Sun Enterprise™ 10000 SSP 3.4 Installation Guide and Release Notes

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Preface

The *Sun Enterprise 10000 SSP 3.4 Installation Guide and Release Notes* contains the Release Notes for SSP 3.4 and describes how to install SSP 3.4 on the System Service Processor (SSP), which enables you to monitor and control the Sun Enterprise™ 10000 system.

How This Book Is Organized

This document contains the following chapters and appendixes:

Chapter 1 contains Release Notes.

Chapter 2 explains the requirements for installing or upgrading to SSP 3.4.

Chapter 3 describes how to install SSP 3.4 on a new disk.

Chapter 4 explains the procedure for upgrading to SSP 3.4.

Chapter 5 provides information on restoring initialization files and configuring the Network Time Protocol daemon.

Chapter 6 explains how to install the SSP 3.4 AnswerBook2 collection.

Chapter 7 explains the procedure for falling back to a previous release of SSP.

Appendix A describes how to configure the SSP network files.

Before You Read This Book

This manual is intended for the Sun Enterprise 10000 system administrator, with a working knowledge of UNIX® systems, particularly those based on the Solaris™ operating environment. If you do not have such knowledge, you must first read the Solaris User and System Administrator AnswerBook2™ collections provided with this system, and consider UNIX system administration training.

Using UNIX Commands

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

See one or more of the following for this information:

- AnswerBook online documentation for the Solaris software environment, particularly those dealing with Solaris system administration
- Other software documentation that you received with your system

Typographic Conventions

TABLE P-1   Typographic Conventions

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

Shell Prompts

TABLE P-2   Shell Prompts

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

Related Documentation

TABLE P-3   Related Documentation

Application	Title	Part Number
User Guide	*Sun Enterprise 10000 SSP 3.4 User Guide*	806-4870
Reference (man pages)	*Sun Enterprise 10000 SSP 3.4 Reference Manual*	806-4871
Other	*Sun Enterprise 10000 Capacity on Demand 1.0 Administrator Guide*	806-2190
	Sun Enterprise 10000 Capacity on Demand 1.0 Reference Manual	806-2191
	Sun Enterprise 10000 Dynamic Reconfiguration User Guide	806-5697
	Sun Enterprise 10000 Dynamic Reconfiguration Reference Manual	806-4123
	Sun Enterprise 10000 InterDomain Networks User Guide	806-4131
	Sun Enterprise 10000 Domain Configuration Guide	806-4121
	Sun Enterprise 10000 Domain Error Messages	806-4120
	Sun Enterprise Server Alternate Pathing 2.3.1 User Guide	806-4150
	Sun Enterprise Server Alternate Pathing 2.3.1 Reference Manual	806-4151

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```
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```

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Please include the part number (806-4872-10) of your document in the subject line of your email.

SSP 3.4 Release Notes

This chapter covers the following topics:

- "General Issues"
- "Changes to the SSP Software"
- "Known SSP Bugs"
- "Bugs Fixed Since SSP 3.3"

General Issues

Viewing SSP 3.4 man Pages in the Solaris 2.6 Operating Environment

The attribute tables contained in SSP 3.4 man pages do not display properly in the Solaris 2.6 operating environment. The table borders extend beyond the table contents.

Viewing man Pages With AnswerBook2 Server

When viewing the man page collection with the AnswerBook2 server, clicking on the letters of the alphabet shown at the top of the page does not always display the section in which you are interested. Click on a man page from the list shown below the alphabet.

Documentation Relocation

Postscript versions of the *Sun Enterprise ™ 10000 SSP 3.4 User Guide* and *Sun Enterprise ™ 10000 SSP 3.4 Reference Manual* are no longer available in the `System_Service_Processor_3.4/Docs` directory. Both manuals are now available in PDF format for viewing and download at `http://docs.sun.com`.

Changes to the SSP Software

SSP 3.4 provides the following new features:

- Automatic SSP and control board failover

  Automatically switches the main SSP or the primary control board to its spare counterpart when a failure is detected.

- Enhanced performance in dynamic reconfiguration (DR) Attach operations

Network configuration in SSP 3.4 is more specific. Please review Appendix A "Configuring the SSP Network" for correct failover setup.

Changes to SSP Commands and Behavior

TABLE 1-1 lists the modifications to SSP commands and changes in SSP behavior.

TABLE 1-1   SSP Command and Behavioral Changes

Command Name or Behavior	Description of Change
`postrc(4)`	`postrc(4)` has two new properties: • `force_dtag_parity_mode (Level 2)` • `no_dtag_ecc_ce_scrub (Level 2)`
`ssp_backup(1M)` and `ssp_restore(1M)`	It is suggested that you use the `ssp_backup(1M)` and `ssp_restore(1M)` commands on the same SSP release. If you restore non-SSP 3.4 backup files, note that the `$SSPVAR/data` and `$SSPVAR/ict` directories from the SSP backup file are not restored. This prevents corruption of the hardware database.
`ssp_config(1M)`	`ssp_config(1M)` has a `float` option for specifying an IP address for the main SSP. The `spare` option has been removed.
`netcon(1M)` message logging	By default, `netcon(1M)` session output is recorded in the `$SSPLOGGER/`*domain_name*`/netcon` file.

TABLE 1-1 SSP Command and Behavioral Changes

Command Name or Behavior	Description of Change
Platform messages	Messages logged in the platform message file on the main SSP are also logged on the spare SSP.
First domain bringup	`actionsysclock` is run on the first domain brought up, to synchronize the JTAG interface and system clock source handled by the primary control board.
More cb_resets	The number of cb_resets has increased during `ssp_startup` as the `fod`(1M) daemon determines the SSP's role.

Single SSP Environments

In single SSP scenarios, the possibility exists to fill the /tmp directory resulting in a system hang. In order to prevent this, run the `setdatasync clean`(1M) command as needed; daily or weekly. This can be automated by `cron`(1M) using a `crontab`(1) entry.

Known SSP Bugs

`bringup` with Centerplane Configuration Shows Errors in POST Test for IOCs (4310528)

After a total system shutdown and system boards have been powered off, the first `bringup` with a centerplane configuration might generate errors on IOCs. This behavior occurs intermittently.

Workaround: Immediately run `hpost`(1M) or rerun `bringup`(1M).

Eveready fan Trays Spin Fast (4325886)

In dual power grid configurations, fans always operate at fast speed.

Workaround: None. It is safe for fans to operate at fast speed on the Sun Enterprise 10000 system.

Cached MIB Objects not Updated due to Traps not Received(4362825)

Several occurrences of incorrect data in the management information base (MIB) have been reported. In these cases, the 3.3VDC value is recorded as zero, and `hostinfo`(1M) shows illegal temperature values. In these instances, both Hostview and `hostinfo` display the incorrect information.

Workaround: Run `cb_reset`(1M) and restart the SSP processes. Use the `power`(1M) command to determine the correct 3.3VDC value.

Bugs Fixed Since SSP 3.3

The following bugs were fixed in SSP 3.4:

4135722 - Spare control board should be polled to determine if good or bad

4136095 - Offline of cpu0 and dr detach board 0 results in "Unable to read `post2obp` structure..."

4260132 - Control board monitoring won't work properly for Eveready configured HW

4261146 - System board voltages reported in SSP MIB are inconsistent

4285895 - Performance problem seen when domains are unlinked from an IDN network

4291084 - E10K heartbeat failures do not provide information to diagnose

4291172 - Need OBP to return status on known boot failures

4293712 - `hpost` fails "Mixed Ecache sizes" even though system has the same size proc/cache

4306044 - `moveboard` generates ERR

4305521 - Different results between `power` and its manpage

4306874 - Patch should not be required prior to `ssp_backup/ssp_upgrade` to `SSP3.3`

4308925 - Hostview can truncate high temperature to normal

4311232 - Syntax error from `showusage` is misleading when SUNW_HOSTNAME is invalid

4311587 - Bringup in a recovery situation can hang if a DR lock exists

4324023 - Enable `netcon` logging by default

4324097 - Mistakenly installing SSP 3.2 software on Solaris 8 operating environment prevents system from booting up

4324299 - SSP release 3.3 renders CPUs inaccessible after `autoconfig`

4325602 - Memory consistency check of `post2obp` structure failed

4326651 - `hostview` & `hostinfo -p` don't display power status correctly

4327649 - `init_attach` failure, MCs programmed for same logical board (memory interleaved)

4334115 - `thermcal`: error writing SN EEPROM

4334393 - SSP prints wrong/misleading voltage warnings for SBs having Rcore problem

4335877 - Centerplane support board EEPROM reads fail when using new centerplane

4344533 - Change CBE to sample BP/fan status

Patches

If you need to apply any software patches to your SSPs, be sure to install the patches on both the main and spare SSP.

Preparing for SSP 3.4 Installation or Upgrade

SSP installation refers to the installation of SSP 3.4 on a new disk. An upgrade refers to the update of SSP software to version 3.4.

This chapter describes the information you need to know before installing or upgrading to SSP 3.4:

■ "Getting Started"
■ "SSP 3.4 Hardware and Software Requirements"
■ "Failover Prerequisites"
■ "SSP Installation and Upgrade Options"

The procedures in this guide use the conventions shown in TABLE 2-1 for command line prompts.

TABLE 2-1   Command Line Prompt Conventions

Prompt	User Indicated
ssp#	superuser on the SSP
ssp%	ssp user on the SSP
#	superuser on a system other than the SSP

Getting Started

This section describes how to begin the installation or upgrade process:

■ It is suggested that you first install or upgrade the SSP software on the main SSP, then install or upgrade the SSP software on the spare SSP.

- If you do not know the current version of your SSP software, determine which version of the SSP software you are running.

  For details, see "To Determine Your Current SSP Version". You can also use this procedure after installation or upgrade to verify that SSP 3.4 is running.

- Obtain the SSP software from one of the following sources:
  - The Web
  - The Solaris™ 8 Sun Computer Systems Supplement CD-ROM

  For details, see "To Obtain SSP Software From the Web" and "To Obtain SSP Software From the CD-ROM".

- Create a backup file of your SSP environment.

  If you are currently running SSP software, you can create a backup file of the SSP environment (the data contained in the `/var/opt/SUNWssp` directory) using the `ssp_backup` command. This command creates a backup file named `ssp_backup.cpio` in a directory that you specify. This backup file can be used to restore the SSP environment. For details, see "To Create an SSP Backup File" on page 10.

- If you have a dual SSP configuration, verify that the main and the spare SSP can talk to each other through the control board network.

  For more information, see "To Verify the Control Board Network Connection Between the Main and Spare SSP" on page 11.

- Verify that the `rsh`(1M) command is enabled.

  For details, see "To Verify that the rsh(1) Command is Enabled" on page 12.

- Remove any `stty` commands from the `.cshrc` file for user `ssp` on the main and spare SSP.

  The `stty` command affects the use of `rcp` or `rsh` commands. For details, refer to Info Docs Article 11371, available through SunSolve.

- For failover purposes, establish the floating IP address of the working main SSP and place the address in the `/etc/hosts` file (see "To Establish a Floating IP Address" on page 12).

  This floating IP address must be different from the IP addresses used for your main and spare SSP. The floating IP address is a logical interface that eliminates the need for a specific SSP host name to communicate between the Sun Enterprise 10000 system and the main SSP.

  Upon an SSP failover, the floating IP address is registered on the new main SSP. The floating IP address enables communication between external monitoring software and the working main SSP.

  If you have a single SSP configuration, you must still assign a floating IP address to your SSP.

> **Note –** If you need to revert to a previous release of SSP after installing or upgrading to SSP 3.4, see Chapter 7 "Falling Back to a Previous SSP Release".

▼ To Determine Your Current SSP Version

1. **Log in as superuser on the SSP and type:**

```
ssp# pkginfo -l SUNWsspr
```

2. **Look for the VERSION line, for example:**

```
VERSION:  3.4.0,REV=2000.nn.nn.nn.nn
```

where *nn* represents the date (month and day) and time (hours and minutes). The version number for SSP 3.4 is shown as `3.4.0`.

▼ To Obtain SSP Software From the Web

1. **Using your web browser, go to** `http://www.sun.com/servers/sw/`.

2. **Click the link** `Enterprise 10000 System Service Processor (SSP) Software`.

3. **In the SSP 3.4 section, click the link** `Click here to download`.

   The file that will be downloaded is named `ssp_3_4_sparc.zip`.

   > **Note –** If you are running the Solaris 2.6 operating environment, you can obtain the `unzip` utility by applying patch 106193-05.

4. **On the SSP, log in as superuser.**

5. **Change directory to the location where you downloaded the SSP software.**

```
ssp# cd download_directory
```

6. **Unzip the downloaded file.**

```
ssp# unzip ssp_3_4_sparc.zip
```

- The SSP 3.4 packages are located in the directory
  /*download_directory*/ssp_3_4_sparc/System_Service_Processor_3.4/
  Product
- The install and upgrade scripts are located in the directory
  /*download_directory*/ssp_3_4_sparc/System_Service_Processor_3.4/
  Tools

▼ To Obtain SSP Software From the CD-ROM

- **Insert the "Solaris™ Sun Computer Systems Supplement" CD-ROM into the CD-ROM drive.**

  Allow time for the volume manager to mount the CD-ROM.

  - The SSP 3.4 packages are located in the directory
    /cdrom/cdrom0/System_Service_Processor_3.4/Product
  - The install and upgrade scripts are located in the directory
    /cdrom/cdrom0/System_Service_Processor_3.4/Tools

▼ To Create an SSP Backup File

Note – The size of the SSP backup file can vary depending upon the contents of the subdirectories in the /var/opt/SUNWssp directory. You can use the du(1M) command to determine the approximate amount of disk space required for the backup file.

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1. **On the SSP, log in as superuser.**

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

```
ssp# cd /opt/SUNWssp/bin
```

3. **Back up the SSP environment on the SSP.**

```
ssp# ./ssp_backup target_directory
```

A backup file named `ssp_backup.cpio` is created in *target_directory*. You may want to rename this file so that you can identify the SSP release associated with this backup file.

Do not make any changes to the Sun Enterprise 10000 environment, such as domain state or power status of boards, until you have completed the SSP installation or upgrade procedure and restored the SSP environment.

4. **If you want to view a list of the SSP files that were backed up, type the following:**

```
ssp% cpio -it -I ssp_backup.cpio
```

▼ To Verify the Control Board Network Connection Between the Main and Spare SSP

1. **On the main SSP, log in as superuser.**

2. **Type the following:**

```
ssp# ping -sRv host
```

where *host* represents the control board network interfaces of the spare SSP. This command prints the route that packets take to the specified host.

The following example shows the information displayed.

```
ssp# ping -sRv xf12-ssp-qfe1
PING xf12-ssp-qfe1: 56 data bytes
64 bytes from xf12-ssp-qfe1 (192.168.2.1): icmp_seq=0. time=1. ms
 IP options:  <record route> xf12-ssp-qfe1 (192.168.2.1), xf12-ssp2-qfe1
(192.168.2.2),  (End of record)
64 bytes from xf12-ssp-qfe1 (192.168.2.1): icmp_seq=1. time=1. ms
 IP options:  <record route> xf12-ssp-qfe1 (192.168.2.1), xf12-ssp2-qfe1
(192.168.2.2),  (End of record)
```

In the previous example, the main and spare SSP are communicating through `xf12-ssp-qfe1` to `xf12-ssp2-qfe1`.

> **Note –** The first three numbers in the IP record route option for the main SSP host interface (`192.168.2`) must match the first three numbers in the IP record route option for the spare SSP host interface (`192.168.2`). The matching numbers indicate that communication between both control board network interfaces is enabled.

Be sure to check all the control board network interfaces, which are described in Appendix A "Configuring the SSP Network".

▼ To Verify that the `rsh(1)` Command is Enabled

1. **On the main SSP, type the following:**

```
ssp# rsh hostname
```

where *hostname* is the name of the spare SSP. If a shell window opens, it indicates that rsh(1M) and related commands, such as rcp(1M) , are enabled. Both of these commands are used by automatic failover.

If a shell window does not open, check the /etc/inetd.conf file. Be sure the following line, which enables rsh, is contained in the file:

```
shell  stream tcp  nowait  root  /usr/sbin/in.rshd  in.rshd
```

2. **Repeat Step 1 on the spare SSP and specify the main SSP as the** *hostname***.**

▼ To Establish a Floating IP Address

1. **If you use NIS, update the NIS map with the IP address to be used as the floating IP.**

2. **If you have private domains that do not use NIS, enter the floating IP address in the** /etc/hosts **file on the main and spare SSP.**

   For an example /etc/hosts file, see Appendix A "To Configure Your SSP Network".

3. **If you have private domains that do not use NIS, enter the floating IP address and host name of the floating SSP in the** /etc/hosts **file for each domain.**

Note – You do not need to specify this floating IP address in the `/etc/hostname.`*interface* files. The SSP software automatically enables the main SSP to use the floating IP address.

SSP 3.4 Hardware and Software Requirements

TABLE 2-2 describes the minimum requirements for running SSP 3.4:

TABLE 2-2   SSP 3.4 Requirements

Item	Description
Operating environment	Solaris 2.6, Solaris 7, or Solaris 8
SSP upgrade	SSP 3.1.1, SSP 3.2, or SSP 3.3
	Before upgrading: • Review "Getting Started" on page 7. • Be sure the SSP network files are configured as described in Appendix A "Configuring the SSP Network". • If your SSP also runs Capacity on Demand (COD), review the COD upgrade process in the *Sun Enterprise Capacity on Demand 1.0 Administrator Guide.*
SSP new installation	Before SSP installation: • Review "Getting Started" on page 7. • Configure SSP network files, as described in Appendix A "Configuring the SSP Network".
Hardware	SPARCstation™ 5, Sun Ultra™ 5, or Sun Enterprise 250 workstation
	If you plan to use more than eight domains (SSP 3.4 supports up to 16 domains), the SSP must be a Sun Ultra 5 or Sun Enterprise 250 workstation. The SPARCstation 5 supports up to eight domains only.
Control board flash PROM boot firmware	Version 3.46
Ethernet connections	Minimum three connections for failover purposes

TABLE 2-2 SSP 3.4 Requirements

Item	Description
Ethernet hubs	Minimum two hubs for failover purposes
Floating IP address	Identifies the working main SSP, as explained in "Getting Started" on page 7
Disk space	Minimum 2.1 Gbytes for the Solaris operating environment and SSP 3.4 software
Processor speed	Minimum 170 MHz
Memory	Minimum 64 Mbytes
Swap space	Minimum 512 Mbytes
	Note that automatic failover uses the `/tmp` directory for data propagation purposes. Any user or SSP files that are larger than the `/tmp` directory cannot be propagated.

Failover Prerequisites

The SSP 3.4 software provides a failover capability that automatically switches the main SSP or the primary control board to its spare counterpart if a failover condition is detected. The spare counterparts serve as a backup if the main SSP or primary control board fails. However, for failover to operate correctly, the physical architecture of a dual SSP configuration must be set up as shown below.
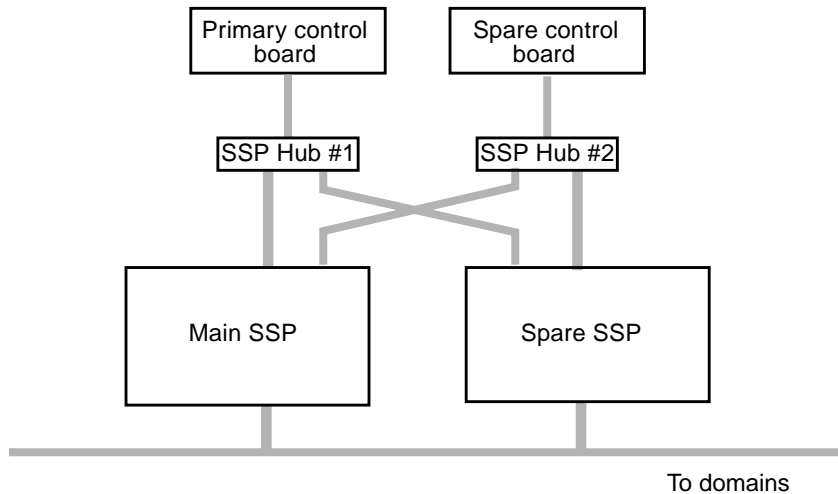
FIGURE 2-1   Dual SSP Configuration Required for Automatic Failover

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Note – Failover also requires that the SSP network files be configured as described in Appendix A "Configuring the SSP Network". Otherwise, failover will not work.

For details on how automatic failover works, see the *Sun Enterprise 10000 SSP 3.4 User Guide.*

SSP Installation and Upgrade Options

TABLE 2-3 describes the basic SSP installation and upgrade options and where to find detailed instructions on each option:

TABLE 2-3   SSP Installation and Upgrade Options

To	See
Create a new SSP 3.4 disk	Chapter 3 "Installing SSP 3.4 on a New Disk"
Upgrade to SSP 3.4	Chapter 4 "Upgrading to SSP 3.4"
Install the SSP 3.4 AnswerBook2 documentation	Chapter 6 "Installing the SSP 3.4 AnswerBook2 Collection"
Fall back to a previous SSP release	Chapter 7 "Falling Back to a Previous SSP Release"

Installing SSP 3.4 on a New Disk

Before installation, review the SSP 3.4 requirements explained in Chapter 2 "Preparing for SSP 3.4 Installation or Upgrade".

Note – If you are currently running SSP version 3.1.1, 3.2, or 3.3, it is suggested that you use `ssp_upgrade`(1M) to upgrade to SSP 3.4. For details, see Chapter 4 "Upgrading to SSP 3.4".

SSP 3.4 Installation Process

The creation of a new SSP 3.4 disk involves the following tasks:

- Installing the Solaris operating environment
- Configuring the SSP network files as explained in Appendix A "Configuring the SSP Network"
- Installing the SSP software using Solaris Web Start (the GUI installer) or the `ssp_install`(1M) command
- Configuring the SSP using the `ssp_config`(1M) command
- Restoring the SSP environment if you have an SSP 3.4 backup file, or providing system information, such as the name of the platform and control board
- Optionally installing the SSP 3.4 AnswerBook2 collection, described in Chapter 6 "Installing the SSP 3.4 AnswerBook2 Collection"

  If you use Web Start, the SSP 3.4 AnswerBook2 package is installed automatically with the SSP software.

The following sections provide detailed descriptions of the SSP 3.4 installation steps using Web Start or the `ssp_install` command.

Using Web Start

You can use Web Start to install the SSP 3.4 software and the SSP 3.4 AnswerBook2 collection. You can use Web Start to perform a fresh install from CD-ROM or from files you have downloaded from the Web.

The following procedure describes the steps involved when you use Web Start to install SSP software on either the main or spare SSP.

▼ To Create a New SSP 3.4 Disk Using Web Start

Note – If an error occurs during installation, manually remove all the SSP 3.4 software packages that were installed using the `pkgrm`(1M) command and return to the beginning of this installation procedure. For details on removing packages, see Chapter 7 "Falling Back to a Previous SSP Release".

---

1. **Log in as superuser on the machine that will be the main SSP.**

2. **Set the `DISPLAY` environment variable.**

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

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

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

3. **Begin Web Start by typing:**

   ```
   ssp# cd base_directory
   ssp# ./installer
   ```

   where *base_directory* specifies one of the following:
   - The directory where you downloaded the SSP software if you obtained the SSP software from the Web.
   - The directory `/cdrom/cdrom0` if you obtained the SSP software from the CD-ROM.

4. **Select Custom Install, then select the System Service Processor 3.4 software.**

   With custom installation, only the products that you select are installed.

5. **Verify that you have sufficient disk space to cover the requirements displayed on the Ready to Install dialog.**

   ```
   ssp# df -k
   ```

6. **Click the Install Now button.**

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

   Note – The /var/sadm/install/logs directory contains all the Web Start log files.

   ---

7. **Configure the SSP using the** ssp_config**(1M) command.**

   ```
   ssp# /opt/SUNWssp/bin/ssp_config
   ```

   During the configuration process, the floating IP address for the host name of the main SSP is verified. If this floating IP address is not valid, you will be prompted for the IP address. You will also be prompted for the following system information:

   ■ Processor speed

   If you have a mixture of processors, select the number corresponding to the *lowest* processor speed. You are prompted to confirm your selection.

   ■ The name of the platform this SSP will service

   The platform name is simply a name by which the SSP software refers to the entire Sun Enterprise 10000 host. The platform name is *not* the host name of a domain or the SSP workstation. A domain name can be the same as the platform name, but it is not suggested.

   Note – The term *starfire* is reserved and cannot be used as the platform name.

   ■ Host control boards

For each control board slot, indicate whether there is a control board present and the host name for the respective control board (host names are in the `/etc/hosts` file). If the IP address for a control board is not found in the existing configuration files, you will be prompted for this information. If two control boards are present, you will be asked which control board is the primary (main) control board.

The following is an example session that shows the prompts and responses displayed for processor, platform, host name of the floating SSP, and control board information.

```
You must specify what type of processor modules you have installed in your
Enterprise-10000 platform.  Please select one of the options below.

1) 250 MHz processors
2) 336 MHz processors
3) 400 MHz processors
4) Unlisted (manually enter clock values)

What speed of processors do you have installed? 2

Your selections are apparently for a 336 MHz processor.

Is this correct? (y/n) y

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

What is the name of the platform this SSP will service? allxf4

Please enter the floating host name of the main SSP [allxf4-ssp-main]:
allxf4-ssp-main

main SSP name = allxf4-ssp-main
main SSP address = 192.168.95.109

Is this correct? (y/n) y

Do you have a control board 0? (y/n)y

Please enter the host name of the control board 0 [allxf4cb0]: xf4-cb0

Do you have a control board 1? (y/n)y

Please enter the host name of the control board 1 [allxf4cb1]: xf4-cb1

Please identify the primary control board.

Is Control Board 0 [xf4-cb0] the primary? (y/n)y

Platform name     = allxf4
Control board 0 = xf4-cb0 => 129.153.151.123
Control board 1 = xf4-cb1 => 129.153.152.123
Primary Control Board = 0

Is this correct? (y/n)y

SSP configuration completed.
```

8. **If you have an SSP backup file** (ssp_backup.cpio)**, restore the backup file using the** ssp_restore**(1M) command.**

Note – If you specify a non-SSP 3.4 backup file, the $SSPVAR/data and $SSPVAR/ict directories are not restored, which prevents corruption of the hardware database. If a warning message tells you to run the autoconfig(1M) command, be sure to shut down your domains before executing the autoconfig command. Otherwise, your running domains will arbstop.

```
ssp# /opt/SUNWssp/bin/ssp_restore backup_directory/ssp_backup.cpio
```

where the *backup directory* is the directory in which the backup file resides.

If you do not have a backup file, but you have a main SSP running version SSP 3.4 software, you can create an SSP 3.4 backup file using the ssp_backup(1M) command on the main SSP. For details, see "To Create an SSP Backup File" on page 10.

9. **Reboot the SSP.**

10. **Log in to the SSP as user** ssp **and specify a new password when you are prompted to do so.**

11. **Enter the SUNW_HOSTNAME (the platform name you specified when configuring the SSP) when you are prompted to do so.**

12. **If you have just configured the main SSP, do the following:**

   a. **Monitor the platform message file by typing:**

```
ssp% tail -f $SSPLOGGER/messages
```

   b. **Before proceeding, wait for the** SSP startup complete **message to display.**

   It can take several minutes for this message to be displayed while the failover daemon determines the role of the SSP as either the main or spare. The platform message file displays information about various SSP processes that are started.

   If you did not restore an SSP backup file, the thermcaldata.tcl database is generated during SSP startup, which might take some time to complete, depending on your configuration.

   c. **Check the platform message file and verify that the correct flash PROM version (3.46) is installed.**

   For information on updating the control board PROM, see the man page for the cb_prom(1M) command.

13. **Be sure that the floating host name is specified in the** `/etc/ssphostname` **file for each domain.**

   a. **From the main SSP, or from another workstation on the network,** `rlogin` **to the domain as superuser.**

   b. **Edit the** `/etc/ssphostname` **file to replace the host name of the main SSP with the host name of the floating IP address.**

   c. **Verify that the floating IP address and the floating host name are in the** `/etc/hosts` **file.**

   d. **Redirect console communication to the new floating IP address.**

   ```
   # ps -ef | grep cvcd
   # kill -9 cvcd_pid
   # cvcd_path/cvcd
   ```

   where *cvcd_path* is `/sbin` under the Solaris 2.6 operating environment, and *cvcd_path* is `/platform/SUNW,Ultra-Enterprise-10000/lib/` under the Solaris 7 and Solaris 8 operating environments.

   e. **For each domain, update the** `/etc/syslog.conf` **file to replace the host name of the former main SSP with the floating host name.**

14. **If you have other software that communicates with the main SSP, such as Sun Management Center, be sure to change the communication path (for that software) to the floating IP address.**

15. **If you need to install the SSP software on the spare SSP, do the following:**
   - Review "Getting Started" on page 7.
   - Repeat Steps 1 through 12 on the spare.

Using the `ssp_install` Command

The `ssp_install` command is a utility that enables you to install the SSP software from the command line. The following procedure describes the steps involved when you use `ssp_install` on either the main or spare SSP.

▼ To Create a New SSP 3.4 Disk Using the `ssp_install` Command

Note – If an error occurs during installation, manually remove all the SSP 3.4 software packages that were installed using the `pkgrm`(1M) command and return to the beginning of this installation procedure. For details on removing packages, see Chapter 7 "Falling Back to a Previous SSP Release".

---

1. **On the SSP, log in as superuser and change to the** `Tools` **directory.**

   ```
   ssp# cd base_directory/System_Service_Processor_3.4/Tools
   ```

   where *base_directory* specifies one of the following:
   - The directory where you downloaded the SSP software if you obtained the SSP software from the Web.
   - The directory `/cdrom/cdrom0` if you obtained the SSP software from the CD-ROM.

2. **Install the SSP software by typing:**

   ```
   ssp# ./ssp_install ../Product
   ```

3. **When you are asked to install the SUNWsspfp (the SSP flash PROM image) package, type** `y`**.**

   The installation process verifies the disk space available and checks for any conflicts with packages already installed.

4. **If conflicting files exist, type** `y` **when you are asked if you want to install these conflicting files.**

5. **Configure the SSP using the** `ssp_config` **command.**

   ```
   ssp# /opt/SUNWssp/bin/ssp_config
   ```

   During the configuration process, the floating IP address for the host name of the main SSP is verified. If this floating IP address is not valid, you will be prompted for the IP address. You will also be prompted for the following system information:
   - Processor speed

     If you have a mixture of processors, select the number corresponding to the *lowest* processor speed. You are prompted to confirm your selection.

- The name of the platform this SSP will service

  The platform name is simply a name by which the SSP software refers to the entire Sun Enterprise 10000 host. The platform name is *not* the host name of a domain or the SSP workstation. A domain name can be the same as the platform name, but it is not suggested.

Note – The term *starfire* is reserved and cannot be used as the platform name.

- Host control boards

  For each control board slot, indicate whether there is a control board present and the host name for the respective control board (host names are in the `/etc/hosts` file). If the IP address for a control board is not found in the existing configuration files, you will be prompted for this information. If two control boards are present, you will be asked which control board is the primary (active) control board.

The following is an example session that shows the prompts and responses displayed for the processor, platform, host name of the floating SSP, and control board information.

```
You must specify what type of processor modules you have installed in your
Enterprise-10000 platform.  Please select one of the options below.

1) 250 MHz processors
2) 336 MHz processors
3) 400 MHz processors
4) Unlisted (manually enter clock values)

What speed of processors do you have installed? 2

Your selections are apparently for a 336 MHz processor.

Is this correct? (y/n) y

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

What is the name of the platform this SSP will service? allxf4

Please enter the floating host name of the main SSP [allxf4-ssp-main]:
allxf4-ssp-main

main SSP name = allxf4-ssp-main
main SSP address = 192.168.95.109

Is this correct? (y/n) y

Do you have a control board 0? (y/n)y

Please enter the host name of the control board 0 [allxf4cb0]: xf4-cb0

Do you have a control board 1? (y/n)y

Please enter the host name of the control board 1 [allxf4cb1]: xf4-cb1

Please identify the primary control board.

Is Control Board 0 [xf4-cb0] the primary? (y/n)y

Platform name     = allxf4
Control board 0 = xf4-cb0 => 129.153.151.123
Control board 1 = xf4-cb1 => 129.153.152.123
Primary Control Board = 0

Is this correct? (y/n)y

SSP configuration completed.
```

6. **If you have an SSP backup file** (`ssp_backup.cpio`)**, restore the backup file using the** `ssp_restore`**(1M) command.**

Note – If you specify a non-SSP 3.4 backup file, the `$SSPVAR/data` and `$SSPVAR/ict` directories are not restored, which prevents corruption of the hardware database. If a warning message tells you to run the `autoconfig`(1M) command, be sure to shut down your domains before executing the `autoconfig` command. Otherwise, your running domains will arbstop.

```
ssp# /opt/SUNWssp/bin/ssp_restore backup_directory/ssp_backup.cpio
```

where the *backup directory* is the directory in which the backup file resides.

If you do not have a backup file, but you have a main SSP running version SSP 3.4 software, you can create an SSP 3.4 backup file using the `ssp_backup`(1M) command on the main SSP. For details, see "To Create an SSP Backup File" on page 10.

7. **Reboot the SSP.**

8. **Log in to the SSP as user** `ssp` **and specify a new password when you are prompted to do so.**

9. **Enter the SUNW_HOSTNAME (the platform name you specified when configuring the SSP) when you are prompted to do so.**

10. **If you have just configured the main SSP, do the following:**

   a. **Monitor the platform message file by typing:**

```
ssp% tail -f $SSPLOGGER/messages
```

   b. **Before proceeding, wait for the** `SSP startup complete` **message to display.**

   It can take several minutes for this message to be displayed while the failover daemon determines the role of the SSP as either the main or spare. The platform message file displays information about various SSP processes that are started.

   If you did not restore an SSP backup file, the `thermcaldata.tcl` database is generated during SSP startup, which may take some time to complete, depending on your configuration.

   c. **Check the platform message file and verify that the correct flash PROM version (3.46) is installed.**

   For information on updating the control board PROM, see the man page for the `cb_prom`(1M) command.

11. **Be sure that the floating host name is specified in the** `/etc/ssphostname` **file for each domain.**

   a. **From the main SSP, or from another workstation on the network,** `rlogin` **to the domain as superuser.**

   b. **Edit the** `/etc/ssphostname` **file to replace the host name of the main SSP with the host name of the floating IP address.**

   c. **Verify that the floating IP address and the floating host name are in the** `/etc/hosts` **file.**

   d. **Redirect console communication to the new floating IP address.**

   ```
   # ps -ef | grep cvcd
   # kill -9 cvcd_pid
   # cvcd_path/cvcd
   ```

   where *cvcd_path* is `/sbin` under the Solaris 2.6 operating environment, and *cvcd_path* is `/platform/SUNW,Ultra-Enterprise-10000/lib/cvcd` under the Solaris 7 and Solaris 8 operating environments.

   e. **For each domain, update the** `/etc/syslog.conf` **file to replace the host name of the former main SSP with the floating host name.**

12. **If you have other software that communicates with the main SSP, such as Sun Management Center, be sure to change the communication path (for that software) to the floating IP address.**

13. **If you need to install the SSP software on the spare SSP, do the following:**
   - Review "Getting Started" on page 7.
   - Repeat Steps 1 through 9 on the spare.

Upgrading to SSP 3.4

Before upgrading, review the SSP 3.4 requirements explained in Chapter 2 "Preparing for SSP 3.4 Installation or Upgrade".

SSP Upgrade Process

The SSP upgrade process automatically updates SSP version 3.1.1, 3.2. or 3.3 to SSP 3.4. During the upgrade, SSP daemons are stopped if appropriate, existing SSP packages are removed, certain SSP files are archived, and the SSP 3.4 packages are added.

If you encounter problems with the upgrade to SSP 3.4, you can revert to a previous release of SSP. However, switching back to a previous release requires that you downgrade the SSP. For instructions on switching back to a previous SSP release, see Chapter 7 "Falling Back to a Previous SSP Release".

Upgrading from SSP 3.1.1, 3.2, or 3.3 involves the following main tasks:

- Backing up the SSP environment using the `ssp_backup` command
- Running the `ssp_upgrade` command
- Optionally installing the SSP AnswerBook2 Collection as explained in Chapter 6 "Installing the SSP 3.4 AnswerBook2 Collection"

The following procedure describes the detailed steps for upgrading either a main or spare SSP.

▼ To Upgrade to SSP 3.4

Note – If an error occurs during upgrade, use the `pkgrm`(1M) command to manually remove all the SSP 3.4 software packages that were installed and return to the beginning of this upgrade procedure. For details on removing packages, see Chapter 7 "Falling Back to a Previous SSP Release".

---

1. **On the main SSP, log in as superuser and change to the `Tools` directory:**

```
ssp# cd base_directory/System_Service_Processor_3.4/Tools
```

where *base_directory* specifies one of the following:

- The directory where you downloaded the SSP software if you obtained the SSP software from the Web.
- The directory `/cdrom/cdrom0` if you obtained the SSP software from the CD-ROM.

2. **If you have a spare SSP, stop the SSP daemons.**

```
ssp# /etc/init.d/ssp stop
```

3. **Back up the environment on the main SSP.**

```
ssp# ./ssp_backup target_directory
```

A backup file named `ssp_backup.cpio` is created in *target_directory*. It is suggested that you rename this backup file so that you can identify the SSP release associated with this backup file.

4. **Upgrade the SSP.**

```
ssp# ./ssp_upgrade ../Product
```

During the upgrade, note the following:

- A message explains that the floating host name or IP address cannot be found, even if you established the floating host name in the NIS map and the `/etc/hosts` file on the main and spare SSP.

This information is required for SSP configuration. Type y to continue the upgrade process, and when you are prompted, type the name of the floating main SSP. The IP address associated with this host name will be displayed and verified.

■ Ignore the following message:

cp:cannot access /var/opt/SUNWssp/.ssp_private/user_file_list

The file, user_file_list, is new in SSP 3.4 and did not exist in previous SSP releases. Therefore, this error can be ignored.

■ When the upgrade is complete, the upgrade log file (/var/sadm/system/logs/ssp_upgrade_log) is written. This log file provides information on upgrade processing.

5. **Reboot the SSP.**

Note that all SSP configuration files on the main SSP are copied to the spare.

6. **Be sure that the floating host name is specified in the** /etc/ssphostname **file for each domain.**

a. **From the main SSP, or from another workstation on the network,** rlogin **to the domain as superuser.**

b. **Edit the** /etc/ssphostname **file to replace the host name of the main SSP with the host name of the floating IP address.**

c. **Verify that the floating IP address and the floating host name are in the** /etc/hosts **file.**

d. **Redirect console communication to the new floating IP address:**

```
# ps -ef | grep cvcd
# kill -9 cvcd_pid
# cvcd_path/cvcd
```

where *cvcd_path* is /sbin under the Solaris 2.6 operating environment, and *cvcd_path* is /platform/SUNW,Ultra-Enterprise-10000/lib/ under the Solaris 7 and Solaris 8 operating environments.

e. **For each domain, update the** /etc/syslog.conf **file to replace the host name of the former main SSP with the floating host name.**

7. **If you have other software that communicates with the main SSP, such as Sun Management Center, be sure to change the communication path (for that software) to the floating IP address.**

8. **If you need to upgrade the SSP software on the spare SSP, do the following:**

■ Review "Getting Started" on page 7.

■ Repeat Steps 1, 4, and 5 on the spare.

After SSP Installation or Upgrade

After you have completed an SSP installation or upgrade, you may need to do the following:

- Edit some of the initialization files in the `/export/home/ssp` directory.

  If you made changes to the files, you did not restore the environment during the fresh install or upgrade, and you want to retain your changes, see the next section, "Editing Initialization Files".

- Configure the Network Time Protocol (NTP) daemon (see "Configuring the Network Time Protocol Daemon" on page 34).

Editing Initialization Files

When you run `ssp_upgrade` or `ssp_restore`, the following files are copied and saved with a `.__upgrade` suffix. If you have made changes to these files, you can incorporate these changes into the new versions of the files when you have completed the upgrade or install procedure.

The default `blacklist`(4) file found in `/var/opt/SUNWssp/etc` is backed up by `ssp_backup` and restored by `ssp_restore`. However, if you have created a `.postrc` file that changes the location of the `blacklist` file, the relocated `blacklist` file is not backed up by `ssp_backup`.

The following files are copied and saved when you run `ssp_upgrade` or `ssp_restore`.

- `/export/home/ssp/.Xdefaults`
- `/export/home/ssp/.xinitrc`
- `/export/home/ssp/.drtclrc`
- `/export/home/ssp/.redxrc`
- `/export/home/ssp/.cshrc`

- `/export/home/ssp/.login`
- `/export/home/ssp/.postrc`
- `/var/opt/SUNWssp/.ssp_private/ssp_resource`
- `/var/opt/SUNWssp/adm/.logger`

Note – To facilitate data synchronization in SSP 3.4, be sure that the `.cshrc` and `.login` files for user `ssp` do not contain `stty`(1M) commands.

The following additional files are copied and saved only when `ssp_restore` is run:

- `/export/home/ssp/.ssp_env`
- `/export/home/ssp/.dtprofile`
- `/export/home/ssp/.dt/dtwmrc`
- `/export/home/ssp/.dt/user.dtwmrc`

If you made changes to the `Ultra-Enterprise-10000.snmpd.cnf` file that is in the `/etc/opt/SUNWssp/snmp/agt` directory, you will have to incorporate your changes into the file installed on the restored system.

Configuring the Network Time Protocol Daemon

If the SSP is to function as a time server, configure the Network Time Protocol (NTP) daemon.

The NTP daemon, `xntpd(1M)` for the Solaris 2.6, Solaris 7, or Solaris 8 operating environments, provides a mechanism for keeping the time settings synchronized between the SSP and the domains. OBP obtains the time from the SSP when the domain is booted, and NTP keeps the time synchronized from that point on.

The configuration is based on information provided by the system administrator. If the Sun Enterprise 10000 system is not currently running in an NTP subnet, does not have access to the Internet, and is not going to use a radio clock, you can set up the Sun Enterprise 10000 system to use its own internal time-of-day clock as the reference clock. Usually, however, the SSP uses its internal time-of-day clock for the Sun Enterprise 10000 system.

The NTP packages are compiled with support for a local reference clock. This means that your system can poll itself for the time instead of polling another system or network clock. The poll is done through the network loopback interface. The numbers in the IP address are 127.127.1.0.

When setting the SSP and the domains, set the SSP to stratum 8. Set up the domains as peers to the SSP and set the local clock two stratums higher.

If the `ntp.conf` file does not exist, create it as described below.

▼ To Create the `ntp.conf` File

1. **Log in as superuser.**

2. **Create the `ntp.conf` file in a text editor.**

   The `ntp.conf` file for the Solaris 2.6, Solaris 7, or Solaris 8 operating environments is located in `/etc/inet`. If you are running the Solaris 2.5.1 operating environment, the `ntp.conf` file is located in the `/etc/opt/SUNWxntp` directory. You must have an `ntp.conf` file on both the SSP and the domains. The following is an example of server lines in the `ntp.conf` file on the SSP, to synchronize clocks.

   ```
   server 127.127.1.0
   fudge 127.127.1.0 stratum 8
   ```

   For the Solaris 2.6, Solaris 7, or Solaris 8 operating environments, you can add lines similar to the following to the `/etc/inet/ntp.conf` file (or for the Solaris 2.5.1 operating environment, the `/etc/opt/SUNWxntp/ntp.conf` file) on the domains:

   ```
   peer ssp_name
   server 127.127.1.0
   fudge 127.127.1.0 stratum 10
   ```

   Note – If you do not have any server lines in the `ntp.conf` file other than the local clock, it might take up to 25 minutes for NTP to synchronize at boot time. For a workaround, refer to Bug 4325813.

   For more information on the NTP daemon, refer to the `xntpd`(1M) man page in the *man Pages(1M): System Administration Commands* section of the Solaris Administration AnswerBook2 Collection.

Installing the SSP 3.4 AnswerBook2 Collection

This section explains how to manually install the SSP 3.4 AnswerBook2 document collection using the standard installation utility, `pkgadd`.

SSP 3.4 AnswerBook2 Collection

Before you can install the SSP 3.4 AnswerBook2 document collection, you must have the AnswerBook2 server software installed. For instructions on installing the AnswerBook2 server software, see "Installing and Administering an AnswerBook2 Server" in the AnswerBook2 Help collection on `docs.sun.com`. The server software can be obtained from the following sources:

- Documentation CD for Solaris 7 and Solaris 8 operating environments
- Web (`http://www.sun.com/software/ab2/index.html`)

▼ To Install the SSP 3.4 AnswerBook2 Collection

1. **Log in as superuser on the machine where the SSP 3.4 AnswerBook2 collection is to be installed.**

2. **If you have a previous version of the SUNWuessp package installed, remove it using the** `pkgrm` **command.**

   ```
   ssp# pkgrm SUNWuessp
   ```

3. **Change directory to the location of the SSP 3.4 AnswerBook package.**

```
ssp# cd base_directory/System_Service_Processor_3.4/Product
```

Where *base_directory* specifies one of the following:

- The directory where you downloaded the SSP software if you obtained the SSP software from the Web.
- The directory `/cdrom/cdrom0` if you obtained the SSP software from the CD-ROM.

4. **Add the SUNWuessp package.**

```
ssp# pkgadd -d . SUNWuessp
```

5. **When you are requested to select an installation option, type 2 (heavy installation).**

```
Select an installation option: 2
```

6. **When you are asked to specify the parent path for the AnswerBook2 Collection, type the path to the directory in which you want to put the SSP 3.4 AnswerBook2.**

It is suggested that you install the SSP AnswerBook2 Collection in `/opt`.

```
Specify the parent path of this AnswerBook2 Collection directory: /opt
```

7. **Type y at the following prompt:**

```
This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWuessp> [y,n,?] y
```

A message indicates that the SUNWuessp package was successfully installed.

For instructions on launching the AnswerBook2 viewer and viewing document collections, see "Viewing Online Documentation Using the AnswerBook2 System" in the AnswerBook2 Help collection on `docs.sun.com`.

Falling Back to a Previous SSP Release

This chapter describes the procedures for reverting from SSP 3.4 to a previous version of SSP.

SSP Fall Back

If you have installed SSP 3.4 or have upgraded to SSP 3.4, you can fall back to a previous SSP version (SSP 3.1.1, 3.2, or 3.3) using the following procedure.

Note – Before you begin the fall back process, be sure that you have an SSP backup file from a previous SSP release.

▼ To Fall Back to a Previous SSP Release

1. **If you have a spare SSP, log in to the spare SSP as superuser and stop the SSP daemons on the spare SSP.**

```
ssp# /etc/init.d/ssp stop
```

2. **Perform the following steps on the main SSP to prevent possible arbstops on your domains after you fall back to a previous SSP version:**

> **Note –** If you are absolutely sure that your hardware state and domain configuration have not changed since SSP installation or upgrade, you can skip Steps a, b, and c. However, if the hardware state and domain configuration have changed, and you skip these steps, your SSP and its domains can arbstop.

a. **Schedule downtime for your domains and shut down the domains on the main SSP using the standard** `shutdown`**(1M) command.**

b. **Log in as user** `ssp` **and remove all domains on the main SSP using the** `domain_remove`**(1M) command.**

```
ssp% domain_remove -d domain_name
```

c. **Power off all system boards.**

```
ssp% power -off -all
```

3. **Log in to the main SSP as superuser and back up the SSP.**

```
ssp# /opt/SUNWssp/bin/ssp_backup backup_directory
```

This creates a backup file of the SSP 3.4 environment, `ssp_backup.cpio`, in the specified backup directory. Do *not* use this file to restore a previous SSP environment.

4. **Uninstall the SSP 3.4 software.**

a. **Log in to the main SSP as user** `ssp` **and switch to the platform name.**

```
ssp% domain_switch platform_name
```

b. **Prepare the SSP for downgrading.**

```
ssp% ssp_downgrade
```

c. **Log in to the main SSP as superuser and stop the SSP daemons:**

```
ssp# /etc/init.d/ssp stop
```

d. Remove the SSP packages.

```
ssp# pkgrm SUNWsspid SUNWsspdo SUNWsspdr SUNWssppo SUNWsspob \
SUNWsspr SUNWsspst SUNWsspdf SUNWsspmn SUNWsspop SUNWsspue \
SUNWsspfp
```

For the SUNWsspr, SUNWsspdf, SUNWsspop, and SUNWsspue packages, a message indicates that the package contains scripts that will be executed with super-user permission during package removal.

e. For the SUNWsspr, SUNWsspdf, SUNWsspop, and SUNWsspue packages, type y when you are asked if you want to continue with the removal of the package.

f. If the SSP AnswerBook package is installed, remove it by typing:

```
ssp# pkgrm SUNWuessp
```

g. Remove the following directories:

- `/var/opt/SUNWssp`
- `/opt/SUNWssp`
- `/etc/opt/SUNWssp`

h. Reboot the SSP.

5. Reinstall a previous SSP release.

Refer to the appropriate version of the *Sun Enterprise 10000 SSP Installation Guide and Release Notes* for details on installing the previous version of the SSP software.

6. Restore the backup file of a previous SSP release.

```
ssp# /opt/SUNWssp/bin/ssp_restore backup_file
```

7. **Run** `ssp_config`**(1M) to make the SSP as the main or spare:**

```
ssp# /opt/SUNWssp/bin/ssp_config
```

The following is an example configuration session that shows the prompts and responses displayed:

```
ssp# /opt/SUNWssp/bin/ssp_config
Beginning setup of this workstation to act as a MAIN or SPARE SSP.
Are you currently configuring the MAIN SSP? (y/n)y
MAIN SSP configuration completed.
```

8. **Reboot the SSP.**

9. **If you performed Step 2, do the following after the main SSP comes up:**

   a. **Verify that there are no configured domains by using the** `domain_status`**(1M) command.**

```
ssp% domain_status
No domains configured
```

   b. **If there are domains, remove those domains using the** `domain_remove`**(1M) command.**

   c. **Run the** `ssp_backup`**(1M) command on the main SSP to save the SSP configuration.**

   Use this backup file to restore the environment on the spare SSP when you fall back on the spare.

10. **If you need to revert to a previous SSP release on the spare SSP, repeat steps 4 through 8 on the spare SSP.**

   When you perform Step 6, be sure to use the SSP backup file created in Step 9c to restore the SSP environment on the spare.

Configuring the SSP Network

If you are installing the SSP software on a new disk, and have already performed a fresh install of the Solaris operating environment, you need to configure the SSP network files before performing a fresh install of the SSP software.

This appendix describes the following SSP network configurations:

- Two subnets
- Three subnets
- Spare SSP

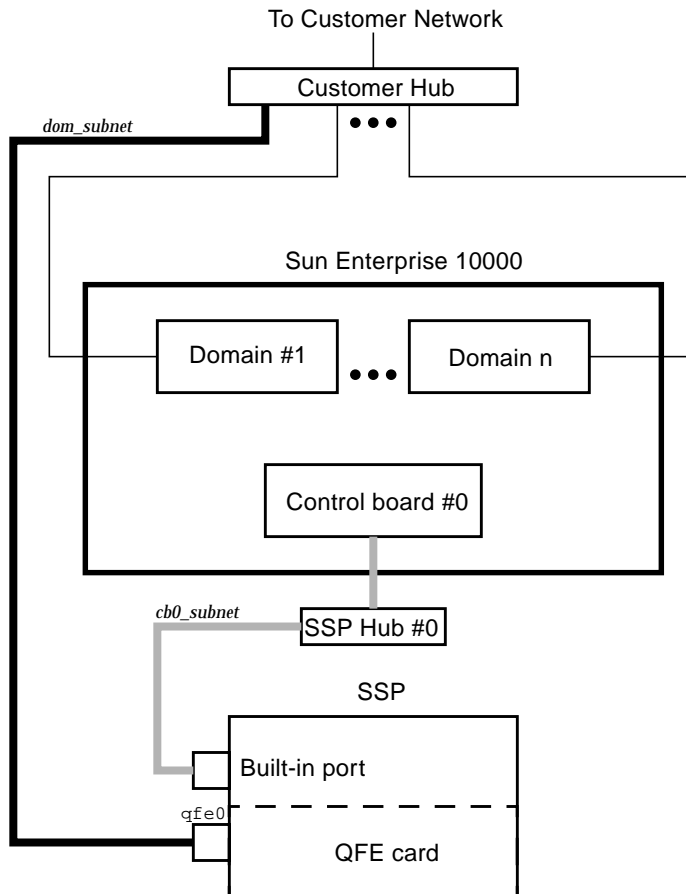TABLE A-1 and FIGURE A-1 describe the two-subnet network configuration.

Note – In a two-subnet configuration, automatic SSP and control board failover is disabled. In a three-subnet configuration, control board failover is enabled, but SSP failover is disabled. In a spare SSP configuration, both SSP and control board failover is enabled.

TABLE A-1   Two-Subnet Network Configuration

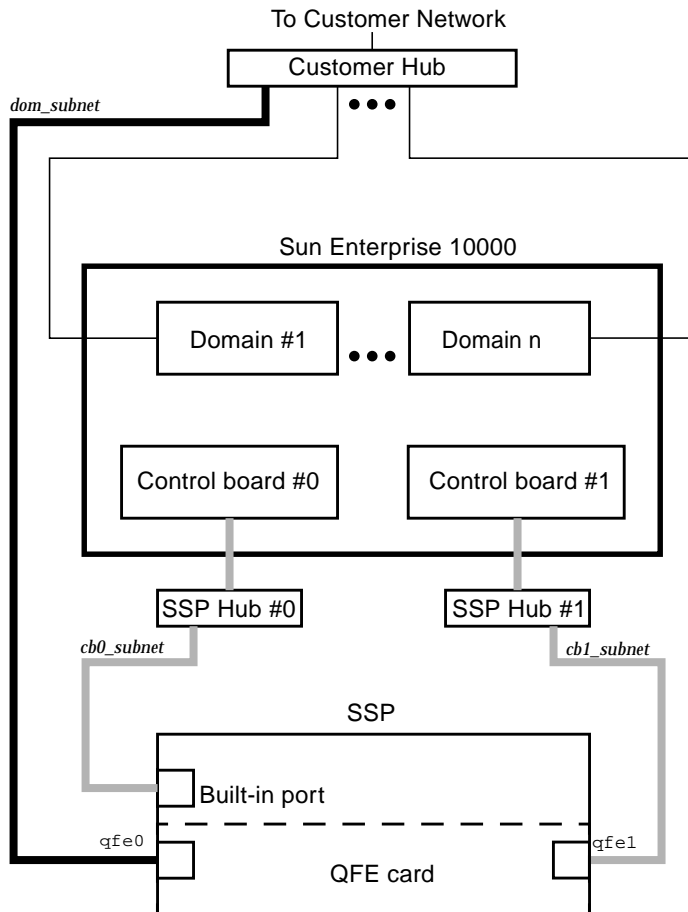| Subnet	Name	Description
Primary	Domain Subnet or `dom_subnet`	SSP and the domains
Second	Control Board Subnet or `cb0_subnet`	SSP and the control board

FIGURE A-1 Two-Subnet Network Configuration

In FIGURE A-1, the built-in port is `le0` for a SPARCstation 5 and `hme0` for a Sun Ultra 5 and a Sun Enterprise 250 system.

TABLE A-2 and FIGURE A-2 describe the three-subnet network configuration.

TABLE A-2 Three-Subnet Network Configuration

Subnet	Name	Description
Primary	Domain Subnet or `dom_subnet`	SSP and the domains
Second	Control Board Subnet 0 or `cb0_subnet`	SSP and the first control board
Third	Control Board Subnet 1 or `cb1_subnet`	SSP and the second control board

FIGURE A-2 Three-Subnet Network Configuration

In FIGURE A-2, the built-in port is `le0` for a SPARCstation 5 and `hme0` for a Sun Ultra 5 and a Sun Enterprise 250 system.

TABLE A-3 and FIGURE A-3 describe the spare SSP network configuration.

TABLE A-3 Spare SSP Network Configuration

Subnet	Name	Description
Primary	Domain Subnet or dom_subnet	Both SSPs and the domains
Second	Control Board Subnet 0 or cb0_subnet	Both SSPs and the first control board
Third	Control Board Subnet 1 or cb1_subnet	Both SSPs and the second control board
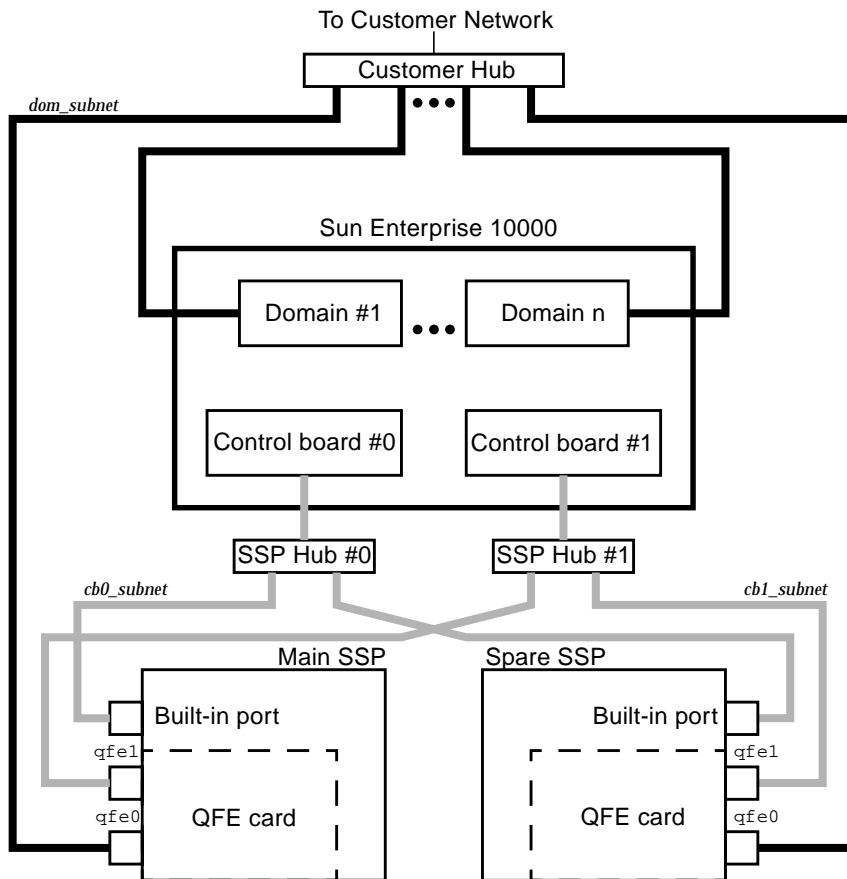
FIGURE A-3 Spare SSP Network Configuration

In FIGURE A-3, the built-in port on the main SSP and the spare SSP is le0 for a SPARCstation 5 and hme0 for a Sun Ultra 5 and a Sun Enterprise 250 system.

▼ To Configure Your SSP Network

This procedure provides instructions for configuring your SSP network in one of the three configurations discussed earlier in this appendix.

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

2. **Create the** `/etc/hostname.*` **configuration files.**

   If you need to view your network controllers, use `ifconfig -a`.

   For example, if you are using a Quad FastEthernet™ (QFE) card, model 1049A, in the two-subnet, three-subnet, or spare SSP network configuration on a Sun Ultra 5 system, you need the following files:

   - `/etc/hostname.qfe0` — contains the current SSP host name; it configures the primary subnet, `dom_subnet`.
   - `/etc/hostname.hme0` — contains *ssp_hostname*-`hme0`; it configures the second subnet, `cb0_subnet`.

   The following file is also needed if you are using either the three-subnet or spare SSP configuration:

   - `/etc/hostname.qfe1` — contains *ssp_hostname*-`qfe1`; it configures the third subnet, `cb1_subnet`.

   Note – The two control board subnets must be on two different physical cards. The node name must reference the public interface and not the private interface.

   ---

3. **Set the contents of the** `defaultrouter` **file to the IP address of the primary network interface:**

```
ssp# echo primary_network_IP_address > /etc/defaultrouter
```

4. **Manually update your name service** `hosts` **registry to include the host names and IP addresses of your control board(s) and other hosts, such as domains and the SSP.**

   This can involve updating the Network Information Service (NIS or NIS+), or the `/etc/hosts` file, or the Domain Name Service (DNS).

   The example below shows the typical modifications for an `/etc/hosts` file on a Sun Ultra 5 system:

```
# Entries for dom_subnet.
www.xxx.yyy.zzz  domain1_hostname
www.xxx.yyy.zzz  domain2_hostname
...
www.xxx.yyy.zzz  domainn_hostnname
(n is the number of domains)
#
# Entries on both ssp's.
# NOTE : On the spare SSP, make sure "loghost"
# belongs to the spare.
#
www.xxx.yyy.zzz  main_ssp_hostname loghost
www.xxx.yyy.zzz  spare_ssp_hostname
www.xxx.yyy.zzz  floating_ssp_hostname
#
# The next three entries need to be on cb0_subnet.
#
www.xxx.yyy.zzz  main_ssp_hostname-hme0
www.xxx.yyy.zzz  spare_ssp_hostname-hme0
www.xxx.yyy.zzz  cb0_hostname
#
# The next three entries need to be on cb1_subnet.
#
www.xxx.yyy.zzz  main_ssp_hostname-qfe1
www.xxx.yyy.zzz  spare_ssp_hostname-qfe1
www.xxx.yyy.zzz  cb1_hostname
```

   The `/etc/hosts` file is a link to the `/etc/inet/hosts` file.

   The following examples show the `/etc/hosts` file for a main and spare SSP, respectively. In the next example, the main SSP is configured as follows:

   - `xf4` and `xf4-b3` are host domains.
   - `xf4-ssp1` is the main SSP and `xf4-ssp2` is the spare SSP.
   - `xf4-ssp-main` is the floating SSP.

■ `xf4-cb0` and `xf4-cb1` are the host names for the two control boards.

```
#/etc/hosts
#
#dom_subnet (www.xxx.49.zzz). The 49 subnet
#
129.153.49.8    xf4
129.153.49.9    xf4-b3
127.0.0.1       localhost
129.153.49.113  xf4-ssp1 loghost
129.153.49.114  xf4-ssp2
129.153.49.115  xf4-ssp-main
#
#cb0_subnet (www.xxx.151.zzz). The 151 subnet
#
129.153.151.113 xf4-ssp1-hme0
129.153.151.114 xf4-ssp2-hme0
129.153.151.123 xf4-cb0
#
#cb1_subnet (www.xxx.152.zzz). The 152 subnet
#
129.153.152.113 xf4-ssp1-qfe1
129.153.152.114 xf4-ssp2-qfe1
129.153.152.127 xf4-cb1
```

The following `/etc/hosts` file for the spare SSP is similar to the previous
`/etc/hosts` file for the main SSP, except the spare SSP is the loghost.

```
#/etc/hosts
#
#dom_subnet (www.xxx.49.zzz). The 49 subnet
#
129.153.49.8    xf4
129.153.49.9    xf4-b3
127.0.0.1       localhost
129.153.49.113  xf4-ssp1
129.153.49.114  xf4-ssp2 loghost
129.153.49.115  xf4-ssp-main
#
#cb0_subnet (www.xxx.151.zzz). The 151 subnet
#
129.153.151.113 xf4-ssp1-hme0
129.153.151.114 xf4-ssp2-hme0
129.153.151.123 xf4-cb0
#
#cb1_subnet (www.xxx.152.zzz). The 152 subnet
#
129.153.152.113 xf4-ssp1-qfe1
129.153.152.114 xf4-ssp2-qfe1
129.153.152.127 xf4-cb1
```

Note – The SSP and the host domains must be on the same subnet so you can boot domains from the network.

5. **Manually update your name service** ethers **registry to include the Ethernet addresses for the domain(s), SSP(s), and control board(s).**

You need to update NIS or NIS+, or the /etc/ethers file. For example:

```
0:0:be:01:00:1e          xf4-cb0
0:0:be:01:00:57          xf4-cb1
```

Note – The Ethernet address of the control board(s) is located on the front of each control board.

6. **Edit the** `/etc/nsswitch.conf` **file on the main SSP and the spare SSP.**

   If you are using local configuration files, the lines in the `/etc/nsswitch.conf` files are similar to the following example:

   ```
   passwd:      files
   group:       files
   hosts:       files
   ethers:      files
   ```

   Note – The name server information (`nis`) is dependent on your network configuration.

   ---

7. **Reboot the SSP.**

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