Configuration Group

User Group ID	User Group Description (<i>Continued</i>)
dmnircfg	Domain I Configuration Group
dmnjrcfg	Domain J Configuration Group
dmnkrcfg	Domain K Configuration Group
dmnlrcfg	Domain L Configuration Group
dmnmrcfg	Domain M Configuration Group
dmnnrcfg	Domain N Configuration Group
dmnorcfg	Domain O Configuration Group
dmnprcfg	Domain P Configuration Group
dmnqrcfg	Domain Q Configuration Group
dmnrrcfg	Domain R Configuration Group

▼ To Add Users to SMS Groups and Configure Directory Access

SMS provides the ability to add users to SMS groups and refine user access to directories on the Sun Fire 15K/12K system. This functionality protects domain integrity and system security.

1. Login as superuser.

2. To correctly configure SMS groups and administrative privileges, you must use the following command for each user you wish to add.

```
sc0: # /opt/SUNWSMS/bin/smsconfig -a -u username -G groupname
domain_id|platform
```

where:

username is the name of a user account on the system.

groupname is one of the following valid group designations: admn, rcfg, oper or svc.

domain_id is the ID for a domain. Valid *domain_id* s are A through R and are case insensitive.

For example, to add a user to the dmnaadm group with access to domain a directories, type:

```
sc0: # /opt/SUNWSMS/bin/smsconfig -a -u fdjones -G admn a
fdjones has been added to the dmnaadm group
All privileges to domain a have been applied.
```

Note – Do *not* manually add or remove users from SMS groups in the `/etc/group` file. This can limit or deny access to users.

3. To list SMS groups and administrative privileges, use the following command.

```
sc0: # /opt/SUNWSMS/bin/smsconfig -l domain_id|platform
```

For example, to display all users with platform privileges, type:

```
sc0: # /opt/SUNWSMS/bin/smsconfig -l platform
fdjones
jtd
```

4. To correctly configure SMS groups and administrative privileges, you must use the following command for each user you wish to remove.

```
sc0: # /opt/SUNWSMS/bin/smsconfig -r -u username -G groupname
domain_id|platform
```

For example, to remove fdjones from the dmnbadmn group, type:

```
sc0: # /opt/SUNWSMS/bin/smsconfig -r -u fdjones -G admn B
fdjones has been removed from the dmnbadmn group.
All access to domain B is now denied.
```

where:

username is the name of a valid user account on the system.

groupname is one of the following group designations: admn, rcfg, oper or svc.

domain_id is the ID for a domain. Valid *domain_id* s are A through R and are case insensitive.

Note – Do *not* manually add or remove users from SMS groups in the `/etc/group` file. This can limit or deny access to users.

5. You have successfully configured your SMS user groups.

Creating a Domain

This section describes the following procedures for creating a new domain:

Note – You must have a valid `idprom.image` file for the domain in the `/var/opt/SUNWSMS/data/domain_id` directory in order to create a domain. Contact your Sun service representative if this file is missing.

- To Build a New Domain on the System Controller
- To Activate the Domain
- To Bring Up a Console for the Domain

▼ To Build a New Domain on the System Controller

For the examples in this guide:

Prompt	Definition
<code>sc0:#</code>	Superuser on the main SC
<code>domain_id: #</code>	Superuser on the domain
<code>sc_name:sms-user:></code>	User prompt on the SC. <i>sms-user</i> is the <code>user-name</code> of an administrator, operator, configurator or service personnel logged in to the SC.
<code>domain_id:sms-user:></code>	User prompts on the domain <i>sms-user</i> is the <code>user-name</code> of the administrator, operator, configurator or service personnel logged in to the domain.

The privileges allotted to the user are determined by the platform or domain groups to which the user belongs. In these examples, the *sms-user* is assumed to have both platform and domain administrator privileges, unless otherwise noted.

Note – In the following example, a platform administrator creates a domain by adding boards to the domain. If you wish to have a domain administrator create the domain, the platform administrator must first run `setupplatform` and place the boards in the domain available component list before the domain administrator can run `addboard`.

1. Log in as a user with `platadm` privileges, and create a domain by adding boards.

```
sc0:sms-user:> addboard -d domain_id -c assign location [location]
```

where:

domain_id is the ID of the domain (A through R) that you are creating

location corresponds to board location. The following *location* forms are accepted:

Valid form for Sun Fire 15K	Valid form for Sun Fire 12K
SB(0...17)	SB(0...8)
IO(0...17)	IO(0...8)

For example, the following command adds CPU boards in slots 2, 4, and 7 to domain A.

```
sc0:sms-user:> addboard -d A -c assign SB2 SB4 SB7
```

The next example adds I/O boards in slots 3, 5, and 8 to domain A.

```
sc0:sms-user:> addboard -d A -c assign IO3 IO5 IO8
```

2. Use the `deleteboard(1M)` command if you need to remove boards from an inactive domain

```
sc0:sms-user:> deleteboard -c unassign location [location]
```

where:

location is the board location. The following *location* forms are accepted:

Valid form for Sun Fire 15K	Valid form for Sun Fire 12K
SB(0..17)	SB(0..8)
IO(0..17)	IO(0..8)

For example, the following command removes the CPU board in slot 2 of slot 0 from domain A.

```
sc0:sms-user:> deleteboard -c unassign SB2
```

The next example removes an I/O board in slot 3 of slot 1 from domain A.

```
sc0:sms-user:> deleteboard -c unassign IO3
```

3. Add a tag for the domain.

```
sc0:sms-user:> addtag -d domain_id domain_tag
```

where:

domain_id is the ID of the domain (A through R) you are creating.

domain_tag is the name of the new tag you are adding for the domain, such as domainA.

For example, the following command adds the tag for domain A to the platform configuration database (PCD).

```
sc0:sms-user:> addtag -d A domainA
```

4. Use the `deletetag(1M)` command if you want to remove a tag.

```
sc0:sms-user:> deletetag -d domain_id
```

where:

`domain_id` is the ID of the domain from which you want to remove a tag (A through R).

For example, the following command deletes the tag for domain A from the platform configuration database (PCD).

```
sc0:sms-user:> deletetag -d A
```

▼ To Activate the Domain

Note – To install the Solaris operating environment and SMS on a new system controller, you must have a valid `idprom.image` file in `/var/opt/SUNWSMS/data/domain_id/idprom.image`, where `domain_id` is A through R. If you do *not* have this file already, contact your Sun service representative.

SMS contains a virtual key switch for each domain, which controls the states of the domain. The `showkeyswitch(1M)` command displays the position of the virtual key switch, and the `setkeyswitch(1M)` command changes the position of the virtual key switch. The valid positions of the virtual key switch are `on`, `standby`, `off`, `diag`, and `secure`. For more information refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems*.

1. Display the domain status.

```
sc0:sms-user:> showkeyswitch -d domain_id
```

where:

`domain_id` is the ID of the domain (A through R) for which you want to check status.

For example, the following command shows the status of domain A.

```
sc0:sms-user:> showkeyswitch -d A
```

2. Activate the domain as a user with Domain Administrator (dmnaadmin) privileges.

```
sc0:sms-user:> setkeyswitch -d domain_id position
```

where:

domain_id is the ID of the domain (A through R) you want to activate

position is whether you want the virtual keyswitch in the `on` (activate), `off` (deactivate), `standby`, `diag`, or `secure` position.

For example, the following command activates domain A.

```
sc0:sms-user:> setkeyswitch -d A on
```

3. If you need to deactivate a domain, set the *position* of the virtual keyswitch to `off`.

For example, the following command deactivates domain A.

```
sc0:sms-user:> setkeyswitch -d A off
```

▼ To Bring Up a Console for the Domain

The conditions required for network console are as follows:

- The network was properly installed and configured on both the SC and the domain in question using the *Sun Fire 15K/12K System Site Planning Guide* and `smsconfig`.
- A network connection exists between the SC and the domain in question.
- IPSec configuration on both SC and the domain in question were properly installed and configured using `smsconfig`. For more information on IPSec, see the `kmd(1M)` man page and Chapter 3 in the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems*.

1. Bring up an active console window for the domain

```
sc0:sms-user:> console -d domain_id
```

where:

domain_id is the ID of the domain (A through R) for which you want to bring up a console.

For example, the following command brings up a console for domain A.

```
sc0:sms-user:> console -d A
```

In the domain `console` window, `vi(1)` runs properly and the escape sequences (tilde commands) work as intended only if the environment variable `TERM` has the same setting as that of the console window.

For example:

```
domain_id:sms-user:> setenv TERM xterm
```

For more information on domain console refer to the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems* and the `console` man page.

Setting Up and Installing the Solaris Operating Environment for the Domain

This section describes the following procedures for setting up and installing the Solaris operating environment for the domain:

- To Set up the Network Install Server on the System Controller
- To Set Up the Domain as an Install Client
- To Install the Solaris Operating Environment on the Domain

Note – If you had the Solaris operating environment pre-installed on your system or you have run the `sys-unconfig` command on the domain please see “Unconfigured Domains” on page 62 before proceeding.

▼ To Set up the Network Install Server on the System Controller

You must create an install server to install the Solaris operating environment software for a domain over the network.

- 1. You should be familiar with setting up network install servers before beginning this procedure.**

For information on configuring network install servers, refer to the *Solaris 9 Installation Guide*.

Refer to the *Solaris 9 Installation Guide* for information on setting up the spare SC as an install client.

For partition and Solaris operating system distribution information see “Introduction” on page 2.

▼ To Set Up the Domain as an Install Client

After you have created an install server on sc0, you are ready to install the Solaris operating environment software for the domain over the network. The system needs to identify the name of the domain, and you add this information by using the `add_install_client(1M)` command. Refer to the *Solaris 9 Reference Manual* for more information about the `add_install_client(1M)` command.

- 1. Obtain the MAN network Ethernet address at the OpenBoot PROM prompt by typing:**

The output displayed is an *example* only and does not reflect the specific information that will appear on your system.

```
ok banner
Sun Fire 15000, using IOSRAM based Console
Copyright 1998-2001 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.5, 3072 MB memory installed, Serial #####.
Ethernet address 8:0:20:0:0:0, Host ID: 80200000.
```

2. As superuser on SC0, set up the host domain as an install client.

```
sc0: # /install_dir_path/Solaris_9/Tools/add_install_client -e
domain_man_etheraddr -s scI1_hostname:/install_dir_path -c
scI1_hostname:/install_dir_path domain_hostname sun4u
```

where:

install_dir_path specifies the directory where the CD images were copied.

domain_man_etheraddr is the Ethernet address for the domain.

scI1_hostname is the hostname given to the SC I1 network during the `smsconfig -m` procedure.

domain_hostname is the name given to the domain I1 network interface assigned during the `smsconfig -m` procedure.

See “To Configure the Management Network (MAN) Using `smsconfig(1M)`.” The domain host name was originally defined on the worksheet in the *Sun Fire 15K/12K System Site Planning Guide*.

▼ To Install the Solaris Operating Environment on the Domain

1. Display the functioning network interfaces.

```
ok watch-net-all
```

Note – The OpenBoot PROM parameter `diag-switch?` must be set to `false` for this to work. Refer to BugID 4378456.

If `watch-net-all` reports a failure on the device associated with `man-net`, you will need to contact your Sun representative.

2. Network boot the domain from the SC using the Management Network. Type:

```
ok boot man-net
```

3. Install the Solaris operating environment for the domain.

Refer to the *Solaris 9 Installation Guide* for detailed installation instructions. Refer to your *Sun Fire 15K/12K System Site Planning Guide* for site specific and system dependent information when prompted during installation.

Note – To use dynamic reconfiguration (DR) you must install at least the Entire Distribution software group (or higher) of the Solaris 8 02/02 or Solaris 9 operating environment on the domain. You can choose any Solaris locale you wish for the operating environment on the domain. The SC must have the English locale installed but the domains do not.

4. Change the domain nodename.

When using the SC as an install server for a domain, change the domain's nodename after the installation is complete. This reduces the amount of network traffic generated between the domain and SC over the MAN network. Change the nodename of the domain to the hostname of one of its external network interfaces (for example, qfe0).

To change the domain's nodename do the following:

1. Log in to the domain as superuser.
2. Type:

```
domain_id:# uname -s new_nodename
domain_id:# echo new_nodename > /etc/nodename
```

3. Log out.

5. Remove the domain from the network install server list.

After installing the domain software, to remove the domain from the install server list:

1. Log in to the SC as superuser.
2. Type:

```
sc0:#/install_dir_path/Solaris_9/Tools/rm_install_client
domain_hostname
```

3. In preparation for Step 4 of the *next* procedure, note the physical disk location. For example, type:

```
sc0:#ls -la /dev/dsk/c0t17d0s0
lrwxrwxrwx  1 root    root          77 Oct 12 17:38
/dev/dsk/c0t17d0s0 ->
../../../../devices/pci@3c,600000/pci@1/SUNW,q1c@4/fp@0,0/ssd@w21000020
370dac0c,0:a
```

4. Log out.

▼ To Set Up OpenBoot PROM Environment Variables for the Domain

1. At the domain console's `ok` prompt, remove any duplicate entries in the `devalias` list.

```
ok nvunalias duplicate_alias
```

where:

duplicate_alias is the alias of the duplicate entry.

Note – This sequence must be repeated once per duplication. `nvunalias` removes only one device alias at a time; the last one in the list of device aliases.

2. Display the OpenBoot PROM device tree to use in creating the device aliases.

```
ok show-devs
```

3. Display the functioning network interfaces.

```
ok watch-net-all
```

Note – The OpenBoot PROM parameter `diag-switch?` must be set to `false` for this to work. Refer to BugID 4378456.

4. Set the *bootdisk_alias* so that it refers to the device on which you are installing the Solaris operating environment.

```
ok nvalias bootdisk_alias device_string
```

where:

bootdisk_alias is the alias for the device on which you are installing the Solaris operating environment

device_string is the string for the device on which you are installing the Solaris operating environment as displayed in Step 3.

For example:

```
nvalias disk /pci@3c,600000/pci@1/SUNW,qlc@4/fp@0,0/disk@w21000020370dac0c,0:a
```

Note – Enter the `nvalias` command on a single line. In the above example, the `ssd` in the physical disk location changed to `disk` in the boot string.

5. Record the newly created NVRAM data.

```
ok nvstore
```

6. Use the `setenv` command to set the default boot device to the correct alias.

```
ok setenv boot-device bootdisk_alias
```

where:

bootdisk_alias is the user-defined alias you established in Step 4. The boot device must correspond to the a bootable disk on which you are installing the operating environment. This variable will be used in case of a panic and auto-boot. It is very important to set this variable correctly.

7. Now that you have set up an alias for your boot device, boot the disk by typing:

```
ok boot
```

Unconfigured Domains

If you had the Solaris operating environment pre-installed on a domain or have run the `sys-unconfig(1M)` command on a domain, you must configure the MAN network information on that domain manually.

Note – Do not add the domain as an install client on the SC prior to booting the domain, as described in “To Set Up the Domain as an Install Client” on page 57.

▼ To Configure Domain Networks

1. **Log in to the domain as superuser.**
2. **Type:**

```
domain_id:#ndd -get /dev/dman man_get_hostinfo
```

The following is an example of the output displayed.

```
manc_magic = 0x4d414e43
manc_version = 01
manc_csum = 0x0
manc_ip_type = AF_INET
manc_dom_ipaddr = 10.1.1.3
manc_dom_ip_netmask = 255.255.255.224
manc_dom_ip_netnum = 10.1.1.0
manc_sc_ipaddr = 10.1.1.1
manc_dom_eaddr = 0:0:be:a8:48:26
manc_sc_eaddr = 8:0:20:f9:e4:54
manc_iob_bitmap = 0x400 io boards = 10.1,
manc_golden_iob = 10
```

3. **Add or edit a `network-11` entry to `/etc/netmasks`, using the following format:**

```
manc_dom_ip_netnum manc_dom_ip_netmask
```

For example:

```
10.1.1.0 255.255.255.224
```

4. Create an `/etc/hostname.dman0` file with the following content:

```
manc_dom_ipaddr netmask + broadcast + private up
```

For example:

```
10.1.1.3 netmask + broadcast + private up
```

5. Ensure that the '`manc_sc_ipaddr`' IP address matches what's in `/etc/syslog.conf`:

```
domain_id:# cat /etc/syslog.conf
```

```
...  
*.notice @10.1.1.1
```

If not, edit the `/etc/syslog.conf` file. Save and exit.

6. Type:

```
domain_id:# ifconfig dman0 plumb  
domain_id:# ifconfig dman0 manc_dom_ipaddr netmask + broadcast +  
private up
```

where

manc_dom_ipaddr is the domain IP address listed in `/etc/netmasks`.

7. The domain is now configured.

Patches

If you need to apply a patch to SMS 1.2, disable failover before installing the patch.

SMS patches are available at: <http://sunsolve.sun.com>

Follow these guidelines and notify the affected administrators:

- The system should be stable.
- No DR operations should be in progress.
- No domain bringup or shutdown should be in progress.

- No user initiated `datasync` or `cmdsnc` operations should be in progress.

Complete any domain, board, or configuration changes *before* you begin patch installation.

Please read all patch instructions carefully before attempting this procedure. Instructions in the patch procedure could preempt these instructions.

This example assumes the main SC is `sc0` and the spare SC is `sc1`.

▼ To Disable Failover

1. **Log in to the main SC as superuser.**
2. **Backup your system configuration on the main:**

```
sc0:# /opt/SUNWSMS/bin/smsbackup directory
```

3. **Log in to the main SC with platform administrator privileges.**
4. **Synchronize the main SC to the spare and backup to the spare. Type:**

```
sc0:sms-user:> /opt/SUNWSMS/bin/setdatasync backup
```

Wait until all files have been propagated.

5. **Verify that all files have been propagated. Type:**

```
sc0:sms-user:> /opt/SUNWSMS/bin/showdatasync -Q
FILE
sc0:sms-user:>
```

When no files are listed in the queue, propagation is complete.

6. **Failover to the spare:**

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover force
```

7. **Patch `sc0` (former main) according to patch instructions.**
8. **Log in to `sc1` (the new main) with platform administrator privileges.**

9. Reactivate failover:

```
sc1:sms-user:> /opt/SUNWSMS/bin/setfailover on
```

10. Ensure that the data files are identical.

```
sc1:sms-user:> /opt/SUNWSMS/bin/setdatasync backup
```

11. Fail back to sc0:

```
sc1:sms-user:> /opt/SUNWSMS/bin/setfailover force
```

12. Patch sc1 according to patch instructions.

13. Reactivate failover:

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover on
```

14. You have finished the patch process for main and spare.

Installing Additional Software Packages

The additional software packages are in separate media. Install the software packages one at a time, from the appropriate media. There is no particular order in which the packages need to be installed. Following are additional packages that you may want to install:

- Sun Remote Services (SRS)
- Veritas Volume Manager (VM)
- Load Sharing Facility (LSF) 3.2.3
- Workshop 7
- ClusterTools 3.1
- C programming language and compiler
- Fortran 77 programming language and compiler
- Oracle database software

▼ To Install Additional Software Packages

1. Log in to the SC as superuser.
2. Insert the appropriate installation CD into the CD-ROM drive on the SC.
3. Use the `share(1M)` command to share the CD across the network.

1. Verify that the `nfsd` server is running. Type:

```
sc0:#ps -ef | grep nfsd
```

Add a CDROM entry to the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro,anon=0 /cdrom/cdrom0
```

To propagate the CDROM image to NFS, type:

```
sc0:#!/etc/init.d/nfs.server start
```

4. Log in to the domain as superuser.
5. Create and mount the `/cdrom` directory for the domain.

```
domain_id: # mkdir /cdrom  
domain_id: # mount SC-II: /cdrom/cdrom0 /cdrom
```

where:

SC-II: is the hostname specified for the SC I1 network in Step 5 of “To Configure the Management Network (MAN) Using `smsconfig(1M)`” on page 25.

6. Add the additional software package.

```
domain_id: # cd /cdrom/install_disk_name
domain_id: # pkgadd -d . software_package_name
```

where:

install_disk_name is the name of the installation disk from which you are installing.

software_package_name is the name of the software package you are adding.

The `pkgadd(1M)` command might display several messages and ask several installation questions for each package, some relating to space, others asking whether it is OK to continue. After answering these questions, and when asked whether to proceed, answer yes.

7. Unmount the CD.

```
domain_id: # cd /
domain_id: # umount /cdrom
```

8. Log out of the domain and log in to the SC as superuser.

9. Eject the installation CD from the CD-ROM drive on the SC.

```
sc0: # cd /
sc0: # eject cdrom
```

Network Time Protocol (NTP)

▼ To Configure the NTP Packages

1. **After you install any additional software packages, configure the `ntp.conf` file for each domain, to synchronize clocks between the SC and its domain.**

For details on configuring the domain `ntp.conf` file, which resides at `/etc/inet/ntp.conf`, refer to the “Configuring NTP” section of the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems*.

For more information about NTP commands, refer to the `xntp(1M)` man page in the man Pages(1M): System Administration Commands section of the Solaris 9 Reference Manual Collection.

Stopping and Starting SMS

For diagnostic or service reasons you may be asked to stop and restart SMS. The following procedure describes how to do that manually.

▼ To Manually Stop and Restart SMS

1. **Log in to the SC as a user with platform administrator privileges.**

You must have platform administrator privileges to run `setfailover`.

2. **Turn off failover.**

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover off
```

3. **Log out as a platform administrator.**

4. **Log in to the SC as a user with `superuser` privileges.**

You must have superuser privileges to perform the following tasks.

5. Use the `/etc/init.d/sms` script to stop SMS.

```
sc0: # /etc/init.d/sms stop
```

6. Use the `/etc/init.d/sms` script to restart SMS.

```
sc0: # /etc/init.d/sms start
```

Note – This procedure assumes that `smsconfig -m` has already been run. If `smsconfig -m` has not been run, you will receive the following error and SMS will exit.

```
sc0: # /etc/init.d/sms start
sms: smsconfig(1M) has not been run. Unable to start sms services.
```

7. Log out as superuser.

8. Log in to the SC as a user with platform administrator privileges.

9. Turn on failover.

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover on
```

10. Type:

```
sc0:sms-user:> /opt/SUNWSMS/bin/showenvironment
```

11. Wait until `showenvironment` finishes displaying all board status.

At this point you can log out and begin using SMS programs.

Mounting the CD-ROM over NFS

▼ To Share SMS Packages on the Spare SC to the Main SC

1. Log in to the main SC as superuser.
2. Insert the Software Supplement for the 09/02 Operating Environment CD-ROM into the CD-ROM drive.
3. Use the `share(1M)` command to share the CD across the network.

1. Verify that the `nfsd` server is running. Type:

```
sc0:#ps -ef | grep nfsd
```

Add a CDROM entry to the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro,anon=0 /cdrom/cdrom0
```

To propagate the CDROM image to NFS, type:

```
sc0:##/etc/init.d/nfs.server start
```

4. Log in to the spare SC as superuser.
5. Create and mount the `/cdrom` directory for the spare SC.

```
sc1:# mkdir /cdrom  
sc1:# mount SC-II: /cdrom/cdrom0 /cdrom
```

where:

`SC-II:` is the hostname specified for the SC II network in Step 5 of “To Configure the Management Network (MAN) Using `smsconfig(1M)`” on page 25.

6. Change to the Product installation directory:

```
scl: # cd /cdrom/cdrom0/System_Management_Services_1.2/Product
```


System Management Services 1.2 Release Notes

This chapter contains the release notes for System Management Services (SMS) 1.2 on Sun Fire 15K/12K servers and covers the following topics:

- Known Limitations
- General Issues
- SMS Documentation Notes
- Fixed SMS 1.2 Bugs
- SMS 1.2 Software Bugs/RFEs
- Fixed Other Bugs
- Other Bugs

Known Limitations

This section contains known limitations that involve SMS on the Sun Fire 15K/12K system.

- DR is not supported on I/O boards. However, you can hot-plug hPCI cards on I/O boards to reconfigure I/O capacity dynamically. Do not use the `psradm(1M)` command concurrently with a hot-swap operation on the same domain.
Do not attempt to perform DR operations on a MaxCPU system board.
- `smversion` does not automatically implement SMS 1.2 features, such as IPv6, on domains. This must be done manually. If you return to SMS 1.1 from SMS 1.2 on the Sun Fire 15K system, `smversion` does not automatically restore domain configuration settings. This must be done manually. Refer to BugId 4484851.

General Issues

This section contains general issues that involve SMS on Sun Fire 15K/12K systems.

System Controller External Network Configuration

Each system controller (SC) must be configured for the TCP/IP network to which it is attached. Refer to the *System Administration Guide: Resource Management and Network Services* of the Solaris 9 System Administrator Collection for details on planning and configuring a TCP/IP-based network. SMS supports both IPv4 and IPv6 configurations.

In this release, the SC supports network connections through the RJ45 jacks on the faceplate of each SC. This corresponds to the network interface `hme0` and `eril` under Solaris software for each SC. You will be required to configure `hme0` or `eril` on each SC with appropriate information for your TCP/IP network. Using this configuration, each SC is known to external network applications by a separate IP hostname and address.



Caution – The IP addresses shown in the `smsconfig` examples in the Sun Fire 15K/12K documentation are *examples only*. Always refer to your *Sun Fire 15K/12K System Site Planning Guide* for valid IP addresses for your network. Using invalid network IP addresses could under certain circumstances render your system unbootable!

Each SC operates in one of two mutually exclusive modes: main or spare. The SC that is in main mode is the SC that controls the machine. The SC that is in spare mode acts as a spare that automatically takes over if the main SC fails. It is important to know which system controller is the main SC and which is the spare SC. To determine the SC role log in to the SC and use the following command:

```
sc0:sms-user:> showfailover -r
MAIN
```

External network-based applications such as Sun Management Center, `telnet`, and others will need to be given the appropriate IP hostname of the main system controller. In the case of an SC failover, these applications need to be restarted with the IP address of the new main SC.

Note – Any changes made to the network configuration on one SC using `smsconfig -m` must be made to the other SC as well. Network configuration is not automatically propagated.

Solaris Locale

SMS does not support any Solaris locale other than English, also known as 'C' on the System Controller. Do not install SMS on an SC running any locale other than 'C.' This does not apply to Sun Fire 15K/12K domains.

IPSec Configuration

Disks intended to be used on a Sun Fire 15K/12K system must be installed using a Sun Fire 15K or Sun Fire 12K machine. Policy placed in `/etc/inet/inetd.conf` must be added manually to `/etc/inet/ipsecinit.conf` as well.

Whenever policy is taken out of `/etc/inet/inetd.conf` it must be removed manually from `/etc/inet/ipsecinit.conf` also.

See Bug Id: 4449848.

Hardware

When a board breaker is turned off and ready to be taken out of the system, I2C timeout errors will be seen. These messages are a notification and does not indicate that an error has occurred. They can be ignored.

SMS Documentation Notes

Part Numbers

Software documentation for this release is provided in PDF form and replaces the documentation originally released with Solaris 9 on the Computer Systems Supplement CD.

These PDF files are named by part number. For your convenience, here are the associated document titles:

816-5259-10.pdf - System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems (replaces 816-3267-10).

816-5260-10.pdf - System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems (replaces 816-3268-10).

816-5261-10.pdf - System Management Services (SMS) 1.2 Installation Guide and Release Notes for the Sun Fire 15K/12K Systems (replaces 816-3269-10).

816-4958-10.pdf - Sun Fire 15K/12K Software Overview Guide (replaces 816-3285-10).

Documentation Errata

The *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* contains corrected text for each of the following man pages. For these items, the man pages themselves are *not* correct.

Man Pages

`console` *List of Valid Escape Characters*

The list of valid console escape characters for use with the `-e` option are invalid. You can use any characters *other* than those listed.

See BugID 4592909.

`disablecomponent` *and* `enablecomponent` *Missing Paroli Link Operand*

The `enablecomponent` and `disablecomponent` man pages do not contain support for Paroli modules on wPCI boards.

The following operand is supported:

`board_loc/paroli_link`

The following *paroli_link* forms are valid:

PAR(0 | 1)

For example:

```
sc0:sms-user:> disablecomponent IO7/PAR0
sc0:sms-user:> showcomponent
Component PARS at 107/PAR0 is disabled <no reason given>
```

See BugID 4546763.

showplatform *Missing Domain Down*

Domain Down is missing from the list of domain statuses. Domain Down indicates that the domain is down and setkeyswitch is set to ON, DIAG or SECURE. To restore the domain use:

```
sc0:sms-user:> setkeyswitch off
sc0:sms-user:> setkeyswitch on
```

For more information on showplatform, refer to Chapter 7 in the *System Management Services (SMS) 1.2 Administrator Guide for the Sun Fire 15K/12K Systems*.

See BugID 4620748.

smsconfig *Options for Adding and Removing Users Incomplete*

The smsconfig man page command synopsis does not list options for adding domain users or removing platform users. The `-a` and the `-r` option need to be added to each list:

```
smsconfig -a|-r -u username -G admn|oper|svc platform
smsconfig -a|-r -u username -G admn|rcfg domain_id
```

See BugID 4626077.

smsconfig *Domain Exclusion Example is Incorrect*

Example 4 in the smsconfig man page should be as follows:

```
sc0:# smsconfig -m I1 D
Enter the MAN hostname for DB-I1 [ sun15-b ]: NONE
Network: I1 DD-I1
Hostname: NONE IP Address: NONE

Do you want to accept these settings? [y,n] y
Creating /.rhosts to facilitate file propagation ... done.

sc0:#
```

See BugID 4658607

showdevices *Query and Force Arguments Are Not Valid With -d domain_id / domain_tag Options*

The query and force arguments are used with boards and locations. They cannot be used on domains.

See BugID 4656426.

flashupdate -d and -f *Options are Required*

The man page shows the -d *domain_id / domain_tag* and -f options as optional when they are required.

See BugID 4670472.

Fixed SMS 1.2 Bugs

This section contains bugs fixed since SMS 1.1.

setkeyswitch Hangs After Control-c (BugId 4349640)

setkeyswitch may hang after you send a control-c (SIGINT) signal.

setkeyswitch Returns Success on Failure (BugId 4430866)

If setkeyswitch is already running for a domain, and you try to run it again, an error message is printed, but the return code is 0. A non-zero result would indicate failure.

Board Test Status Gets Lost After Failover (BugId 4431636)

When failover occurs, pcd receives poweron events from esmd. pcd clears the test status field of those boards being reported as powered on by esmd (even though in reality they are not being powered on).

Console Session Would Not Open (BugId 4447218)

A console session does not connect if dxs/dca are not running.

dsmd May Leave Domain Off (BugId 4448476)

If a domain does not perform an environmental shutdown quickly enough, dsmd may leave it off. esmd is not sending a recover event to dsmd.

Strange Character in frad Messages (BugId 4466020)

frad messages in the message log files sometimes contain a bad string in place of the FRUID. This does not crash the daemon and nothing needs to be done.

SMS CLIs Must Revoke Privileges for Platsvc (BugId 4477169)

The following commands should not be executable by platsvc:

`disablecomponent`, `enablecomponent`, `flashupdate`, `poweron`, `poweroff`, `resetsc`, `setbus`, `setfailover`.

`showdate` Does Not Conform to the Privileges Table and man pages (BugId 4477357)

`showdate` privileges are incorrect and allow all users access to both the platform and the domains. `showdate` should be executable as follows:

Platform administrator, operator and service can only run `showdate` for the platform. Domain administrator and configurator can only run `showdate` on the domain for which they have privileges.

Usage Message for `showcomponent` Needs to Be Updated (BugId 4477464)

The usage message for the `showcomponent` command does not match the man page. Needs to be updated to follow the accepted nomenclature.

`showkeyswitch` Failed When Run with Platform Permissions (BugId 4477473)

Only the platform admin can run `showkeyswitch` for a domain.

`rctgadm` Fails After a Failover That Occurred During DR (BugId 4478467)

If a failover occurs in the middle of a `rctgadm` operation, the operation fails when restarted after the failover.

esmd Gives Incorrect Power Information at Startup Time (BugId 4479317)

`esmd` calculates available power based on how many power supplies it has probed. At startup time, `esmd` registers a power supply failure because it has not yet probed all the power supplies. It then logs an incorrect message about available power.

SMS Needs to Handle Lock Timeouts More Cleanly (BugId 4484180)

When running SMS operations (like `setkeyswitch`, for example) on machines with many domains (greater than 10) you see failures due to "lock acquisition failures".

`smsconnectsc` Should Not Support "-q" Option. (BugId 4484857)

Currently, `smsconnectsc` supports the "-q" command line option which suppress all messages to `stdout` including prompts and you will not get the `tip` console.

`setkeyswitch on` Should Provide Notification When Waiting to Start POST (BugId 4485413)

If POST is already running on several domains, `setkeyswitch` may appear to hang before starting POST. It can take up to 50+ minutes to finish.

`esmd` Does Not Do a Graceful Domain Shutdown (BugId 4487091)

When both CSBs overheat simultaneously `esmd` does not gracefully shutdown the domain.

Duplicate Container Nodes in PICL FRU Tree After `esmd` Dies (BugId 4488053)

Occurs when `esmd` restarts.

Domain Log Fills Up with Mailbox Messages (BugId 4488179)

The internal network fails when Sun Management Center starts up. The domain can be reached by the external network but not by the internal network.

`xir` Outputs Lock Error Messages (BugId 4488549)

A library routine is trying to get status. This does not affect the operation, only the return code.

Error Messages Before SC Has Become Main (BugId 4489856)

After starting SMS but before the SC has become main, the `hwad` and `fomd` error messages are printed in the platform log. These error messages vanish once the SC has becomes main.

Sometimes the SC Cannot Become Main (BugId 4489958)

After running `setfailover force`, the desired new main sometimes has problems becoming main. `pcd` repeatedly fails to startup. The SC eventually gives up and remains in an UNKNOWN state until it is either reset or SMS is cycled. The old main comes back up, does not detect interrupts, and then assumes the main role.

Relevant `/etc` Files Should Be Backed up with `smsbackup` (BugId 4490943)

Files under the `/etc` directory are not backed up by the `smsbackup` command. These include but are not limited to: `/etc/hosts`, `/etc/nsswitch.conf`, `/etc/group` and `/etc/hostname.*` Consequently, an `smsrestore` does not restore a system to its previous working state completely.

`dsmd` Loops Trying to Clear Recordstop (BugId 4492052)

`dsmd` attempts clear recordstops, after the hardware state dump is taken. The recordstop may not be cleared if the lowest numbered expander board is unconfigured. This causes `dsmd` to continue taking recordstop dumps indefinitely.

Periodic File Propagation Not Working (BugId 4496790)

After starting SMS on main and spare, the platform message file does not get copied to spare. Other files in `/var/opt/SUNWSMS/adm/A...R` get copied once when starting failover, but never again. `pcd` files get propagated but other files don't.

`dsmd` Should Increase POST Level for Next Run If ASR Boot Fails in OBP (BugId 4513721)

`dsmd` distinguishes two types of domain reboot. A domain reboot to recover from software failures such as domain panic or heartbeat stop is performed by the minimal POST. The reboot to recover from hardware failures such as domain stop or from repeated software failure is performed by the regular POST. Currently the `dsmd`-invoked POSTs always use the `hpost` level specified in the `.postrc` file and this `hpost` level does not change between ASR retries. `dsmd` should handle such boot failures by retry the ASR reboot but the POST invoked should be done with higher `hpost` level.

Patch Required: 112539

ssd Should Log When SMS is Ready (BugId 4529989)

It is not clear when SMS is loaded and ready for use.

rcfgadm Exits With an Error When -o unassign is Used and the SB is Not in the Available Component List (BugId 4530028)

If `-o unassign -c disconnect` is used, the `unassign` is passed as an option to a domain function. In this case, the `unassign` is performed with the domain administrator privileges even if the user on the SC has platform administrator privileges.

Patch Required: 112482.

Rebooting a Domain Can Result in a Panic (BugId 4587418)

Issuing the `reboot` command on a domain, issuing the `boot` command after shutdown on a domain, and `dsmd` ASR reboots will cause a domain to panic.

Patch Required: 112488

hwad Core Dumps After a Lock Timeout (BugId 4593197)

This will only occasionally happen.

Patch Required: 112483.

`pcd` is Not Being Propagated to the Spare SC (BugId 4614577)

During complex operations, for example, `setkeyswitch(1M)`, it is possible that the `pcd` on the Spare SC can get out-of-sync with the `pcd` on the Main SC. If this happens when a failover occurs then the new Main SC may not recognize a given domain. This will leave the domain unmonitored thus disabling console access and domain logging from the SC.

Patch Required: 112599

Domain Failed to Get to OK Prompt, Due to `dxs` (BugId 4617560)

Once in a while the domain console hangs.

Patch Required: 112486.

`osdTimeDeltas` Missing From `fomd_sys_datasync.cf` (BugId 4628978)

`osdTimeDeltas` does not get propagated to the Spare SC. This may throw off the time-of-day for all domains.

Patch Required: 112822.

`dsmd` Can Hold a Lock During 18 Domain Boot (BugId 4629474)

The failure could happen when 18 domains are trying to boot.

Patch Required: 112641

"Attach Ready" State of System Boards Must Be Cleared When No Domains are Active (BugId 4629480)

Boards that are not powered-off after all domains are brought down may cause a DStop when the domains are brought back up. Certain conditions must be met for this to occur.

Patch Required: 112481.

SMS Software Will Not Start After Upgrade From SMS1.1 (BugId 4632095)

Some of the contents of an `smsbackup` from SMS1.1 are not compatible with SMS1.2. If an `smsrestore` is performed in SMS1.2 using an SMS1.1 backup file, SMS will not start up.

Patch Required: 112547.

Test Status Needs to be Cleared During Reset (BugId 4671526)

When `setkeyswitch standby` is run, board test status should be cleared otherwise boards can be deconfigured or not tested properly.

Patch Required: 112481.

System Boards Should be Deconfigured Before Expander Boards During Reset (BugId 4671531)

Resetting boards in the wrong order will skip the deconfiguration on the expanders.

Patch Required: 112827.

Failover Bugs

Addboard Hangs After Interrupted by Failover (BugId 4459812)

The pcd database and checkpoint files failed to propagate to the other SC before the failover occurs.

Domain Dstop During SMS Start on Previous Spare SC (BugId 4469482)

Both SC's clocks are phase locked when SMS is running. This creates a failover without the benefit of having SMS phase locking the system clocks. This, naturally, lead to a DStop.

If You Degradate CP to CSB Associated With Spare and Failover, DARB Interrupt Will Break (BugId 4616931)

Depending on which CP is degraded, DStops may not be handled.

Management Network Bugs

smsconfig Does Not Work Properly with IPv6 Addresses (BugID 4411113)

Cannot specify IPv6 addressees.

smsconfig Allows Mixed IPv4 and IPv6 (BugID 4411819)

smsconfig Should Set Appropriate OS Variables (BugId 4434696)

smsconfig should set the following IP ndd variables:

```
ip_forwarding
ip6_forwarding
ip_respond_to_echo_broadcast
ip6_respond_to_echo_multicast
```

to false using `nnd`. These settings should be configured to persist across reboots (add them to the appropriate `rc` script).

MAND Does Not Work With IPv6 Addresses (BugId 4486879)

Delay in I1 Networking Coming Up After Failover (BugId 4627984)

For certain cases there may be a delay in the start up of the I1 network.

Patch Required: 112632.

You must be logged in as superuser on the SC.

```
sc0:#ifconfig scman0 down
sc0:#ifconfig scman0 up
```

SMS 1.2 Software Bugs/RFEs

The following are known SMS 1.2 software bugs.

esmd Warnings and Errors Do Not Appear in Associated Domain Logs (BugId 4382784)

esmd logs all environmental events that affect one or more domains to the platform log but not the domain log.

Workaround: None. Refer to the platform log where the messages are logged.

kmd Does Not Delete Security Associations on the Domain (BugId 4403149)

After a failover, kmd does not delete security associations on the domain. The security associations (SAs) are associated with socket connections between DCA to and from DCS or DXS to and from CVCD. The SAs for the SC which failed over are the ones which should have been deleted.

The SAs would be useful only for a client on the failed over SC with sockets bound to the ports in the SAs.

Workaround: Use the Solaris ipseckey(1M) command on the domain to delete SAs which have the IP address of the failed over SC.

Socket Error When Using the I2 Net (BugId 4472333)

After a failover/takeover, the following errors are sometimes seen when failover is activated and file propagation begins:

```
"/var/opt/SUNWSMS/data/.failover/chkpt/chkpt.list" failed - "rcmd:  
socket: Cannot assign requested address."
```

This prevents file propagation from working.

Workaround: None. File propagation will take place eventually.

dsmc Should Checkpoint ASR Steps (BugId 4477381)

If a failover occurs while `dsmc` is performing a domain recovery, `dsmc` may not complete the domain recovery.

Workaround: Complete the recovery manually using `setkeyswitch off`, `setkeyswitch on` and, if necessary, booting the domain.

esmd Shouldn't Log hPCI Cassette Removal and Insertion Messages During Power On and Off (BugId 4483155)

Whenever you turn an hPCI board on and off, `esmd` logs messages indicating that its cassettes were inserted/removed.

dsmc May Detect and React to Spurious Timeouts After an Emergency esmd Shutdown (BugId 4498021)

`dsmc` thinks a timeout has occurred when it has not.

Workaround: None.

dsmc Is Slow to Pick Up Domain Nodename on SMS Startup (BugId 4514742)

When the system brings up a large number of domains, commands like `showplatform` will not display all domain nodenames at once. It can take several iterations to complete the display.

Workaround: Wait until `dsmc` finishes.

hwad Errors Appear During setkeyswitch off (BugId 4524488)

The following messages has been seen in the platform log:

```
hwad[22334]: [1128 52700900610948 ERR JtagSerengeti.cc 224]
Reading bus failed in address 40200050, ecode=1217
hwad[22334]: [0 52700901823489 ERR post_logif.c 60]
jt_read_chain(m=98,c=0,i=0x41,nbits=1112,,0) error 1217
hwad[22334]: [1158 52700902546590 ERR InterruptHandler.cc 2562]
libxcpost call xcp_read_axq_scint_status() failed, ecode=-1
```

Workaround: Ignore the messages.

dsmd Resets a Domain Unnecessarily Due to False Timeouts (BugId 4526770)

dsmd thinks a timeout has occurred when it has not and resets a domain.

Workaround: None.

Error Message About Max Number of Connected Consoles (BugId 4530492)

The following messages has been seen in the domain log:

```
dxs[8753]-C(): [4911 12439774264309 ERR ConsoleService.cc 506]
DXS - maximum number of connected consoles reached
```

This indicates that the maximum number of console processes has been reached.

Workaround: Close some open consoles. If that does not work, kill(1) the console process.

Power Gives the Wrong Status for SC0 (spare) (BugId 4533114)

Whenever any of the power converters on the SC are powered off SMS the `poweron` command will show that board as off, even though it is up and running.

Workaround: Make sure all power converters are on. `poweroff` and `poweron` the spare SC.

`dsmd` Recovery State Sometimes Lost After Core Dump (BugId 4533133)

When some of the domains are trying to recover a failure and `dsmd` core dumps, it `dsmd` can lose the recovery state.

Workaround: Reboot the domain using `setkeyswitch off`, `setkeyswitch on`.

`smsconnectsc` Does Not Connect to Other SC If Powered Off (BugId 4533385)

`smsconnectsc` asks the user if they want to power on the other SC, then it does the `poweron` and exits without printing any further instructions or information. It should automatically connect to the SC after it has powered it on and not prompt.

Workaround: None.

`esmd` Uses the Wrong Thresholds for WCI Temps, So it Will Not Shut Them Off in Time (BugId 4533897)

If a wPCI ASIC overheats, you may lose the ASIC.

Workaround: None.

Comment in `kmd_policy.cf` is Misleading (BugId 4545879)

The comment in the `kmd_policy.cf` file is inaccurate. It states that specific domains should be identified using an integer in 0 - 17. The file should state a letter in A - R should be used to identify a domain.

Workaround: Use domain letters in the `kmd_policy.cf` file rather than numbers to identify specific domains.

Disablecomponent(1M) and Enablecomponent(1M) Man Pages Do Not Contain wPCI Support for Paroli Modules (BugId 4546763)

SMS 1.2 software supports disabling and enabling Paroli modules on wPCI boards. The man pages do not list `paroli_link` as a valid form.

Workaround: See “Man Pages” on page 76 for examples on blacklisting Paroli modules.

esmd Fails to Power Off a Paroli When One of its Voltages is Out of Range (BugId 4548844)

esmd detects a voltage condition but fails to turn the paroli off

Workaround: None.

SMS1.2 Shouldn't Restore to 1.1 When `MAN.cf` file Contains Incompatibilities (BugId 4554667)

`smsrestore` for 1.2 restores an incompatible version of the `MAN.cf` to SMS 1.1. Switching back from 1.2 to 1.1 once the new `MAN` features have been enabled is not supported.

Workaround: Rerun `smsconfig` after installation and `smsversion` to 1.2.

Clocks Are Not Set Properly When the Main SC is Powered off During failover (BugId 4554753)

You can lose clock source, causing domains to DSTOP.

Workaround: None.

crontab Entries Contain the Wrong Command Path (BugId 4586065)

The absolute path in the listed crontab entries are incorrect.

Workaround: These entries are not implemented in this release. Remove the following crontab entries:

```
10 4 1 * * /var/opt/SUNWSMS/bin/codlogrotate # SUNWSMSop
0 10 * * 1 /var/opt/SUNWSMS/bin/audit-hotspares # SUNWSMSop
```

dsmd Holds the tmd Lock of a Thread That Doesn't Exist Anymore (BugId 4587746)

This can cause setkeyswitch to hang.

Workaround: Restart tmd and dsmd.

console(1M) Man Page List of -e Escape Characters is Wrong (BugID 4592909)

The list of valid escape characters is invalid. The only characters you cannot use are:

```
# @ ^ & ? * = . |
```

Workaround: Use any character other than those listed.

esmd Should Set/Clear MAN_OVERRIDE Based on Component's Clock Inputs (BugId 4617507)

esmd monitors the clock inputs of components but takes no action. This is a request to have esmd set a bit to prevent HW from toggling back to a bad source and add logging for repeated events.

Workaround: None.

Domains Fail POST Several Times When dsmd Recovers From Platform Power Failure (BugId 4619655)

When DSMD recovers a domain after a platform power failure, POST may fail on the domain one or more times, but DSMD will retry POST until it is able to restart the domain

Workaround: None.

showplatform(1M) Man Page Missing "Domain Down" in Status List (BugID 4620748)

"Domain Down" is missing from the domain status list in the showplatform man page.

Workaround: See "showplatform Missing Domain Down" on page 77 for an explanation of "Domain Down." Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

esmd Can Decrease Fan Speeds Even Though it Has Detected a Hot Sensor (BugId 4620872)

If esmd detects a hot sensor within a minute after it starts up, it may decrease fan speeds in spite of the sensor.

Workaround: None.

smsconfig(1M) Man Page Options for Adding and Removing Users are Incomplete (BugId 4626077)

The syntax for `smsconfig` is incorrect. The `-a` option only shows platform users and the `-r` option only shows domain users. Both options need their complement added.

Workaround: See “`smsconfig` Options for Adding and Removing Users Incomplete” on page 77 for an example of the correct syntax. Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

cmdsyc Commands Do Not Work When Failover Disabled (BugId 4626440)

Normally, if failover happens in the middle of a `cmdsyc` command execution, the new main continues and completes the commands before it disables failover. Sometimes, however, failover is disabled before the commands have finished running and they do not complete.

Workaround: Rerun the commands manually.

addboard Returns EACCES Error When -c assign Invoked as Platadm (BugId 4627926)

The platform administrator does not have access to the `/etc/opt/SUNWSMS/config/domain_id/` directories. Domain-specific blacklist and `postrc` entries will not be visible to the administrator if he only has `platadm` privileges.

Workaround: None for a platform administrator but obtaining domain administrator privileges would allow you to view the domain specific files.

smsbackup Will Only Accept Absolute Path Names (BugId 4633179)

If a relative path name is passed to the command, the backup will fail. In two cases `.` and `./` will cause the command to print :

```
/opt/SUNWSMS/bin/smsbackup.  
smsbackup: Backup to tape succeeded: ./sms_backup.1.2.cpio  
SMS backup complete.
```

This is incorrect. No file is generated to the current directory.

Workaround: Use absolute path name.

disablecomponent Command Does Not Disable P0 Alone (BugID 4644723)

When a single processor in a processor pair is blacklisted neither processor is used.

Workaround: None.

setdatasync backup Command Can Improperly Overwrite Files on the Spare SC (BugID 4657218)

The `setdatasync backup` command uses `smsbackup` and `smsrestore` to backup the main SC to the spare SC. This only works if all the files backed up by the `smsbackup` command are identical on both machines.

Workaround: Make copies of non symmetric files on the spare SC and restore the files after the `setdatasync backup` command has been executed.

smsconfig(1M) Man Page Domain Exclusion Example is Incorrect (BugID 4658607)

Example 4 in the `smsconfig` man page shows NONE being entered as the IP address. This is incorrect. An existing IP address will not be removed and if no IP address exists for a valid hostname NONE will not be accepted. NONE must be entered as the hostname and not the IP address.

Workaround: See “`smsconfig` Domain Exclusion Example is Incorrect” on page 78. Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

showdevices(1M) Man Page Query and Force Arguments Are Not Valid with `-d domain_id / domain_tag` Options (BugID 4656426)

The `showdevices` man page lists query and force as valid arguments used with the `-d domain_id / domain_tag` options. This is incorrect. Query and force reports deal with individual boards or locations not domains.

Workaround: Do not use the `-d domain_id / domain_tag` syntax to produce query or force reports. Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

flashupdate(1M) Man Page `-d` and `-f` Options are Incorrect (BugID 4670472)

The `flashupdate` man page shows the `-d` and `-f` options as optional, they are required. The `-q` option is missing from the second command synopsis.

Workaround: You must use the `-d domain_id / domain_tag` or `-f path` option when running `flashupdate`. Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

Propagation/retrieval of

`/var/opt/SUNWSMS/data/.failover/chkpt/0.128.1.0 failed (BugId 4674732)`

Messages of this type are internal messages and do not indicate an error.

Workaround: Ignore the messages.

Operands for `disablecomponent`, `enablecomponent` and `showcomponent` Man Pages are Incorrect (BugID 4676524)

The *location* operand section of `disablecomponent`, `enablecomponent` and `showcomponent` are incorrect for:

`board_loc/proc/bank/all_banks_on_that_proc` and `board_loc/proc/all_banks_on_that_board`

Workaround: Refer to the *System Management Services (SMS) 1.2 Reference Manual for the Sun Fire 15K/12K Systems* for the corrected text.

`showfailover` Should Not Report Incomplete Tests as Failed (BugId 4679418)

Failover typically takes 1-4 minutes to activate. While failover is activating, `showfailover` reports the failover state as `FAILED`, and reports problems with the spare SC and/or internal network.

Workaround: No workaround necessary. This is a transient state; `showfailover` reports the correct state when all tests are complete.

Deconfiguring System Boards Should Include Resetting the DARB Ports if Necessary (BugId 4699827)

If there are no active or attach-ready boards on an expander, the Darb ports should be reset during deconfiguration of the system boards.

Workaround: Poweroff the expander.

Management Network (MAN) Bugs

This section contains the synopses and Sun BugID number of the more important bugs that have been discovered regarding MAN. This list does not include all bugs

MAN Driver Error Message During Net Install (BugId 4368815)

While net booting a domain using the SC as the install server, and going over the MAN, the following error is displayed while the Solaris software is coming up:

```
ifconfig: setifflags: SIOCSLIFFLAGS: eril: Cannot assign  
requested address
```

Workaround: Ignore it.

MAN Driver Configuration Function Should Live in sysidtool Framework (BugId 4469050)

If `sys-unconfig` is run on a domain preconfigured with Solaris software, the `/etc/hostname.dman0` files are lost. They are not be recreated on a reconfiguration boot and the MAN network between the SC and the domain does not come up.

Workaround: Refer to “Unconfigured Domains” on page 62.

Domain MAN Configuration Problem When Booted with Another Domain’s Boot Disk (BugId 4482112)

If a boot disk which was installed on another domain is used to boot a domain, then `dman0` interface on the domain will be configured with wrong IP address.

Workaround: Refer to “Unconfigured Domains” on page 62.

MAN I1 Network IP Address of an Installed Domain Using `smsconfig -m` Does Not Reflect Changes on the Domain (BugId 4484851)

If there are already installed domains and you have changed the MAN I1 network configuration using `smsconfig -m` then you will need to configure the MAN network information on the already installed domains by hand.

Workaround: Refer to “Unconfigured Domains” on page 62.

Fixed Other Bugs

This section contains bugs fixed since SMS 1.1.

Volume Manager (BugId 4355643)

Volume Manager can not cope with some formats of CDROM

Memory Bug (BugId 4457384)

Holding `proc_t->p_lock` while allocating memory leads to hung `clock()` & heartbeat.

Workaround: None.

NTP On the Domain Does Not Sync with the SC (BugId 4467470)

`xntpd` on the domain should gradually adjust the clock to sync with the `sc` clock. Instead, a message appears about a half hour after starting `xntpd`:

```
sun15-b xntpd[1324]: IID 774427] time reset (slew) -54.206802 s
```

The amount printed is the amount of difference between the `sc` and domain clocks, but the clocks are never in sync.

Workaround: Use `setdate` to manually set the date and time.

IPMP Fail `eri1` Path Group (BugId 4469112)

When the external network is configured so that there are two communities, with `hme0` in one community and `eri1` in the other, IPMP fails the path group with `eri1` in it.

Workaround: None.

Other Bugs

This section contains the synopses and Sun BugID number of the more important bugs that have been discovered regarding the Sun Fire 15K/12K system. This list does not include all bugs.

OBP Test Fails, Even When Card is Good (BugId 4378456)

Freshchoice card fails OBP external loopback test. Error messages vary. This is happening only during selftest if diag-switch? is set to true.

Workaround: Set `diag-switch?` to `false`, while running selftest on network side of FastEthernet (freshchoice/freshchoice-lite) boards with Lucent PHY.

IP_RPUT_DLPI Error (BugId 4419505)

`ip_rput_dlpi(fcip0): DL_ERROR_ACK error message on boot from cd image`

The following error messages are seen when doing an installation to set the SC as the install server.

```
Configuring /dev and /devices
ip_rput_dlpi(fcip0): DL_ERROR_ACK for DL_ATTACH_REQ(11), errno 8,
unix 0
ip_rput_dlpi(fcip0): DL_ERROR_ACK for DL_BIND_REQ(1), errno 3,
unix 0
ip_rput_dlpi(fcip0): DL_ERROR_ACK for DL_PHYS_ADDR_REQ(49), errno
3, unix 0
ip_rput_dlpi(fcip0): DL_ERROR_ACK for DL_UNBIND_REQ(2), errno 3,
unix 0
ip_rput_dlpi(fcip0): DL_ERROR_ACK for DL_DETACH_REQ(12), errno 3,
unix 0
Using RPC Bootparams for network configuration information.
```

This indicates that the IP over Fibre Channel device instance 0 does not exist.

Workaround: Ignore it.

ohci Driver Does Not Receive SOF Interrupts (BugId 4485012)

A message similar to the following may appear while the SC or a Sun Fire 15K domain is being booted:

```
WARNING: <device_tree_path> (ohci0): No SOF interrupts (refer to  
ohci(7D))
```

This warning comes from a driver in Solaris that is not used by the Sun Fire 15K server. However, it does indicate that the OpenHCI driver has disabled this interface because of the missing interrupts and, as a result, no USB devices will work on either the SC or the domains. This bug also significantly increases boot time for the SC and domains.

Currently, no workaround to this bug has been found. However, adding the following line to the `/etc/system` file on the SC and on each domain suppresses the error message and slightly reduces the boot duration:

```
exclude: drv/ohci
```


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