

Sun™ Enterprise™ 10000 SSP

3.1.1 Installation Guide and Release Notes



THE NETWORK IS THE COMPUTER™

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Preface

The *Sun Enterprise 10000 SSP 3.1.1 Installation Guide and Release Notes* contains the Release Notes for SSP 3.1.1 and describes how to install SSP 3.1.1 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 Release Notes.

Chapter 2 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 3 describes the fresh install procedures.

Chapter 4 describes the upgrade procedures.

Chapter 5 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 the procedure for installing the AnswerBook2 server.

Appendix B describes how to configure the SSP network files.

Appendix C describes how to uninstall the SSP 3.1.1 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 3.1.1 User Guide</i>	805-7519-10
Reference (man pages)	<i>Sun Enterprise 10000 SSP 3.1.1 Reference Manual</i>	805-7920-10
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 3.1.1 Release Notes

General Issues

This section describes issues related to the SSP software and the Sun Enterprise 10000 SSP 3.1.1 documentation.



Caution – The 64-bit version of the Solaris 7 operating environment is not supported on the SSP. If you are going to upgrade the SSP to Solaris 7, install the 32-bit version.

New SSP Failover Procedure

The failover procedure (switching from the main SSP to the spare SSP) described in Chapter 3 of the *Sun Enterprise 10000 SSP 3.1.1 User Guide* is new.

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
```

Printing the *Sun Enterprise 10000 SSP 3.1.1 User Guide* and *Sun Enterprise 10000 SSP 3.1.1 Reference Manual*

To print the *Sun Enterprise 10000 SSP 3.1.1 User Guide* or *Sun Enterprise 10000 SSP 3.1.1 Reference Manual*, do one of the following:

- Print the PostScript® file from the `/cdrom/cdrom0/Docs` directory on the CD-ROM or the `Docs` directory in the directory in which you downloaded the files from the Web.
- Print the AnswerBook2 version using your browser print feature, not the AnswerBook2 print feature.

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.

Changes to the SSP Software

SSP 3.1.1 provides the following new features:

- Support for Solaris 2.5.1, 2.6, or 7 running on the SSP.

- Support for the 100MHz system board and the 400MHz CPU module.
- The ability to run under Sun's Common Desktop Environment (CDE).
- Improved integration between the SSP SNMP Manager (`snmpd(1M)`) and the Solstice Enterprise Master Agent (`snmpdx(1M)`) when running Solaris 2.6 or 7 on the SSP. SSP `snmpd(1M)` is configured to run as a subagent of `snmpdx(1M)`.
- The ability to install the SSP software with the WebStart GUI application.
- Two new scripts, `ssp_backup` and `ssp_restore`, for backing up and restoring the SSP environment.

ssp_startup Changes

The way the `ssp_startup` daemon is run has changed. Previously, `ssp_startup` was started through `/etc/inittab`. The `ssp_startup` daemon is now started through the `/etc/rc2.d/S99ssp` script. It can also be started (or stopped) manually with this command:

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

where *option* is either `start` or `stop`. See the `ssp_startup(1M)` man page for details.

When all SSP daemons are first started, either through `ssp_startup` or booting of the SSP, the following message is logged in the platform messages file (`$SSPLOGGER/messages`):

```
date:time ssp_host_name SSP Startup: : Startup of SSP \
programs complete
```

When this message appears, you can start administering the Sun Enterprise 10000, performing tasks such as bringing up domains.

Console Logging

The ability to capture all output displayed on an active `netcon(1M)` console is available through the `LOCAL1` facility of `syslogd(1M)` (see “`netcon` Message Logging” in the *Sun Enterprise 10000 SSP 3.1.1 User Guide* for details). `netcon(1M)` console logging can be suppressed by using the `-S` option to `netcon_server(1M)` or `bringup(1M)`.

ssp_backup and ssp_restore Scripts

SSP 3.1.1 provides two new scripts, `ssp_backup` and `ssp_restore`, for backing up and restoring the SSP environment. The most common use of the `ssp_backup` and `ssp_restore` scripts is to switch from the main SSP to the spare SSP.

ssp_backup Script

The syntax for `ssp_backup` is:

```
ssp_backup backup_directory
```

This script backs up the SSP environment to a file named `ssp_backup.cpio` in the directory specified by *backup_directory*. This file can later be restored using the `ssp_restore` script.

Note – The `ssp_backup` script does not back up all SSP file systems; it only backs up the running SSP environment and configuration.

ssp_restore Script

The syntax for `ssp_restore` is:

```
ssp_restore ssp_backup_filename
```

This script takes as input the backup file created by `ssp_backup` and restores the SSP environment.

Changes to SSP Commands

bringup(1M)

The `-S` option has been added to `bringup(1M)`. This option can be used to suppress `netcon` session logging.

domain_create(1M)

The `domain_create(1M)` command accepts both SunOS release number format and the Solaris release number format. However, internally, the SunOS format is used. For example, if you specify the Solaris release number 2.6 for the `-o` option, it is translated to 5.6.

domain_status(1M)

The `domain_status(1M)` command displays the operating system version in the SunOS format (for example, 5.6, 5.7), even if you have used the Solaris release number format with the `-o` option to `domain_create(1M)`.

hpost(1M)

The alternate diagnostic level specification has been added to `hpost(1M)` (see the `-a` option in the `hpost(1M)` man page).

power(1M)

The display output of the `power(1M)` command has changed (see the `power(1M)` man page for an example).

`power(1M)` also provides the capability to power off individual components. For example, the following command powers off system board number 6:

```
ssp% power -off -sb 6
```

netcon(1M)

`netcon(1M)` provides the ability to specify an escape character for exiting the `netcon` session as well as to open a console with read only permission (see `-e` and `-r` in the `netcon(1M)` man page).

netcon_server(1M)

The `-S` option has been added to `netcon_server(1M)`. This option can be used to suppress `netcon` session logging.

GUI Changes

Invoking `netcon` or `netcontool` From the Workspace Manager Menu

If you invoke `netcon(1M)` or `netcontool(1M)` from the WorkSpace Manager menu and the `SUNW_HOSTNAME` environment variable is not set to a valid host name, a window is displayed prompting you to provide a host name.

`netcontool(1M)`

The text labels on the following `netcontool(1M)` buttons have changed; there are no functional changes to `netcontool(1M)`:

TABLE 1-1 `netcontool` Button Labels

Label in SSP 3.1	Label in SSP 3.1.1
Lock Write	Locked Write
Unlock Write	Unlocked Write
Excl. Session	Exclusive Session
Rel. Write	Release Write

The following check boxes have been added to the Configure the `netcontool` window:

- Default Session - configure `netcontool(1M)` to open a default `netcon(1M)` session; other options are Read Only, Unlocked Write, Locked Write, and Exclusive.
- DtTerm (CDE) - configure `netcontool(1M)` to open the `netcon(1M)` session inside a DtTerm; other options are Xterm, Shell Tool, and Command Tool.

Known Bugs

Simultaneous bringups fail with `hpost` level > 16 (4223354)

Description: Simultaneous bring ups with `hpost(1M)` diagnostic level greater than 16 cause time out 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 assume 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 time out 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 time outs occurring.

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

`edd` is detecting intermittent voltage problems on boards that are powered off (4228244)

Description: Occasionally, a Voltage readings have exceeded the thresholds on system board message is logged in the platform messages file for a system board that is powered off.

Workaround: The warning message can be ignored if the system board is powered off.

Console hangs when performing DR operations on OS 2.7 (4233315)

Description: When performing DR operations on a domain booted with Solaris 2.7, the console window hangs. 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: Perform a hot swap when replacing fan trays; do not turn the fan tray off before pulling it out. When this condition occurs, turn the fan tray 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`.

Need to update `edd.emc` and `edd.erc` man pages with `obp_reset` and `cb_power_on/off` (4246788)

Description: The following EDD events are not included in the SSP 3.1.1 `edd.emc(4)` and `edd.erc(4)` man pages.

The following information needs to be added to `edd.emc(4)`:

```
obp_reset : enabled          #cpu sig states indicate obp reset condition
cb_power_on : enabled        #a control board has been powered on
cb_power_off : enabled       #a control board has been powered off
```

The following information needs to be added to `edd.erc(4)`:

```
obp_reset : enabled : 300 : 3 : ObpResetact -d %d
cb_power_on : enabled : 0 : 1 : PowerOnact -t %t -b %b
cb_power_off : enabled : 0 : 1 : PowerOffact -t %t -b %b
```

Workaround: None. You should not need to modify these events.

SUNWsspue's postinstall gets permissions wrong on `dtwmrc` (4249098)

Description: The `pkgchk(1M)` command reports errors due to the incorrect permissions on `dtwmrc`.

Workaround: Ignore the errors in `pkgchk(1M)` output.

Bugs Fixed Since SSP 3.1

This section lists bugs fixed in this release.

4023717 - `ssp_config` is not checking for source of ethers address correctly

4036803 - spare SSP responded to control board RARP

4084319 - `netcon_server` fails to restart after SSP reboot on some systems

4091642 - hpost does not generate a dump file when it is unable to clear a centerplane err

4094506 - Hostview does not display CPU temps on sysbds with less than four CPUs

4104335 - SSP 3.1 automated thermal_config causes invalid/bogus hpost bbsram failures

4108964 - power(1M) command reports wrong number for 48V power supplies

4112713 - ssp_upgrade of spare automatically becomes main

4117061 - SSP fails to start daemons

4117082 - ERR: do_service: duplicate registration mode=R services=7 mask=2

4117320 - cbs runs out of file descriptors from invoking netcon_server or obp_helper

4117637 - snmpd complains about snmp-trap entry not being in /etc/services

4118252 - Hostview shows domain information after removing all domains

4123212 - power(1M) doesn't detect some invalid arguments

4123400 - Hostview kills netcontool(1M) window on quit

4132751 - SSP 3.1 does not always run thermal_config when board is replaced

4132845 - POST (hpost) should report when CPU clock frequencies are less than optimal

4134096 - clock frequencies reported by snmpd not stable

4134681 - cbs has memory leaks sometimes from invoking netcon_server or obp_helper

4137459 - fan command displays erroneous info & results in poor SSP performance

4144869 - Hostview does not recognize a removed power supply

4146592 - gethrtime() returned improper value on starfire machine(sun4u1)

4147442 - fan display doesn't update when fan trays removed/added

4149225 - powering off inactive control board causes bogus 911 overtemp

4153652 - Recordstop is not cleared by hpost -W

4157314 - snmpd is not responding

4157729 - OBP probe needs to warn against HME cards in SBUS slot 1 on SYSIO 0 & 1

4160108 - cbs still leaks file descriptors

4177552 - Some system boards reported with wrong “off” status with the power command

4177639 - cde_t_resp_n_reqerr_msg:client exited prematurely, service tag=OB36

4177684 - obp_helper can't validate signature block

4179772 - cb_prom fails with a meaningless message

4180521 - CPU cache becomes 0.5MB on a sysboard with single processor after rebooting

4181234 - netcon_server on UE10000 core dump every 1 month

4182020 - SSP file and directory permissions are not tight enough

4185502 - Temperature monitoring reports unreasonable values

4195902 - Automatic thermal_config is not reliable

4199294 - corrupted SBUS firmware causes system to drop to OBP during DR attach

4201585 - netcon_server leaks memory if domain name not correct in /etc/hosts on SSP

4204582 - pcs_snmp_get_frequencies() intermittently cause hpost/bringup failures

Required Patches

Solaris 7

- The fix for bug number 4192420 (SIGHUP handling of syslogd in Solaris 7 incorrect) is integrated in Solaris 7 Update 2 (S7 5/99). The patch for Solaris 7 Update 1 (S7 3/99) is 106541. This patch is needed to enable SSP message logging.
- You must apply patch number 107709 (libssasmp.so.1 patch) if you are running Solaris 7 5/99. This patch enables the SSP snmpd daemon to work with the Sun Solstice Enterprise Master Agent (snmpdx). This patch was in development at the time of publication; please check the SunSolve database for the latest version of this patch for which the README file indicates that it fixes bug number 4237139. In the unlikely event that a patch is not available for this bug, the workaround is as follows:

1. Stop `snmpdx`, if it's running:

```
ssp# /etc/rc3.d/S76snmpdx stop
```

2. Stop and restart SSP:

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

Solaris 2.6

Patch number 106439 (`/usr/sbin/syslogd` patch) is needed to enable SSP message logging. This patch was in development at the time of publication; please check the SunSolve database for the latest version of this patch for which the README file indicates that it fixes bug number 4192420. In the unlikely event that a patch is not available for this bug, you can do one of the following as a workaround:

- Execute the `touch(1)` command on `/etc/syslog.conf` and then send `syslogd` a HUP signal:

```
ssp# touch /etc/syslog.conf
ssp# ps -ef | grep syslogd
  root   164      1  0   May 18 ?           0:02 /usr/sbin/syslogd
ssp# kill -HUP syslogd_pid
```

where *syslogd_pid* is the process ID reported by the `ps(1)` command (164 in this example).

- After the SSP `machine_server` process is active, kill `syslogd` (it restarts automatically):

```
ssp# ps -ef | grep syslogd
  root   164      1  0   May 18 ?           0:02 /usr/sbin/syslogd
ssp# kill syslogd_pid
```

where *syslogd_pid* is the process ID reported by the `ps(1)` command (164 in this example).

Preparing for a Fresh Install or Upgrade

This chapter discusses the following topics:

- Overview of Tasks
- Determining the SSP Version
- Installing or Upgrading From the Web or From a CD-ROM
- Backing Up 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 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

Overview of Tasks

To help you prepare to install the SSP 3.1.1 software, the following list provides a summary of the tasks you perform during a fresh install or upgrade.

The procedures that you must complete before performing a fresh install or upgrade follow this overview. The procedures for fresh install and upgrade can be found in Chapter 3 “Fresh Install of SSP 3.1.1” and Chapter 4 “Upgrading to SSP 3.1.1”, respectively.

The tasks involved in a fresh install or upgrade of SSP 3.1.1 include:

Note – Perform these tasks in the order shown.

- Installing the AnswerBook2 server, if it is not already installed, so that you can view the SSP 3.1.1 AnswerBook2. (Solaris 2.5.1 comes with the AnswerBook server, not AnswerBook2. Solaris 2.6 and 7 come with the AnswerBook2 server.) If you have the AnswerBook2 server installed on a remote system, you can use the `ab2admin(1M)` tool to add the SSP 3.1.1 AnswerBook2 path to the index of the AnswerBook2 server. You may need to re-install the AnswerBook2 server if you do not have, at a minimum, version 3.0. See Appendix A “Installing the AnswerBook2 Server”.
- Determining what version of the SSP software you are currently running. See “Determining the SSP Version” on page 16 for instructions.
- 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 16.
- Backing up the SSP. If you are upgrading a single SSP configuration, backing up the SSP environment with `ssp_backup` is not required, but it is suggested that you perform a `ufsdump(1M)` before and after the upgrade. For SSP 3.0, you can use the backup file created by `ssp_backup` to synchronize the environments on the main and spare SSPs. For SSP 3.1 and 3.1.1, you can restore the environment after the fresh install if you have created a backup file using `ssp_backup`. See “Backing Up the SSP” on page 17.
- Performing a fresh install or upgrade. Chapter 3 “Fresh Install of SSP 3.1.1” describes the fresh install procedures for a dual SSP or single SSP configuration. Chapter 4 “Upgrading to SSP 3.1.1” describes the upgrade procedures for a dual SSP or single SSP configuration.

Note – It is suggested that you perform an upgrade instead of a fresh install if your SSP is already running the SSP software. The upgrade procedure is simpler and makes it easier to retain the current SSP environment.

- 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 37.
 - 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 40.
 - Upgrading the Solaris operating environment. See “Upgrading the Solaris Operating Environment on the SSP Workstation” on page 41.
-



Caution – The 64-bit version of the Solaris 7 operating environment is not supported on the SSP. If you are going to upgrade the SSP to Solaris 7, install the 32-bit version.

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 3.1.1 software and recover the previous version of the SSP software. See Appendix C “Uninstalling SSP 3.1.1” for more information.

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

Installing the AnswerBook2 Server

If you have not installed the AnswerBook2 server, or are not sure if you have, at a minimum, version 3.0, see Appendix A “Installing the AnswerBook2 Server”.

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 SSP 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: 3.1.0,REV=97.11.17.17.04
```

This is an example of the version number for SSP 3.1. The version number for SSP 3.0 is shown as 3.0.0.

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 on the Enterprise 10000 System Service Processor link.**
3. **Click on the Click here to download link.**
The file that will be downloaded is named `ssp_3_1_1_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 ssp3.1.1.tar.Z | tar xvf
```

The SSP 3.1.1 packages are located in `/download_directory/Product` and the install and upgrade scripts are located in `/download_directory/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 3.1.1 packages are located in `/cdrom/cdrom0/Product` and the install and upgrade scripts are located in the `/cdrom/cdrom0/Tools` directory.

Backing Up the SSP

Back up the SSP environment by using `ssp_backup` prior to a fresh install or an upgrade. The `ssp_backup` script is distributed with the SSP software and is located in the `Tools` directory. `ssp_backup` copies directories that contain configuration information for the SSP.

- 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.
- If your SSP is currently running SSP 3.0, you must perform an upgrade 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 – 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`. 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 4Mbytes to well over 80Mbytes, 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`.

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/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 `ssp_backup` is run, 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.

Fresh Install of SSP 3.1.1

The 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, you can retain the SSP environment by backing it up before the installation and restoring it after you have completed the installation of SSP 3.1.1. See “Backing Up the SSP” on page 17 for instructions.

Note – You cannot perform a fresh install of SSP 3.1.1 and restore an SSP 3.0 environment. To retain an SSP 3.0 environment, you must perform an upgrade from the SSP 3.0 installation to SSP 3.1.1.

If you are installing SSP 3.1.1 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 B “Configuring the SSP Network.”

Using WebStart

In the procedures for fresh install, you can use WebStart, a GUI application, 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.

Note – You can only use WebStart if you are installing SSP 3.1.1 on a Solaris 2.6 or Solaris 7 operating environment.

▼ To Use WebStart

1. **Log in as the superuser.**
2. **Set the `DISPLAY` environment variable.**
 - If you are using `sh(1)` or `ksh(1)`, type:

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

- If you are using `csh(1)`, type:

```
ssp# setenv hostname:0
```

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/solaris7_899/supcd` if you are installing from a CD, or the download directory if you are installing from the Web.

4. **Select Default 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 single or dual 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

If you have not read “Overview of Tasks” on page 14, do so before performing the fresh install.

TABLE 3-1 shows the supported combinations of SSP software for dual SSP configurations:

TABLE 3-1 Supported Dual SSP Configurations

SSP version on the Main SSP	SSP Version on the Spare SSP
3.0	3.0
3.1	3.1 or 3.1.1
3.1.1	3.1 or 3.1.1

▼ To Perform a Fresh Install of SSP 3.1.1 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. If your SSP is currently running SSP 3.0, you must perform an upgrade to preserve the current SSP environment.

1. On the spare SSP (referred to here as SSP2), log in as superuser.

2. 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 4 “Upgrading to SSP 3.1.1.”

3. Change directory to the `Tools` directory:

- If you are installing from the Web, type:

```
ssp# cd /download_directory/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. Install the SSP 3.1.1 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/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 19 for instructions.

5. When you are asked if you want to install the SSP 3.1.1 AnswerBook (the `SUNWuessp` package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.1.1 Answerbook, 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
```


c. If your SSP is currently running SSP 3.1, kill the `rarpd` process:

```
ssp# ps -ef | grep rarpd
ssp# kill -9 rarpd_pid
```

Where `rarpd_pid` is the process ID shown by the `ps` command for `rarpd`. Killing the `rarpd` process prevents the SSP from responding to control board boot requests.

8. 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.
```

9. Reboot SSP2.

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

11. Type:

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

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

12. 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 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 3.1.1 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.

13. 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 37 for instructions on upgrading the flash PROM.

Fresh Install of a Single SSP Configuration

If you have not read “Overview of Tasks” on page 14, do so before performing the fresh install.

▼ To Perform a Fresh Install of SSP 3.1.1 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. If your SSP is currently running SSP 3.0, you must perform an upgrade to preserve the current SSP environment.

1. Log in as superuser.

2. 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 4 “Upgrading to SSP 3.1.1.”

3. Change directory to the `Tools` directory:

- If you are installing from the Web, type:

```
ssp# cd /download_directory/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_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/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 19 for instructions.

5. When you are asked if you want to install the SSP 3.1.1 AnswerBook (the `SUNWuessp` package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.1.1 Answerbook, 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 3.1.1 AnswerBook.**

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

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

- c. Type `y` at this 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
```

- 6. 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.

- 7. 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 6, you will need to provide system information. See “To Name the Platform and Control Board” on page 28 for more information.

- 8. Reboot the SSP.**

- 9. Check the flash PROM version.**

See “Checking and Upgrading the Control Board Flash PROM” on page 37 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.

Here is a representative 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. 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 3.1.1

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

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
3.0	3.0
3.1	3.1 or 3.1.1
3.1.1	3.1 or 3.1.1

Upgrade Procedures

If you have not read “Overview of Tasks” on page 14, do so before performing an upgrade.

▼ To Upgrade a Dual SSP Configuration

1. On the main SSP (referred to here as SSP1), log in as superuser.
2. 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/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. Copy the *ssp_backup.cpio* file to the spare SSP (referred to here as SSP2).

d. On SSP2, log in as superuser.

e. On SSP2, change directory to the *Tools* directory.

- If you are installing from the Web, type:

```
ssp# cd /download_directory/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
```

f. On SSP2, type:

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

Where *backup_directory* is the directory to which you copied *ssp_backup.cpio* in Step 3b above.

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 3a through Step 3e above.

3. 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/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`.

4. When you are asked if you want to install the SSP 3.1.1 AnswerBook (the SUNWuessp package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.1.1 Answerbook, 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 3.1.1 AnswerBook.

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

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

c. Type `y` at this 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
```

5. 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.
```

c. If SSP1 is running SSP 3.0 or 3.1, halt the system or kill the rarpd process:

```
ssp# ps -ef | grep rarpd
ssp# kill -9 rarpd_pid
```

Where *rarpd_pid* is the process ID shown for *rarpd* in the output of the *ps* command.

6. 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.
```

7. Reboot SSP2.

8. 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 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 2 and Step 3 on SSP1 instead of SSP2. If you have made changes to the SSP environment on SSP2, make sure that the two environments are the same before upgrading SSP1.

9. 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 37 for instructions on checking and upgrading the flash PROM.

▼ To Upgrade a Single SSP Configuration

1. On the SSP, log in as superuser.

2. Change directory to the `Tools` directory:

- If you are installing from the Web, type:

```
ssp# cd /download_directory/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_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/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`.

4. When you are asked if you want to install the SSP 3.1.1 AnswerBook (the `SUNWuessp` package), type `y` to install it; otherwise, type `n`.

If you install the SSP 3.1.1 Answerbook, 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 3.1.1 AnswerBook.

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

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

c. Type `y` at this 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
```

5. Reboot the SSP.

After a Fresh Install or Upgrade

After you have completed the fresh install or upgrade of SSP 3.1.1, you need to check the version of the flash PROM and upgrade if necessary. For SSP 3.1.1, you must upgrade your flash PROM if the version is earlier than 3.46. See “Checking and Upgrading the Control Board Flash PROM” below.

You may also need to:

- Edit some of the initialization files in the `/export/home/ssp` directory. If you made changes to the files, did not restore the environment during the fresh install or upgrade, and want to retain your changes, see “Editing Initialization Files” on page 40.
- Upgrade the Solaris operating environment. See “Upgrading the Solaris Operating Environment on the SSP Workstation” on page 41.

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 below and upgrade if the version is earlier than 3.46.
- If you are upgrading to SSP 3.1.1 on the main SSP, the flash PROM version is checked and updated automatically.
- If you are upgrading to SSP 3.1.1 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.

Note – If your SSP is currently running SSP 3.0, you *must* upgrade the flash PROM as described in “To Install the SUNWsspfp Package and Upgrade the PROM” on page 38.

▼ 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(4)` configuration file.

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 *Product* directory in the directory in which you downloaded files if you are installing from the Web
- /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(4) configuration file. The version shown should be 3.46.

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/.openwin-menu`
- `/export/home/ssp/.xinitrc`
- `/export/home/ssp/.drtclrc`
- `/export/home/ssp/.openwin-init`
- `/export/home/ssp/.openwin-menu-ssp`
- `/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` 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.

Upgrading the Solaris Operating Environment on the SSP Workstation

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.



Caution – The 64-bit version of the Solaris 7 operating environment is not supported on the SSP. If you are going to upgrade the SSP to Solaris 7, install the 32-bit version.

If you are running the Solaris 2.5.1 operating environment with the QuadFastEthernet adapter driver installed (`SUNWqfed` and `SUNWqfedu` packages), you can only upgrade the Solaris operating environment from CD-ROM.

▼ To Upgrade the Solaris Operating Environment on the SSP

1. Upgrade or fresh install the SSP 3.1.1 software.

2. Configure the SSP to be a spare SSP.

Do this even if you have a single SSP configuration.

3. Upgrade the Solaris operating environment to Solaris 2.6 or 7.

Refer to one of the following manuals:

- For Solaris 2.6, see the *Solaris 2.6 System Administrator Collection Vol 1—Solaris Advanced Installation Guide*.
- For Solaris 7, see the *Solaris 7 Installation Collection—Solaris Advanced Installation Guide*.

4. After you have upgraded the Solaris operating environment, configure your SSP network as described in Appendix B “Configuring the SSP Network”.

5. Log in as superuser.

6. Change directory to the `Tools` directory:

- If you are installing from the Web, type:

```
ssp# cd /download_directory/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
```

7. Configure the SSP to work with the Sun Solstice Enterprise Master agent (`snmpdx`) by typing:

```
ssp# ./ssp_post_os_upgrade
```

8. Reconfigure the SSP to be the main SSP.

9. Reboot the SSP.

Configuring the Network Time Protocol Daemon

The NTP daemon (which is `xntpd(1M)` for the Solaris 2.5.1 operating environment, and `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 you are not currently running in an NTP subnet, and you do not have access to the Internet, and you are 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 an Sun Sun Enterprise 10000 system and its SSP, set the SSP to stratum 4. Set up the Sun Enterprise 10000 system as a peer to the SSP and set the local clock two stratums higher.

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.**

Under the Solaris 2.5.1 operating environment, the `ntp.conf` file is located in `/etc/opt/SUNWxntp` directory. Under the Solaris 2.6 or 7 operating environments, it is located in `/etc/inet`.

You must have an `ntp.conf` file on both the SSP and the platform. The following is an example of server/peer lines in the `/etc/opt/SUNWxntp/ntp.conf` file on the SSP.

```
server 127.127.1.4
```

Under the Solaris 2.5.1 operating environment, you can add lines similar to the following to the `/etc/opt/SUNWxntp/ntp.conf` file on the platform:

```
server spp_name  
server 127.127.1.13
```

Under 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 platform:

```
server spp_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* and the *NTP Reference*.

Installing the AnswerBook2 Server

You will need the AnswerBook2™ server to be able to view books in the SSP 3.1.1 AnswerBook2 collection. The AnswerBook2 server was not shipped with Solaris 2.5.1; Solaris 2.5.1 comes with the AnswerBook server, which is an older version. At a minimum, you must have version 3.0 of the AnswerBook2 server. You can check the version of the AnswerBook2 server as described in the following procedure.

▼ To Check the AnswerBook2 Server Version

1. **Log in as superuser.**
2. **Type:**

```
ssp# pkginfo -l SUNWab2r
```

If your version of the AnswerBook2 server is earlier than version 3.0, you must re-install it.

Note – It is suggested that you install the AnswerBook2 server on a system other than the SSP.

If you have installed the AnswerBook2 server on another system, you can install the SSP 3.1.1 AnswerBook2 package on the SSP and add the SSP 3.1.1 AnswerBook2 to the AnswerBook2 index by using `ab2admin(1M)`. See the `ab2admin(1M)` man page for more information.

If you do not have the AnswerBook2 server installed on any system, or if you have a version earlier than 3.0, you can install the AnswerBook2 server from the Solaris Documentation CD or from the Web. To install the AnswerBook2 server from the

Solaris Documentation CD, refer to the *Installation Library* for your version of the Solaris operating environment. To install the AnswerBook2 server from the Web, follow the steps in the procedure below.

▼ To Install the AnswerBook2 Server From the Web

1. **Log in as superuser.**
2. **Point your browser to** `http://www.sun.com/software/ab2`.
3. **Click Download Versions.**
4. **Click Download Version 1.4.**
5. **Read the License Agreement and click on the Accept button.**
You cannot download the software if you do not accept the License Agreement.
6. **Read the Export Agreement and click on the Accept button.**
You cannot download the software if you do not accept the Export Agreement.
7. **Choose the version of the AnswerBook2 server that is appropriate for the Solaris operating environment on your system.**
 - If your system is running the Solaris 2.6 or 7 operating environment, click on Solaris 2.6 or Solaris 7 Operating Environment.
 - If your system is running the Solaris 2.5.1 operating environment, click on Solaris 2.5.1 Operating Environment.
8. **Follow the instructions on the web page to download the software and install the AnswerBook2 server.**

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 B-1 and FIGURE B-1 describe the two-subnet network configuration.

TABLE B-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

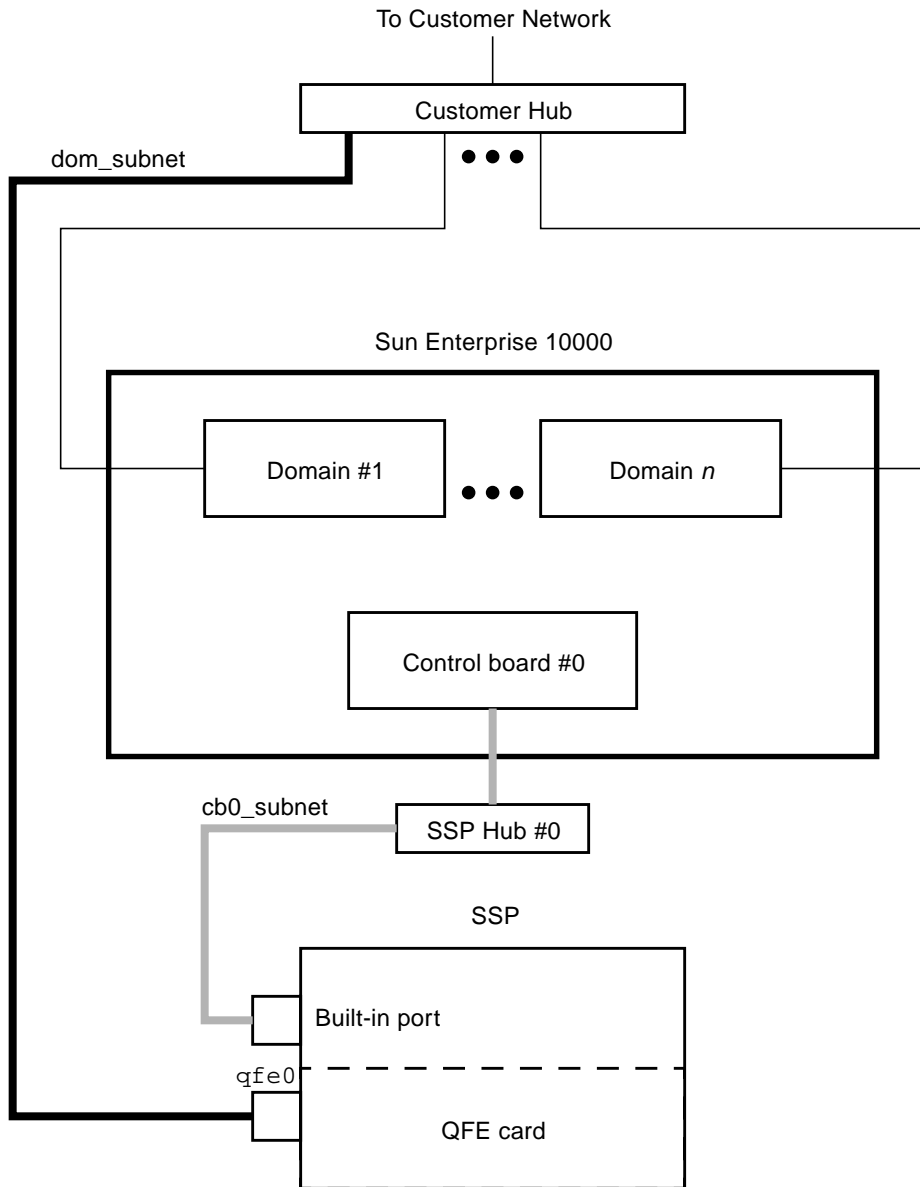


FIGURE B-1 Two-Subnet Network Configuration

In FIGURE B-1, the Built-in port is `le0` for a Sparcstation™ 5 and `hme0` for a Sun Ultra™ 5.

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

TABLE B-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

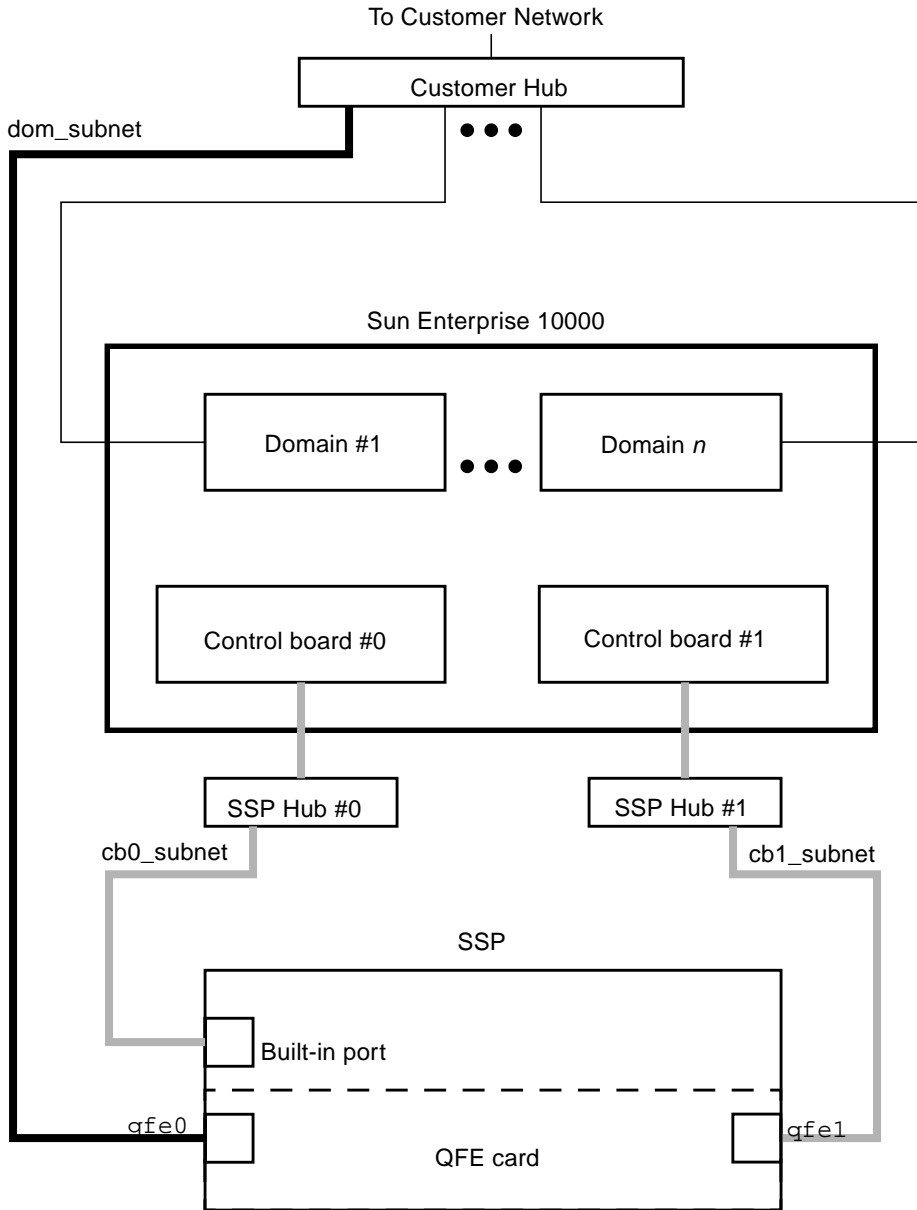


FIGURE B-2 Three-Subnet Network Configuration

In FIGURE B-2, the Built-in port is `1e0` for a Sparcstation 5 and `hme0` for a Sun Ultra 5.

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

TABLE B-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

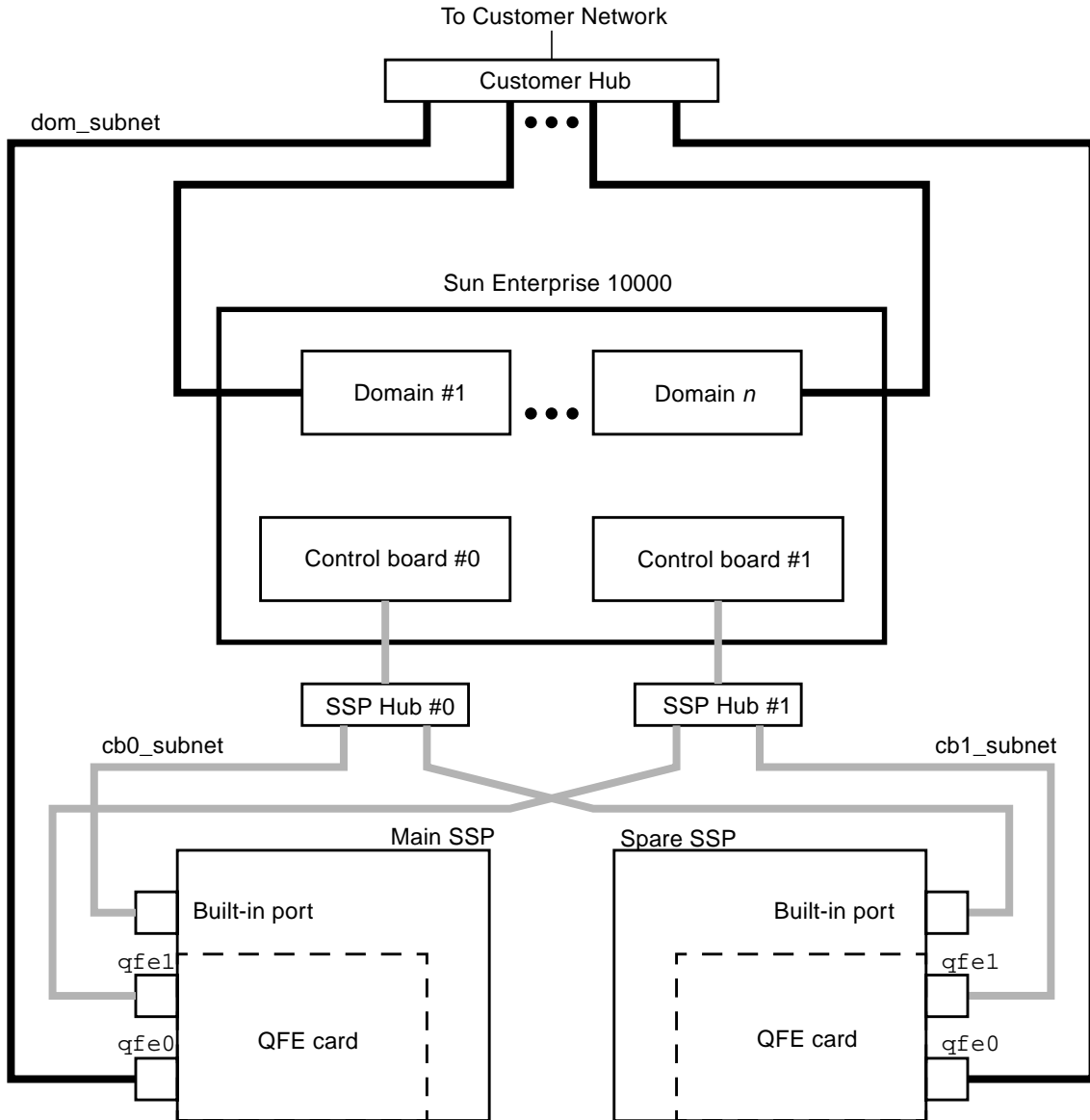


FIGURE B-3 Spare SSP Network Configuration

In FIGURE B-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.

▼ 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 QuadFastEthernet™ (QFE) card, model 1049A, in the two-subnet, three-subnet, or spare SSP network configuration on a Sun Ultra 5, 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:

```
# 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-1e0
www.xxx.yyy.zzz spare_ssp_hostname-1e0
www.xxx.yyy.zzz cb0_hostname
#
# The next three entries need to be on cb1_subnet.
#
www.xxx.yyy.zzz main_ssp_hostname-hme1
www.xxx.yyy.zzz spare_ssp_hostname-hme1
www.xxx.yyy.zzz cb1_hostname
```

Here is an example of a main SSPs `/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-le0
129.153.151.114   xf4-ssp1-le0
129.153.151.123   xf4-cb0
#
#cb1_subnet (www.xxx.152.zzz). The 152 subnet
#
129.153.152.113   xf4-ssp-hme1
129.153.152.114   xf4-ssp1-hme1
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
netmasks:  files
bootparams: files
```

If you are using NIS, the lines in the file are similar to the following example:

```
hosts:      nis [NOTFOUND=return] files
ethers:     nis [NOTFOUND=return] files
netmasks:  nis [NOTFOUND=return] files
bootparams: nis files
```

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

7. Reboot the SSP.

Uninstalling SSP 3.1.1

In the unlikely event that you encounter problems, such as a disk crash or network outage, during the fresh install or upgrade process, you can remove the SSP 3.1.1 software and recover the previous version of the SSP software. This appendix describes the procedure for uninstalling the SSP 3.1.1 software. Refer to the appropriate version of the *Sun Enterprise 10000 SSP User's 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` prior to upgrading to SSP 3.1.1; this file is needed to restore the SSP environment.

▼ 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 SUNWsspido 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 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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