Sun Fire™ V20z and Sun Fire V40z Servers Release Notes

Sun Microsystems, Inc.
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Contents

Preface

These Release Notes summarize new information including features, known issues, and workarounds, as well as important safety guidelines for the Sun Fire V20z and Sun Fire V40z servers. This document also contains information about past updates to the servers' hardware and software.

Safety Guidelines

You can safely connect the Sun Fire V20z and Sun Fire V40z servers to an IT Power System.

The use of the black-on-yellow "exclamation-point-in-a-triangle" symbol on the product indicates a reference to the following important safety information concerning National Deviations for Finland, Norway, and Sweden:

- **English:** The earthed-style attachment plug on the power-supply cord requires the socket outlet to be an earthing type.
- **Finnish:** Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- **Norwegian:** Apparatet må tilkoples jordet stikkontakt.
- **Swedish:** Apparaten skall anslutas till jordat uttag.

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation at http://docs.sun.com

Shell Prompts

Shell	Prompt
C shell	*machine-name*%
C shell superuser	*machine-name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell superuser	#

Typographic Conventions

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

* The settings on your browser might differ from these settings.

Related Documentation

The document set for the Sun Fire V20z and Sun Fire V40z servers is available at:

`http://docs.sun.com/app/docs/coll/v20z-v40z`

Product Updates, Documentation, Support, Training, and Warranty URLs

Sun provides updates to documentation, drivers, firmware, and CD-ROM `.iso` images through the Sun web site. The web site also provides access to technical support, training services, and more. Use the links below to access these Sun services.

Sun Function	URL
Documentation	http://docs.sun.com/app/docs/prod/sf.v40z~v20z-v40z
Updates, including firmware, drivers, and CD-ROM `.iso` images	http://www.sun.com/servers/entry/v20z/support.jsp http://www.sun.com/servers/entry/v40z/support.xml
Technical support	http://www.sun.com/service/contacting
Training	http://www.sun.com/training/
Warranty	http://www.sun.com/service/support/warranty/index.html

Third-Party Web Sites

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Please include the title and part number of your document with your feedback:

Sun Fire V20z and Sun Fire V40z Servers Release Notes, 819-1771-25

Hardware and Firmware Information and Issues

This chapter describes issues related to the Sun Fire V20z and Sun Fire V40z hardware, including these topics:

- Section 1.1, "Versions of the Servers" on page 1-1
- Section 1.2, "Notes for Sun Fire V20z and Sun Fire V40z Servers" on page 1-3
- Section 1.3, "Notes Specific to Sun Fire V20z Servers" on page 1-19
- Section 1.4, "Notes Specific to Sun Fire V40z Servers" on page 1-22
- Section 1.5, "New or Revised Hardware Procedures" on page 1-24

1.1   Versions of the Servers

Sun has released different versions of the Sun Fire V20z and Sun Fire V40z Servers. Not all hardware and software components are compatible with all versions of each server. In particular, memory VRMs and CPU VRMs might not be compatible with certain hardware configurations.

See TABLE 1-1 for hardware and software compatibility information through each release of the Sun Fire V20z and Sun Fire V40z Servers. Note that if multiple versions of the BIOS and NSV are compatible with a particular hardware configuration, the configuration is listed multiple times.

For more information about the differences between the servers, see *Sun Fire V20z and Sun Fire V40z Servers--Differences Between Server Versions*, available on the Sun documentation web site.

> **Note –** The chassis part number (PN) is labelled on the front panel of the server, near the DVD-ROM/Diskette Drive assembly.

TABLE 1-1   Compatibility Between Components and Software for Each Server Version

FRU Chassis PN	Motherboard PN	CPU Stepping Version	Required CPU VRM PN	Type of Memory DIMM DDR	Required Memory VRM PN	Minimum Required NSV	Minimum Required BIOS
Sun Fire V20z Server							
380-0979	370-6730	C0	F370-6680	**DDR** 333	F370-6646	2.1.0.9f	1.27.11
380-1168	370-7691	CG	F370-6680	**DDR** 333	F370-6646	2.1.0.16b	1.30.5
380-1194 single core	370-7788	E6, E4,	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.2.0.6h	1.32.7.2
380-1194	370-7788	E6, E4	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.3.0.11	1.33.5.2
380-1194	370-7788	E6, E4, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.3.0.11c	1.33.7.2
380-1194	370-7788	E6, E4, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.4.0.6	1.34.4.2
380-1194	370-7788	E6, E4, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.4.0.8	1.34.6.2
380-1194	370-7788	E6, E4, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.4.0.12	1.35.2.2
Sun Fire V40z Server							
380-1010	370-6929	CG	F370-6680	**DDR** 333	F370-6646	2.1.0.16b	2.22.4
380-1206 single core	370-7808	E6, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.2.0.6h	2.32.8.2
380-1206 dual core	370-7808	E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.3.0.11	2.33.5.2
380-1206	370-7808	E4, E1	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.3.0.11c	2.33.7.2

FRU Chassis PN	Motherboard PN	CPU Stepping Version	Required CPU VRM PN	Type of Memory DIMM DDR	Required Memory VRM PN	Minimum Required NSV	Minimum Required BIOS
380-1206	370-7808	E6, E4, E1, CG, C0	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.4.0.6	2.34.4.2
380-1206	370-7808	E6, E4, E1, CG, C0	F370-7746	**DDR** 333 **DDR** 400	F370-7747	2.4.0.8	2.34.6.2
380-1378	375-3438	E6, E4, E1, CG, C0	F371-1463	**DDR** 333 **DDR** 400	F371-1464	2.4.0.18	2.35.3.2

1.2 Notes for Sun Fire V20z and Sun Fire V40z Servers

1.2.1 BIOS Chipkill Function Not Working

The BIOS Chipkill function might not work with servers running BIOS versions 1.35.3.2 and 2.35.3.2. To resolve this issue upgrade to NSV release 2.4.0.28. For more information about release 2.4.0.28, see Section 3.1, "NSV Release 2.4.0.28" on page 3-1.

1.2.2 Create LSI IM Volumes *Before* Installing the OS

To prevent data corruption on Solaris ZFS or Linux operating systems, create IM volumes *before* you install the OS. To create IM volumes use the LSI Configuration Utility.

1.2.3 Failure During LSI IME RAID Auto-Rebuild of Swapped Drives

On some earlier versions of LSI firmware, the array might fail to rebuild after swapping drives out of an IME RAID. Use the `cfggen.exe` utility and the following procedures to turn on the automatic rebuilding of a 1E array on systems with no existing RAID volumes or on systems with existing RAID volumes.

To update IME volume settings so that hot-swapped drives automatically configure themselves into a RAID (IM or IME) array on systems with no existing RAID volumes:

1. **Shut down the server.**

2. **Insert a bootable floppy disk that contains the** `cfggen.exe` **utility.**

3. **At the command prompt, enter the following command:**

   A:> **`cfggen 0 vsime 0x00000014`**

   The following message appears:

   ```
   Warning: You are about to update Volume Settings (Y/N)?
   ```

4. **Enter Y.**

   The following message appears:

   ```
   Warning: Proceeding with this operation changes the behavior of IME
   volumes dependencies on hex value set. Are you sure you want top
   roceed (Y/N)?
   ```

5. **Enter Y.**

To update IME volume settings so that hot-swapped drives automatically configure themselves into a RAID (IM or IME) array on systems with existing RAID volumes:

1. **Shut down the server.**

2. **Insert a bootable floppy disk that contains the CFGGEN. exe utility.**

3. **At the command prompt, enter the following command:**

   A:> **cfggen 0 vsime 0x00000014** *volume ID#*

   volume ID # The ID of the existing RAID array.

   The following message appears:

   ```
   Warning: You are about to update Volume Settings (Y/N)?
   ```

4. **Enter Y.**

   The following message appears:

   ```
   Warning: Proceeding with this operation changes the behavior of IME
   volumes dependencies on hex value set. Are you sure you want top
   roceed (Y/N)?
   ```

5. **Enter Y.**

1.2.4 POCI Port Conflicts

The Solaris POCI driver was originally set to port 6789. This caused a conflict with another service on the Solaris OS. This conflict in turn caused a binding error during the Solaris system boot. To resolve this issue a new command was added to the SP command set. The new command allows you to change the the port value:

sp set pociport *nnnn*

nnnn A port number value between 1 and 65535.

The command will change the port on both the SP and the platform OS (Solaris). The command only works with Solaris and has no effect on Linux or Windows distributions. The command also only works when the platform is fully powered-up and booted into Solaris. Once issued, the command will persist through SP and platform (Solaris) reboots and power-cycles. On the SP, the port configuration is stored in the /pstore/jnet_config file, and on Solaris, the configuration is stored in the /etc/init.d/poci.sh file.

Use the following command to retrieve the current value for the POCI port:

sp get pociport

1.2.5 Additional SP Commands `enable` and `disable` SSHD Protocol Version 1

These commands allow enabling and disabling accesses to SSHD via protocol version 1, which is older and less secure than protocol version 2. The configuration setting that these commands issue persists through Service Processor reboots.

```
sp disable ssh1
```
This command disables protocol version 1

```
sp enable ssh1
```
This command enables protocol version 1 accesses to SSHD. This is the default setting.

```
sp get ssh1
```
This command queries the current state of the level 1 access of SSHD.

1.2.6 BIOS Does Not Use the Correct Sensor Number in the System Firmware Progress SEL Entries

When certain errors occur during system boot, such as keyboard or floppy errors, the system BIOS generates a System Firmware Progress SEL entry and sends it to the SP. The BIOS uses an incorrect sensor number (0x00) when creating these SEL entries.

1.2.7 BIOS Update Failure Due to an Error in Transmitting the File

BIOS Update might fail due to an error in transmitting the file. If this occurs, retry the update.

Note – To update the BIOS, you must first set jumpers, JP11 and JP12.

1.2.8 System Will Not Boot to a USB Floppy Disk if Internal Floppy Drive is Enabled

If you want to boot the system to a USB floppy disk, you must first disable the floppy controller and the floppy drive. Disable the floppy controller in the BIOS setup, under the Advanced menu. Disable the floppy drive in the BIOS setup under the Main menu.

1.2.9 Configuring PowerNow! for Your OS

NSV release 2.4.0.6 and later include PowerNow! technology, developed by AMD to reduce power consumption and heat dissipation. PowerNow! accomplishes this by lowering the CPU frequency and voltage when the kernel load is low.

Note – Changes in CPU frequency and voltage with PowerNow! cause fluctuations in the clock speed. Depending on how you utilize system resources, the indicated speed might be substantially lower than the actual (maximum) rating of your CPU. For example, if you installed a 2.2 GHz processor at times of low demand, the CPU could clock down and indicate only ~1.0 GHz. This is normal and indicates that you are in a power-saving mode.

Caution – PowerNow! is not supported on all operating systems. On some operating systems which do support it, PowerNow! is enabled by default. Read the following information carefully for your particular operating system. If you do not want to use this feature, or if it is not supported on your operating system, you should disable it. Check the documentation for your particular operating system.

1.2.9.1 PowerNow! on Solaris

PowerNow! is not currently supported on the Solaris Operating System.

1.2.9.2   PowerNow! on Linux

PowerNow! is not supported on all Linux operating systems. For those which do support it, HPET must be enabled. If HPET is disabled on a system with PowerNow! processors, follow the instructions in this section to configure the OS appropriately. Also refer to the documentation for your operating system.

1.2.9.3   Red Hat Enterprise Linux 4

RHEL-4 (64-Bit) and RHEL-4 Update 1 (64-Bit)

PowerNow! is not supported on RHEL-4 64-bit and must be disabled as follows:

1. **Enter the command:**

   $ **chkconfig --level 12345 cpuspeed off**

2. **Reboot the system.**

RHEL 4 (32-Bit) and RHEL 4 Update 1 (32-Bit)

PowerNow! is not supported on RHEL-4 32-bit at this time and is already disabled by default. No action is needed.

1.2.9.4   SUSE Linux Enterprise Server 9

PowerNow! is supported on some SLES 9 versions, as described in this section.

SLES 9 SP2 (64-Bit)

PowerNow! is enabled by default on all systems. No action is necessary to enable PowerNow! functionality

SLES 9 SP1 (64-Bit)

PowerNow! is not supported on SLES 9 SP1 64-bit at this time and must be disabled by doing the following procedure:

1. **Open the following file in a text editor:**

   /etc/sysconfig/powersave/common

2. **Change:**

```
POWERSAVE_CPUFREQD_MODULE=""
```

to:

```
POWERSAVE_CPUFREQD_MODULE="off"
```

3. **Reboot the system.**

SLES 9 SP2 (32-Bit)

To enable and use PowerNow! on SLES 9 SP2 (or higher) 32-bit:

1. **Add the boot parameter** `clock=pmtmr` **to the file:**

   ```
   /boot/grub/menu.lst
   ```

2. **Reboot the system.**

SLES 9 SP1 (32-Bit) For Dual-core Processors

PowerNow! is *not* supported for dual-core processors under SLES 9 SP1 32-bit.
Follow this procedure to disable PowerNow!:

1. **Open the file** `/etc/sysconfig/powersave/common` **in a text editor and
   replace:**

   ```
   POWERSAVE_CPUFREQD_MODULE=""
   ```

   with:

   ```
   POWERSAVE_CPUFREQD_MODULE="off"
   ```

2. **Reboot the system.**

SLES 9 SP1 (32-Bit) For Single-core Processors

PowerNow! is supported for single-core processors under SLES 9 SP1 32-bit. Follow
this procedure to enable PowerNow!:

1. **Open the** `/boot/grub/menu.lst` **file in a text editor and add the boot
   parameter** `clock=pmtmr`**.**

2. **Reboot the system.**

1.2.10 Sensor Fan Alerts

Sensor Fans 5 through 12 might report 0 rpm during a platform power-on condition, but quickly reports a return to normal.

If SNMP, email, or other alerts are configured for critical events, this issue generates notices if a fan alert does occur. This problem does not affect the performance of the fans or any other part of the system.

1.2.11 LSI Option Defaults and Automatic Rebuild of Swapped Drives

The LSI Option defaults interfere with the ability of RAID 1E (IME) to automatically rebuild swapped drives. The following workaround will enable you to rebuild failed drives in an IME RAID array.

1. **While the system boots and the on-board LSI SCSI controller initializes, press Ctrl-C to enter the LSI Configuration Utility.**

2. **Select the SCSI adapter on PCI Bus 2, then press Enter.**

3. **Choose RAID Properties from the menu, then press Enter.**

4. **In the Device Identifier list, locate the drive that you want to add as a hot spare.**

   This typically has the same SCSI ID as the drive that failed, but was replaced with a functional disk. This example uses SCSI ID 0.

5. **Highlight the Hot Spare field for the drive you located in Step 4, then press - (minus) to add the drive as a hot spare.**

   The value in the Hot Spare field changes from `No` to `Yes`.

6. **Press Delete to incorporate this drive as a hot spare.**

   The drive is erased so the drive can be synchronized with the other drives.

7. **Press Esc.**

   A menu displays.

8. **Choose Save changes and Exit Menu to confirm your selection, then press Enter.**

   The drive is synchronized into the current IME RAID array.

Note – Boot the system into the operating system for faster synchronization results.

1.2.12 Four-Function PCI-X Option Cards

Four-function PCI-X option cards (such as the X9273A Gigabit Quad Ethernet card from Sun) are not supported for Sun Fire V20z or Sun Fire V40z Servers when running at 133MHz. If you install this type of card, your options are different depending on which server you use.

1.2.12.1 Sun Fire V40z Server

This server has four PCI-X 133MHz slots. You can install a four-function option card into one of these four slots; however, the BIOS clocks the card down to 100 MHz. The BIOS does not notify you that the bus is clocked down from 133MHz to 100MHz. You cannot override this setting in the BIOS.

1.2.12.2 Sun Fire V20z Server

This server has one 133MHz PCI-X slot. Four-function PCI-X option cards are not supported on the Sun Fire V20z because this slot cannot be clocked down.

If the four-function option card is installed in this slot, the system displays the following warning message during the boot process:

```
Caution:
Due to AMD-8131 Errata 56, the 133MHz PCI-X card in Slot02 has
been disabled. Please shut down, move the card to a 100MHz or
66MHz PCI-X slot and reboot. Refer to the AMD-8131 Revision
Guide for more details. If you wish to use this card at 133MHz,
with a full understanding of Errata 56, please enter Setup and
enable the "8131 Errata 56 PCLK" option.

Press <F1> to resume. Press <F2> to go to Setup.
```

If you chose not to remove the card as prompted, take the following steps:

1. **In the Setup menu, choose Settings > Advanced.**

2. **Set the 8131 Errata 56 PCLK option to Enabled. By default this is set to** *Disabled***.**

- *Disabled* — The boot-up warning message displays each time you boot the server and the option card itself is disabled.

- *Enabled* — The warning message does not appear when you boot the server, and you can use the option card at 133MHz, but *with the risk of data corruption*.

Caution – Choosing to enable the 133MHz slot when a four-function PCI-X option card is installed in the V20z Server is not recommended and could result in data corruption.

For more information, refer to the public AMD document at:

http://www.amd.com/us-
en/assets/content_type/white_papers_and_tech_docs/26310.pdf

1.2.13 Serial-Concentrator Failures at Speeds Faster Than 9600 Baud

Because of framing errors, some serial concentrators fail to work with the server when the server is set to a baud rate greater than 9600. The problem occurs because the server has very fast processors and UARTS with 16-byte FIFOs, causing the transmit bandwidth to become completely saturated. There is no empty space left between one asynchronous byte and the next—the stop bit of one byte is followed immediately by the start bit of the next byte.

As a consequence, the terminal (or other device) on the receiving end of this treatment must be fast enough to keep up, without missing a single byte. When a serial concentrator clears its receiver overflow and begins to receive once again, it can no longer detect where the start and stop bits are. This results in an endless stream of framing errors, both detected and undetected.

Workaround

Perform the following procedure on the Sun Fire V20z or Sun Fire V40z Server:

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, choose the Console Redirection submenu, then press Enter.**

3. **In the Console Redirection menu, choose the Baud Rate option and choose your desired baud rate (the default is 9600).**

4. **Select the Flow Control option and choose CTS/RTS.**

5. **Select the Console Type option and choose your desired terminal type.**

6. **Press the F10 key to save your changes.**

Perform the following procedure on the serial-concentrator console:

1. **Choose the desired port number.**

2. **Choose the baud rate that matches the baud rate you selected for the server.**

3. **For the Flow Control option, select Hardware.**

4. **For the DCD Sensitive option, choose Yes or No, depending on your preference.**

5. **Verify that you have the correct RJ-45 female to DB-9 female adapter (refer to your serial-concentrator user documentation.)**

If you still encounter a few framing errors, check the cabling between the server and the serial concentrator.

1.2.14 Intel Dual-Port Ethernet PCI Card (Linux Only)

On a server running a Linux operating system (OS), one of the ports on a dual-port Ethernet PCI card (Pro1000MT) might stop transmitting and receiving data.

During periods of high traffic over the dual-port PCI card, at some point, one port on the card might stop transmitting and receiving data, while the other port continues to function. Usually, the port remains out of service until the PCI card is reset. Occasionally, the NETDEV watchdog times out and thus resets the card.

The PCI card can be reset either manually (through the command `ifconfig`) or automatically (due to the NETDEV watchdog timing out).

When this problem occurs, you will see (in the network statistics) an increased error count for dropped packets; you can view the network statistics by running the `ifconfig` command.

Workaround

To resolve this issue, follow this procedure to set the "Maximum Memory Read Byte Count" value to 512.

1. **To determine the correct bus IDs for your dual-port card, run the following command as the root user:**

   # **lspci | grep Intel**

   The bus ID depends on the number and location of the PCI card(s) installed in your server. The bus ID displays as *bus:device.function*, in the format of bb:dd.f.

   The following lines show sample output from this command:

   ```
   03:01.0 Ethernet controller: Intel Corp.: Unknown device 1079 (rev 03)
   03:01.1 Ethernet controller: Intel Corp.: Unknown device 1079 (rev 03)
   ```

   The bus ID appears at the beginning of each line. In this example, the bus IDs are 03:01.0 and 03:01.1.

2. **Add the following two commands to the end of the boot script for your operating system. These commands set the maximum byte count to 512.**

   /usr/X11R6/bin/pcitweak -w *bb:dd:0f* **0xe4 0x0002f007**

   /usr/X11R6/bin/pcitweak -w *bb:dd:0f* **0xe4 0x0002f007**

   bb:dd:0f The bus ID determined in Step 1.

Note – In these two commands, add a **0** (zero) before the single-digit f value, and change the "." (period) to a ":" (colon). From the example given above, 03:01.0 changes to 03:01:00 and 03:01.1 changes to 03:01:01.

   For Red Hat Enterprise Linux (RHEL) 3, the path and boot-script file is:

   /etc/rc.d/rc.local

   For SUSE Linux distributions, the path and boot-script file is:

   /etc/rc.d/boot.local

3. **After you modify the boot-script file, save the file, and then reboot your server.**

1.2.15 Possible Rx-ERR on Intel PCI Network Interface Card (Port-to-Port Connection Only)

Data-receiving errors (Rx-ERR) might be observed only when servers are connected directly with no switch or router in between (port-to-port), through the ports on the Intel PCI Network Interface cards (NICs). The port-to-port connection is not normally configured in a network-server environment.

1.2.16 LSI U320 PCI Card Addition Causes Benign Error

After adding the LSI U320 PCI card (LSI22320-R) to the server and rebooting, you might see the following error message:

```
Initializing.....
Adapter configuration may have changed, reconfiguration is suggested!
```

You can safely ignore this message. The server will boot up successfully. Even if you restore defaults, you will still see this message when using this card.

1.2.17 LSI U320 PCI Card Not Supported With External Arrays Using Certain Drives

When attaching an external SCSI array to the add-on LSI U320 PCI card (Sun part number X9265A), the following drives and firmware levels are not supported.

Data-miscompare issues have been observed with these types of drives using the firmware levels indicated:

Drive	Firmware Level
Seagate ST336607LSUN36G	0407 and earlier
Seagate ST336753LSUN36G	0349 and earlier
Seagate ST373307LSUN73G	0407 and earlier
Seagate ST373453LSUN73G	0349 and earlier

To resolve this issue, update the firmware of these drives to 0507 or later (for 10K rpm drives) and to 0449 or later (for 15K rpm drives).

1.2.18 Synchronization Time for On-board RAID Mirroring

You must install the LSI drivers provided by Sun for the Linux operating system. You can find the Linux drivers in the directory /support on the Sun Fire V20z and Sun Fire V40z Servers Documentation and Support Files CD.

> **Note –** The Solaris operating system already includes the proper drivers.

1.2.18.1 Estimating Synchronization Times

The duration of the synchronization operation depends on the size of the hard disk drives and whether the OS and LSI drivers are loaded.

If you reboot the server before the synchronization operation completes, the synchronization operation resumes after the server finishes rebooting.

1.2.18.2 OS and Drivers Not Loaded on Server

Without the LSI drivers loaded (typically, the OS is not yet installed on the server), the data transfer for synchronizing the hard disk drives operates in asynchronous mode. The transfer speed in this case is over 10 times slower than in synchronous mode.

The average time necessary to synchronize two hard disk drives in asynchronous mode is approximately one hour per Gbyte of storage. This means that, without the OS installed, it takes about 73 hours (just over three days) to synchronize two 73 Gbyte hard drives.

The server is not "out of service" during the synchronization process. You can still access the hard disk drives.

1.2.18.3 OS and LSI Drivers Are Loaded on Server

When the OS is installed on the server with the proper SCSI drivers, the data transfer operates in synchronous mode, allowing for transfer speeds up to 3 MB/sec.

To calculate the approximate time necessary to synchronize two hard disk drives, use the following formula (*Vol* represents the volume size in Gigabytes):

resync time (Hours) = ((*Vol* * 1024)/ 3 MB/sec)/ 3600

In the case of two 73 Gbyte hard disk drives, the synchronization time is:

((73 * 1024)/ 3)/ 3600 = 6.92 hours or 6 hours 55 minutes

1.2.19 SP Platform Shutdown or Power Cycle Command Requires -f Argument

Caution – Before running this command, perform a sync-up in the platform file system. To do so, enter **sync** in the console or at the command-line prompt. The command **platform set power state off -f** immediately powers down the power supply of the platform OS, which might adversely affect the platform file system. This is the equivalent to shutting down the server by pressing the Power button on the front panel.

Note – If you use the service processor (SP) to power down a server remotely, you should install the nps package. With the nps package installed, you can use the SP Platform Shutdown or Power Cycle command to perform a graceful shutdown of the server without using the -f argument. The nps package is on the Sun Fire V20z and Sun Fire V40z Servers Documentation and Support Files CD shipped with the product, or from the download center at:
http://www.sun.com/download/index.jsp?tab=2

If the nps package is not installed on the server, you must add the -f argument when you run either of these SP commands from the SP command line. The -f argument forces the server to shut down or to power cycle.

In this case, the SP command-line syntax to shut down the server is:

```
$ platform set power state off -f
```

The SP command-line syntax to power cycle the server is:

```
$ platform set power state cycle -f
```

1.2.20 PCI Card Addition Causes POST Error Message

If you add a PCI card to the server, you might encounter an error message during the power-on self test (POST), such as the following example:

```
Error Message: Expansion ROM not initialized.
PCI Mass Storage Controller in Slot 01
Bus: 02, Device: 05, Function:00
```

If you press the F1 key at this point, the OS loads normally.

1.2.20.1   Disabling Option ROM Scan to Avoid POST Error Message

Perform this procedure to prevent the error message from appearing. After you complete the steps, you will not see the POST error message during boot.

Note – The server will not boot from the add-in card after you perform this procedure. Do the procedure in the next section to disable the error message and boot from the add-in card (applicable for SCSI-controlled cards only).

---

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, choose the PCI Configuration submenu.**

3. **Choose PCI Device Slot 1 or 2 (select the slot in which you installed the new device).**

4. **Change the Option ROM Scan value to Disabled.**

5. **Press the F10 key to save your changes.**

Subsequent POST runs will not produce the error message.

1.2.20.2   Disabling an On-board NIC Option ROM Scan to Boot From a SCSI-Controlled Card

Perform this procedure to prevent the error message from appearing. After you complete the procedure, you can boot from the SCSI-controlled card without seeing the POST error message.

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, choose the PCI Configuration submenu.**

3. **Choose Embedded Broadcom Gbit 0 or Embedded Broadcom Gbit 1 (select the port that does not connect to your networked PXE server).**

4. **Change the Option ROM Scan value to Disabled.**

5. **Press the F10 key to save your changes.**

1.3 Notes Specific to Sun Fire V20z Servers

This section discusses known issues and considerations on both the original and the updated releases of the Sun Fire V20z Server. For more information about the releases, see the document *Sun Fire V20z and Sun Fire V40z Servers—Differences Between Server Versions*.

1.3.1 Incorrect BIOS Version Displays After Update

After you perform a BIOS update, the SP might display the older BIOS revision. To resolve this issue, reboot the platform using the following command:

```
platform set os state reboot
```

1.3.2 Spurious Interrupts on Serial Port

Floating interrupt pins on the serial port cause spurious interrupts on the serial port on the motherboard of the Sun Fire V20z Server.

This issue appears only when you are using the serial-over-LAN feature.

If you are not using the serial-over-LAN feature, you can avoid this issue by doing the following:

1. **Turn on or reboot the server.**

2. **Press the F2 key to enter the BIOS Setup Utility.**

3. **Disable the Console Redirection option.**

1.3.2.1 Using the Serial-over-LAN

If you are using the serial-over-LAN feature, perform the following step:

1. **Update your server to the latest BIOS release, available as part of the NSV 2.2.0.8 or later from the Sun Download Center.**

If you are running a system running the Solaris OS, you do not need to make any special changes after the BIOS is updated.

If you still encounter this issue, you can redirect the console over the serial port, using the following procedures. (You can also find these procedures in Chapter 4 of the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide*.)

Caution – Redirecting the console over serial is a procedure intended for advanced users of Solaris only. You can disrupt the proper functioning of the server or make the server unbootable if you introduce a problem in the `bootenv.rc` file.

Note – The default setting for the output device is `screen`; the default setting for the input device is `keyboard`.

1.3.2.2 Changing and Verifying the Settings in Solaris

To enable Console Redirection over Serial on a Solaris-based server:

1. **In a terminal window, run the** `eeprom` **command to change the settings for the output and input devices, as shown here:**

   eeprom output-device=ttya

   eeprom input-device=ttya

Note – For Solaris 10 1/06 and later, use the command:
eeprom console=ttya

---

2. **To verify your changes, run the** `eeprom` **command in a terminal window with no arguments.**

   The contents of the `bootenv.rc` file display in the terminal window.

3. **Locate the following lines and verify that they display the correct values.**

   output-device=ttya

   input-device=ttya

1.3.2.3 Resetting to the Default Settings in Solaris

To reset the output and input devices to the default settings, run the `eeprom` command with the following arguments:

eeprom output-device=screen

eeprom input-device=keyboard

> **Note –** For Solaris 10 1/06 and later, use the command:
> `eeprom console=text`

1.3.2.4 Changing the Settings in Linux

If you are running a Linux-based system, make the following changes:

Add the following line to the end of the `/etc/securetty` file:

ttyS0

Add the following line to the list of gettys in the `/etc/inittab` file:

co:2345:respawn:/sbin/agetty -L ttyS0 9600 vt100

The list of `gettys` in the `inittab` file should read as follows:

```
# getty-programs for the normal runlevels
# <id>:<runlevels>:<action>:<process>
# The "id" field  MUST be the same as the last
# characters of the device (after "tty").
co:2345:respawn:/sbin/agetty -L ttyS0 9600 vt100
1:2345:respawn:/sbin/mingetty --noclear tty1
2:2345:respawn:/sbin/mingetty tty2
3:2345:respawn:/sbin/mingetty tty3
4:2345:respawn:/sbin/mingetty tty4
5:2345:respawn:/sbin/mingetty tty5
6:2345:respawn:/sbin/mingetty tty6
```

1.4 Notes Specific to Sun Fire V40z Servers

This section discusses issues on both the original and the updated releases of the Sun Fire V40z Server. For more information about the releases, see the *Sun Fire V20z and Sun Fire V40z Servers—Differences Between Server Versions*.

1.4.1 890 CPU

The Sun Fire V40z server supports the Opteron DC 890 CPU, 2.8 GHz, E6 stepping.

1.4.2 Super FRU Replacement Procedure

If you replace the Super FRU (the chassis, motherboard, and certain CRUs) on the Sun Fire V40z server and the server fails to boot due to a PCI ID mismatch, see the "Procedure for Resolving a Failure to Boot Due to a PCI ID Mismatch" in Chapter 4 of the *Sun Fire V20z and Sun Fire V40z Servers User's Guide.*

1.4.3 4 Gbyte DIMMs

The Sun Fire V20z and V40z servers support 4 Gbyte DDR1-400 DIMMs. To order, go to the Sun Store at `http://store.sun.com`.

1.4.4 PCI/PCI-X Hot Plug Enable/Disable

The PCI/PCI-X Hot Plug feature reserves resources for Hot Plug PCI and PCI-X slots. Because the feature reserves memory for PCI/PCI-X Hot Plug capability, this memory is not available for other uses. In systems with less than 4 GB, the loss is negligible. However, in systems with memory 4 Gbyte and above, the user might find the trade-off in memory loss to be unacceptable.

In NSV releases earlier than 2.4.0.6, the PCI/PCI-X Hot Plug feature was *enabled* by default, and you could not disable it.

In NSV 2.4.0.6 and later releases, the feature is *disabled*, and you are allowed to enable or disable the feature, as described in the following subsections.

Caution – PCI/PCI-X Hot Plug is not supported by Sun and is not supported under Linux or Solaris. The following sections are for your informational purposes.

1.4.4.1 Enabling PCI/PCI-X Hot Plug Feature

To use the PCI/PCI-X Hot Plug feature with 2.4.0.6 and later releases, enable the feature in BIOS by doing the following:

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, choose the PCI Configuration submenu.**

3. **Choose PCI/PCI-X Hot Plug Enable.**

   The default value displays as [Disabled].

4. **Press the down arrow key to toggle this value to [Enabled].**

5. **Press the F10 key to save your changes.**

6. **Reboot the system.**

1.4.4.2 Verifying PCI/PCI-X Hot Plug Is Enabled

To verify that the PCI/PCI-X Hot Plug feature is enabled:

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, choose the PCI Configuration submenu.**

   The toggle should show as [Enabled].

1.4.5 Topspin Infiniband Host Channel Adapter

Note – This issue is resolved in the BIOS included with NSV 2.2.0.6h and later releases.

Note – The Boot-Over-InfiniBand feature is not supported at this time.

On a Sun Fire V40z Server running BIOS version 2.18.11 or below, support for the Topspin Infiniband Host Channel Adapter (HCA) (Sun PN X9270A) is limited to Slots 2 and 3.

1.4.6 PCI Option Card: Sun Dual Gigabit Ethernet + Dual SCSI PCI Card

You can install more than one Sun Dual Gigabit Ethernet + Dual SCSI PCI option card in the Sun Fire V40z Server. However, you cannot install two of the option cards in PCI slot 2 and slot 3 at the same time.

For example, if you install a Sun Dual Gigabit Ethernet + Dual SCSI PCI option card in PCI slot 2, you can install one or more of the same option cards in slots 4, 5, 6 or 7, but not in slot 3.

For more information about this option card, go to:

http://www.sun.com/products/networking/ethernet/
dualgigabitethernet/details.xml#Supported%20Platforms-12

1.4.7 SP Event Log Messages When One Power Supply Is Disconnected

If your Sun Fire V40z Server has two power supplies installed, operate the server with an AC power cord attached to each power supply.

If you disconnect one power cord, the SP event log will fill with messages indicating that the power supply is disconnected. You can ignore the messages, but other events in the log might not be seen.

1.5 New or Revised Hardware Procedures

1.5.1 Heat Sink Removal and Installation

Note – If you remove original heat sink hardware and replace it with new hardware, follow the instructions provided with your replacement kit.

Improper removal and installation of the heat sink can strip the threads on the heat sink spring assemblies. To ensure that this does not occur, remove and install the heat sink according to the instructions below.

There are two types of thermal devices used to cool the system processors in model 2100 and 4300/4300-E products. The first type is a heat pipe, which is used in the model 4300 and 4300-E products for the processors on the main system board. The second type is a low-profile finned heat sink, which is used on the model 2100 product to cool the main system processors, and on the auxiliary CPU board of the model 4300 and 4300-E products to cool the expansion processors. The following instructions refer to the low-profile finned heat sink only. Refer to your hardware service documentation for instructions pertaining to the heat pipe.

1.5.1.1   Heat Sink Removal

1. **With the appropriate screwdriver, alternately loosen the back and front spring assemblies, not more than three turns each, until the heat sink screws are completely loose.**

2. **Carefully remove the spring assemblies and the washers that lie beneath each of the assemblies and set them aside.**

3. **Remove the heat sink by wiggling the heat sink slightly to free it from the thermal grease.**

Caution – Be careful not to bend or damage the heat sink fins. Damaged fins will degrade the performance of the heat sink.

---

4. **Inspect the heat sink for lint and dust. If necessary, clean it with a vacuum or with compressed air.**

5. **Place the heat sink upside down on a flat surface, so that the thermal grease does not contaminate other components.**

6. **Use the plastic card from your Processor Replacement Kit to scrape any thermal grease from the heat sink and from the top of the processor.**

7. **Use the pre-moistened, anti-static wipe from your Processor Replacement Kit to wipe any residual grease from the heat sink, from the top of the processor, and from the plastic card.**

You can replace the processor, if necessary. Follow the instructions in your server guide or the document that came with the new part. Continue with the heat sink installation instructions below.

1.5.1.2 Heat Sink Installation

1. **Use the syringe from your replacement kit to apply approximately 0.1 ML/CC of the thermal grease, in a circular pattern, to the top of the processor case.**

2. **Use the plastic card from your Processor Replacement Kit to carefully distribute the grease. Scrape off any excess grease until only an extremely thin and uniform layer remains. Any voids or crevices can create air pockets, so ensure that coverage is thin but thorough.**

3. **Carefully position the heat sink on the processor. Align the holes on either side of the heat sink over the standoffs for the spring assemblies. Ensure that both heat sink holes are centered over their respective standoffs.**

4. **Place the spring assembly washers over the heat sink holes, and ensure that they also are centered over their respective standoffs.**

⚠ **Caution –** Failure to center the heat sink holes and washers over their respective standoffs can cause the spring assembly to bind on the washer or on the heat sink. This can cause improper spring tension and can damage the threads of the spring assembly or the standoff.

FIGURE 1-1   Relationship of Heat Sink, Spring Assy., Washer, and Standoff
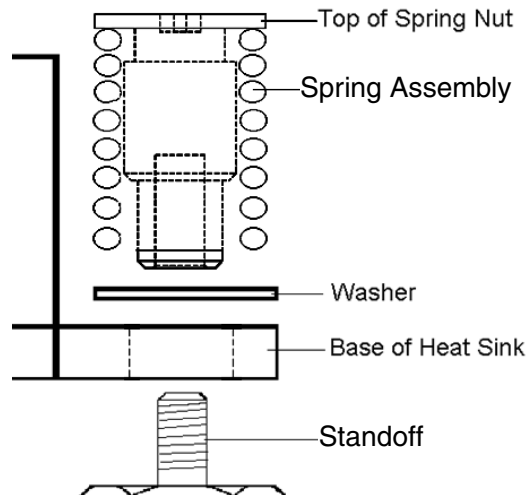
5. **Carefully press down firmly and evenly on the heat sink, to hold it securely in place while you install the spring assemblies.**

   Continue to press down on the heat sink.

6. Place the rear spring assembly (the one nearest the PCI support post) over the rear standoff, and without the use of any tools, hand-tighten it as far as the spring assembly allows.

7. Still pressing down firmly and evenly on the heat sink, place the front spring assembly over the front standoff, and hand-tighten it as far as the spring assembly allows.

   After both spring assemblies have been hand-tightened, you can release the downward pressure you applied on the heat sink.

8. To ensure that the spring assemblies center properly in the holes, grasp the top of the heat sink and gently wiggle it, both left and right, until the spring assemblies center into the holes.

9. After you wiggle the heat sink in to place, hand-tighten the spring assemblies again (use no other tools) to ensure that they are snug against the washers and the heat sink.

10. Attempt to wiggle the heat sink again. You should notice only a small amount of side play if the spring assemblies have fully centered in the holes.

11. Lightly hold the heat sink in place as you complete the installation with the appropriate tool.

12. Tighten the rear spring assembly three turns.

13. Tighten the front spring assembly three turns.

14. Continue to alternate the tightening of the rear and front spring assemblies until both spring assemblies "bottom out" on the standoffs.

Software Information and Issues

This chapter contains information related to software. To update your server to the latest available software, go to:

- http://www.sun.com/servers/entry/v20z/support.jsp
- http://www.sun.com/servers/entry/v40z/support.xml

To determine operating systems certified or supported for the servers, go to:

- http://www.sun.com/servers/entry/v20z/os.jsp
- http://www.sun.com/servers/entry/v40z/os.jsp

This chapter contains the following sections:

2.1 Linux Operating System Issues

This section lists issues for Sun Fire V20z and Sun Fire V40z Servers running supported Linux operating systems. For all items, check the product web sites for future enhancements.

2.1.1 Create LSI IM Volumes *Before* Installing the OS

To prevent data corruption on Linux operating systems, create IM volumes *before* you install the OS. To create IM volumes, use the LSI Configuration Utility.

2.1.2 RHEL 4 U1 64-bit and NSV 2.4.0.2a

If you run RHEL 4 U1 (64-bit) with NSV 2.4.0.2a, it is necessary to modify the Makefile to point to the correct directory for the kernel source. The source code for the kernel in RHEL4 U1 (64 bit) is not located in the common area (/usr/src/linux) that usually points to the correct version.

To create a soft link to the correct version of the kernel source code, enter the following command:

ln -s *full path to kernel source* **/usr/src/linuxi**

2.1.3 Linux and AMD PowerNow! Capable Processors

If HPET is disabled on a system with AMD PowerNow! processors and a Linux operating system, follow the instructions below to configure the OS appropriately.

2.1.3.1 RHEL 4 (AMD64) / RHEL 4 U1 (AMD64)

Red Hat Enterprise Linux 4 does not support AMD PowerNow! at this time. AMD PowerNow! must be disabled on all systems.

To disable AMD PowerNow!:

1. **Enter the following:**

   chkconfig --level 12345 cpuspeed off

2. **Reboot the server.**

2.1.3.2 RHEL 4 (x86) / RHEL 4 U1 (x86)

RHEL 4 does not support AMD PowerNow! at this time. AMD PowerNow! does not default to enable on Red Hat Enterprise Linux 4 (x86), so requires no action.

2.1.3.3 SLES 9 SP2 or Newer (AMD64)

AMD PowerNow! defaults to enable on all systems, so requires no action to enable AMD PowerNow! functionality.

2.1.3.4 SLES 9 SP2 (x86)

To enable and use PowerNow!:

1. **Add the boot parameter, `clock=pmtmr` to the file** `/boot/grub/menu.lst`.

2. **Reboot the system.**

2.1.3.5 SLES 9 SP1 (AMD64)

AMD PowerNow! must be disabled on all systems.

To disable AMD PowerNow!:

1. **In the /**`etc/sysconfig/powersave/common` **file, replace**

   `POWERSAVE_CPUFREQD_MODULE=""`

   with

   `POWERSAVE_CPUFREQD_MODULE="`**`off`**`"`

2. **Reboot the system.**

2.1.3.6 SLES 9 SP1 (x86)

Servers with dual-core processors:

This OS does not support AMD PowerNow! for dual-core processors.

To disable AMD PowerNow!:

1. **In the** `/etc/sysconfig/powersave/common` **file, replace:**

   `POWERSAVE_CPUFREQD_MODULE=""`

   with

   `POWERSAVE_CPUFREQD_MODULE="`**`off`**`"`

2. **Reboot the system.**

Servers with single-core processors:

To enable and use PowerNow!:

1. **Add the boot parameter `clock=pmtmr` to the file** /boot/grub/menu.lst.

2. **Reboot the system.**

2.1.4 OpenSSH Version - Modification

Trusted hosts might not work on some implementations without a modification to the OpenSSH script:

/etc/ssh/ssh_config

Currently, the machine uses this version:

OpenSSH_3.6.1p2, SSH protocols 1.5/2.0, OpenSSL 0x0090701f

To modify it, add this to the script:

EnableSSHKeysign yes

2.1.5 PCI-X Hot-plug Support on Linux

PCI-X hot-plug support on Linux requires kernel support as well as a driver to enable the hot-plug capabilities of the AMD-8131 PCI-X chipset element. Linux support of PCI-X hot-plug is an evolving area and a tight interdependency exists between kernel versions and hot-plug drivers. Therefore, be careful to use the correct configuration for your systems hardware/software combination. To download the AMD 8131 PCI-X Tunnel Standard Hot Plug Controller (SHPC) driver, go to:

http://www.amd.com/us-
en/Processors/TechnicalResources/0,,30_182_871_9034^9504,00.html

Within the kernel source of your distribution, read the file named pci.txt for additional information about the PCI support layer in Linux.

2.1.6 PRS in This Release

The PRS version included in this software release impacts new products only, because PRS is not field update-able.

2.1.7 Service Processor and Platform Clocks

To ensure that the Service Processor and the platform OS time zone data are in sync, set the platform RTC in Greenwich Mean Time (GMT), and use an OS mechanism to adjust platform time to the local time zone.

2.1.8 SNMP Platform OS Agent, Recommended, Reverse Proxy Configuration

Installation of certain platform OS SNMP agents might cause a review of SP-GROUP-MIB.mib (1.3.6.1.4.1.9237.2.1.1.7) to time out, in the reverse proxy configuration. To avoid this problem, install platform OS SNMP agent net-snmp v5.1.2, only.

2.1.9 Subcommand `savedump` Causes Watchdog Timeout Error

With more than 4 Gbyte of memory, if you use the `savedump` subcommand of `lcrash`, the 4300 and the 2100 hang, and a watchdog timeout error occurs. To prevent this problem, do not use the `savedump` subcommand. Instead, use the `lkcd` dump command.

2.1.10 SUSE Memory Bandwidth Performance on Dual Core

In order to obtain optimal performance for dual-core systems, customers should ensure that they use the latest kernel patch. The patch is included in SP1 or later.

If you prefer to install the patch, rather than upgrade to SP1 or later, follow the instructions below.

1. **Log on to the SUSE Portal at:**
   http://www.novell.com/linux/suse/portal/

2. **Select the Patch Support Database link in the right column of the SUSE Linux Portal page.**

3. **Select By Product on the SUSE Patch Support Database page.**

4. **Select SUSE Linux Enterprise Server 9 for AMD64 (x86_64) on the Distributions page.**

5. **Select the most recent kernel patch.**

6. **Follow the instructions to download and install the packages for SUSE CORE 9 for AMD64 and Intel EM64T (x86_64).**

2.1.11 Trident Video Driver with RHEL 3 Might Cause a System Lockup

The Trident server video driver, shipped with Red Hat Enterprise Linux (RHEL) 3.0, might cause a system lockup under certain conditions. These conditions are described in Red Hat's Bugzilla database at:

https://bugzilla.redhat.com/bugzilla/show_bug.cgi?id=113533

To avoid this issue, use the VESA X server video driver bundled with RHEL 3.0.

To select the VESA driver during installation, proceed normally until the Graphical Interface (X) Configuration screen appears. Then expand the Other drivers menu and select "VESA driver (generic)."

To select the VESA driver after installation, switch from using a Trident driver to a VESA driver. For detailed steps, see the RHEL documentation.

2.1.12 The 32-bit version of RHEL 3.0 Does Not Recognize More Than 4 Gbytes of Physical Memory

The 32-bit version of RHEL 3.0 does not recognize more than 4 Gbyte of physical memory, even when more than 4 Gbyte is installed. This is a limitation of the default kernel.

Some other 32-bit versions of Linux have trouble recognizing more than 4 Gbyte of memory because of limitations of their default kernels. If your OS demonstrates this issue, contact your OS vendor for instructions to get the correct kernel to support your memory configuration.

2.1.13 Linux Server Management Requires a Customized OpenIPMI Linux Kernel Driver

See the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide* for detailed instructions on installing this customized OpenIPMI driver.

2.1.14 Operating Systems Distributed on DVD Rather than on CD-ROM.

For the Sun Fire V20z Server, it is recommended that you obtain the optional CD/DVD drive (X9260A) to install software from DVD media.

Note – The Sun Fire V40z Servers have only the DVD/diskette drive as an option.

2.1.15 SUSE Linux Enterprise Server 8 Install From CD media using the X-windows-based Installation Utility

If SUSE Linux Enterprise Server 8 (SLES 8) is installed from the CD media using the X-windows-based installation utility, a problem might occur during the post-installation steps. The X-windows-based installation utility might revert control to the primary console and display an error message about the ps command. If this happens, you can return control to the X-windows-based installation utility by pressing **Ctrl-Alt-F7** simultaneously on your keyboard. At this point you can proceed with normal post-installation setup with SLES 8.

2.1.16 SCSI HD Installation

If you have a single SCSI hard drive, the drive can be inserted in any slot. If you have two or more hard disk drives, install the drive with the OS boot sector in the lowest-numbered slot among the populated slots.

2.1.17 SUSE Memory Bandwidth Performance on Dual Core Systems

To obtain the best performance for dual-core systems running SLES 9, install SP1 or a later service pack. If this is not an option, install patch-9962, released 21 March 2005. The patch is available on the Novell web site at:

http://support.novell.com/techcenter/search/search.do?cmd=
displayKC&externalId=2558830537429cdedb543926fd6344a8html

Note – Patch-9962 is not required for systems running SLES9 SP1 or later.

2.1.18 Translation Look-Aside Buffer (TLB) Reload Causes Errors With Certain Linux Software

Note – If you use Red Hat Enterprise Linux (RHEL) 3.0, install the most recent OS update on the server to minimize this issue.

In the BIOS Advanced menu, the "No Spec. TLB Reload" option is disabled by default. This setting allows the Translation Look-Aside Buffer (TLB) to reload.

With the default setting, errors similar to the following were observed on systems running any 64-bit version of Red Hat Linux and also SUSE Linux with Service Pack 1.

```
Northbridge status a60000010005001b
GART error 11
Lost an northbridge error
NB status: unrecoverable
NB error address 0000000037ff07f8
Error uncorrected
```

To avoid these errors, disable TLB reloading:

1. **Reboot the server and press the F2 key to enter BIOS setup.**

2. **Navigate to the Advanced > Chipset Configuration BIOS menu.**

3. **Use the arrow keys to scroll down to the option No Spec. TLB reload and change its setting from Disabled to Enabled.**

   This disables TLB reloading and eliminates the error message.

2.1.19   SLES 9 (64-bit) in Failsafe Mode Does Not Install on Sun Fire V40z Dual-Core

SUSE Linux Enterprise Server 9 64-bit currently does not work with the boot option of `maxcpus=0`, the default option for failsafe mode for the Sun Fire V40z dual-core.

Workaround

After the BIOS finishes booting, a graphical boot screen appears with three options: Linux, Floppy, or Failsafe.

1. **Select "Failsafe".**

2. **Click in the small text edit box below the options.**

3. **Scroll to the end of the line.**

4. **Edit the text: change from** `maxcpus=0 3`" **to** "`maxcpus=3`**".**
   Do not remove the number "3".

2.1.20   Installing RHEL4 FCS (32-bit) on Sun Fire V40z (Chassis 380-1010) With NSV 2.4.0.6 Requires Disabling HPET

To install Red Hat Enterprise Linux 4 FCS (32-bit) on Sun Fire V40z (chassis 380-1010) with NSV 2.4.0.6, the High Precision Event Timer (HPET) must be disabled in the BIOS. This modification is not necessary with RHEL4 Update 1.

Workaround

To disable the HPET in the BIOS:

1. **Press the F2 key to enter the BIOS Setup Utility.**

2. **In the Advanced menu, select the HPET Timer option.**

3. **Change the value to Disabled.**

4. **Press the F10 key to save your changes.**

2.2   Solaris Operating System Issues

This section lists issues and considerations regarding Sun Fire V20z and Sun Fire V40z servers using the Solaris operating system. For all items, check the product web sites for future enhancements.

The first compatible version of the Solaris OS is Solaris 9 OS 4/04 or later for the Sun Fire V20z Server and Solaris 9 OS HW 4/04 for the Sun Fire V40z Server. However, certain functionality might be phased in after the initial product release of the server:

■ RAID functionality is not supported in the initial release.

■ The ECC-check driver and IPMI support on the Sun Fire V20z and Sun Fire V40z Servers Documentation and Support Files CD.

■ Use the VESA driver for Solaris installations requiring onboard graphic support. When installing the Solaris 9 OS 4/04 with a monitor, use the kdmconfig utility to select "VESA Generic Driver for VESA Compatible Video Cards".

■ You might see problems when connecting a USB mouse to the server. The kdmconfig utility might fail to detect the USB mouse and the video might fail. To avoid this problem, manually select USB mouse in the Pointing Device Selection screen with kdmconfig.

■ The Solaris boot disk must be installed in SCSI slot 0.

■ Some distributions of operating systems might be on DVD media rather than on CD-ROM. For the Sun Fire V20z Server, Sun recommends that you obtain the optional DVD-ROM/diskette drive (X9260A) to install software from DVD media.

Note – The Sun Fire V40z servers have only the DVD/diskette drive as an option.

■ These servers do not have UHCI hardware on-board. Devices that are operated by USB drivers written to run on prior Solaris x86 environments (using the original USBA framework) require either:

  ■ A 3rd-party UHCI-based USB PCI card (to use their existing driver)

  ■ A USBA 1.0 driver to work with on-board OHCI hardware

■ The network interface LEDs might not function properly with the current build of Solaris software; however, the network connections are fully functional.

■ If you halt a system with a USB console keyboard, the keyboard is disabled after the following message is displayed: Syncing file systems... done. Type any key to continue. It is then safe to power off the server.

■ As patches for Solaris x86 software become available for these servers, you can find the latest downloads at:

  http://www.sun.com/servers/entry/v20z/downloads.html
  http://www.sun.com/servers/entry/v40z/downloads.html

2.2.1 Create LSI IM Volumes *Before* Installing the OS

To prevent data corruption on the Solaris ZFS operating systems, create IM volumes *before* you install the OS. To create IM volumes, use the LSI Configuration Utility.

2.2.2 Solaris 10 Telnet Vulnerability Patch

Solaris 10 6/06 and 11/06 security vulnerability in the in.telnetd(1M) daemon might allow unauthorized remote users to gain access to a Solaris Host. Patch# 120069-02 addresses this issue. Apply the patch manually or run the install.sh script on all Solaris 10 6/06 and 11/06 distributions. For more information, please refer to Sun Security Alert 102802. This patch will be incorporated into the Solaris preinstall image at a later date.

2.2.3 GUI-Based Solaris 10 1/06 OS Installation Fails on Systems Fully Populated With 4 Gbyte DIMMS

Solaris 10 1/06 OS GUI-based installation fails on Sun Fire V40z servers with 64 Gbyte of memory installed (fully populated with 4 Gbyte DIMMs).

Workaround

The installation does not fail if you use the console text-mode installation.

2.2.4 Solaris 9 OS Limited to 32 Gbyte Memory

Solaris 9 OS is a 32-bit OS and is limited to 32 Gbyte of memory. However, addressing 32 Gbyte of physical memory requires a large portion of the 32-bit address space. Applications might not have access to sufficient physical memory.

Workaround

Sun recommends running the Solaris 10 OS for applications requiring large amounts of physical memory.

2.2.5 Preinstalled Solaris 10 OS

Some versions of the Sun Fire V20z and Sun Fire V40z Servers ship with a preinstalled version of the Solaris 10 OS.

If you want to remove the preinstalled version of the Solaris 10 OS from your server, you can simply overwrite it by installing a version of the Linux OS. During the Linux installation process, a warning message that begins as follows might display:

```
Warning. Unable to align partition properly.
```

Incorrect partition labels from the preinstalled Solaris 10 OS cause this message, but you can safely ignore it. The error is corrected after a Linux installer changes the partition table.

2.3 Sun Installation Assistant Issues

An operating system can be installed on the server without configuring the service processor or the network share volume (NSV) software. However, if you choose to skip configuration of the service processor and the NSV software, you will not be able to use the remote management capabilities of the system or the diagnostics.

2.3.1 Sun Installation Assistant CD-ROM

The Sun Installation Assistant CD-ROM helps you to install a supported Linux operating system (OS). It provides a set of Sun-supported drivers that are tested for quality assurance. By using the Sun Installation Assistant CD, you can install the operating system, the appropriate drivers, and additional software on your system. The Assistant eliminates the need to create a Drivers Update diskette.

The Sun Installation Assistant for Sun Fire V20z and Sun Fire V40z Servers CD-ROM might be included in your accessory kit.

You can download the .iso image for this CD-ROM from the product web sites at:

http://www.sun.com/servers/entry/v20z/downloads.jsp

http://www.sun.com/servers/entry/v40z/downloads.jsp

Note – Sun encourages customers to visit the Downloads web site. When the Sun Installation Assistant is updated to support additional versions of the Linux OS, an updated .iso image will be posted to this site.

Information about using the Sun Installation Assistant CD-ROM can be found in Chapter 2 of the current version of the *Sun Fire V20z and Sun Fire V40z Servers—Linux Operating System Installation Guide.*

2.3.2 Linux Versions Supported by the Sun Installation Assistant (SIA)

At the time of this printing, the following versions of the Linux OS are supported by the Sun Installation Assistant:

TABLE 2-1   Linux OS Versions Supported by the Sun Installation Assistant

Linux Distribution	Version Supported	32-bit 64-bit
Single-Core Systems		
Red Hat Enterprise Linux 3, WS/ES/AS	Updates 1 - 4	32-bit
Red Hat Enterprise Linux 3, WS/AS	Updates 1 - 4	64-bit
Red Hat Enterprise Linux 4, WS/ES/AS		32-bit
Red Hat Enterprise Linux 4, WS/ES/AS	Update 1	32-bit, 64-bit
SUSE Linux Enterprise Server 9 (SLES9)	SP 1, SP2	64-bit
SUSE Linux Enterprise Server 8	SP 3	64-bit
Dual-Core Systems		
Red Hat Enterprise Linux 4, AS/ES/WS	Update 1	32-bit, 64-bit
SUSE Linux Enterprise Server 9 (SLES9)	SP 1, SP2	64-bit

Note – Sun Installation Assistant does not support Red Hat Enterprise Linux 3 Update 8 and SUSE Linux Enterprise 10. These operating systems can be installed directly without using SIA.

2.3.3 Using Logical Volume Manager With the Sun Installation Assistant

The Sun Installation Assistant does not support using Logical Volume Manager (LVM) with Red Hat Enterprise Linux 3 and updates or SUSE Linux Enterprise Server 8 or 9 and service packs. The current release available from the download site supports LVM with Red Hat Enterprise Linux 4. Future releases will support LVM with SUSE Linux Enterprise Server 9 and service packs.

2.3.4 Platform Drivers

If you do not install the platform drivers and a correctable ECC error occurs, duplicate error messages of the most recent ECC failure are reported indefinitely.

To avoid this issue, ensure that you install the appropriate level of platform drivers on your server. For more information, refer to the *Sun Fire V20z and Sun Fire V40z Servers—Installation Guide*.

2.3.5 LSI Driver

Note – This issue is resolved in the BIOS update within NSV 2.2.0.6h and newer releases.

If you installed the SUSE Linux Professional 9.0 or SUSE Linux Enterprise Server 8 (SLES8) OS on your server, and are running the LSI driver version 2.05.11 and firmware version 1.03.15, you might encounter performance issues on the internal hard disk drives (HDDs).

Sun recommends updating to LSI driver version 2.05.16 and firmware version 1.03.23. You can use these versions of the driver and firmware for all supported operating systems.

2.3.6 OpenIPMI Linux Kernel Driver Conflict During Diskette Access

Note – This issue is resolved in NSV versions 2.2.0.6h and higher.

If you are using in-band IPMI functionality with your server, you must unload the OpenIPMI Linux kernel driver before accessing a diskette (floppy disk). If you do not unload the OpenIPMI Linux kernel driver before you access a diskette, diskette writes and management data that is handled by the OpenIPMI Linux kernel driver will be corrupted.

1. **To unload the OpenIPMI Linux kernel driver, authenticate as** `root`**, then enter the following commands:**

   $ `rmmod ipmi_kcs_drv`
   $ `rmmod ipmi_devintf`
   $ `rmmod ipmi_msghandler`

2. **After diskette access is complete, restore the in-band IPMI functionality by entering the following commands:**

   $ `modprobe ipmi_devintf`
   $ `modprobe ipmi_kcs_drv`

2.4 Diagnostics Issues

The most current version of `diags` contains multiple bug fixes and is available at the following URLs:

http://www.sun.com/downloads

http://www.sun.com/servers/entry/v20z/support.jsp

http://www.sun.com/servers/entry/v40z/support.xml

2.4.1 Empty README and RESCUECD Files

In previous versions of the Diagnostics CD, the README and RESCUECD files served two purposes:

- Provide user-related information.
- Serve as tag files for the diagnostics kernel to verify and match the diagnostics application with the correct version of the Linux diagnostics kernel.

In current and future versions of CD-based diagnostics, these files no longer need to contain user-related information. However, the diagnostics kernel still requires the files to verify the match between the kernel and diagnostics application. As a result the files remain intact, but have no content.

2.4.2   CD-Based Diagnostics and Remote Access

Remote access requires the prior creation of a manager-level user on the platform. See "Create Trusted Host Relationships," in the Systems Management Guide for instructions. To establish a remote command-line interface for CD-based diagnostics tests, use SSH network access:

1. **SSH to the platform IP address as the user, setup. If you created a manager-level user on the Service Processor, you are prompted for a username and password to create a new account. You can use any username except: diagUser, setup, or root. When your username and password validate, you are logged off of the system.**

2. **Now use your username and password to SSH to the platform.**

3. **To enable only platform diagnostics tests without loading the Service Processor tests, execute the command:**

```
diags start -n
```

Note – For Service Processor-based diagnostics, the -n argument specifies: Do not boot the platform with diagnostics.

–or–

To enable both Service Processor and platform diagnostic tests, execute the command:

```
diags start
```

This command reboots the platform into diagnostics mode. Wait at least two or three minutes before you attempt to run the tests.

–or–

Implement one of the following in shell or Perl:

```
diags start
sleep 240
rc = diags get state
if (rc ==0)
then
  # run desired tests using diags run tests command
```

```
else
    echo "Diagnostics not loaded in expected time. rc = $rc"
fi
```

–or–

```
rc = diags get state
timer = 0
while (rc == 25 (device error)) and (timer < MAX_WAIT)
do
    sleep SLEEP_TIME
    timer=time+SLEEP_TIME
    rc = diags get state
done
if (timer < MAX_WAIT)
then
    # run desired tests using diags run tests command
else
    echo "Error loading platform diagnostics. rc = $rc"
fi
```

4. **To determine if the diagnostics tests are available to run, you can execute the command:**

```
diags get state
```

The command returns either a success message:

```
The Service Processor and the platform diagnostics systems are
available to receive test requests.
```

Or an error message:

```
The platform diagnostics system is not available.
```

```
end
if re == 0
    diags run tests -a
```

2.4.3   Diagnostic Tests Fail to Load

In some releases, after you've entered the command to execute diagnostics (**diags start**) some diagnostic tests might fail to load. You can check on the status of the diagnostics by entering the following command:

```
diags get state
```

If the diagnostics have loaded, the above command will return the following message:

```
The SP and Platform Diagnostics systems are available to receive test requests.
```

If the diagnostics haven not loaded, the above command will return the following message:

```
The Platform Diagnostics system is not available.
```

To resolve this issue, install NSV 2.4.0.6a.

2.4.4   Diagnostic Fan Tests are Platform Power Dependent

Platform state changes that are made after diags has been started night not be detected by fan tests, which are dependent on platform power. If you use service processor-based, non-platform mode "diags start -n," set the desired platform state before you load diags.

2.4.5   Fan 10 Falsely Reports During Reboot Cycle

The sensor for Fan 10 reports 0 RPM during the reboot cycle, but then quickly reports a return to normal operation.

2.4.6   Packet Corruption Might Cause Failure of Diagnostic Download

Packet corruption might happen during diagnostics download. If this happens, platform-side `diags` never comes up. To resolve the issue, follow this procedure:

1. **Stop all diagnostics by entering the command:**

   $ `diags terminate`

2. **Verify that the server power is off by entering the command:**

   $ `platform get power state`

3. **Start diagnostics by entering the command:**

   $ `diags start`

4. **Repeatedly check the status of** `diags` **by entering:**

   $ `diags get state`

If the problem persists, call Sun Service for further assistance.

2.4.7 `diags` Fan Tests

Any platform state changes made after the `diags` command has been started might not be detected by fan tests, which are dependent on platform power. If you use Service-Processor-based, no-platform mode `diags start -n`, set the desired platform state before you load diagnostics.

2.4.8 `diags` SSH Connection and nic Test

Users might lose SSH connection with the platform when the `retention.allDimms` test runs. Diagnostics continues to run, but the user cannot SSH into the platform after the connection is lost. To avoid this problem, if you use an SSH connection, do not run the nic test.

2.4.9 Firmware Downgrades

Generally, downgrading firmware to a version lower than the version shipped with the machine is not supported.

2.4.10 `sp snmp community` Commands

NSV releases 2.4.0.6 and later support the following SP commands:

- `sp set snmp community`
- `sp get snmp community`

2.4.10.1 `sp set snmp community`

This command enables you to set the community name to be used by the service processor (SP), itself, as opposed to the proxy community string that is used between the SP and the platform.

There are no restrictions on the length of the community string. Typical names are "private" and "public." The factory default name of the community string is "public," so if you run the command `sp get snmp community` before you set a value, "public" is returned. Set the value to any string without spaces.
For example, for:

`$ `**`sp set snmp community COMMUNITY_STRING`**

Successful output is:

```
localhost# sp set snmp community private
```

2.4.10.2 `sp get snmp community`

This command returns the community name that is currently being used by the service processor. For example, with command:

`$ `**`sp get snmp community`**

Successful output is:

```
localhost# sp get snmp community public
```

2.4.11 Incorrect Install Date Returned With `inventory get software` Command

In rare cases, when the user enters the `inventory get software` command, the wrong date is displayed for the latest revision of the server diagnostics software. This does not affect functionality or performance of the product and can be safely ignored.

For example:

```
$ inventory get software
Name        Revision  Install Date            Description
Diagnostics V2.3.0.9  Thu Feb 17 19:17:16 1938Server Diagnostics
BIOS-V20z   V1.33.5.2 Mon Jun 06 14:00:11 2005Platform BIOS for V20z
servers
Operator Panel V1.0.1.2Mon Jun 06 13:43:06 2005Operator Panel
Firmware
SP Value-AddV2.3.0.11 Mon May 16 14:36:32 2005SP Value-Add Software
SP Base     V2.3.0.11 Mon May 16 14:36:32 2005SP Base Software
$
```

Workaround

If you need to access the correct install date for the server diagnostics software, perform the following command sequence:

1. **Revert to the default settings of the SP by entering.**

   $ **sp reset to default-settings -a**

2. **Wait for the SP to reboot, then create a manager account by connecting to the IP address of the SP.**

   $ **ssh -l setup** *IP-ADDRESS*

   IP-ADDRESS The IP address of the SP when it comes back online.

3. **Follow the prompts to create a manager account.**

4. **Log in to the manager account you just created.**

5. **Mount the SP containing the Server Diagnostics software.**

6. **Verify your access to the latest revision dates of the installed software.**

   $ **inventory get software**

   The correct installation dates for the latest software revisions are now displayed.

For more information about creating a manager account or mounting the SP, see the *Sun Fire V20z and Sun Fire V40z Servers—Installation Guide*.

2.4.12 `sp get tdulog` and `sp ssh1` Commands

The `sp get tdulog` command has been enhanced and the `sp ssh1` commands have been added. For details, see the *Sun Fire V20z and Sun Fire V40z Servers Server Management Guide*.

2.4.13 Do Not Access the SP While Diagnostics Are Loaded

Note – This issue appears in NSV versions 2.1.0.16 and earlier. It is resolved in NSV 2.2.0.6 and later versions.

While running diagnostics on your server, do not interact with the service processor (SP) through the command-line interface or IPMI.

The sensor commands cannot be used reliably while the diagnostics are running. Issuing sensor commands while diagnostics are loaded might result in "false" or erroneous critical events being logged in the events log. The values returned by the sensors are not reliable in this case.

2.4.14 `diags terminate` Command Generates "False" Critical Events

Note – This issue appears in NSV versions 2.1.0.16 and earlier. It is resolved in NSV 2.2.0.6 and later versions.

Terminating the diagnostics generates critical events on the sensors and system errors. After the diagnostics are terminated and the platform is powered off (the `diags terminate` command does this automatically), Sun recommends that you clear these events from the event log so that you do not mistake them for actual critical events.

The diagnostics provided with the Sun Fire V20z or Sun Fire V40z Servers are designed for a user who is watching the screen, or for the output to be saved to a file.

TABLE 2-2 and TABLE 2-3 (generated by the SP command `sp get events`) show the events generated when you run the command `diags terminate` on your server. You can ignore all of the "critical" errors.

TABLE 2-2   Sample Event Log for a Sun Fire V20z Server

ID	Last Update	Component	Severity	Message
50	11/04/2004 16:49	Platform	informational	The platform has been powered off
51	11/04/2004 16:49	planar	critical	Sensor CPU VDDA voltage reports 0.00 Volts but should be between 2.25 and 2.75 Volts
52	11/04/2004 16:49	ps	critical	Sensor Bulk 12v supply voltage (cpu0) reports 1.33 Volts but should be between 10.20 and 13.80 Volts
53	11/04/2004 16:49	cpu0.vrm	informational	Sensor CPU 0 core voltage reports 0.76 Volts and has returned to normal
54	11/04/2004 16:49	cpu0.memvrm	critical	Sensor CPU 0 VDDIO voltage reports 0.00 Volts but should be between 2.25 and 2.75 Volts
55	11/04/2004 16:49	cpu1.vrm	informational	Sensor CPU 1 core voltage reports 0.76 Volts and has returned to normal
56	11/04/2004 16:49	cpu1.memvrm	critical	Sensor CPU 1 VDDIO voltage reports 0.00 Volts but should be between 2.25 and 2.75 Volts

<Log file continues...>

TABLE 2-3   Sample Event Log for a Sun Fire V40z Server

ID	Last Update	Component	Severity	Message
1	11/04/2004 14:31	ps1	informational	Power supply 1 has resumed normal operation
2	11/04/2004 14:31	ps2	informational	Power supply 2 has resumed normal operation
3	11/04/2004 15:03	planar	critical	Sensor Bulk 1.8V S0 voltage reports 0.00 Volts but should be between 1.62 and 1.98 Volts
4	11/04/2004 15:03	cpuplanar	critical	Sensor CPU 2 VDDA (2.5V) S0 voltage reports 0.00 Volts but should be between 2.25 and 2.75 Volts

TABLE 2-3   Sample Event Log for a Sun Fire V40z Server *(Continued)*

5	11/04/2004 15:03	ps1	critical	Sensor Bulk 12V S0 voltage at CPU 0 reports 0.01 Volts but should be between 10.20 and 13.80 Volts
6	11/04/2004 15:03	ps2	critical	Sensor Bulk 12V S0 voltage at CPU 0 reports 0.01 Volts but should be between 10.20 and 13.80 Volts
7	11/04/2004 15:03	fan5	critical	Sensor Fan 5 measured speed reports 60 RPM but should be greater than 2000 RPM
8	11/04/2004 15:03	fan6	critical	Sensor Fan 6 measured speed reports 60 RPM but should be greater than 2000 RPM

```
<Log file continues...>
```

Workaround

The following steps provide a workaround to clear the false critical events from the event log.

Note – For a complete list of the SP commands, refer to the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide*.

1. **Before running the diagnostics, clear the SP events log.**

2. **Start the diagnostics.**

   Wait for the diagnostics to come up.

3. **Run any or all of the diagnostics tests.**

4. **Check the SP event log for any errors.**

   The event log can be stored away for future investigation.

5. **Terminate the diagnostics with the command `diags terminate`.**

6. **Clear the SP event log.**

   This step eliminates all of the false critical events that were generated in the previous step.

Note – For more information about clearing the event log, enter the command:
```
sp delete event --help
```

2.4.15   Other Diagnostics Issues

- The diagnostics x86-64 kernel hangs when legacy USB is enabled. To work around this issue, turn off legacy USB for the diagnostic mode.

- After running the NIC tests once, the bcm5700 device is not freed; this prevents the user from running the NIC tests again.

- When the diagnostics are launched on the platform, the system tries to mount the floppy drive. The following error is returned:

```
mount : Mounting /dev/fd0 on /mnt/floppy failed. No such
device.
```

You can safely ignore this error message.

Note – The floppy-disk drive issue is resolved in the diagnostics included with NSV 2.2.0.6h and later releases.

CHAPTER **3**

NSV (SP and BIOS) Changes By Version

This chapter lists the features, known issues, and workarounds in the latest major NSV versions.

3.1   NSV Release 2.4.0.28

3.1.1   New Features and Resolved Issues

NSV release 2.4.0.28 is a maintenance release that contains a fix for the chipkill function issue. Release 2.4.0.28 contains no other changes, and is provided solely for the resolution of this issue. For more information, see Section 1.2.1, "BIOS Chipkill Function Not Working" on page 1-3.

3.2   NSV Release 2.4.0.26

3.2.1   New Features

NSV 2.4.0.18 includes the following hardware and software features:

TABLE 3-1   NSV 2.4.0.26 Components

Component	Change or Additions
Red hat Enterfprise Linux 4	Update 4, 2.6 Kernel (32-bit & 64-bit)
NSV	Version 2.4.0.26
SP Base Software	Version 2.4.0.18
Diagnostics Software	Version 2.4.0.14

3.2.2   Resolved Issues

The following known issues are resolved in NSV 2.4.0.26

Component	Issue
SP/BIOS	Added Service Processor command to enable changing the network port that the POCI driver uses.
Software	Fixed issue with POCI driver with newer 64-bit Solaris release.

3.3 NSV Release 2.4.0.18

3.3.1 New Features

NSV 2.4.0.18 includes the following hardware and software features:

TABLE 3-2   NSV 2.4.0.18 Components

Component	Change or Addition
Red Hat Enterprise Linux 3	Update 8, 2.4 Kernel (64-bit) support
SUSE Linux Enterprise Server 10	2.6 Kernel (64-bit)
AMD Opteron Processor Support	Sun Fire V40z Server: • AMD Opteron 890, E-6
NSV	Version 2.4.0.18
4300 (V40z) Platform BIOS	Version 2.35.3.2
SP Base Software	Version 2.4.0.14
Diagnostics Software	Version 2.4.0.14

3.3.2 Resolved Issues

The following known issues are resolved in NSV 2.4.0.18.

TABLE 3-3   Issues Resolved in NSV 2.4.0.18

Component	Issue
SP	Remote console access to LSI MegaRAID firmware fixed; delete entry function fixed.
Diagnostics	Resolved I2C conflict causing erroneous and faulty DIMM topology gathering.
	Resolved high failure when 4 GB DIMM installed on Sun Fire V40z with chassis 380-1378.
	Resolved triple faults when diagnostics with ECC encounter DIMM with taped pin.
Other	Removed ssh version 1 from service processor.

TABLE 3-3   *(Continued)*Issues Resolved in NSV 2.4.0.18

Component	Issue
	Resolved diagnostics memory tests giving false error indications with 4 GB DIMMs.
	Delivered the proper NVData image for Sun Fire V40z with chassis 380-1010 and 380-1206 onboard LSI 1020/1030 controller.
BIOS	Added support for Opteron 890 CPUs.
	LSI MegaRAID card qualified but remote console feature is planned in future release.
	Added SLES 10 support for POCI/TDU.
	Implemented AMD errata #169 for Sun Fire V40z.
	Resolved bad memory not always detected when in upper 64-bits of bank or causes hang in lower 64 bits.
	With certain configuration including a megaRAID card and 875 CPUs, unable to run diagnostics.
	Server does not post with a MegaRAID card installed.

3.4　NSV Release 2.4.0.12

3.4.1　New Features

NSV 2.4.0.12 includes the following hardware and software features:

TABLE 3-4   NSV 2.4.0.12 Components

Component	Change or Addition
RoHS 5 compliance	BIOS supports RoHS compliant Sun Fire V40z Servers
Red Hat Enterprise Linux 3	Update 7, 2.4 Kernel (32-bit and 64-bit) support
Red Hat Enterprise Linux 4	Update 3, 2.6 Kernel (32-bit and 64-bit) support
SUSE Linux Enterprise Server 9	Support for SP3, 2.6 Kernel (64-bit)
AMD Opteron Processor Support	Sun Fire V40z Server: • AMD Opteron 856, E-4 • AMD Opteron 885, E-6
NSV	Version 2.4.0.12

TABLE 3-4   NSV 2.4.0.12 Components *(Continued)*

Component	Change or Addition
2100 (V20z) Platform BIOS	Version 1.35.2.2
4300 (V40z) Platform BIOS	Version 2.35.2.2
SP Base Software	Version 2.4.0.10
Diagnostics Software	Version 2.4.0.6

3.4.2   Resolved Issues

The following known issues are resolved in NSV 2.4.0.12.

TABLE 3-5   Issues Resolved in NSV 2.4.0.12

Component	Issue
Software	Slow DIMMs in Node 0 cause Multi-Bit ECC Error due to initialization not completing
Drivers: TDU	The `tdulog` naming convention changed in version 2.3.0.11. This is corrected in version 2.4.0.12.
BIOS	CD diagnostics sporadically reboots if a bad DIMM is encountered.
BIOS	IPMI KCS code might hang if BMC (PIP) stops responding. There were inadequate provisions for time out or failure handling in the KCS stack. This usually appeared as a hang at postcode D9.
BIOS	Command used to instruct BIOS to PXE boot works only if the boot image is on the network connected to `eth0`. If the image is available using `eth1`, the server boots from the local disk.

3.5   NSV Release 2.4.0.8

3.5.1   New Features

This release includes the following software features:

- Support for Red Hat Enterprise Linux 3, Update 5 (32-bit and 64-bit)
- Support for Red Hat Enterprise Linux 3, Update 6 (32-bit and 64-bit)

- Network Share Volume, NSV 2.4.0.8, including the updated components in TABLE 3-6

TABLE 3-6 NSV 2.4.0.8 Components

Component	Change
2100 (V20z) Platform BIOS	Version 1.34.6.2
4300 (V40z) Platform BIOS	Version 2.34.6.2
SP Base Software	Version 2.4.0.8
Diagnostics Software	Version 2.4.0.4
2100 PRS for V20z	Version 102
4300 PRS for V40z	Version 18

3.5.2   Resolved Issues

TABLE 3-7 lists issues resolved in the NSV 2.4.0.8 release.

TABLE 3-7 Issues Resolved in NSV 2.4.0.8

Component	Issue
BIOS	Customers configuring Sun Fire V40z Servers with one or more Endace DAG 4.3GE cards must update to NSV 2.4.0.8.
BIOS	Deliver the proper NVData image for the V40z onboard LSI 1020/1030 controller.
Diagnostics	Some V40z (Rev. E) super FRUs fail to load platform diagnostics if a daughtercard is not installed.
Service Processor	Software inventory is reporting "factory installed," in error.
Diagnostics	Memory diags sometimes reports incorrect configuration or cannot identify a failing DIMM.
Service Processor	Value for MIB entry for `SP-SP-MIB::spPort80` is always zero. Enable the appropriate value.
BIOS	Set the Maximum Outstanding Split Transactions (MOST) to 1 in PCI configuration space, to work-around LSI 53C1020-B2 Device Errata Listing 865, item 10.

3.6 NSV Release 2.4.0.6

The following is a list of the features and fixes contained in BIOS v1.34.4.2 (Sun Fire V20z Server) and v2.34.4.2 (Sun Fire V40z Server), as well as the service processor (SP) firmware v2.4.0.6.

3.6.1 Features in NSV 2.4.0.6

- AMD PowerNow! Technology

  Release 2.4 features AMD Opteron processors that include AMD PowerNow! Technology with Optimized Power Management. This feature allows IT and workstation customers to decrease overall power consumption by enabling optimization of performance on demand. It also aids in platform investment protection for demanding enterprise server environments by lessening strain on data center cooling and ventilation systems.

- PCI/PCI-X Hot Plug Enable/Disable

  This new option was added in the BIOS Configuration, Advanced menu. If enabled, it reserves resources for Hot Plug PCI-X slots. If Disabled, it allocates resources only for cards that were installed at boot. This option applies only to Sun Fire V40z Servers. The default is Disabled.

- CMOS Save-Restore

  Release 2.4 includes a CMOS Save-Restore feature that saves any CMOS setting changes you initiate for boot order, time/date, and so on. If the CMOS becomes corrupted, the saved settings are restored rather than the default settings.

3.6.2 Resolved Issues in NSV 2.4.0.6

TABLE 3-8 lists issues resolved in the NSV 2.4.0.6 release.

TABLE 3-8   Issues Resolved in NSV 2.4.0.6

Component	Issue
System Management: IPMI	For ICTS SDR/sensor tests: 1. Return data that specifies that unreadable sensors have no data, rather than IPMI_ILLEGAL_COMMAND_FOR_SENSOR. 2. Return IPMI_ILLEGAL_COMMAND_FOR_SENSOR instead of IPMI_SENSOR_DATA_NOT_PRESENT if a request is made for a sensor that does not exist.
System Management: SM Commands	Commands for setting community strings show incorrect help message.
System Management: SM Commands	The ipmi get sel command should understand manufacturer ID and display sel record type, consistent with other data.
System Management: IPMI	Node Busy message is not returned after the set command, during time when the command is executing.
System Management: SNMP	In SNMP MIB, SP inventory install dates display "Uninstalled."
System Management: SM Commands	The ipmi get sel command should analyze timestamp before converting it to time.
System Management: SM Commands	The ipmi get sel command does not display all sel entries appropriately.
System Management	Cannot change DHCP setting with same IP address.
System Management: SM Commands	Support forced option for platform update bios command when OS is in "on" state.
System Management: IPMI	Add set/get system information commands.
System Management: IPMI	The ipmi get supported cipher suites should address specification clarification.

TABLE 3-8 Issues Resolved in NSV 2.4.0.6 *(Continued)*

Component	Issue
System Management: IPMI	The dates returned from the `get sel info` command "Most recent addition timestamp" and "Most recent deletion timestamp" are not persistent across SP boots.
System Management: Op Panel Executive	When the SP boots, if it is already configured for DHCP and the network is unplugged or non-functional, the SP will become unusable when Opexec times out and resets the networking to DHCP mode.
System Management	Add `sp` commands to modify SNMP community string. The `sp snmp set/get community string` commands were added.
System Management: SM Commands	If `/pstore` is filled to near-capacity, the `access add trust` SM command gives no indication of a failure, even though an event warning displays: "Error persisting user information. It is likely that the persistent filesystem is full."
System Management: SM Commands	The `ipmi get sel` command does not display all sel entries appropriately.
System Management: Op Panel	Op panel server menu does not show reboot option when going in reverse direction.

3.6.3 Known Issues in NSV 2.4.0.6

3.6.3.1 HPET Timer Off Might Cause System Clock to Lose Ticks

When the HPET timer is off, the system clock might lose ticks. This loss of timer ticks might result in timing errors in the kernel and in user applications. Symptoms might include timers that prematurely time out and the time of day clock appearing to behave erratically. The HPET timer must be enabled when using the PowerNow! feature on a SMP kernel.

3.6.3.2 Incorrect Sensor Number Used in BIOS for System Firmware Progress SEL Entries

BIOS does not use the correct sensor number when generating System Firmware Progress SEL entries. If certain errors occur during system boot, such as keyboard or floppy disk errors, the system BIOS generates a System Firmware Progress SEL entry and send it to the service processor. Currently the BIOS incorrectly uses a sensor number of 0x00 when creating those SEL entries.

3.6.3.3   BIOS Update Failure

Updating the BIOS might fail due to an error in transmitting the file. If this occurs, retry the update.

Documentation Issues

This chapter contains the following sections:

- Section 4.1, "SP and BIOS Update Procedures" on page 4-1
- Section 4.2, "Setup Posters" on page 4-1
- Section 4.3, "Manuals" on page 4-3

4.1   SP and BIOS Update Procedures

The SP and BIOS update procedures are available on the product web site in HTML and PDF formats. Refer to the *Sun Fire V20z and Sun Fire V40z Servers—SP and BIOS Update ReadMe* at:

http://docs.sun.com/app/docs/prod/sf.v40z~v20z-v40z

4.2   Setup Posters

The setup posters have the following issues.

4.2.1   Cables

On posters for both the Sun Fire V20z and Sun Fire V40z Servers, the zoom window highlighting the PS/2 mouse and PS/2 keyboard connectors incorrectly shows Y-cables for the mouse and keyboard. It should show standard PS/2 cables.

4.2.2   CD-ROMs

- Documentation is not included on a CD-ROM with Sun Fire V40z Servers with chassis part number 380-1378. See "Related Documentation" on page xiii for the documentation download URL.

- The setup posters show several CD-ROMs included with the servers. The accessory kit shipped with your system might have three or four CD-ROMs.

  Both servers ship with:

  - "Sun Fire V20z and Sun Fire V40z Servers—Network Share Volume"

  Depending on the version of the server that you purchased, your accessory kit might also contain:

  - "Sun Fire V20z and Sun Fire V40z Servers—Documentation and Support Files" (documentation not included on CD-ROM with Sun Fire V40z servers with chassis part number 380-1378.)
  - "Sun Installation Assistant for Sun Fire V20z and Sun Fire V40z Servers"
  - The "Sun Fire V20z and Sun Fire V40z Servers—Bootable Diagnostics CD"

  See "Product Updates, Documentation, Support, Training, and Warranty URLs" on page xiv for information about downloading the CD-ROM `.iso` images from the product web sites.

- Information about using the Sun Installation Assistant CD-ROM is in the *Sun Fire V20z and Sun Fire V40z Servers—Linux Operating System Installation Guide*.

- Information about using the Sun Fire V20z and Sun Fire V40z Servers—Bootable Diagnostics CD-ROM is in the *Sun Fire V20z and Sun Fire V40z Servers—Guide for the Bootable Diagnostics CD*.

4.2.2.1   Sun Fire V20z Server

Poster part number: 817-5336-10 (01-2004)

1. The Contents section on the poster shows a power cord. A power cord no longer ships with any of the configurations of the Sun Fire V20z Server.

2. The accessory kit for the updated releases of the Sun Fire V20z Server (chassis PNs 380-1168 and 380-1194) includes a Solaris OS update package. The package contains a Solaris 9 OS Install-Time Update (ITU) floppy diskette and a short installation document.

4.2.2.2   Sun Fire V40z Server

Poster part number: 817-5337-10 (05-2004)

1. The Contents section on the poster incorrectly shows a power cord. A power cord does not ship with the Sun Fire V40z Server.

2. The accessory kit for the updated release of the Sun Fire V40z Server (chassis PN 380-1206), includes a Solaris OS update package. The package contains a Solaris 9 OS ITU floppy diskette and a short installation document.

Poster part number: 817-5337-11 (09-2004)

The poster calls out "crossover" Ethernet cables for each of the SP port connectors. Use a crossover Ethernet cable only when you are daisy-chaining together the SP connectors of two different Sun Fire V20z or Sun Fire V40z Servers. Otherwise, use a regular Ethernet cable to connect an SP port to a switch or other network device. Refer to the *Sun Fire V20z and Sun Fire V40z Servers—Installation Guide* for further information.

4.3   Manuals

Sun Fire V20z and Sun Fire V40z Servers—User Guide

Some versions of the User Guide show the incorrect BIOS Boot menu options. TABLE 2-6 shows the correct options that are available from the BIOS Boot menu.

TABLE 4-1   BIOS Boot Menu

Menu Option	Description	Default Boot Order
Removable Devices (Floppy)	Boot from the diskette drive	First boot device
CD-ROM Drive	Boot from the CD/DVD-ROM	Second boot device
Hard Drive	Boot from the hard disk	Third boot device
Network Boot	Boot from a networked device	Networked boot device
MBA v7.0.*x* Slot 0210	Boot from the on-board NIC #1 (eth0)	Fourth boot device
MBA v7.0.*x* Slot 0211	Boot from the on-board NIC #2 (eth1)	Fifth boot device