



System Management Services (SMS) 1.3 Installation Guide

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Preface

This guide contains initial installation instructions as well as release notes for the System Management Services (SMS) 1.3 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 Firesystem 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 Fireserver 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 Firecluster configurations.

How This Book Is Organized

This guide contains the following information:

Chapter 1 introduces installation for SMS 1.3.

Chapter 2 describes SMS 1.3 software reinstallation.

Chapter 3 describes SMS 1.3 software upgrade.

Chapter 4 describes additional SMS software instructions.

Chapter 5 describes security option instructions.

Chapter 6 describes SMS 1.3 software and domains.

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> : sms-user: > or <i>domain_id</i> : sms-user: >
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) 1.3 Administrator Guide</i>	816-5318-10
Reference (man1M)	<i>System Management Services (SMS) 1.3 Reference Manual</i>	816-5319-10
Options	<i>System Management Services (SMS) 1.3 Dynamic Reconfiguration User Guide</i>	816-7723-10
	<i>Sun Fire 15K/12K Dynamic Reconfiguration User Guide</i>	816-5075-12
	<i>Sun Fire 15K/12K System Site Planning Guide</i>	816-3510-11
	<i>Solaris 9 Installation Guide</i>	816-7171-10
	<i>System Administrator Guide: IP Services</i>	806-4075-11
	<i>OpenBoot™ 4.x Command Reference Manual</i>	816-1177-10
	<i>System Administration Guide: Naming and Directory Services (DNS, NIS, LDAP)</i>	816-7511-10
	<i>System Administration Guide: Resource Management and Network Services</i>	816-7125-10

Application	Title	Part Number
	<i>Securing the Sun Fire 15K/12K System Controllers: Updated for SMS 1.3</i>	817-1358-10
	<i>Securing the Sun Fire 15K/12K Domains: Updated for SMS 1.3</i>	817-1357-10
	<i>Sun Fire 15K Open System Controller (OpenSC) White Paper</i>	816-3266-10

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Introduction

This chapter introduces reinstallation and upgrade of the SMS 1.3 software.

SMS 1.3 Software on the SC

SMS 1.3 is also available for the Solaris 8 02/02 operating environment. That version (SMS 1.3_s8) will *not* run on the Solaris 9 operating environment. SMS 1.3 for the Solaris 9 operating environment (SMS 1.3_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 system controller (SC). 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 disk partitions, of at least 10 Mbytes, be dedicated to each metadevice state database copy for disk mirroring.

SMS 1.3 Software Requirements

SMS requires:

- The same version of SMS software on both system controllers (SCs).
- Installation of the `Entire Distribution` software group of the Solaris operating environment.

The same version of the Solaris operating environment, including update version and installed patches, on both SCs is strongly recommended.

- Java 1.2.2 installed in `/usr/java1.2/bin/java`. This is where Java 1.2.2 is normally installed during Solaris `Entire Distribution` installation so this is *only* an issue if that path has been changed or Java 1.2.2 was not installed.



Caution – SMS will fail to load if it cannot locate Java 1.2.2.

Default Stop Sequence

The default sequence to stop the system (`STOP-A`) has been changed in SMS 1.3 to the following alternate:

```
[Return][tilde][CTRL-B]
```

This was done to facilitate failover. Solaris 8 introduced this new feature which gives the system the ability to force a hanging system to halt when required, without allowing random or spurious breaks to cause an unintentional stop.

Note – This is true only with serial devices acting as consoles and not for systems with keyboards of their own. There must be an interval of more than 0.5 seconds between characters, and the entire string must be entered in less than 5 seconds.

Software Combinations

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

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	Installation Type	Path
Solaris 8/SMS 1.1	Solaris 8/SMS 1.3_s8 (for Solaris 8) or Solaris 9/SMS 1.3_s9 (for Solaris 9)	OS: Upgrade SMS: None.	SMS 1.1 and SMS 1.3 are non-adjacent versions. No direct upgrade path is available. To upgrade from SMS 1.1, you must first upgrade to Solaris 8 02/02/SMS 1.2_s8 or Solaris 9/SMS1.2_s9. For further information, refer to the SMS 1.2 documentation located at: http://docs.sun.com . Once upgraded to SMS 1.2 you can follow one of the SMS 1.2 upgrade paths described in this table.
Solaris 8/ SMS 1.2_s8 (for Solaris 8) Solaris 8/SMS 1.3_s8 Solaris 9/ SMS 1.2_s9 (for Solaris 9)	Solaris 9/SMS 1.3_s9	OS: Fresh Install SMS: Fresh Install. Type 1. See “Performing a Type 1 Installation” on page 8.	Backup your SMS 1.2_s8, SMS1.2_s9 or SMS1.3_s8 configuration Install Solaris 9 Install SMS 1.3_s9 Restore your SMS 1.2 or SMS 1.3_s8 configuration

Current Version	New Version	Installation Type	Path
Solaris 8/ SMS 1.2_s8 (for Solaris 8)	Solaris 8/SMS 1.3_s8 (for Solaris 8)	OS: Same SMS: Upgrade Type 2 SMS Install. See “Performing a Type 2 Upgrade” on page 40	Upgrade SMS 1.3_s8
Solaris 9/ SMS 1.2_s9 (for Solaris 9)	Solaris 9/SMS 1.3_s9	OS: Same SMS: Upgrade Type 2 SMS Install. See “Performing a Type 2 Upgrade” on page 40	Upgrade SMS 1.3_s9
Solaris 8/ SMS 1.2_s8 (for Solaris 8) Solaris 9/ SMS 1.2_s9 (for Solaris 9) Solaris 8/SMS 1.3_s8	Solaris 9/SMS 1.3_s9	OS: Upgrade SMS: Upgrade See “Performing a Type 2 Upgrade” on page 40	Backup your SMS 1.2_s8, SMS1.2_s9 or SMS 1.3_s8 configuration Upgrade Solaris 9 Upgrade SMS 1.3_s9

Note – `smsversion` does not support a return to SMS 1.1, SMS 1.2_s8 or SMS 1.3_s8 in this release of SMS 1.3 for Solaris 9. To return to SMS 1.1, SMS 1.2_s8 or SMS 1.3_s8 you must return to the *applicable* Solaris 8 operating environment.

Previous versions of SMS documented the use of the Java™ Web Start GUI and the `pkgadd` command to install the SMS packages on to the Sun Fire 15K/12K system. SMS 1.3 introduces the `smsinstall` and `smsupgrade` scripts which simplify and streamline the installation and upgrade process to the extent that Web Start and `pkgadd` are no longer recommended or documented. Because of the complexity of configuration for SMS, do *not* use any method other than the ones documented in the *System Management Services (SMS) 1.3 Installation Guide* to install or upgrade SMS 1.3. Doing so could result in misconfiguration and loss of functionality.

Other Documentation and Requirements

The following chapters 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, printouts and patches 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. You will need the following information from your worksheets:

- Platform name
- Hostname IP addresses and submask for the I1 internal network
- Hostname IP addresses and submask for the I2 internal network
- Community hostname IP addresses and submask for the external network
- Hostname IP address for the SC logical interface
- Community hostname addresses for the domains

Note – We recommend that you install the release-appropriate Solaris Patch Cluster available at <http://sunsolve.sun.com>, to ensure that SMS runs properly. Any patches to the Solaris operating environment should be applied before re-installing or upgrading the SMS software.

Check the *Solaris 9 (SPARC Platform Edition) Release Notes*, the *Solaris 9 Release Notes Supplement for Sun Hardware*, the *System Management Services (SMS) 1.3 Release Notes* and sunsolve.sun.com for the latest information on issues, late-breaking news, and patch availability.

Note – During installation or whenever the other SC is at the Open Boot PROM prompt or not running SMS you will see “SC clocks NOT phase locked” messages in the platform log. You can ignore them. Refer to BugID 4783775.

Example Conventions

For the examples in this guide:

Prompt	Definition
sc0:#	Superuser on SC0, initially the main SC
sc1:#	Superuser on SC1, initially the spare SC
domain_id:#	Superuser on the domain
sc_name:sms-user:>	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.
domain_id:sms-user:>	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.

SMS 1.3 Software Installation

This chapter contains instructions for reinstalling SMS 1.3 software under the Solaris operating environment or fresh installing Solaris 9 and SMS 1.3_s9 software. These instructions apply to the Sun Fire 15K/12K server systems.

The SMS installation 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 Back Up Your SMS Environment
- To Install the Solaris Operating Environment (optional)
- To Install the SMS Software Packages Using `smsinstall`
- To Restore Your SMS Configuration
- To Configure the Management Network (MAN) Using the `smsconfig(1M)` Command
- To Enable Failover

Preparing to Perform a Reinstallation or Fresh OS/SMS Installation (Type 1)

The SMS 1.3 installation instructions in this section assume that you are fresh installing the Solaris 9 operating environment or your system is already running the Solaris 9 operating environment.

Performing a Type 1 Installation

To fresh install Solaris 9 and SMS 1.3_s9 software or reinstall the SMS 1.3_s9 software on your Sun Fire 15K/12K system, you will need to perform the following procedures:

Task	Reference	Page
Download your SMS 1.3_s9 packages	To Download Software From the Web To Download Software From a CD-ROM	9
Backup SMS software - Turn off failover on the main SC (SC0) - Stop SMS on the spare SC (SC1) - Backup the current SMS software using <code>smsbackup</code> on the spare	To Backup Your SMS Environment	10
Install Solaris 9 operating environment (optional)	Solaris 9 Installation Guide	
Install SMS 1.3_s9 software packages on the spare SC (SC1)	To Install the SMS Software Packages Using <code>smsinstall</code>	12
Restore your SMS configuration on the spare SC	To Restore Your SMS Configuration	15
Configure the MAN network on the spare SC	To Configure the Management Network (MAN) Using <code>smsconfig(1M)</code>	16
Configure your SMS user groups on the spare SC (optional)	To Add Users to SMS Groups and Configure Directory Access	63
Switch control to the spare SC	To Switch Control to the Spare SC	21
Update the SC and CPU flash PROMs on the new spare SC	Updating the Flash PROMs	22
Reinstall the former main SC - Backup the current SMS software using <code>smsbackup</code> on the former main SC - Install Solaris 9 operating environment (optional) - Install SMS 1.3_s9 software packages on the former main SC	To Reinstall the Former Main SC	25
Restore your SMS configuration on the former main SC	To Restore Your SMS Configuration	29
Configure the MAN network on the former main SC	To Configure the Management Network (MAN) Using <code>smsconfig(1M)</code>	30
Configure your SMS user groups for the former main SC (optional)	To Add Users to SMS Groups and Configure Directory Access	63
Reboot the former main SC (SC0)	To Reboot the Former Main SC	36
Update the SC flash PROMs on the new spare SC	To Update the Flash PROMs	36
Turn on failover on the new main SC (SC1)	To Enable Failover	38

To begin, proceed to “Downloading SMS Software” on page 9.

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_3_sparc.zip`.
4. **Log in to the SC as superuser.**
5. **Change directory to the location where you downloaded the software:**

```
scl:# cd /download_directory
```

6. **Extract the downloaded file by typing:**

```
scl:# unzip sms_1_3_sparc.zip
```

The SMS 1.3 packages are located in
`/download_directory/sms_1_3_sparc/System_Management_Services_1.3/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 1.3 packages are located in
`/cdrom/cdrom0/System_Management_Services_1.3/Product`.

2. **Log in to the system controller as superuser.**

3. Change to the Product installation directory:

```
scl: # cd /cdrom/cdrom0/System_Management_Services_1.3/Product
```

4. 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 Back Up 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.

Note – The `sms_backup.X.X.cpio` file of one SC cannot be used by the other SC. They are SC specific files and non-interchangeable.

```
sc1:# /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:

```
sc1:# /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.

If you are fresh installing the Solaris 9 operating environment, proceed to “Installing the Solaris Operating Environment” on page 11.

If you are reinstalling SMS 1.3 software proceed to “Installing SMS Packages” on page 12.

Installing the Solaris Operating Environment

▼ To Install the Solaris Operating Environment

- 1. Install 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 1.3_s9 does not run under software releases *earlier* than Solaris 9

or software groups *less* than Entire Distribution. All patches should be applied according to each patch's instructions. Several Solaris patches are required for SMS to run properly. See "Other Documentation and Requirements" on page 5.

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

SMS provides a script, `smsinstall(1M)`, to automate software installation. To install SMS software packages, follow the steps in the procedure "To Install the SMS Software Packages Using `smsinstall`" on page 12.

▼ To Install the SMS Software Packages Using `smsinstall`

1. **Log in to the spare SC as superuser.**
2. **Change directory to the location of `smsinstall`:**
 - If you downloaded software from the Web, type:

```
scl:# cd
/download_directory/sms_1_3_sparc/System_Management_Services_1.3/Tools
```

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

```
scl:# cd /cdrom/cdrom0/System_Management_Services_1.3/Tools
```

Note – `smsinstall(1M)` 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.

3. Install packages using the `smsinstall(1M)` command.

directory_name is the /Product directory from “Downloading SMS Software” on page 9.

The following example runs from the CD-ROM.

```
scl:# smsinstall directory_name
Installing SMS packages.  Please wait. . .
pkgadd -n -d
"/cdrom/cdrom0/System_Management_Services_1.3/Product" -a
/tmp/smsinstall.admin.24501 SUNWSMSr SUNWSMSop SUNWSMSdf
SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSpp
SUNWSMSsu
SUNWscdvr.u SUNWufrx.u SUNWufu SUNWccmn
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
205 blocks

Installation of <SUNWSMSr> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
61279 blocks

Installation of <SUNWSMSop> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
32 blocks

Installation of <SUNWSMSdf> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
2704 blocks

Installation of <SUNWSMSjh> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
5097 blocks

Installation of <SUNWSMSlp> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
1696 blocks

Installation of <SUNWSMSmn> was successful.
Copyright 2002 Sun Microsystems, Inc.  All rights reserved.
576 blocks
```

Installation of <SUNWSMSob> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSod> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSPd> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
14763 blocks

Installation of <SUNWSMSpo> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWSMSpp> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
5 blocks

Installation of <SUNWSMSsu> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
479 blocks

Installation of <SUNWscdvr> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
33 blocks

Reboot client to install driver.
type=ddi_pseudo;name=flashprom uflash\N0
Installation of <SUNWufrx> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
13 blocks

Installation of <SUNWufu> was successful.

Installation of <SUNWwccmn> was successful.

Verifying that all SMS packages are installed
.....OK
Checking that all installed SMS packages are correct
pkgchk -n SUNWSMSr SUNWSMSop SUNWSMSdf SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob

```
SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSPp SUNWSMSsu SUNWscdvr
SUNWufrx SUNWufu SUNWccmn
OK

Setting up /etc/init.d/sms run control script for SMS 1.3
New SMS version 1.3 is active

Attempting to restart daemon picld
/etc/init.d/picld stop
/etc/init.d/picld start

smsinstall complete. Log file is
/var/sadm/system/logs/smsinstall.
```

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

See “Installing SMS Patches” on page 65. Once the patches have been successfully installed you can proceed to Step 5.

5. Proceed to “To Restore Your SMS Configuration” on page 15.

Restoring Your SMS Configuration on the Spare SC

▼ To Restore Your SMS Configuration

1. Restore your SMS configuration.

Run `smsrestore` to restore the `smsbackup` file.

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

```
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.

2. For a fresh install:

Proceed to “To Configure the Management Network (MAN) Using the `smsconfig(1M)` Command” on page 16.

For reinstallation:

During reinstallation the SMS group file was restored. Proceed to “To Add Users to SMS Groups and Configure Directory Access” on page 63 *only* if you will be changing user group memberships. Otherwise, proceed to “To Switch Control to the Spare SC” on page 21.

Configuring the MAN Network on the Spare SC

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

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*.**

Note – The platform name must not begin with a number. Refer to BugId 4790002.

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 `eril` 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) 1.3 Administrator Guide* and the `smsconfig man` page.

```
sc1:# 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
```

```
Two network interfaces controllers (NICs) are required for IPMP
network failover.
```

```
Enter NICs associated with community C1 [hme0 eril]: [Return]
```

```
Enter hostname for hme0 [sun15-sc1-hme0]:[Return]
```

```
Enter IP address for hme0: 10.1.1.52
```

```
Enter hostname for eril [sun15-sc1-eril]:[Return]
```

```
Enter IP address for sun15-sc1-eril: 10.1.1.53
```

```
The Logical/Floating IP hostname and address will "float" over to
whichever system controller (SC0 or SC1) is acting as the main SC.
```

Enter Logical/Floating IP hostname for community C1 [sun15-sc-C1]:[Return]

Enter IP address for sun15-sc-C1:10.1.1.50

Enter Netmask for community C1: 255.255.255.0

Enter hostname for community C1 failover address [sun15-scl-C1-failover]:[Return]

Enter IP address for sun15-scl-C1-failover:10.1.1.51

Hostname	IP Address (platform=sun15)
-----	-----
sun15-sc-C1	10.1.1.50
sun15-scl-C1-failover	10.1.1.51
sun15-scl-hme0	10.1.1.52
sun15-scl-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-il #smsconfig-entry#
ADD: 10.1.1.50  sun15-sc-C1 #smsconfig-entry#
ADD: 10.1.1.51  sun15-sc1-C1-failover #smsconfig-entry#
ADD: 10.1.1.52  sun15-sc1-hme0 #smsconfig-entry#
```

```
ADD: 10.1.1.53 sun15-scl-eril #smsconfig-entry#
ADD: 10.3.1.1 sun15-sc0-i2 #smsconfig-entry#
ADD: 10.3.1.2 sun15-scl-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.
smsconfig complete. Log file is /var/sadm/system/logs/smsconfig
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 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.

```
sc1: # 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 63.**

During reinstallation this file was restored. Proceed with this step *only* if you will be changing user group memberships or you have performed a fresh installation.

11. **After adding users to your SMS Groups:**

Proceed to “To Switch Control to the Spare SC” on page 21.

Switching 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 of SMS 1.3, proceed to “To Reinstall the Former Main SC” on page 25.

If you are fresh installing a system which previously ran SMS 1.2, proceed to “To Update the Flash PROMs” on page 22.

Updating the Flash PROMs on the SC and the System Boards

▼ To Update the Flash PROMs

When you fresh install SMS 1.3 on system previously running SMS 1.2, you must update the SC flash PROMs on both SCs. You must also update the CPU flash PROMs on the system boards. You must have platform privileges to run the `flashupdate(1M)` command. In the following example the `sc#` prompt indicates both the main or spare SCs.

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

```
sc#:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 12 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 12 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:

```
sc#:# /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/SCOBPimg.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) 1.3 Reference Manual* or the `flashupdate` man page.

3. Upgrade the CPU Flash PROMs.

Update all CPU Flash PROMs using `flashupdate`.

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

where:

location is the FPROM location.

The FPROM location consists of *board_loc/FPROM_id*, separated by a forward slash.

The *FPROM_id* is specified only when you want to update a particular FPROM (FP0 or FP1) on a CPU board and the system controller (SC).

For example, the location, SB4/FP0, indicates the FPROM 0 on the CPU board in slot 4.

Sun Fire 15K, Sun Fire 12K

SB(0...17), SB(0...8)

IO(0...17), IO(0...8)

SC(0|1), SC(0|1)

The following *FPROM_id* forms are accepted:

FP(0|1), FP(0|1)

For more information on `flashupdate(1M)` refer to the *System Management Services (SMS) 1.3 Reference Manual* 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 the Former Main SC” on page 25.

Reinstalling the Former Main SC

▼ To Reinstall 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.

Note – The `sms_backup.X.X.cpio` file of one SC cannot be used by the other SC. They are SC specific files and non-interchangeable.

```
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:

To fresh install the Solaris 9 operating environment, proceed to “Installation of the Solaris Operating Environment on the Former Main SC” on page 26.

To reinstall SMS 1.3, proceed to “Installing SMS 1.3 Software on the Former Main SC” on page 26.

Installation of the Solaris Operating Environment on the Former Main SC

▼ To Install the Solaris Operating Environment

1. **Install 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 1.3 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. All patches should be applied according to each patch's instructions. Several Solaris patches are required for SMS to run properly. See "Other Documentation and Requirements" on page 5.

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 1.3 Software on the Former Main SC" on page 26.**

Installing SMS 1.3 Software on the Former Main SC

To install SMS software packages, perform the steps in the following procedure.

▼ To Install the SMS Software Packages Using `smsinstall`

1. **Log in to the former main SC as superuser.**
2. **Change directory to the location of `smsinstall`:**
 - If you downloaded software from the Web, type:

```
sc0:# cd
/download_directory/sms_1_3_sparc/System_Management_Services_1.3/Tools
```

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

```
sc0:# cd /cdrom/cdrom0/System_Management_Services_1.3/Tools
```

Note – `smsinstall(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.

3. Install packages using the `smsinstall(1M)` command.

directory_name is the `/Product` directory location of the SMS packages from “Downloading SMS Software” on page 9.

The following example runs from CD-ROM.

```
sc0:# smsinstall directory_name
Installing SMS packages. Please wait. . .
pkgadd -n -d
"/cdrom/cdrom0/System_Management_Services_1.3/Product" -a
/tmp/smsinstall.admin.24501 SUNWSMSr SUNWSMSop SUNWSMSdf
SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSpp
SUNWSMSsu
SUNWscdvr.u SUNWufrx.u SUNWufu SUNWwccmn
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
205 blocks

Installation of <SUNWSMSr> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
61279 blocks

Installation of <SUNWSMSop> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
32 blocks

Installation of <SUNWSMSdf> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
2704 blocks

Installation of <SUNWSMSjh> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
```

Use is subject to license terms.
5097 blocks

Installation of <SUNWSMSlp> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1696 blocks

Installation of <SUNWSMSmn> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
576 blocks

Installation of <SUNWSMSob> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSod> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSpd> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
14763 blocks

Installation of <SUNWSMSpo> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWSMSpp> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
5 blocks

Installation of <SUNWSMSsu> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
479 blocks

Installation of <SUNWscdvr> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
33 blocks

Reboot client to install driver.
type=ddi_pseudo;name=flashprom uflash\N0
Installation of <SUNWufrx> was successful.


```
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
13 blocks

Installation of <SUNWufu> was successful.

Installation of <SUNWwccmn> was successful.
Verifying that all SMS packages are installed
.....OK
Checking that all installed SMS packages are correct
pkgchk -n SUNWSMSr SUNWSMSop SUNWSMSdf SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob
SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSpp SUNWSMSsu SUNWscdvr
SUNWufrx SUNWufu SUNWwccmn
OK

Setting up /etc/init.d/sms run control script for SMS 1.3
New SMS version 1.3 is active

Attempting to restart daemon picld
/etc/init.d/picld stop
/etc/init.d/picld start

smsinstall complete. Log file is
/var/sadm/system/logs/smsinstall.
```

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

See “Installing SMS Patches” on page 65. Once the patches have been successfully installed you can proceed to Step 5.

5. Proceed to “To Restore Your SMS Configuration” on page 29.

Restoring Your SMS Configuration on the Former Main SC

▼ To Restore Your SMS Configuration

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

Run `smsrestore`.

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

```
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.

2. For a fresh install:

Proceed to “To Configure the Management Network (MAN) Using the `smsconfig(1M)` Command” on page 30.

For reinstallation:

During reinstallation the SMS group file was restored. Proceed to “To Add Users to SMS Groups and Configure Directory Access” on page 63 *only* if you will be changing user group memberships. Otherwise, proceed to “To Reboot the Former Main SC” on page 36.

Configuring the MAN Network on the Former Main SC

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

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*.

Note – The platform name must not begin with a number. Refer to BugId 4790002.

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) 1.3 Administrator Guide* 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
Two network interfaces controllers (NICs) are required for IPMP
network failover.
```

Enter NICs associated with community C1 [hme0 eril]: [Return]

Enter hostname for hme0 [sun15-sc0-hme0]:[Return]

Enter IP address for hme0: **10.1.1.52**

Enter hostname for eril [sun15-sc0-eril]:[Return]

Enter IP address for sun15-sc0-eril: **10.1.1.53**

The Logical/Floating IP hostname and address will "float" over to whichever system controller (SC0 or SC1) is acting as the main SC.

Enter Logical/Floating IP hostname for community C1 [sun15-sc-C1]:[Return]

Enter IP address for sun15-sc-C1:**10.1.1.50**

Enter Netmask for community C1: **255.255.255.0**

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

Enter IP address for sun15-sc0-C1-failover:**10.1.1.51**

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-eril	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-il #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-scl-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.
smsconfig complete. Log file is /var/sadm/system/logs/smsconfig
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 63.**
- During reinstallation this file was restored. Proceed with this step *only* if you will be changing user group memberships or you have done a fresh install of the Solaris operating environment. Otherwise proceed to “To Reboot the Former Main SC” on page 36.

11. **After adding users to your SMS Groups:**

Proceed to “To Reboot the Former Main SC” on page 36.

Rebooting 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 of SMS 1.3, proceed to “To Enable Failover” on page 38.

If you are fresh installing a system that was previously running SMS 1.2 software, proceed to “To Update the Flash PROMs” on page 36.

Updating the Flash PROMs on the Former Main SC

▼ To Update the Flash PROMs

When you fresh install SMS 1.3 on a system that was previously running SMS 1.2 software you must update the SC flash PROMs on both SCs.

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

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:

```
sc#:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 12 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 12 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. In the following example the `sc#` prompt indicates both the main or spare SCs:

```
sc#:# /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) 1.3 Reference Manual* 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 38.

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.

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

Your reinstallation or upgrade is now complete! If you want to secure the SCs, proceed to “SMS 1.3 Security Options” on page 75. Otherwise, proceed to “Creating a Domain” on page 84.

SMS 1.3 Software Upgrade

This chapter contains upgrade instructions for System Management Services (SMS) 1.3 software under the Solaris operating environment. These instructions apply to the Sun Fire 15K/12K server systems.

The SMS upgrade 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 Prepare Your SMS Environment for Upgrade
- To Upgrade the Solaris Operating Environment (optional)
- To Upgrade the SMS Software Packages
- To Switch Control to the Spare SC
- To Update the Flash PROMs on the Former Main
- To Upgrade the Former Main SC (optional)
- To Upgrade the Solaris Operating Environment (optional)
- To Upgrade the SMS Software Packages
- To Reboot the Former Main SC on the Former Main
- To Update the Flash PROMs on the Former Main
- To Enable Failover on the New Main SC (SC1)

Note – `smversion` does not support a return to SMS 1.1, SMS 1.2_s8 or SMS 1.3_s8 in this release of SMS 1.3 for Solaris 9. To return to SMS 1.1, SMS 1.2_s8 or SMS 1.3_s8 you must return to the *applicable* Solaris 8 operating environment.

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.

Preparing to Perform an OS/SMS Upgrade (Type 2) Installation

The SMS 1.3 installation instructions in this section assume that you are upgrading the Solaris 9 operating environment and SMS software, or SMS software alone.

Performing a Type 2 Upgrade

To *upgrade* the Solaris operating environment software from Solaris 8 with SMS 1.2_s8 or 1.3_s8 software; or to upgrade from Solaris 9 with SMS 1.2_s9 software, you will be performing the following procedures:

Task	Reference	Page
Download your SMS 1.3_s9 packages	To Download Software From the Web To Download Software From a CD-ROM	42
Prepare for Upgrade - Turn off failover on the main SC (SC0) - Stop SMS on the spare SC (SC1) - Backup the current SMS software on the spare (optional)	To Prepare Your SMS Environment for Upgrade	43
Upgrade your Solaris 9 operating environment (optional)	Solaris 9 Installation Guide	
Upgrade SMS software packages using <code>smsupgrade</code>	To Upgrade SMS Software Packages	45
Switch control to the spare SC	To Switch Control to the Spare SC	49
Update the SC and CPU flash PROMs on the new spare SC	To Update the Flash PROMs	50
Upgrade the former main SC (SC0) - Stop SMS on the former main SC - Backup the current SMS environment on the former main SC (SC0) (optional) - Upgrade your Solaris 9 operating environment (optional) - Upgrade SMS 1.3_s9 software packages on the former main SC (SC0)	To Upgrade the Former Main SC	52
Reboot the former main SC (SC0)	Rebooting the Former Main SC	57
Update the SC flash PROMs on the former main SC (SC0)	To Update the Flash PROMs on the Former Main	58
Turn on failover on the new main SC (SC1)	To Enable Failover on the New Main SC (SC1)	59

To begin Type 2 upgrade proceed to “Downloading SMS Software” on page 42.

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_3_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_3_sparc.zip
```

The SMS 1.3 packages are located in
`/download_directory/sms_1_3_sparc/System_Management_Services_1.3/Product`.

7. **Proceed to “Preparing Your SMS Environment for Upgrade” on page 43.**

▼ 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 1.3 packages are located in
`/cdrom/cdrom0/System_Management_Services_1.3/Product`.

2. **Log in to the system controller as superuser.**
3. **Change to the** `Product` **installation directory:**

```
sc1:# cd /cdrom/cdrom0/System_Management_Services_1.3/Product
```

4. Proceed to “Preparing Your SMS Environment for Upgrade” on page 43.

Preparing Your SMS Environment for Upgrade

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

▼ To Prepare Your SMS Environment for Upgrade

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):**

```
sc1:# /etc/init.d/sms stop
```

3. **Backup the system on the spare SC (optional).**

`smsupgrade` backs up and restores your SMS environment, however, if you will be upgrading your Solaris software and are unfamiliar with that process, we recommend you make a backup of your SMS environment prior to the Solaris upgrade. Save the resulting file off the local system for redundancy.

Note – The `sms_backup.X.X.cpio` file of one SC cannot be used by the other SC. They are SC specific files and non-interchangeable.

```
sc1:# /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:

```
sc1:# /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.

4. You are now ready to upgrade.

If you wish to upgrade the Solaris 9 operating environment on the spare SC, have your *Solaris 9 Installation Guide* available. Proceed to “To Upgrade the Solaris Operating Environment” on page 45.

If you are already running Solaris 9 software and only wish to upgrade SMS 1.3 proceed to “Upgrading SMS Packages” on page 45.

Upgrading the Solaris Operating Environment

▼ 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 1.3_s9 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. All patches should be applied according to each patch's instructions. Several Solaris patches are required for SMS to run properly. See “Other Documentation and Requirements” on page 5.

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.

Once you have upgraded your Solaris software and rebooted you may see `krtld` (`kern.notice`) and `kstat` and `scman ifconfig` error messages. You can disregard them.

2. **Stop SMS on the spare SC (SC1):**

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

3. **Proceed to “Upgrading SMS Packages” on page 45.**

Upgrading SMS Packages

To upgrade SMS software packages, follow the steps in the procedure “To Upgrade the SMS Software Packages” on page 45.

▼ To Upgrade the SMS Software Packages

1. **Log in to the spare SC as superuser.**
2. **Change directory to the location of `smsupgrade`:**

- If you downloaded software from the Web, type:

```
scl:# cd
/download_directory/sms_1_3_sparc/System_Management_Services_1.3/Tools
```

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

```
scl:# cd /cdrom/cdrom0/System_Management_Services_1.3/Tools
```

Note – smsupgrade(1M) 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.

3. Upgrade SMS using the smsupgrade(1M) command.

directory_name is the /Product directory from “Downloading SMS Software” on page 42.

smsupgrade backs up and restores any existing SMS environment. The backup file resides in /var/tmp/sms_backup.1.x.cpio.

The following SMS 1.3 example runs from CD-ROM.

```
scl:# smsupgrade directory_name

Attempting to stop daemon picld
/etc/init.d/picld stop

Verifying that all SMS packages are installed
.....OK

Backing up SMS to /var/tmp/sms_backup.1.3.cpio before upgrade.
Please wait. . .
smsbackup /var/tmp
smsbackup: Backup configuration file created:
/var/tmp/sms_backup.1.3.cpio
SMS backup complete.

Installing SMS packages. Please wait. . .
pkgadd -n -d
"/cdrom/cdrom0/System_Management_Services_1.3/Product" -a
/tmp/smsinstall.admin.24501 SUNWSMSr SUNWSMSop SUNWSMSdf
SUNWSMSjh SUNWSMSlp
```

SUNWSMSmn SUNWSMSob SUNWSMSod SUNWSMSPd SUNWSMSpo SUNWSMSpp
SUNWSMSsu

SUNWScdvr.u SUNWufrx.u SUNWufu SUNWwccmn

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
205 blocks

Installation of <SUNWSMSr> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
61279 blocks

Installation of <SUNWSMSop> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
32 blocks

Installation of <SUNWSMSdf> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
2704 blocks

Installation of <SUNWSMSjh> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
5097 blocks

Installation of <SUNWSMSlp> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1696 blocks

Installation of <SUNWSMSmn> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
576 blocks

Installation of <SUNWSMSob> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSod> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSPd> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

14763 blocks

Installation of <SUNWSMSpo> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
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Installation of <SUNWSMSpp> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

5 blocks

Installation of <SUNWSMSsu> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.

479 blocks

Installation of <SUNWscdvr> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.

33 blocks

Reboot client to install driver.

type=ddi_pseudo;name=flashprom uflash\N0

Installation of <SUNWufrx> was successful.

Copyright 2002 Sun Microsystems, Inc. All rights reserved.

13 blocks

Installation of <SUNWufu> was successful.

Installation of <SUNWwccmn> was successful.

Verifying that all SMS packages are installed

.....OK

Checking that all installed SMS packages are correct

pkgchk -n SUNWSMSr SUNWSMSop SUNWSMSdf SUNWSMSjh SUNWSMSlp

SUNWSMSmn SUNWSMSob

SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSpp SUNWSMSsu SUNWscdvr

SUNWufrx SUNWufu SUNWwccmn

OK

Setting up /etc/init.d/sms run control script for SMS 1.3

New SMS version 1.3 is active

Restoring SMS from /var/tmp/sms_backup.1.3.cpio after upgrade.

Please wait. . .

smsrestore /var/tmp/sms_backup.1.3.cpio

Attempting to restart daemon picld

/etc/init.d/picld stop

```
/etc/init.d/picld start

smsupgrade complete.  Log file is
/var/sadm/system/logs/smsupgrade.
```

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

See “Installing SMS Patches” on page 65. Once the patches have been successfully installed you can proceed to Step 5.

5. Proceed to “To Switch Control to the Spare SC” on page 49.

Switching 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:

Proceed to “To Update the Flash PROMs” on page 50.

Updating the Flash PROMs on the 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. You must have platform privileges to run the `flashupdate(1M)` command. In the following example the `sc#` prompt indicates both the main or spare SC.

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

```
sc#:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 12 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ibus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 12 20:30 /dev/uflash1 ->
../devices/pci@1f,0/pci@1,1/ibus@1/flashprom@10,800000:uflash1
```

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

```
sc#:# /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/SCOBPimg.di sc1/fp0
sc1:sms-user:> flashupdate -f /opt/SUNWSMS/firmware/SSCPOST.di sc1/fpl
```

For more information on `flashupdate(1M)` refer to the *System Management Services (SMS) 1.3 Reference Manual* or the `flashupdate` man page.

3. Upgrade the CPU Flash PROMs.

Update all CPU Flash PROMs using `flashupdate`.

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

where:

location is the FEPROM location.

The FEPROM location consists of *board_loc/FEPROM_id*, separated by a forward slash.

The *FEPROM_id* is specified only when you want to update a particular FEPROM (FP0 or FP1) on a CPU board and the system controller (SC).

For example, the location, SB4/FP0, indicates the FEPROM 0 on the CPU board in slot 4.

Sun Fire 15K, Sun Fire 12K

SB(0...17), SB(0...8)

IO(0...17), IO(0...8)

SC(0|1), SC(0|1)

The following *FEPROM_id* forms are accepted:

FP(0|1), FP(0|1)

For more information on `flashupdate(1M)` refer to the *System Management Services (SMS) 1.3 Reference Manual* 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 Upgrade the Former Main SC” on page 52.

Upgrading the Former Main SC

▼ To Upgrade the Former Main SC

1. Log in to the former main as superuser.
2. Stop SMS on the former main SC:

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

3. Backup the system on the former main SC (optional).

smsupgrade backs up and restores your SMS environment, however, if you will be upgrading your Solaris software and are unfamiliar with that process, we recommend you make a backup of your SMS environment prior to the Solaris upgrade. Save the resulting file off the local system for redundancy.

Note – The `sms_backup.X.X.cpio` file of one SC cannot be used by the other SC. They are SC specific files and non-interchangeable.

```
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.

4. You are now ready to upgrade.

If you wish to upgrade the Solaris 9 operating environment on the former main SC, have your *Solaris 9 Installation Guide* available. Proceed to “To Upgrade the Solaris Operating Environment” on page 53.

If you are already running Solaris 9 software and only wish to upgrade SMS 1.3 proceed to “To Upgrade the SMS Software Packages” on page 54.

Upgrade the Solaris Operating Environment on the Spare SC

▼ 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 1.3_s9 does not run under software releases *earlier* than Solaris 9 or software groups *less* than `Entire Distribution`. All patches should be applied according to each patch’s instructions. Several Solaris patches are required for SMS to run properly. See “Other Documentation and Requirements” on page 5.

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.

Once you have upgraded your Solaris software and rebooted you may see `krtld` (`kern.notice`) and `kstat` and `scman ifconfig` error messages. You can disregard them.

2. Stop SMS on the former main SC:

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

3. Proceed to “To Upgrade the SMS Software Packages” on page 54.

SMS 1.3 Software on the Former Main SC

To upgrade SMS software packages, follow the steps in the procedure “To Upgrade the SMS Software Packages” on page 54.

▼ To Upgrade the SMS Software Packages

1. **Log in to the former main SC as superuser.**
2. **Change directory to the location of `smsupgrade(1M)`:**
 - If you downloaded software from the Web, type:

```
sc0:# cd
/download_directory/sms_1_3_sparc/System_Management_Services_1.3/Tools
```

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

```
sc0:# cd /cdrom/cdrom0/System_Management_Services_1.3/Tools
```

Note – `smsupgrade(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.

3. **Upgrade packages using the `smsupgrade(1M)` command.**

`directory_name` is the `/Product` directory from “Downloading SMS Software” on page 42.

`smsupgrade` backs up and restores any existing SMS environment. The backup file resides in `/var/tmp/sms_backup.1.x.cpio`.

The following example runs from CD-ROM.

```
sc0:# smsupgrade directory_name

Attempting to stop daemon picld
/etc/init.d/picld stop

Verifying that all SMS packages are installed
.....OK

Backing up SMS to /var/tmp/sms_backup.1.3.cpio before upgrade.
Please wait. . .
```

```
smsbackup /var/tmp
smsbackup: Backup configuration file created:
/var/tmp/sms_backup.1.3.cpio
SMS backup complete.

Installing SMS packages. Please wait. . .
pkgadd -n -d
"/cdrom/cdrom0/System_Management_Services_1.3/Product" -a
/tmp/smsinstall.admin.24501 SUNWSMSr SUNWSMSop SUNWSMSdf
SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob SUNWSMSod SUNWSMSpd SUNWSMSpo SUNWSMSpp
SUNWSMSsu
SUNWscdvr.u SUNWufrx.u SUNWufu SUNWccmn
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
205 blocks

Installation of <SUNWSMSr> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
61279 blocks

Installation of <SUNWSMSop> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
32 blocks

Installation of <SUNWSMSdf> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
2704 blocks

Installation of <SUNWSMSjh> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
5097 blocks

Installation of <SUNWSMSlp> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1696 blocks

Installation of <SUNWSMSmn> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
576 blocks

Installation of <SUNWSMSob> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
```

1025 blocks

Installation of <SUNWSMSod> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
1025 blocks

Installation of <SUNWSMSPd> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
14763 blocks

Installation of <SUNWSMSpo> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWSMSpp> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
5 blocks

Installation of <SUNWSMSsu> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
479 blocks

Installation of <SUNWscdvr> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
33 blocks

Reboot client to install driver.
type=ddi_pseudo;name=flashprom uflash\N0
Installation of <SUNWufrx> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.
13 blocks

Installation of <SUNWufu> was successful.

Installation of <SUNWwccmn> was successful.

Verifying that all SMS packages are installed
.....OK
Checking that all installed SMS packages are correct
pkgchk -n SUNWSMSr SUNWSMSop SUNWSMSdf SUNWSMSjh SUNWSMSlp
SUNWSMSmn SUNWSMSob
SUNWSMSod SUNWSMSPd SUNWSMSpo SUNWSMSpp SUNWSMSsu SUNWscdvr
SUNWufrx SUNWufu SUNWwccmn
OK

```
Setting up /etc/init.d/sms run control script for SMS 1.3
New SMS version 1.3 is active

Restoring SMS from /var/tmp/sms_backup.1.3.cpio after upgrade.
Please wait. . .
smsrestore /var/tmp/sms_backup.1.3.cpio

Attempting to restart daemon picld
/etc/init.d/picld stop
/etc/init.d/picld start

smsupgrade complete. Log file is
/var/sadm/system/logs/smsupgrade.
```

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

See “Installing SMS Patches” on page 65. Once the patches have been successfully installed you can proceed to Step 5.

5. Proceed to “To Reboot the Former Main SC” on page 57.

Rebooting 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:

Proceed to “To Update the Flash PROMs on the Former Main” on page 58.

Updating the Flash PROMs on the Former Main SC

▼ To Update the Flash PROMs on the Former Main

When you upgrade the SMS software you must update the SC flash PROMs on both SCs.

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

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:

```
sc#:# ls -l /dev/uflash*
lrwxrwxrwx 1 root other 62 Oct 12 20:30 /dev/uflash0 ->
../devices/pci@1f,0/pci@1,1/ebus@1/flashprom@10,400000:uflash0
lrwxrwxrwx 1 root other 62 Oct 12 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. In the following example the `sc#` prompt indicates both the main or spare SCs:

```
sc#:# /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) 1.3 Reference Manual* 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 the New Main SC (SC1)” on page 59.

Enabling Failover on the Main SC (SC1)

▼ To Enable Failover on the New Main SC (SC1)

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

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

Your upgrade is now complete! To secure the SCs proceed to “SMS 1.3 Security Options” on page 75. If you do not wish to secure the SCs, you can proceed to “Creating a Domain” on page 84.

SMS 1.3 Additional Software Instructions

This chapter contains additional instructions for System Management Services (SMS) 1.3 software under the Solaris operating environment. These instructions apply to the Sun Fire 15K/12K server systems.

This chapter includes:

- To Add Users to SMS Groups and Configure Directory Access
- To Patch the Spare SC
- To Install Additional Software Packages
- To Configure the NTP Packages
- To Manually Stop and Restart SMS
- To Share SMS Packages on the Spare SC to the Main SC

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) 1.3 Administrator Guide*.

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
platadmin	Platform Administrator Group
platsvc	Platform Service Group
platooper	Platform Operator Group
dmnaadmin	Domain A Administrator Group
dmnbadmin	Domain B Administrator Group
dmncadmin	Domain C Administrator Group
dmndadmin	Domain D Administrator Group
dmneadmin	Domain E Administrator Group
dmnfadmin	Domain F Administrator Group
dmngadmin	Domain G Administrator Group
dmnhadmin	Domain H Administrator Group
dmniadmin	Domain I Administrator Group
dmnjadmin	Domain J Administrator Group
dmnkadmin	Domain K Administrator Group
dmnladmin	Domain L Administrator Group
dmnmadmin	Domain M Administrator Group
dmnnadmin	Domain N Administrator Group
dmnoadmin	Domain O Administrator Group
dmnpadmin	Domain P Administrator Group
dmnqadmin	Domain Q Administrator Group
dmnradmin	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
dmnircfg	Domain I Configuration Group

User Group ID	User Group Description (<i>Continued</i>)
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 *dmnaadmn* 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 dmnaadmn 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: `adm`, `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. Return to your installation instructions.

Installing SMS Patches

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 that, initially, the main SC is `sc0` and the spare SC is `sc1`.

▼ To Patch the Spare SC

1. Log in to the *main* SC with platform administrator privileges.
2. Turn failover off. Type:

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

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

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

Once all patches have been installed successfully, you can delete this backup file.

5. Log in to the *spare* SC as superuser.
6. Patch the *spare* SC according to patch instructions.
You can install more than one patch, at this time, if the patch instructions do not prohibit it.
7. Log in to the *main* SC with platform administrator privileges.

8. Reactivate failover on the main SC and verify that it is active:

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

sc0:sms-user:> /opt/SUNWSMS/bin/showfailover
SC Failover Status: Activating
...
sc0:sms-user:> /opt/SUNWSMS/bin/showfailover
SC Failover Status: Active
```

It can take a minute or two for failover to activate.

9. Failover to the spare SC:

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

The main SC will reboot and become the former main SC.

▼ To Patch the Former Main SC

1. Log in to the former main SC as superuser.

2. Patch the former main SC according to patch instructions.

You can install more than one patch, at this time, if the patch instructions do not prohibit it.

3. Log in to the new main SC with platform administrator privileges.

4. Reactivate failover on the main SC and verify that it is active:

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

sc1:sms-user:> /opt/SUNWSMS/bin/showfailover
SC Failover Status: Activating
...
sc1:sms-user:> /opt/SUNWSMS/bin/showfailover
SC Failover Status: Active
```

It can take a minute or two for failover to activate.

5. You have finished the patch process for main and spare SCs. If you wish to restore the original SC roles, proceed to “To Restore SC Roles” on page 67.

▼ To Restore SC Roles

At this point, the original spare SC is running as main and the original main is running as spare. If you wish, you can return them to their original roles as follows:

1. **Log in to the new main SC with platform administrator privileges.**
2. **Failover to the spare SC:**

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

The new main SC reboots and becomes the spare SC. The original main becomes the main again.

3. **Log in to the main SC with platform administrator privileges.**
4. **Reactivate failover on the main SC and verify that it is active:**

```
sc0:sms-user:> /opt/SUNWSMS/bin/setfailover on  
  
sc0:sms-user:> /opt/SUNWSMS/bin/showfailover  
SC Failover Status: Activating  
...  
sc0:sms-user:> /opt/SUNWSMS/bin/showfailover  
SC Failover Status: Active
```

It can take a minute or two for failover to activate.

Installing Additional Software Packages

The additional software packages are in separate media. Install the software packages one at a time, from the appropriate media to the domain.

Note – None of these packages should be installed on the SCs. For information on installing additional software on the Sun Fire 15K/12K SCs refer to the *Sun Fire 15K Open System Controller (OpenSC) White Paper*.

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.
 - a. Verify that the `nfsd` server is running. Type:

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

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

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


c. 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 II network in Step 5 of “To Configure the Management Network (MAN) Using the `smsconfig(1M)` Command” on page 16.

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) Information

▼ To Configure the NTP Packages

- **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) 1.3 Administrator Guide*.

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 12/02 Operating Environment CD-ROM into the CD-ROM drive.
3. Use the `share(1M)` command to share the CD across the network.
 - a. Verify that the `nfsd` server is running. Type:

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

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

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

- c. 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 the `smsconfig(1M)` Command” on page 16.

6. Change to the Product installation directory:

```
scl:# cd /cdrom/cdrom0/System_Management_Services_1.3/Product
```


SMS 1.3 Security Options

This chapter contains information on securing the System Management Services (SMS) 1.3 software under the Solaris operating environment. These instructions apply to the Sun Fire 15K/12K server systems.

The following security options are available in SMS 1.3:

Strongly Recommended

- Use Secure Shell (`ssh`) as an alternative transport for `fomd` (failover management daemon).
- Disable ARP (Address Resolution Protocol) on the I1 MAN network between the SCs and domains.

Optional

- Disable all IP traffic between the SC and a domain by excluding that domain from the SC's MAN driver.

By using `ssh` as an alternative transport for `fomd`, the SCs no longer require a `.rhosts` file. Secure Shell provides user authentication and encrypts all network traffic; it prevents an intruder from being able to read an intercepted communication or from spoofing the system.

To protect against ARP spoofing and IP-based attacks, We strongly recommend that you disable ARP on the MAN network in all multi-domain configurations. For systems where domain separation is critical, we also recommend disabling IP connectivity between the SC and specific domains that require separation.

Before you implement the above security options, we strongly recommend that you modify (harden) your Solaris Operating Environment configurations on the SCs and domains to improve overall system security. For details, refer to following Sun BluePrints Online articles available at:

<http://www.sun.com/security/blueprints>

- Solaris Operating Environment Security - Updated for Solaris 8 Operating Environment

- Solaris Operating Environment Security - Updated for Solaris 9 Operating Environment

For step-by-step instructions on implementing the three options, which involve the use of the Solaris Security Toolkit (SST, a/k/a JASS), and detailed description of all security recommendations for Sun Fire 12K and 15K systems, refer to the following Sun BluePrints Online articles available at:

<http://www.sun.com/security/blueprints>

- Securing the Sun Fire 12K and 15K System Controllers: Updated for SMS 1.3
- Securing the Sun Fire 12K and 15K Domains: Updated for SMS 1.3

SMS 1.3 Software and Domains

This chapter contains additional instructions for System Management Services (SMS) 1.3 software and domains. These instructions apply to the Sun Fire 15K/12K server systems.

This chapter includes:

- To Install the Solaris Operating Environment on the Domain
- To Set Up OpenBoot PROM Environment Variables for the Domain
- To Configure Domain Networks
- To Build a New Domain on the System Controller
- 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

Setting Up and Installing the Solaris Operating Environment for the Domain

This section describes the recommended 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 83 before proceeding.

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

We strongly recommend creating an install server to install the Solaris operating environment software for a domain over the network.

- **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 “SMS 1.3 Software on the SC” on page 1.

▼ 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 12/02 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 the `smsconfig(1M)` Command” on page 16.” 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:



Caution – If you do not remove the domain from the install server list the domain will not boot from the boot disk or the net!

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 78.

▼ 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.

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 `platadmin` 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) 1.3 Reference Manual*.

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, “SMS Internals” in the *System Management Services (SMS) 1.3 Administrator Guide*.

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) 1.3 Administrator Guide* and the `console` man page.

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