RAID Controller PCI Card for the Sun Fire™ V60x and V65x Servers Release Notes

CAUTION: Read this document before installing the RAID Controller PCI Card. Failure to use the correct firmware version with the RAID card will result in a high probability of data loss. Refer to the Firmware Update section of the document for more information.

Please Recycle

Adobe PostScript™

RAID Controller PCI Card for the Sun Fire V60x and V65x Servers Release Notes

This document provides general information and release notes for the RAID Controller PCI Card for the Sun Fire V60x and V65x servers (Sun marketing part number X5132A).

The following sections are included in this document:

Technical Support and Service

The RAID Controller PCI Card for the Sun Fire™ V60x and V65x servers is
supported on Red Hat Enterprise Linux. The X5132A RAID card is not supported on
Solaris x86. Refer to the following Web sites for more information.

`http://www.sun.com/servers/entry/v60x/`

`http://www.sun.com/servers/entry/v65x/`

For technical support, call the phone numbers listed below, according to your
location.

- United States Tel: 1-800-USA-4SUN (1-800-872-4786)

- UK Tel: +44 870-600-3222

- France Tel: +33 1 34 03 5080

- Germany Tel: +49 1805 20 2241

- Italy Tel: +39 02 92595228, Toll Free 800 605228

- Spain Tel: +011 3491 767 6000

See the following link for US, Europe, South America, Africa, and APAC local
country telephone numbers:

`http://www.sun.com/service/contacting/solution.html`

Refer to the following Web site for the latest Sun Fire V60x and V65x server
documentation:

`http://www.sun.com/products-n-solutions/hardware/docs/Servers/`
`Workgroup_Servers/Sun_Fire_V60x-V65x/index.html`

Check the Version of Your Kernel

Drivers supporting the Red Hat Enterprise Linux 2.4.9-e.12 (or later) kernel are the
only drivers that have been qualified for the Sun Fire™ V60x and V65x servers. The
download site provides drivers, supporting a number of kernels, for your
convenience. Use care when choosing which drivers to download.

Note – The X5132A RAID card is not supported on Solaris x86; it is only supported
on Red Hat Enterprise Linux.

Hard Drive Firmware Update

To ensure proper operation of the RAID Controller PCI Card with the Sun Fire V60x and V65x servers, make sure that hard drive firmware version 0507 or later is installed on the Sun Fire V60x or V65x server.

- For instructions on verifying which firmware version is installed on your server, see "Checking the Hard Drive Firmware Revision" on page 3.

- To update your firmware to version 0507 or later, see "Downloading Firmware" on page 5.

Caution – If you use the RAID Controller PCI Card with the Seagate hard drive models ST336607LSUN36G and ST373307LSUN72G along with drive firmware 0307, there is a high probability that you will encounter problems resulting in a corrupted RAID array.

Caution – The hard drives MUST be attached to the internal UltraSCSI 320 connectors before updating the hard drive firmware. The firmware update utility does not support updating the drive firmware when the drives are attached to the RAID card. Once the hard drive firmware is updated, the drives can be reattached to the RAID card.

Checking the Hard Drive Firmware Revision

To check the firmware version on your Sun Fire V60x or V65x server, use one of the following procedures, depending on whether or not the operating system is running:

- "Checking Hard Drive Firmware Revision With the Red Hat Operating System Running" on page 3
- "Checking the Hard Drive Firmware Revision During POST" on page 4

Checking Hard Drive Firmware Revision With the Red Hat Operating System Running

On systems with a Red Hat Linux operating system installed, the hard drive firmware revision can be checked while the operating system is running by checking the /proc information.

- **To check the hard drive firmware revision, type the following command:**

  # **`cat /proc/scsi/scsi`**

  The following is an example of the expected output.

  ```
  Attached devices:
  Host: scsi1 Channel: 00 Id: 00 Lun: 00
    Vendor: SEAGATE  Model: ST373307LSUN72G  Rev: 0307
    Type:   Direct-Access ANSI SCSI revision: 03
  Host: scsi1 Channel: 00 Id: 01 Lun: 00
    Vendor: SEAGATE  Model: ST373307LSUN72G  Rev: 0307
    Type:   Direct-Access ANSI SCSI revision: 03
  ```

  The Rev value indicates the firmware level for each device on the SCSI chain.

Checking the Hard Drive Firmware Revision During POST

To check the firmware revision, during POST (power-on self-test), begin the following procedure when prompted during the SCSI initialization phase.

1. **Press Ctrl + A for the SCSI Select Utility.**

2. **Select AIC-7902 B at slot 00 04:07:01.**

3. **Select SCSI Disk Utilities.**

4. **Select each hard drive listed individually.**

   A screen displays containing information about the SCSI drive.

   The following is an example of the output you will see:

   ```
   SCSI ID#0: SEAGATEST373307LSUN72G
   Firmware:  0307
   Capacity:  73GB
   ```

5. **Press the Esc key repeatedly to exit out of the SCSI Select Utility.**

Downloading Firmware

To download drive firmware version 0507 or later, go to:

`http://www.sun.com/servers/entry/v60x/downloads.html` or

`http://www.sun.com/servers/entry/v65x/downloads.html`

Instructions on downloading and installing the firmware are available on this site.

System Event Log (SEL) Issues

Events reported by the RAID card controller may not be logged in the System Event Log (SEL). To ensure that all RAID information or events are passed to the user, install the Storcon utility and the SRCD service.

For installation instructions, refer to the *Intel® Integrated RAID Software: Software Installation and User's Guide* located on the enclosed Intel® RAID Controller SRCZCR Resource CD.

Refer to the following sections in the user guide:

- Installation of Storcon Monitoring Utility
- Remote Monitoring with Intel SRCD Remote Access Service

RAID 1 and RAID 5 Issues

If you use a RAID Controller PCI Card for Sun Fire V60x and V65x with a RAID 1 or RAID 5 configuration, a drive may return bad data even if the drive is returning a *good* status to the PCI card controller.

When the RAID controller accesses an array in a RAID 1 or 5 configuration, the controller relies on the data integrity of the drive and assumes the drive to be operating correctly when it receives *good* status from the drive. If a drive failure occurs and sends corrupted data along with *good* status, then corrupted data could be returned from the RAID 1 or 5 array.

In order to verify the integrity of the drive set in the RAID 5 configuration, you can use the Periodic Parity Verify option within the StorCon utility. Periodic Parity Verify reads the data stripe, calculates new parity, compares the new parity with the associated written parity strip, and then makes a decision on how to handle a

detected error. The Periodic Parity Verify option is only available for RAID levels with parity (RAID 4 and RAID 5 arrays). Refer to the *Intel® Integrated RAID Software: Software Installation and User's Guide* for information on how to use this option.

Hot-swap Capability

Hot swapping (or hot-plugging) is the installation or removal of a hard disk drive without quiescing the system's internal SCSI bus. Sun Fire V60x and V65x servers have hardware support for hot swapping internal hard disk drives. However, the feature is not supported in either Solaris 9x or Red Hat Linux 7.3.

Hard drives may be removed and replaced when the system is running, as long as the system has not jumped to the OS level.

USB Keyboard Issues

You must use a PS/2 keyboard when configuring the RAID Controller PCI Card for the Sun Fire V60x and V65x server. A USB keyboard will not work with the RAID configuration program.

SCSI Backplane Issues

If you have a Sun Fire V60x server with a SCSI backplane with serial numbers that begin with ABWE227 through ABWE236, the hot-swap capability of the backplane may not work correctly with the RAID Controller PCI Card.

If you have one of the affected backplanes installed in your system, and you replace a hard drive, you will need to reboot the system in order for the RAID controller to work properly.

To determine the SCSI backplane serial number, follow these steps:

1. **Remove the lid from the Sun Fire V60x server.**

2. **Remove the system fan pack.**

3. **Find the backplane serial number label to the left of center on the circuit card.**

4. **If the serial number falls between ABWE227xxxxx and ABWE236xxxxx, you will want to replace the serial backplane to ensure proper SCSI hot-swap operation.**

If you have material affected by this issue, contact Sun using your normal warranty process, in order to obtain a replacement.

RAID Card Installation

Perform the following steps to install the RAID Controller PCI Card into a Sun Fire V60x or V65x server.

Caution – Back up the data stored on the system's hard drives before beginning the RAID card installation. Most RAID levels perform a destructive array build in which all data is lost; regardless of the level of the hard drive's firmware. During the RAID setup and configuration, read all warnings very carefully before making a selection.

Caution – Before removing the cover to work inside the system, observe the safety guidelines as stated in *Sun Fire V60x and Sun Fire V65x Server User Guide*.

1. **Before removing the cover to work inside the system, observe the safety guidelines as stated in** *Sun Fire V60x and Sun Fire V65x Server User Guide***.**

2. **Replace the standard bracket that is installed on the PCI card with the lower profile bracket included in the PCI card box.**
   By default, the PCI card comes with a standard PCI bracket installed.

3. **While pressing the blue latch button (A) with your left thumb, push down on the top cover and slide it back using the heel of your right hand on the blue pad (see Figure 1).**
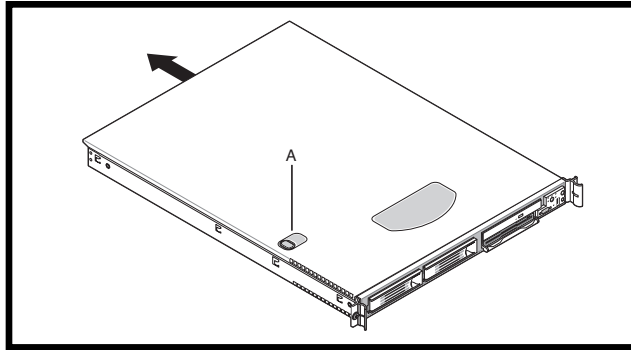
FIGURE 1   Removing the top cover

4. **Set the cover aside and away from the immediate work area.**

Note – A non-skid surface or a stop behind the chassis may be needed if attempting to remove the top cover on a flat surface. Sliding the server chassis on a wooden surface may mar the surface (there are no rubber feet on the bottom of the chassis).
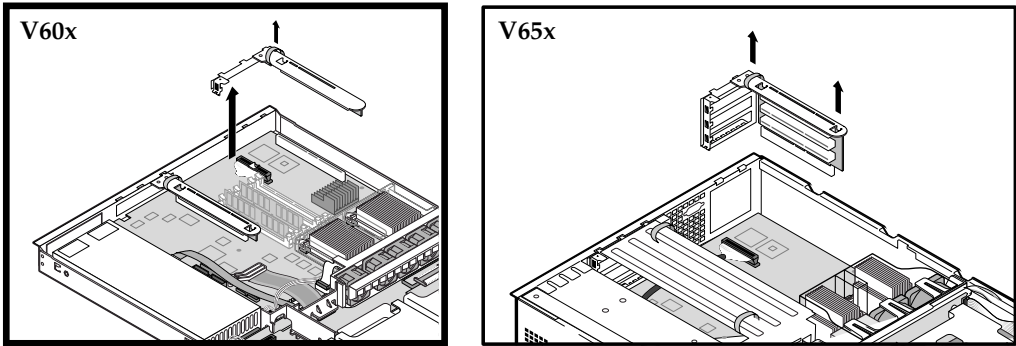
5. **Insert your finger in the plastic loop on the PCI riser assembly that is to the right of the chassis when you are facing the front of the server.**
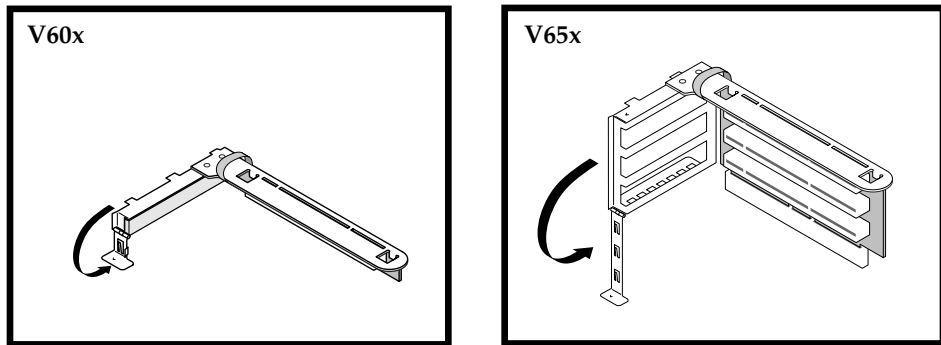
Note – The PCI riser assembly on the right side of the chassis contains a RADIOS-enabled PCI card slot. The RAID card must be installed in a RAIDIOS-enabled PCI card slot.

FIGURE 2   Removing the PCI riser assemblies

6. **Pull straight up and remove the riser assembly from the chassis.**

7. **Open the retainer clip on the riser card retention bracket (see Figure 3).**

FIGURE 3   Releasing the riser card retainer clips

8. **Install the RAID card in the riser assembly.**

   If you have a Sun Fire V65x server, install the RAID card in the bottom slot of the riser assembly (the slot closest to the server board when the riser assembly is installed).

V60x	V65x
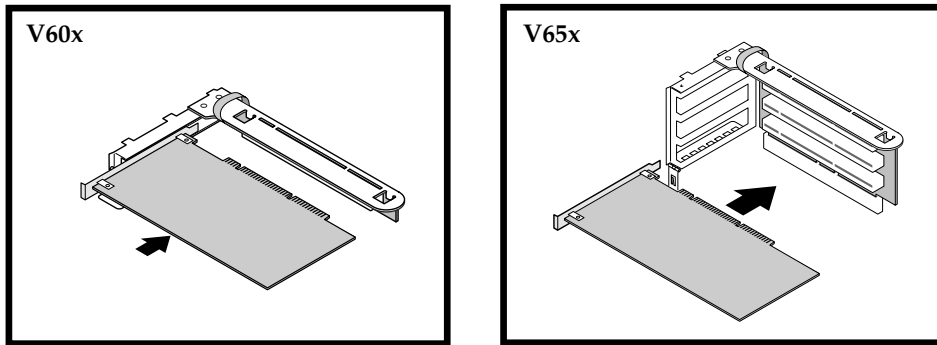
FIGURE 4   Installing the RAID card in the riser assembly

9. **Insert the riser assembly connector into the server board slot while aligning the tabs on the rear retention bracket with the holes in the chassis.**

10. **Firmly press the riser assembly straight down until it is seated in the server board slot.**

11. **Replace the chassis cover if you have no additional work to do inside the chassis.**

    For more information on installing the RAID Controller PCI Card, refer to Intel documentation packaged with the RAID card in either hard copy format or on the Intel® RAID Controller SRCZCR Resource CD.

Note – If removing the RAID card and not inserting another, the PCI slot cover must be reinstalled in the open slot, at the rear of the chassis, to meet FCC emissions requirements.