

Sun Enterprise™ 10000 SSP

3.2 Installation Guide and Release Notes



THE NETWORK IS THE COMPUTER™

Sun Microsystems, Inc.
901 San Antonio Road
Palo Alto, CA 94303-4900
USA 650-960-1300 FAX650 969-9131

Part No. 806-1502-10
November 1999, Revision A

Send comments about this document to: docfeedback@sun.com

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Preface

The *Sun Enterprise 10000 SSP 3.2 Installation Guide and Release Notes* contains the Release Notes for SSP 3.2 and describes how to install SSP 3.2 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 appendices:

Chapter 1 contains the SSP release notes.

Chapter 2 contains the IDN release notes.

Chapter 3 provides an overview of the fresh install and upgrade tasks. It also describes procedures that need to be completed before performing a fresh install or upgrade.

Chapter 4 describes the fresh install procedures.

Chapter 5 describes the upgrade procedures.

Chapter 6 provides information on checking and upgrading the flash PROM, restoring initialization files, upgrading the Solaris™ operating environment, and configuring the Network Time Protocol.

Appendix A describes how to configure the SSP network files.

Appendix B describes how to uninstall the SSP 3.2 software in the event that a disk failure, or other problem, occurs during the fresh install or upgrade.

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 <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. Command-line variable; replace with a real name or value. | Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be <code>root</code> to do this. To delete a file, type <code>rm filename</code> . |

Shell Prompts

TABLE P-2 Shell Prompts

| Shell | Prompt |
|---------------------------------------|-----------------------|
| C shell | <i>machine_name</i> % |
| C shell superuser | <i>machine_name</i> # |
| Bourne shell and Korn shell | \$ |
| Bourne shell and Korn shell superuser | # |

Related Documentation

TABLE P-3 Related Documentation

| Application | Title | Part Number |
|-----------------------|--|-------------|
| User Guide | <i>Sun Enterprise 10000 SSP 3.2 User Guide</i> | 806-1500-10 |
| Reference (man pages) | <i>Sun Enterprise 10000 SSP 3.2 Reference Manual</i> | 806-1501-10 |
| Other | <i>Sun Enterprise 10000 Dynamic Reconfiguration User's Guide</i> | 805-7985-10 |
| | <i>Sun Enterprise 10000 Dynamic Reconfiguration Reference Manual</i> | 805-7986-10 |
| | <i>Sun Enterprise Server Alternate Pathing User's Guide</i> | 805-5985-10 |
| | <i>Sun Enterprise Server Alternate Pathing Reference Manual</i> | 805-5986-10 |

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SSP 3.2 Release Notes

This chapter covers the following topics:

- “General Issues”
- “Changes to the SSP Software”
- “Known Bugs”
- “Bugs Fixed Since SSP 3.1.1”
- “Patches”

General Issues

This section describes issues related to the SSP software and the Sun Enterprise 10000 SSP 3.2 documentation.

SSP Hardware Requirements

You can use a SPARCstation™ 5, Sun Ultra™ 5, or Sun Enterprise™ 250 workstation or server as an SSP, with the following minimum requirements:

- Memory: 64 Mbytes of memory
- Processor speed: 170 MHz
- Disk space: 2.1 gigabytes of disk space for the Solaris™ operating environment and SSP 3.2 software (refer to FIN number I0527-1)

Installation with WebStart

If you install the SSP packages by using WebStart, check in the `/var/sadm/install/logs` directory for error messages.

`ssp_install` and `ssp_upgrade` Scripts

The `ssp_install` and `ssp_upgrade` scripts will not display any warning or error messages if you install the SSP software on a nonstandard SSP hardware configuration.

SUNWuessp Package

If you run `pkgchk(1M)` on the `SUNWuessp` package (the SSP AnswerBook2 package), the following errors are displayed, which can be safely ignored:

```
ssp# pkgchk SUNWuessp
ERROR: /opt/SUNWuessp/collinfo
        file size <174> expected <171> actual
        file cksum <13931> expected <14046> actual
ERROR: /opt/SUNWuessp/socat
        file size <180> expected <174> actual
        file cksum <13436> expected <13666> actual
```

Solaris Man Pages

You must install the Solaris man pages on the SSP. If the Solaris man pages are not installed, SSP 3.2 man pages displayed using the `man(1M)` command will not display some of the headings, such as “EXAMPLES” and “SEE ALSO”.

Printing the SSP 3.2 Documentation

To print the *Sun Enterprise 10000 SSP 3.2 User Guide* or the *Sun Enterprise 10000 SSP 3.2 Reference Manual*, print the appropriate PostScript™ file from the `/cdrom/cdrom0/Docs/SSP3.2` directory on the CD-ROM or the `Docs/SSP3.2` directory in the directory in which you downloaded the files from the Web.

Viewing man pages with AnswerBook2 Server

When viewing the man page collection with the AnswerBook2 server, click on a man page from the list shown below the alphabet. 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.

Viewing man Pages with man(1M)

To view man pages using `man(1M)`:

1. Make sure that the environment variable `MANPATH` includes the directory for the SSP man pages (`/opt/SUNWssp/man`).
2. Run `catman -w`.

Changes to the SSP Software

SSP 3.2 provides the following new features:

- Support for InterDomain Networks (IDN)
- Support for a control board with the new 5:1/6:1 clock ratio

IDN Commands

SSP 3.2 introduces two new commands for IDN:

- `domain_link(1M)` allows users to link domains into a single IDN
- `domain_unlink(1M)` allows users to remove a domain from an IDN

Changes to SSP Commands

TABLE 1-1 lists the changes that were made to SSP commands.

TABLE 1-1

| Command Name | Description of Change |
|-------------------|--|
| bringup(1M) | bringup(1M) invokes domain_unlink(1M) if the domain is in an IDN. After the domain has booted, the SSP automatically links the domain back to the IDN. |
| domain_remove(1M) | You cannot remove a domain that is in an IDN. You must run domain_unlink(1M) on the domain before running domain_remove(1M). |
| domain_status(1M) | domain_status(1M) displays domain and IDN configuration information. |
| dr(1M) | If the domain on which you are performing a DR operation is part of an IDN, dr(1M) unlinks the specified domain from the IDN before performing the DR operation. dr(1M) also relinks the domain to the IDN after the DR operation is complete. |
| hostint(1M) | You cannot run hostint(1M) on a domain that is part of an IDN. You must run domain_unlink(1M) on the domain first. hostint(1M) also has a --f option that forces a panic in an IDN domain. |
| power(1M) | You cannot power off a board that is part of an IDN even if the board is not in the OS running state. You must unlink the domain using domain_unlink(1M) before you can power off the system board. The --f option to power(1M) overrides this restriction, but use of this option is not recommended. |
| sigbcmd(1M) | You cannot send an OBP or PANIC signal to a domain in an IDN. You must unlink the domain using domain_unlink(1M) before you can use sigbcmd(1M) to send an OBP or PANIC signal to the domain. The --f option of sigbcmd(1M) overrides this restriction, but use of this option is not recommended. |

Known Bugs

state of hostview is incorrect unless `snmpd` killed after UE10K power failure (4223045)

Description: If there is at least one domain running the OS, a loss of power on the Sun Enterprise 10000 system and recovery of the domains causes the visual status of Hostview to be incorrect.

Workaround: If power is lost on the platform but not the SSP, perform the following step to resynchronize Hostview with the platform. Determine the `snmpd` process ID, and then kill that process:

```
ssp% kill -9 snmpd_pid
```

Simultaneous bring-ups fail with `hpost` level > 16 (4223354)

Description: Simultaneous bring-ups with `hpost(1M)` diagnostic level greater than 16 cause timeout errors and bring-up failures.

The following information is from escalation #514419. The chart indicates the maximum diagnostic level for `hpost(1M)` that can be run on domains concurrently.

The information provided here is based on a fully configured system running SSP 3.1, privately configured control boards, and assumes ideal conditions. Domains were evenly balanced as they were created and bring-ups were done concurrently. If a hardware problem exists, the possibility of a timeout increases significantly.

TABLE 1-2 Maximum `hpost` Diagnostic Levels

| Number of Domains | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|----|----|----|----|----|----|----|----|
| Maximum <code>hpost</code> Diagnostic Level | 64 | 64 | 24 | 17 | 17 | 17 | 17 | 16 |

These levels are considered to be safe when initiated by `bringup(1M)`, but any hardware problems that result in `arbstop` or `recordstop` dumps will contend with the `jtag` port, which increases the chances of timeouts occurring.

Workaround: Refer to the table above when performing simultaneous bring-ups, or perform sequential bring-ups.

Console hangs when performing DR operations on OS 7 (4233315)

Description: When performing DR operations on a domain booted with the Solaris 7 operating environment, the console window can hang. The console will continue to hang until it receives an echo character. This only happens when the DR operation causes a `boot-proc-change` trap to occur; for example, when a lower numbered board is removed from a two-board domain. The DR operation completed successfully.

Workaround: Echo a character to `/dev/console` from another login window; if you cannot log in to the domain, kill the `netcon_server` process on the SSP and restart it with the `-r` option. Another method is to close and re-open `netcon`.

AC power breaker trip when replacing a fan tray (4243177)

Description: When removing a powered off fan tray, pulling the fan tray causes the AC power breaker to trip and the breaker cannot be flipped back on. This is an intermittent problem.

Workaround: After pulling a fan tray and replacing it, execute `fan -p on` and then enable the AC breaker.

psi recordstop with no active ports (4243651)

Description: POST was unable to clear the centerplane and domain fails to boot final configuration phase. The board that had the problem was subsequently configured so whatever happened was not a hard failure. A dump file, `xfstate`, was generated. This file shows the same XDB failure: `psi recordstop with no active ports`.

Workaround:

1. Add these lines to the `.postrc` file:

```
skip_phase nmb_procmem2
skip_test xB4
```

2. Execute `hpost -C`.

`sigbcmd` fails to send host to OBP (4249101)

Description: A PANIC or OBP `sigbcmd(1M)` request to the bootproc+1 CPU for a domain running the Solaris 7 software will fail. The console on the host will display a “Fast Data MMU miss” message.

Workaround: None. Issue `sigbcmd(1M)` requests to the domain boot processor.

`edd` detecting intermittent voltage changes on boards powered on but idle (4260390)

Description: When domains are continuously booting, `edd(1M)` may report zero volts on system boards.

Workaround: None. Software intermittently reports zero volts when domains are in a continuous boot cycle. The problem will be automatically corrected within five minutes.

False temperature data is being reported that cause `thermcal_config` to run (4267751)

Description: When domains are in a continuous reboot or DR cycle, `edd(1M)` may report a temperature of zero degrees Celsius.

Workaround: None. Software intermittently reports zero temperature when domains are in continuous boot cycle. The problem will be automatically corrected within five minutes.

`ssp_config cb` does not update the `/tftpboot` directory when `cb` address changes (4272751)

Description: When the control board IP address changes, the `ssp_config(1M)` command does not update the `/tftpboot` directory indicating the new control board image for that IP address.

Workaround: Run the `ssp_config(1M)` command without the `-cb` argument. Answer `y` when asked if you are configuring the main SSP.

`ssp_upgrade` should not be touching `/etc/syslog.conf` to disable `netcon` logging.

Description: When upgrading SSP software using the `ssp_upgrade` script, the `/etc/syslog.conf` file is modified to disable `netcon` logging even if the user has enabled this feature prior to the upgrade.

Workaround: Edit the `/etc/syslog.conf` file to re-enable this feature.

Bugs Fixed Since SSP 3.1.1

The following bugs were fixed in SSP 3.2:

4250101 - Powering off system boards on domains at OBP causes arbstops on other domains

4252532 - Truncated temperature values are reported by CBE, causing 911 temperature traps

4265955 - `PowerOffact:` and `PowerOnAct:` are sporadically showing up in platform messages

4261146 - System-board voltages reported in SSP MIB are inconsistent

Patches

SSP Patches

Patch 106190-07 is not implemented in SSP 3.2. As of this writing, this patch is being removed from SSP 3.1.1.

Patches Required for Solaris 7

- The fix for bug number 4192420 (SIGHUP handling of `syslogd` in Solaris 7 incorrect) is integrated in Solaris 7 5/99. You must have patch 106541 for Solaris 7 3/99. This patch is needed to enable SSP message logging.
- You must apply patch number 107709 (`libssasnmplib.so.1` patch) if you are running Solaris 7 5/99. This patch enables the SSP `snmpd` daemon to work with the Solstice Enterprise Agents™ Master Agent (`snmpdx`).
- The fixes for bugids 4249101 and 4233315 are fixed in Solaris 7 KU-09 patch (106541-09).

InterDomain Networks Release Notes

InterDomain Networks (IDNs) are internal, high-speed, hardware connections that enable dynamic system domains (referred to as *domains* in this chapter) on the Sun Enterprise 10000 server to communicate with each other as though they are communicating over a standard network. For more information, refer to the *Sun Enterprise 10000 InterDomain Networks User Guide* in the SSP 3.2 AnswerBook2™ collection.

General Issues

This section contains general issues about the IDN feature. Read this section before you attempt to configure an IDN.

Software Support

To use IDNs, the SSP must be running SSP version 3.2.

`idn.conf(4)` File

IDNs are initialized on the domain by using the `idn.conf(4)` file. Each domain must have an `idn.conf(4)` file to be a member of an IDN. This file is used to instantiate each instance of the driver and to initialize multiple parameters that can affect the performance and behavior of the IDN. You must ensure that the values of

the parameters are within the allowed ranges of the values. Refer to the *Sun Enterprise 10000 InterDomain Networks User Guide* in the SSP 3.2 AnswerBook2™ collection for more information about the `idn.conf(4)` parameters.

Caution – Values outside of the allowed range can result in panics occurring on the domain after the domain is rebooted. If the domain panics, the event detector daemon detects the panic and reboots the domain, causing the domain to panic again. Thus, the domain cannot be rebooted if the `idn.conf(4)` file contains an incorrect value. Sun Microsystems suggests that any `/etc/hostname.idnX` file be removed to prevent automatic loading of the IDN driver upon reboot.

OpenBoot™ PROM

Be aware of the following issues with the `idn-smr-size` variable and with breaking to the OpenBoot PROM (OBP) prompt on the Sun Enterprise 10000 server.

`idn-smr-size` Variable

The OBP variable for the IDN feature, `idn-smr-size`, is present in Solaris 2.6. If Solaris 2.6 is installed on a domain, do not set the value to any other value other than zero (the default value). The IDN feature is not supported in the Solaris 2.6 operating environment.

OBP Environment

Before you break to the OBP prompt, unlink the domain from its IDN by using the `domain_unlink(1M)` command. Do not break to OBP while the domain is linked to an IDN.

Known Bugs

The following is a list of bugs that are known to exist in this release of the IDN feature.

VerExec Error Occurs When a Solaris 2.6 Domain Is Rebooted From OBP (4254715)

Errors that are related to the IDN feature can occur on domains running the Solaris 2.6 operating environment. Some messages can be safely ignored; however, some messages are related to setting the OBP variable `idn-smr-size` to a value other than zero.

Workaround: The Solaris 2.6 operating environment does not support the IDN feature. Do not change the default value of `idn-smr-size` on domains that are running the Solaris 2.6 operating environment.

IDN Driver Can Panic if `idn_slab_mintotal` Is Set to a Value Other Than Zero (4273317)

Parameter values set outside of the allowed range can result in panics occurring on the domain. You must ensure that you use a value that is within the allowed range of values.

The following is a list of parameters that can cause a panic if the value set in the `idn.conf(4)` file is outside of the allowed range.

- `idn_slab_mintotal`
- `idn_slab_bufcount`
- `idn_smr_bufsize`

Workaround: No workaround exists for this bug. The domain will continue to panic because of the incorrect values in the `idn.conf(4)` file any time the IDN driver is loaded. You must ensure that you use values that are within the allowed range.

Setting `idn_protocol_nservers` Value to the Minimum Value of One Causes Panic (4275051)

Setting the `idn.conf(4)` parameter `idn_protocol_nservers` to one can cause the domain to panic. The `idn.conf(4)` parameters are initialized when the domain is rebooted and the IDN driver is loaded. If the domain panics, the event detector daemon reboots the domain, and the domain panics again, causing an unrecoverable error.

Workaround: Do not set this parameter to one. If this error occurs, reboot the domain to single-user mode and remove the `/etc/hostname.idnX` file to prevent the IDN driver from being automatically loaded at reboot.

Remote Domain Reporting Master Domain Without CPU ID (4275420)

Certain combinations of CPU IDs and domain IDs in a domain responding to a connect request can cause incorrect information being sent in the connect request.

Workaround: None

IDN Driver Does Not Implement MIB-II Kernel Statistics (4276084)

The IDN driver does not implement MIB-II kernel statistics for this release. Thus, network management tools that display MIB-II kernel statistics will not be able to display statistics about IDNs.

Workaround: No workaround exists for this bug. It will not be fixed in this release.

Setting `idn_msgwait_nego` to the Minimum Value (1 Second) Can Cause IDN Operations to Fail (4277617)

Setting the `idn.conf(4)` parameter `idn_msgwait_nego` to 1 second can cause IDN operations to fail. The `idn.conf(4)` parameters are initialized when the domain is rebooted. If this error occurs, you must reset the value and reboot the domain before you can execute IDN operations.

Workaround: Do not set this parameter to one. This bug will not be fixed in this release.

Patches

This section contains a list of patches that should be applied before you attempt to set up an IDN.

108317-01

Description: IDN driver can will panic if property (idn_slab_mintotal) set out of range

Bugs fixed: 4273317, 4275051, 4275420

Note – You must go to the SunSolve web site to obtain this patch.

Documentation Errata

This section contains descriptions of errors in the publications that were found after the release of the IDN feature.

domain_link(1M) and domain_unlink(1M)

The domain_link(1M) and domain_unlink(1M) man pages should have included a note that instructs users to use the proper domain name for the SUNW_HOSTNAME variable when they are linking or unlinking domains. The domain must support the IDN feature. The IDN user guide includes this information.

IDN Parameter Values

Some of the parameter values given in “Configuring InterDomain Networks” in the *Sun Enterprise 10000 InterDomain Networks User Guide* are incorrect. The following table contains the proper values.

TABLE 2-1 Corrections to IDN Parameter Values

| Parameter | Minimum | Maximum | Default |
|----------------------|---------|---------|---------|
| idn_awolmsg_interval | 0 | 3600 | 60 |
| idn_hiwat | 1024 | 1048576 | 262144 |
| idn_lowat | 1 | 524288 | 1 |
| idn_msgwait_cfg | 1 | 300 | 40 |
| idn_msgwait_cmd | 1 | 300 | 40 |

TABLE 2-1 Corrections to IDN Parameter Values

| Parameter | Minimum | Maximum | Default |
|------------------------------------|---------|---------|---------|
| <code>idn_msgwait_con</code> | 1 | 300 | 20 |
| <code>idn_msgwait_nego</code> | 1 | 300 | 20 |
| <code>idn_netsvr_spin_count</code> | 0 | 10000 | 500 |
| <code>idn_netsvr_wait_min</code> | 0 | 3000 | 40 |

`idn.conf(4)` File Parameters

Some of the parameter descriptions in “Configuring InterDomain Networks” in the *Sun Enterprise 10000 InterDomain Networks User Guide* state that the parameter can be changed at any time or that the domain must be unlinked from the IDN before the parameter can be changed. This information is incorrect. All `idn.conf(4)` file parameters can be changed while the domain is linked to the IDN; however, the domain must be rebooted before the values take affect.

The value of the `idn_smr_bufsize` parameter must be a power of two.

The `idn.conf(4)` file parameter table includes the `idn_modunloadable` parameter. This parameter is an `ndd(1M)` parameter. It is not an `idn.conf(4)` parameter.

The description of the `idn.conf(4)` parameter `idn_smr_size` is incorrect. The description should state that the size of the shared memory region (SMR) is limited by the value of the OBP variable `idn-smr-size`. The size of the SMR is determined by the minimum value of the `idn-smr-size` variable and by the minimum value of the `idn_smr_size` parameter. If `idn-smr-size` is set to zero, the OBP variable overrides the value of the `idn.conf(4)` parameter.

Preparing for a Fresh Install or Upgrade

This chapter discusses the following topics:

- “Overview of Tasks”
- “Installing or Upgrading From the Web or From a CD-ROM”
- “Determining the SSP Version”
- “Backing Up the SSP”
- “Upgrading the Solaris Operating Environment on the SSP”

You use a fresh install procedure to install the SSP software on a disk for the first time. You use an upgrade procedure to install the SSP software on an SSP that is running a previous version of the SSP software.

The procedures in this guide use the conventions shown in TABLE 3-1 for command line prompts:

TABLE 3-1 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 |

Overview of Tasks

To help you prepare to install the SSP 3.2 software, the following list provides a summary of the tasks you perform during a fresh install or upgrade.

Review this overview of tasks before proceeding to the procedures. After you have read the overview, go on to the procedures in the remainder of this chapter.

Note – Perform the following tasks in the order shown.

The tasks to be completed before a fresh install or upgrade of SSP 3.2 include:

- Determining whether you are doing a fresh install or an upgrade from the Web or from a CD-ROM. The locations of directories will vary depending on the source of your installation. See “Installing or Upgrading From the Web or From a CD-ROM” on page 20.
- Determining what version of the SSP software you are currently running if you do not know. See “Determining the SSP Version” on page 21 for instructions.
- Upgrading to the Solaris 2.6 or Solaris 7 operating environment and installing SSP 3.2. TABLE 3-2 shows the five possible options for upgrading the Solaris operating environment and installing SSP 3.2.

TABLE 3-2 Installation Options and Tasks

Option 1. Single SSP with a new or blank disk

Performing an initial (fresh) install of the Solaris 2.6 or Solaris 7 operating environment. For Solaris 2.6 software, see the *Solaris 2.6 System Administrator Collection Vol 1—Solaris Advanced Installation Guide*. For Solaris 7 software, see the *Solaris 7 Installation Collection—Solaris Advanced Installation Guide*.

Configuring the SSP network. See Appendix A “Configuring the SSP Network”.

Performing a fresh install of SSP 3.2. See Chapter 4 “Fresh Install of SSP 3.2”.

Installing or creating your `eeeprom.image` file or restoring an SSP backup file.

Option 2. Single SSP Running SSP 3.1 on the Solaris 2.5.1 operating environment

Backing up the SSP. See “Backing Up the SSP” on page 21.

Performing an initial (fresh) install of the Solaris 2.6 or Solaris 7 operating environment. For Solaris 2.6 software, see the *Solaris 2.6 System Administrator Collection Vol 1—Solaris Advanced Installation Guide*. For Solaris 7 software, see the *Solaris 7 Installation Collection—Solaris Advanced Installation Guide*.

Configuring the SSP network. See Appendix A “Configuring the SSP Network”.

Performing a fresh install of SSP 3.2. See Chapter 4 “Fresh Install of SSP 3.2”.

Restoring the SSP environment.

TABLE 3-2 Installation Options and Tasks (*Continued*)

Option 3. Single SSP running SSP 3.1.1 on the Solaris 2.5.1 operating environment
Upgrading to the Solaris 2.6 or Solaris 7 operating environment. See “Upgrading the Solaris Operating Environment on the SSP” on page 23.
Upgrading to SSP 3.2. See Chapter 5 “Upgrading to SSP 3.2”.

Option 4. Single SSP running SSP 3.1.1 on the Solaris 2.6 or Solaris 7 operating environment
(If your SSP is running the Solaris 2.6 operating environment and you want to upgrade to Solaris 7 software, see “Upgrading the Solaris Operating Environment on the SSP” on page 23.)
Upgrading to SSP 3.2. See Chapter 5 “Upgrading to SSP 3.2”.

Option 5. Dual SSP running SSP 3.1.1 or 3.1
Backing up the SSP environment on the main SSP. See “Backing Up the SSP” on page 21.
On the spare SSP, upgrading the Solaris operating environment and SSP software by selecting the appropriate option for the spare SSP from the options above (A, B, C, or D).
Restoring the SSP environment on the spare SSP.
Switching from the main SSP to the spare SSP. Refer to the *Sun Enterprise 10000 SSP 3.2 User’s Guide*.
On the new spare SSP, upgrading the Solaris operating environment and SSP software by selecting the appropriate option for the spare SSP from the above (Option 1, 2, 3, or 4).
Restoring the SSP environment on the new spare SSP.

-
- Checking the flash PROM version and upgrade if the version is earlier than 3.46. See “Checking and Upgrading the Control Board Flash PROM” on page 45.
 - Editing some of the initialization files in the `/export/home/ssp` directory if you made changes to these files. See “Editing Initialization Files” on page 47.

Note – If you encounter problems (such as network or disk errors) that prevent the completion of the fresh install or upgrade, you can remove the SSP 3.2 software and recover the previous version of the SSP software. See Appendix B “Uninstalling SSP 3.2” for more information.

The remainder of this chapter describes procedures you must complete before a fresh install or upgrade.

Note – If installation of Alternate Pathing is required after upgrading the SSP, refer to the appropriate version of the *Sun Hardware Platform Guide* for instructions on installing Alternate Pathing.

Installing or Upgrading From the Web or From a CD-ROM

▼ To Install or Upgrade From the Web

1. Using your web browser, go to <http://www.sun.com/servers/sw/>.
2. Click the **Enterprise 10000 System Service Processor link**.
3. Click the **Click here to download link**.

The file that will be downloaded is named `ssp_3_2_sparc.tar.Z`.

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. Extract the downloaded file by typing:

```
ssp# uncompress -c ssp3.2.tar.Z | tar xvf -
```

The SSP 3.2 packages are located in `/download_directory/ssp_3_2_sparc/Product` and the install and upgrade scripts are located in `/download_directory/ssp_3_2_sparc/Tools`.

▼ To Install or Upgrade From CD-ROM

- Insert the “Software Supplement for the Solaris 7 Operating Environment” CD-ROM into the CD-ROM drive.

Allow time for the volume manager to mount the CD-ROM. The SSP 3.2 packages are located in the `/cdrom/cdrom0/Product` directory and the install and upgrade scripts are located in the `/cdrom/cdrom0/Tools` directory.

Determining the SSP Version

If you do not know the current version of your SSP software, determine the version before performing a fresh install or upgrade. Some of the instructions in the procedures vary depending on the version of the SSP software currently installed.

▼ To Determine Your Current SSP Version

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

```
ssp# pkginfo -l SUNWsspue
```

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

```
VERSION: 3.1.1,REV=97.11.17.17.04
```

This is an example of the version number for SSP 3.1.1. The version number for SSP 3.2 is shown as 3.2.0.

Backing Up the SSP

Back up the SSP environment by using `ssp_backup(1M)` prior to a fresh install or an upgrade. `ssp_backup(1M)` is distributed with the SSP software and is located in the `Tools` directory. `ssp_backup(1M)` copies directories that contain configuration information for the SSP, including all domain configuration and `eeprom.image` files.

If your SSP is currently running SSP 3.1, you can restore from the backup file after the install to preserve the current SSP environment. You also need the backup file if you want to revert to a previous version of the SSP software in case of a disk failure.

Note – `ssp_backup(1M)` does not back up network or operating system configuration files, such as `/etc/hostnames.*`. You must use `ufsfump(1M)` to backup these files.

Note – It is suggested that you also back up the SSP with `ufsdump(1M)` both before and after the fresh install or upgrade. You can back up all of the files on the SSP using `ufsdump(1M)`, instead of just the SSP configuration information that is backed up by `ssp_backup(1M)`. This backup can be used to restore the SSP in the event of a disk failure.

▼ To Back Up Your SSP Environment

Note – The size of the SSP backup file can range from approximately 4 Mbytes to well over 80 Mbytes, depending upon the contents of the `adm`, `data`, `etc`, `ict`, and `.ssp_private` directories 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. Delete any unnecessary message or log files from the `/var/opt/SUNWssp/adm` directory prior to invoking `ssp_backup(1M)`.

1. On the main SSP, log in as superuser.
2. Change directory to the Tools directory:
 - If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where `download_directory` is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

3. Type:

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

The directory specified by `target_directory` must exist; this is the directory where the backup file, named `ssp_backup.cpio`, will be created. After you have run `ssp_backup(1M)`, 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 fresh install or upgrade procedure and restored the SSP environment.

Upgrading the Solaris Operating Environment on the SSP

Before you upgrade to the Solaris 2.6 or Solaris 7 operating environment, the SSP must be running SSP 3.1.1. You cannot run SSP 3.0 or 3.1 on the Solaris 2.6 or Solaris 7 operating environment.

▼ To Upgrade the Solaris Operating Environment on the SSP

1. Verify that the SSP is currently running SSP 3.1.1.
2. Configure the SSP to be a spare SSP.
 - a. Log in to the SSP as superuser.
 - b. Type:

```
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)n
SPARE SSP configuration completed.
```

Do this even if you have a single SSP configuration.

3. Upgrade the Solaris operating environment to Solaris 2.6 or Solaris 7 software. Verify that your SSP has sufficient disk space; refer to FIN number I0527-1 for information on Solaris packages to install and space requirements. Refer to one of the following manuals:
 - For Solaris 2.6 software, see the *Solaris 2.6 System Administrator Collection Vol 1—Solaris Advanced Installation Guide*.
 - For Solaris 7 software, see the *Solaris 7 Installation Collection—Solaris Advanced Installation Guide*.
4. To upgrade the SSP 3.2 software, log in as superuser.
5. Change directory to the `TOOLS` directory:

- If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

6. Configure the SSP to work with the Solstice Enterprise Agents™ Master Agent (snmpdx) by typing:

```
ssp# ./ssp_post_os_upgrade
```

7. Reconfigure the SSP to be the main SSP.

- a. Log in to the SSP as superuser.
- b. Type:

```
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
SPARE SSP configuration completed.
```

8. Reboot the SSP.

Configuring the Network Time Protocol Daemon

The NTP daemon (`ntpd(1M)` for Solaris 2.6 and Solaris 7 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 first three numbers in the IP address are 127.127.1. The last numbers in the IP address are the NTP stratum to use for the clock.

When setting up domains on an Sun Enterprise 10000 system and its SSP, set the SSP to stratum 4. Set up the domains as a peer to the SSP and set the local clock at least one stratum higher than the SSP.

If the `ntp.conf` file does not exist, create it as described in the following procedure.

▼ 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 is located in `/etc/inet`. You must have an `ntp.conf` file on both the SSP and the domains.

`ntp.conf` Examples

The following is an example of `server/peer` lines in the `ntp.conf` file on the SSP.

```
server 127.127.1.4
```

For the Solaris 2.6 and Solaris 7 operating environments, you can add lines similar to the following to the `/etc/inet/ntp.conf` file on the domains:

```
server ssp_name
server 127.127.1.13
fudge 127.127.1.13 stratum 13
```

For more information on the NTP daemon, refer to the *Network Time Protocol User's Guide*, the *NTP Reference*, and `xntpd(1M)`.

Fresh Install of SSP 3.2

This chapter describes the following topics:

- “Using WebStart”
- “Fresh Install of a Dual SSP Configuration”
- “Fresh Install of a Single SSP Configuration”

Before installing the SSP software, if you are currently running SSP 3.1 or 3.1.1, you can retain the SSP environment by backing it up before the installation and restoring it after you have completed the installation of SSP 3.2. See “Backing Up the SSP” on page 21 for instructions.

If you are installing SSP 3.2 on a new disk on which you have already performed a fresh install of the Solaris operating environment, you need to configure the SSP network. See Appendix A “Configuring the SSP Network”.

Note – You can only install SSP 3.2 on an SSP running the Solaris 2.6 or Solaris 7 operating environment.

Using WebStart

In the procedures for fresh install, you can use WebStart instead of `ssp_install`. WebStart is not a Web-based application; it is a GUI application that you can use to perform a fresh install from CD-ROM or from files you have downloaded from the Web.

▼ To Use WebStart

1. **Log in as the superuser.**
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 from which you have logged in.

3. **Start Webstart.**

```
ssp# cd installer_directory
ssp# ./installer
```

where *installer_directory* is `/cdrom/cdrom0` if you are installing from a CD, or the download directory if you are installing from the Web.

4. **Select Custom Install.**
5. **Verify that you have sufficient disk space to cover the requirements displayed on the Ready to Install dialog.**
6. **Click the Install Now button.**

Wait until the installation is complete and the Installation Summary dialog is displayed.
7. **Continue with the fresh install procedure for the dual or single SSP configuration.**

Note – If you want to run the `prodreg(1)` command to check the installation, log in as superuser first. If you do not run `prodreg(1)` as superuser, the following error messages are displayed, which can be safely ignored:

```
Java.io.IOException
Error loading Software Registry: java.io.FileNotFoundException: \
/var/sadm/install/SwProductRegistry The registry may be corrupt.
```

Fresh Install of a Dual SSP Configuration

You can only install SSP 3.2 on the Solaris 2.6 or Solaris 7 operating environment.

TABLE 4-1 shows the supported combinations of SSP software for dual SSP configurations:

TABLE 4-1 Supported Dual SSP Configurations

| SSP version on the Main SSP | SSP Version on the Spare SSP |
|-----------------------------|------------------------------|
| 3.1 | 3.1, 3.1.1, or 3.2 |
| 3.1.1 | 3.1, 3.1.1, or 3.2 |
| 3.2 | 3.1, 3.1.1, or 3.2 |

Note – If you are using SSP 3.2 features such as IDN or 5:1 control board, both the main and spare SSP must be running SSP 3.2.

▼ To Perform a Fresh Install of SSP 3.2 on the Spare SSP

Note – If you want to retain the current SSP environment, you must back up the SSP before performing the fresh install.

1. Read the “Overview of Tasks” on page 17 before proceeding.
2. On the spare SSP (referred to here as SSP2), log in as superuser.
3. Remove the SSP packages if they are present.

See the `pkgrm(1M)` man page for more information on removing packages. If you have a previous version of the SSP software installed, it is suggested that you upgrade instead of performing a fresh install. See Chapter 5 “Upgrading to SSP 3.2”.

4. Change directory to the `Tools` directory:
 - If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

5. Install the SSP 3.2 software on SSP2 by typing:

```
ssp# ./ssp_install pathname
```

where *pathname* specifies the path to the `Product` directory.

- If you are installing from the Web, the path to the `Product` directory is `/download_directory/ssp_3_2_sparc/Product`; *download_directory* is the location where you downloaded the files from the Web.
- If you are installing from CD-ROM, the path to the `Product` directory is `/cdrom/cdrom0/Product`.

You can run the GUI installer, `WebStart`, instead of `ssp_install`. See “Using `WebStart`” on page 27 for instructions.

6. When you are asked if you want to install the SSP 3.2 AnswerBook2 (the `SUNWuessp` package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.2 Answerbook2, you must respond to the following prompts:

- a. When you are requested to select an installation option, type `2` (heavy installation):**

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

- b. When requested to specify the parent path for the AnswerBook2 Collection, type the path to the directory in which you want to put the SSP 3.2 AnswerBook2.**

It is suggested that you install it in `/opt`.

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

c. 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
```

If an error occurs during `ssp_install`, you must manually remove all SSP software packages that were installed and return to the beginning of the fresh install procedure. You can remove the SSP packages with the `pkgrm(1M)` command, as follows:

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

7. If you have a backup file from SSP 3.1 or 3.1.1, restore it on SSP2.

a. Type:

```
ssp# ./ssp_restore backup_directory/ssp_backup.cpio
```

Where *backup_directory* is the directory in which the backup file is located.

8. Change the main SSP (referred to here as SSP1) to be a spare SSP.

a. On SSP1, log in as superuser.

b. Type:

```
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)n
SPARE SSP configuration completed.
```

9. Change SSP2 to be the main SSP.

a. On SSP2, log in as superuser.

b. Type:

```
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.
```

10. Reboot SSP2.

11. Log in as user `ssp` on SSP2.

12. Type:

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

Wait for the “Startup of SSP programs complete” message.

13. On each domain, perform the following steps.

a. Edit the `/etc/ssphostname` file to replace the host name of the main SSP with the host name of the spare SSP.

b. Switch console communication from the main SSP to the spare SSP by typing:

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

where `cvcd_path` is `/sbin` under the Solaris 2.5.1 and 2.6 operating environments, and `cvcd_path` is `/platform/SUNW,Ultra-Enterprise-10000/lib/cvcd` under the Solaris 7 operating environment.

You can now perform a fresh install of SSP 3.2 on SSP1 by repeating Step 2 through Step 5 on SSP1. If you have made changes to the SSP environment, synchronize the two SSPs by backing up SSP2 and restoring the backup file on SSP1 after you have completed the SSP installation.

14. On the main SSP, check the flash PROM version to make sure you are running version 3.46.

If the PROM version is earlier than 3.46, see “Checking and Upgrading the Control Board Flash PROM” on page 45 for instructions on upgrading the flash PROM.

Fresh Install of a Single SSP Configuration

You can only install SSP 3.2 on the Solaris 2.6 or Solaris 7 operating environment.

▼ To Perform a Fresh Install of SSP 3.2 on the Main SSP

Note – If you want to retain the current SSP environment, you must back up the SSP before performing the fresh install.

1. Read the “Overview of Tasks” on page 17 before proceeding.

2. Log in as superuser.

3. Remove the SSP packages if they are present.

See the `pkgrm(1M)` man page for more information on removing packages. If you have a previous version of the SSP software installed, it is suggested that you upgrade instead of performing a fresh install. See Chapter 5 “Upgrading to SSP 3.2”.

4. Change directory to the `Tools` directory:

■ If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

■ If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

5. Type:

```
ssp# ./ssp_install pathname
```

where *pathname* is the path to the `Product` directory.

- If you are installing from the Web, the path to the Product directory is `/download_directory/ssp_3_2_sparc/Product`; `download_directory` is the location where you downloaded the files from the Web.
- If you are installing from CD-ROM, the path to the Product directory is `/cdrom/cdrom0/Product`.

You can run the GUI installer instead of `ssp_install`. See “Using WebStart” on page 27 for instructions.

6. When you are asked if you want to install the SSP 3.2 AnswerBook2 (the SUNWuessp package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.2 Answerbook2, you must respond to the following prompts:

a. When you are requested to select an installation option, type `2` (heavy installation):

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

b. When requested to specify the parent path for the AnswerBook2 Collection, type the path to the directory in which you want to put the SSP 3.2 AnswerBook2.

It is suggested that you install it in `/opt`.

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

c. 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
```

If an error occurs during `ssp_install`, you must manually remove all SSP software packages that were installed and return to the beginning of the fresh install procedure. You can remove the SSP packages with the `pkgrm(1M)` command, as follows:

```
ssp# pkgrm SUNWsspidd SUNWsspido SUNWsspdr SUNWsspdp SUNWsspob \
SUNWssprr SUNWsspst SUNWsspfd SUNWsspmm SUNWsspop SUNWsspue
```

7. If you have a backup file of the SSP environment, restore this file by typing:

```
ssp# ./ssp_restore target_directory/ssp_backup.cpio
```

Where *target_directory* is the directory in which the SSP backup file was created.

8. If you did not perform a restore in Step 7, you must recreate the `eeeprom.image` files.

See the *Sun Enterprise 10000 SSP 3.2 User Guide*.

9. Type:

```
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.
```

If you did not perform a restore in Step 7, you will need to provide system information. See “To Name the Platform and Control Board” on page 35 for more information.

10. Reboot the SSP.

11. Check the flash PROM version.

See “Checking and Upgrading the Control Board Flash PROM” on page 45 for instructions on checking and upgrading the flash PROM. If the PROM version is earlier than 3.46, you must upgrade it.

▼ To Name the Platform and Control Board

If you did not restore the SSP environment during the install procedure, you will be prompted for system information during the reboot of the SSP.

Caution – You *must* be at the SSP workstation console to see the messages described in this section. You cannot see these messages or perform these steps from a remote login session.

1. Specify the processor speed by typing in the corresponding number:

- 1 for 250 MHz processors
- 2 for 336 MHz processors
- 3 for 400 MHz processors

- 4 for Unlisted (manually enter clock values)

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

2. Enter 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. 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.

Note – If you make a mistake during this configuration session, continue to the end of the prompts where you will be given an opportunity to correct any errors.

3. Define the 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, 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:

```
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
```

You are prompted to indicate whether this is a main SSP or spare SSP:

```
Are you currently configuring the MAIN SSP? (y/n) y
```

When the upgrade is complete, the following message is displayed:

```
MAIN SSP configuration completed.
```

4. Log in to the SSP as user `ssp` and specify a new password when you are prompted to do so.
5. Before proceeding, wait for the `SSP startup complete` message to appear in the platform log file.
6. For each control board:

a. Check the version of the flash PROM on the control board by typing:

```
ssp% cb_prom -r -h control_board_name  
Checking PROM revision...3.44
```

b. If the version displayed is earlier than 3.46, you must update the flash PROM as follows:

```
ssp% cb_prom -p /opt/SUNWssp/cbobjs/flash_boot.ima \  
-h control_board_name
```

For more information, see `cb_prom(1M)`.

Upgrading to SSP 3.2

This chapter describes the upgrade procedure for both the dual SSP and single SSP configurations.

You can only upgrade to SSP 3.2 from SSP 3.1.1. The SSP must be running the Solaris 2.6 or Solaris 7 operating environment before you upgrade to SSP 3.2.

TABLE 5-1 shows the supported combinations of SSP software for dual SSP configurations.

TABLE 5-1 Supported Dual SSP Configurations

| SSP Version on the Main SSP | SSP Version on the Spare SSP |
|-----------------------------|------------------------------|
| 3.1 | 3.1, 3.1.1, or 3.2 |
| 3.1.1 | 3.1, 3.1.1, or 3.2 |
| 3.2 | 3.1, 3.1.1, or 3.2 |

Note – If you are using SSP 3.2 features such as IDN or 5:1 control board, both the main and spare SSP must be running SSP 3.2.

Upgrading the SSP

This section contains instructions on how to upgrade a dual and single SSP configuration.

▼ To Upgrade a Dual SSP Configuration

1. Read the “Overview of Tasks” on page 17 before proceeding.
2. On the main SSP (referred to here as SSP1), log in as superuser.
3. Make sure the environments on both SSPs are the same.
 - a. On SSP1, change directory to the `Tools` directory.
 - If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

- b. On SSP1, type:

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

A file named `ssp_backup.cpio` is created in *target_directory*.

- c. On SSP2, log in as superuser.
- d. On SSP2, change directory to the `Tools` directory.
 - If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```


4. On SSP2, type:

```
ssp# ./ssp_upgrade pathname
```

Where *pathname* is the path to the `Product` directory.

- If you are installing from the Web, the path to the `Product` directory is `/download_directory/ssp_3_2_sparc/Product`; *download_directory* is the location where you downloaded the files from the Web.
- If you are installing from CD-ROM, the path to the `Product` directory is `/cdrom/cdrom0/Product`.

5. On SSP2, type:

```
ssp# ./ssp_restore /backup_directory/ssp_backup.cpio
```

Where *backup_directory* is the directory in which the `ssp_backup.cpio` file is located.

Do not make changes to the SSP environment until after the spare SSP has been upgraded. If you make any changes to the SSP environment, you must repeat Step 3 above.

6. When you are asked if you want to install the SSP 3.2 AnswerBook2 (the SUNWuessp package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.2 Answerbook2, you must respond to the following prompts:

a. When you are requested to select an installation option, type `2` (heavy installation):

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

b. When requested to specify the parent path for the AnswerBook2 Collection, type the path to the directory in which you want to put the SSP 3.2 AnswerBook2.

It is suggested that you install it in `/opt`.

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

c. 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
```

If an error occurs during `ssp_upgrade`, you must manually remove all SSP software packages that were installed and perform a fresh install. You can remove the SSP packages with the `pkgrm(1M)` command, as follows:

```
ssp# pkgrm SUNWsspid SUNWsspdo SUNWsspdr SUNWsspdp SUNWsspob \
SUNWsspqr SUNWsspst SUNWsspfd SUNWsspmm SUNWsspdp SUNWsspue
```

7. Change SSP1 to be a spare SSP.

a. On SSP1, log in as superuser.

b. Type:

```
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)n
SPARE SSP configuration completed.
```

8. Change SSP2 to be the main SSP.

a. On SSP2, log in as superuser.

b. Type:

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

9. Reboot SSP2.

10. On each domain:

a. Edit the `/etc/ssphostname` file to replace the host name of the main SSP with the host name of the spare SSP.

b. Switch console communication from the main SSP to the spare SSP by typing:

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

where *cvcd_path* is `/sbin` under the Solaris 2.5.1 and 2.6 operating environments, and *cvcd_path* is `/platform/SUNW,Ultra-Enterprise-10000/lib/cvcd` under the Solaris 7 operating environment.

You can now upgrade SSP1 by performing Step 4 on SSP1 instead of on SSP2. If you have made changes to the SSP environment on SSP2, make sure that the two environments are the same before upgrading SSP1.

11. Check the flash PROM version to make sure you are running version 3.46.

See “Checking and Upgrading the Control Board Flash PROM” on page 45 for instructions on checking and upgrading the flash PROM.

▼ To Upgrade a Single SSP Configuration

1. Read the “Overview of Tasks” on page 17 before proceeding.
2. On the SSP, log in as superuser.
3. Change directory to the `Tools` directory:
 - If you are installing from the Web, type:

```
ssp# cd /download_directory/ssp_3_2_sparc/Tools
```

where *download_directory* is the location where you downloaded the SSP software.

- If you are installing from CD-ROM, type:

```
ssp# cd /cdrom/cdrom0/Tools
```

4. Type:

```
ssp# ./ssp_upgrade pathname
```

Where *pathname* is the path to the `Product` directory.

- If you are installing from the Web, the path to the `Product` directory is `/download_directory/ssp_3_2_sparc/Product`; `download_directory` is the location where you downloaded the files from the Web.
- If you are installing from CD-ROM, the path to the `Product` directory is `/cdrom/cdrom0/Product`.

5. When you are asked if you want to install the SSP 3.2 AnswerBook2 (the `SUNWuessp` package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.2 Answerbook2, you must respond to the following prompts:

a. When you are requested to select an installation option, type `2` (heavy installation):

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

b. When requested to specify the parent path for the AnswerBook2 Collection, type the path to the directory in which you want to put the SSP 3.2 AnswerBook2.

It is suggested that you install it in `/opt`.

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

c. 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
```

If an error occurs during `ssp_upgrade`, you must manually remove all SSP software packages that were installed and perform a fresh install. You can remove the SSP packages with the `pkgrm(1M)` command, as follows:

```
ssp# pkgrm SUNWsspidd SUNWsspido SUNWsspdr SUNWsspdp SUNWsspob \
SUNWsspr SUNWsspst SUNWsspfd SUNWsspmm SUNWsspob SUNWsspue
```

6. Reboot the SSP.

After a Fresh Install or Upgrade

After you have completed the fresh install or upgrade of SSP 3.2, you need to check the version of the flash PROM and upgrade, if necessary. For SSP 3.2, you must upgrade your flash PROM if the version is earlier than 3.46. See “Checking and Upgrading the Control Board Flash PROM”.

You may also need to 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 “Editing Initialization Files” on page 47.

Checking and Upgrading the Control Board Flash PROM

You need to have the correct version of the flash PROM boot firmware installed on the control boards; the boot firmware is required to download the control board executive (CBE).

- If you are performing a fresh install, on either a single or dual SSP configuration, you must check the flash PROM version as described in the procedure that follows and upgrade if the version is earlier than 3.46.
- If you are upgrading to SSP 3.2 on the main SSP, the flash PROM version is checked and updated automatically.
- If you are upgrading to SSP 3.2 on the spare SSP, the PROM version is not checked or upgraded automatically. You must check the PROM version manually, as described in the procedure that follows.

▼ To Check the Flash PROM Version

1. Log in as user `ssp` on the main SSP.
2. Check the version of the flash PROM on your control boards by typing:

```
ssp% cb_prom -r -h control_board_name  
Checking PROM revision...3.44
```

where *control_board_name* is the name of the control board as specified in the `/etc/hosts` configuration file (see `hosts(4)`).

If the version displayed is earlier than 3.46, you must update the flash PROM. To do this, you must install the `SUNWsspfp` package, which contains the control board flash PROM code, and then upgrade the PROM; these steps are described in the following procedure.

▼ To Install the `SUNWsspfp` Package and Upgrade the PROM

1. Log in as superuser and verify that the `SUNWsspfp` package is installed:
 - a. Type:

```
spp# pkginfo | grep SUNWsspfp  
application SUNWsspfp System Service Processor Flash Prom Image
```

No output indicates that the package is not installed.

- b. If the `SUNWsspfp` package is not installed, type:

```
ssp# pkgadd -d product_directory SUNWsspfp
```

where *product_directory*:

is the `ssp_3_2_sparc/Product` directory in the directory in which you downloaded files if you are installing from the Web.

is `/cdrom/cdrom0/Tools` if you are installing from CD-ROM.

2. Log in as `ssp` on the SSP.

3. Type:

```
ssp% cb_prom -p /opt/SUNWssp/cbobjs/flash_boot.ima -h \  
control_board_name  
Programming PROM...complete.
```

4. To have the PROM change take effect, type:

```
ssp% cb_reset  
Resetting host xf4-cb0...  
Resetting host xf4-cb1...  
xf4-cb1 is ready...  
xf4-cb0 is ready...
```

where *xf4-cb1* and *xf4-cb0* are replaced with the names of the control boards for your system.

5. Verify the PROM version by typing:

```
ssp% cb_prom -r -h control_board_name  
Checking PROM revision...3.46
```

where *control_board_name* is the name of the control board as specified in the */etc/hosts* configuration file (see *hosts(4)*). The version shown should be 3.46.

Editing Initialization Files

When you run *ssp_upgrade* or *ssp_restore(1M)*, 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(1M)* and restored by *ssp_restore(1M)*. 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(1M)*.

The following files are copied and saved when you run *ssp_upgrade* or *ssp_restore(1M)*.

- */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

The following additional files are copied and saved only when `ssp_restore(1M)` 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.

Note – No copy is made if a file does not exist.

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.

TABLE A-1 Two-Subnet Network Configuration

| Subnet | Name | Description |
|---------|---|---------------------------|
| Primary | Domain Subnet or <code>dom_subnet</code> | SSP and the domains |
| Second | Control Board Subnet or <code>cb0_subnet</code> | SSP and the control board |

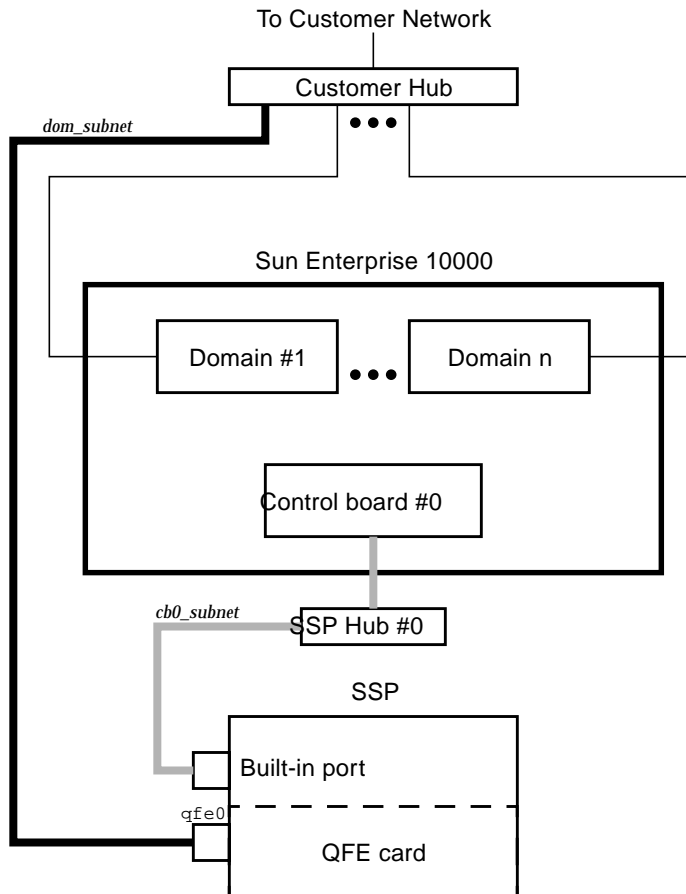


FIGURE A-1 Two-Subnet Network Configuration

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 <code>dom_subnet</code> | SSP and the domains |
| Second | Control Board Subnet 0 or <code>cb0_subnet</code> | SSP and the first control board |
| Third | Control Board Subnet 1 or <code>cb1_subnet</code> | SSP and the second control board |

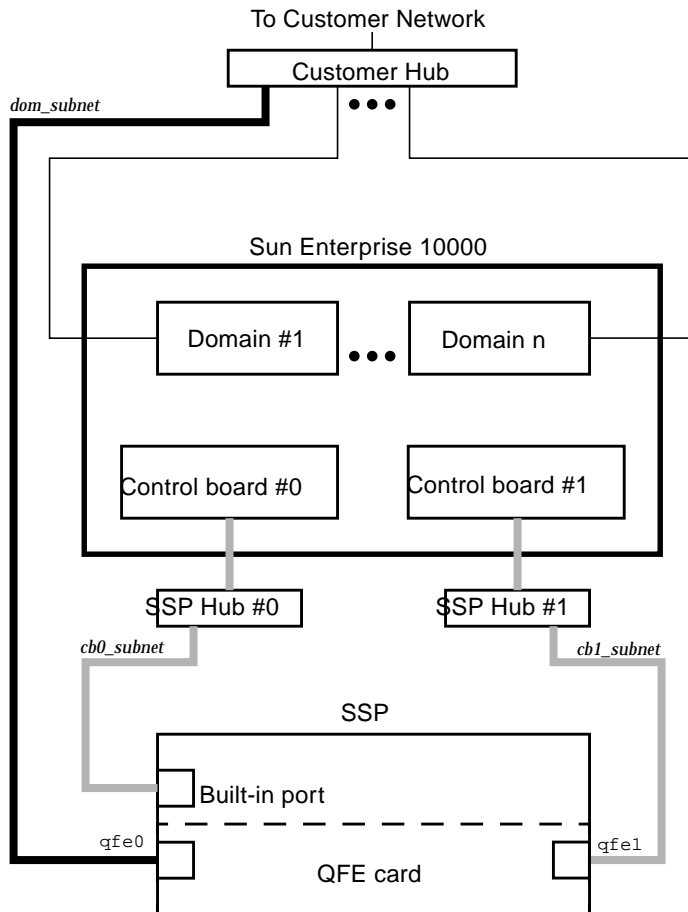


FIGURE A-2 Three-Subnet Network Configuration

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 <code>dom_subnet</code> | Both SSPs and the domains |
| Second | Control Board Subnet 0 or <code>cb0_subnet</code> | Both SSPs and the first control board |
| Third | Control Board Subnet 1 or <code>cb1_subnet</code> | Both SSPs and the second control board |

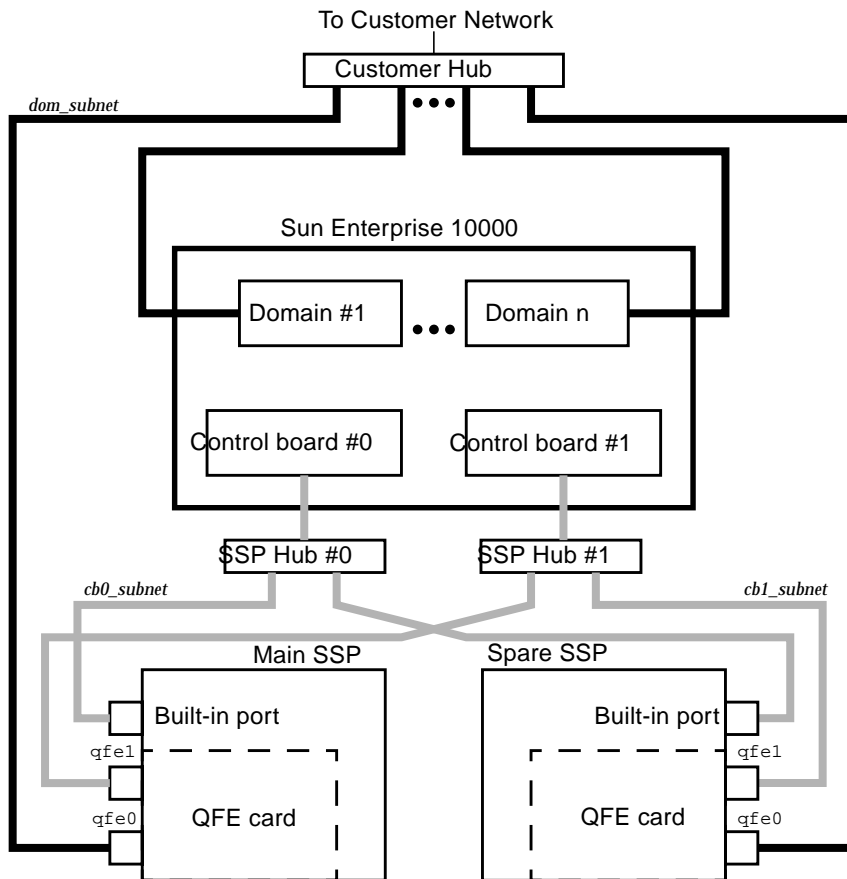


FIGURE A-3 Spare SSP Network Configuration

In FIGURE A-3, the built-in port on the main SSP and the spare SSP is `1e0` for a SPARCstation 5 and `hme0` for a Sun Ultra 5 and a Sun Enterprise 250 system.

Configuring the SSP Network

This section contains instructions on how to configure the SSP network.

▼ To Configure the 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`.

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 following example 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_hostname
(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
#
# 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
```

Here is an example of a main SSP `/etc/hosts` file. In this example, the SSP is configured as follows:

- `xf4` and `xf4-b3` are host domains.
- `xf4-ssp` is the main SSP and `xf4-ssp1` is the spare 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-ssp loghost
129.153.49.114 xf4-ssp1
#
#cb0_subnet (www.xxx.151.zzz). The 151 subnet
#
129.153.151.113 xf4-ssp-hme0
129.153.151.114 xf4-ssp1-hme0
129.153.151.123 xf4-cb0
#
#cb1_subnet (www.xxx.152.zzz). The 152 subnet
#
129.153.152.113 xf4-ssp-qfel
129.153.152.114 xf4-ssp1-qfel
129.153.152.127 xf4-cb1
```

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

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:

```
hosts:      files
ethers:     files
```

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

7. Reboot the SSP.

Uninstalling SSP 3.2

If you encounter problems, such as a disk crash or network outage, during the fresh install or upgrade process, you can remove the SSP 3.2 software and recover the previous version of the SSP software. This appendix describes the procedure for uninstalling the SSP 3.2 software. Refer to the appropriate version of the *Sun Enterprise 10000 SSP User Guide* for information on installing the previous version of the SSP software.

You will need the backup file of the SSP environment that you created using `ssp_backup(1M)` prior to upgrading to SSP 3.2; this file is needed to restore the SSP environment.

Uninstalling the SSP Software

This section contains instructions on how to uninstall the SSP software.

▼ To Uninstall the SSP Software

1. Log in to the SSP as superuser and stop the SSP daemons:

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

2. Uninstall the SSP packages by typing:

```
ssp# pkgrm SUNWsspidd SUNWsspdo SUNWsspdr SUNWsspoo SUNWsspob \  
SUNWsspr SUNWsspst SUNWsspfd SUNWsspmm SUNWsspoo SUNWsspue
```

3. If the SSP Answer Book package is installed, remove it by typing:

```
ssp# pkgrm SUNWuessp
```

4. If you installed the flash PROM package, remove it by typing:

```
ssp# pkgrm SUNWsspfp
```

5. Reinstall the previous version of the SSP software.

Refer to the appropriate version of the *Sun Hardware Platform Guide* for SSP 3.1 installation instructions or the *Sun Enterprise 10000 SSP 3.1.1 Installation Guide and Release Notes* for SSP 3.1.1 installation instructions.

Note – If you have upgraded to the Solaris 2.6 or Solaris 7 operating environment, you need to reinstall the Solaris 2.5.1 operating environment before reinstalling the previous version of the SSP software.

6. Reapply all the latest SSP patches on the SSP.

7. Restore the SSP environment by running the following command from the `Tools` directory:

```
ssp# ./ssp_restore backup_directory/ssp_backup.cpio
```

Note – The `ssp_restore` script resides in the `Tools` directory of the distribution `media/directory`.

8. Reboot the SSP.

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