



Sun StorEdge 5210 NAS 1.1 Software and Capacity Upgrade Instructions

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Sun StorEdge 5210 Upgrade Procedure

This document describes how to upgrade your Sun StorEdge 5210 NAS. Sun recommends you review all of the procedures in this document before you begin the actual upgrade.

This upgrade consists of:

- Adding storage to your existing Sun StorEdge 5210 NAS
- Updating the BIOS/firmware on the RAID card
- Updating the Sun StorEdge 5210 NAS operating system

Before You Begin

Before you begin the upgrade, be sure you:

- Choose an appropriate AC power source
- Install an AC power disconnect
- Understand how to prevent static electricity damage
- Confirm you have all parts

Choosing an Appropriate AC Power Source

You must maintain reliable grounding of this equipment. The Sun StorEdge 5210 NAS (including head and optional Expansion Unit) must be connected to a dedicated 20A receptacle.

The AC source must be electrically isolated by double or reinforced insulation from any hazardous AC or DC source. The AC source must be capable of providing up to 500 W of continuous power per feed pair.

To achieve fault tolerance, you should plug the first power cord for the Sun StorEdge 5210 NAS and the first power cord for each Expansion Unit into the same AC circuit. Plug the second power cord for each unit into a different AC circuit.

Installing an AC Power Disconnect

You are responsible for installing an AC power disconnect for the entire rack unit. This power source disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server(s).

Preventing Static Electricity Damage

Surges of static electricity (caused by shuffling your feet across a floor and touching a metallic surface, for example) can cause damage to electrical components in the Sun StorEdge 5210 NAS and Expansion Unit.

To prevent static electricity as you perform the procedures in this document, it is very important that you follow these proper packaging and grounding techniques:

- Transport products and parts in static-safe containers.
- Cover work stations with approved static-dissipating material.
- Wear the wrist strap (included with your upgrade kit) at all times when touching static sensitive equipment and parts.
- Use only properly grounded tools and equipment.
- Avoid touching pins, leads, or circuitry.

Checking Your FRU Upgrade Parts List

In addition to these upgrade instructions, your FRU kit includes the parts listed in TABLE 1.

TABLE 1 Parts Included with Your FRU Kit

Quantity	Part	Part Number
1	Two-Port SCSI RAID Card	375-3208-02
1	Air baffle	330-3956-01
2	Transportable Battery Backup Units	370-7059-02

Quantity	Part	Part Number
1	SCSI 320 Ribbon (use if current cable is damaged)	530-3329-03
1	PCI card brace	341-0508-01
1	Screw	240-4389-01
1	RAID retention mechanism support bracket	341-0455-02
1	Disposable wrist strap	250-1007-01

Note – Sun StorEdge 5210 NAS Expansion Units and cables are not part of this kit but are required for the upgrade procedure. Make sure you also have these parts available before you begin. Also, you will need to connect a keyboard and monitor to the system to complete the upgrade, so be sure to have them available if they are not already connected to your Sun StorEdge 5210 NAS.

Upgrading and Adding Storage

Follow these steps to upgrade your system:

1. **Stop any I/O coming into the Sun StorEdge 5210 NAS (check the LCD panel to ensure there is no load on the system).**
2. **Shut down the Sun StorEdge 5210 NAS (refer to the *Sun StorEdge 5210 NAS Software Installation, Configuration, and User Guide* for instructions on properly shutting down this system).**
3. **Power off all peripheral devices connected to the Sun StorEdge 5210 NAS.**
4. **Power off the Expansion Unit.**
5. **Label and then disconnect all peripheral cables connected to the back of the Sun StorEdge 5210 NAS and the Expansion Unit.**

Note – Make sure the Sun StorEdge 5210 NAS unit and optional Expansion Unit are turned off. Sun recommends you keep the equipment plugged in for grounding purposes.

6. **Label and disconnect the external SCSI cable from the installed RAID card on the Sun StorEdge 5210 NAS.**
7. **Remove the Sun StorEdge 5210 NAS Cover by following these steps:**

- a. Press and hold the blue latch button (A) with your left thumb.
- b. Push down on the top cover and slide it back using the heel of your right hand on the blue pad.
- c. Set the cover aside and away from the immediate work area.

Note – Sliding the server chassis on a wooden surface may mark the surface (there are no rubber feet on the bottom of the chassis). You may need a non-skid surface or a stop behind the chassis if you attempt to remove the top cover on a flat surface.

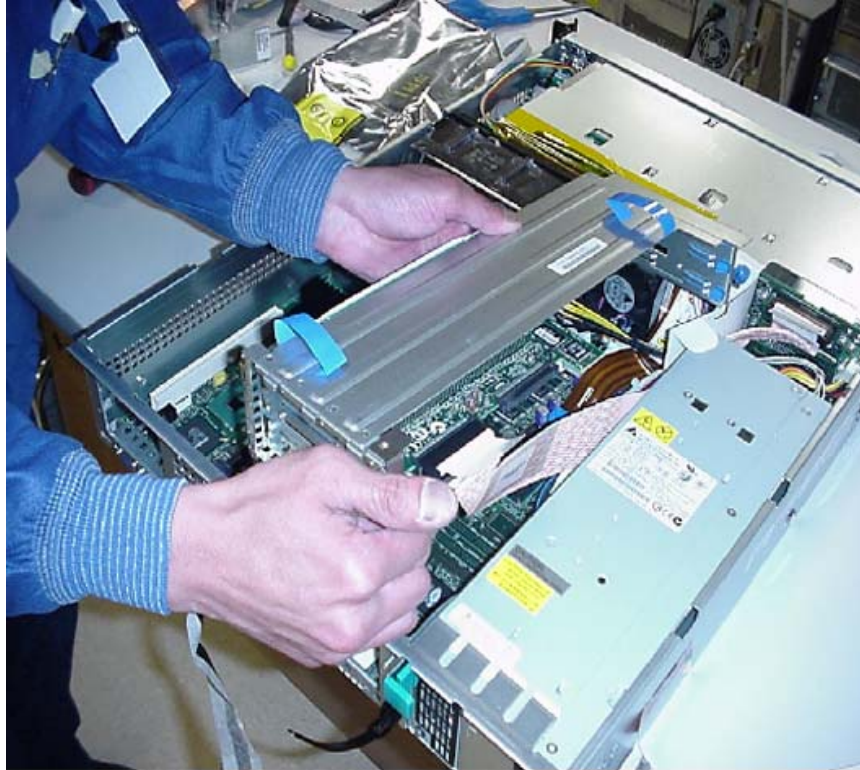
8. Removing the RAID card and replacing the TBBU (Transportable Battery Backup Unit):

Note – Newer SCSI cables may have a locking type connector on them (there will not be a white tab to pull). For these newer cables, you must squeeze the sides of the connector to unclip the latch.

- a. Remove the SCSI cable from the SCSI connector on the RAID card by pulling the white tab on the SCSI ribbon cable.

- b. Remove the High Profile PCI Riser that contains the RAID Card, as shown in FIGURE 1.

FIGURE 1 Removing the High Profile PCI Riser



- c. Insert your finger in the plastic loops on the riser assembly.
- d. Pull straight up and remove the riser assembly from the chassis.
- e. Cut and remove the plastic tie (if present) on the RAID card.
If there is a metal tab holding down the PCB, loosen the screw and slide the PCB to disengage the finger holding down the card. There may be a small piece of metal with a hole in it between the RAID card and the retention mechanism. Remove and discard this piece of metal.
- f. Open the retainer clip on the riser card retention mechanism support bracket.

Note – There may be a small piece of metal with a hole in it between the RAID card and the retention mechanism. If so, remove and discard.

- g. Pull the RAID card out of the riser board slot.

- h. Remove the TBBU by pressing the clips at the end of the DIMM.
- i. Open the TBBU package (shown in FIGURE 2). Write down the date code (the first 4 digits of the second group of numbers) on the serial number label in the middle of the TBBU. If the serial number is *P030102702A 2204KT862210068*, for example, the date code is *2204*.

FIGURE 2 Transportable Battery Backup Unit With Date Code Circled



- j. Install the new TBBU by pressing the DIMM into the slot.

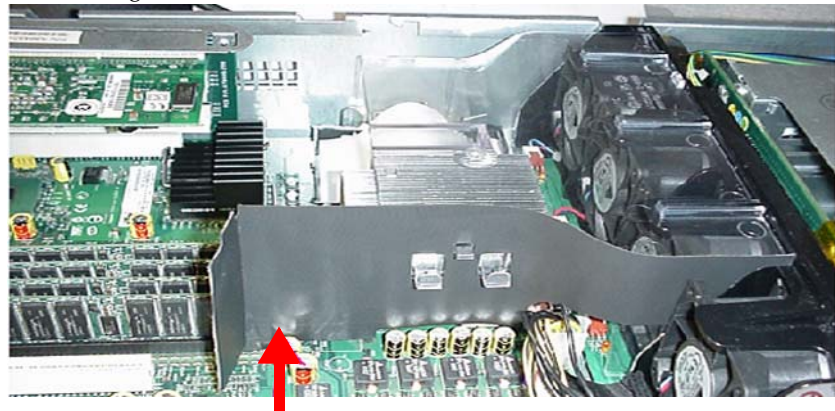
Note – Make sure the battery is connected to the DIMM (this ships unplugged). There is a small connector lead that plugs into the connector port on the DIMM. You must plug in the connector to the DIMM. You hear the clips click upon entry.

- 9. Install the Sun StorEdge 5210 NAS air baffle (shown in FIGURE 3):
 - a. Unclip and remove the clear plastic CPU air duct.
 - b. Remove the memory fan wire from the clips on the side of the clear plastic CPU air duct.
 - c. Peel the paper liner off the adhesive on the back of the new air baffle (330-3956-01, shown in FIGURE 3).
 - d. Apply the air baffle to the side of the clear plastic CPU air duct.

There are 3 cutouts in the air baffle that fit over three plastic clips (for the fan wire) extending out of the side of the clear plastic CPU air duct. Apply the air baffle so that it follows the curve on the side of the clear plastic CPU air duct. The back curved edge should be approximately flush, but not overlapping the clear plastic CPU air duct. You may find it easiest to align this edge first.
 - e. Apply firm pressure over the entire adhesive area once it is correctly aligned.

- f. Bend the air baffle along the perforated line 90 degrees out, so that the new flap points away from the clear plastic CPU air duct.
- g. Reinstall the clear plastic CPU air duct. The lower edge of the air baffle should sit behind some capacitors on the motherboard and up against the DIMM memory socket when positioned correctly.
- h. Ensure that the flap you bent at 90 degrees is inserted under the PCI carrier so that it is up against the retention mechanism support bracket that holds the RAID cards.
- i. Replace the clear plastic CPU air duct back into the chassis.

FIGURE 3 Sun StorEdge 5210 NAS Air Baffle



- j. Reconnect the memory fan wire to the clips on the side of the clear plastic CPU air duct.

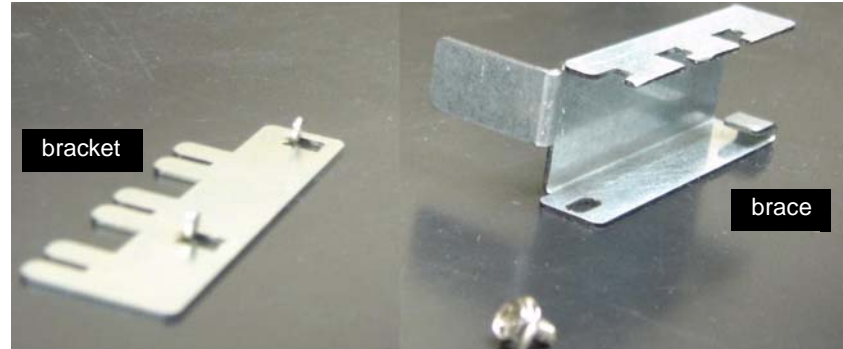
10. Install the RAID card retention mechanism (shown in FIGURE 4):

Note – This step updates the RAID card retention mechanism. A new metal bracket (see FIGURE 4) will be installed to secure the rear of the RAID card. FIGURE 6 shows the completed assembly. This bracket replaces the small piece of metal with a hole (used to keep the RAID card in place) that was removed earlier.

- a. Remove the screw holding the RAID card near the middle of the carrier.
- b. Install card brace (341-0508-01) using the new longer screw (240-4389-01). Ensure that the metal is hooked over the PCB. Do not tighten the screw yet.
- c. Open the retainer clip on the riser card retention mechanism support bracket. If there is small rectangular metal plate, remove it.

- d. Add the retention mechanism support bracket (341-0455-02) to the latch. This bracket has two small tabs that must be inserted into the latch so that the latch holds the bracket.

FIGURE 4 Brace, Bracket, and Screw for the RAID Card Retention Mechanism



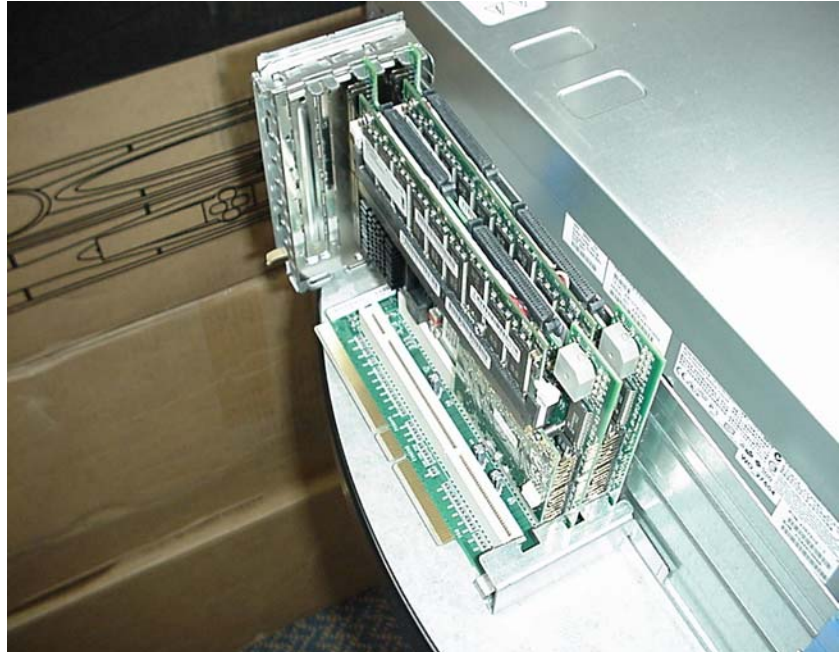
11. Install the new TBBU onto the new Two-Port SCSI RAID card (see FIGURE 2).

Note – Make sure the battery is connected to the DIMM (this ships unplugged). There is a small connector lead that plugs into the connector port on the DIMM. You must plug in the connector to the DIMM. You hear the clips click upon entry.

12. Install the RAID cards:

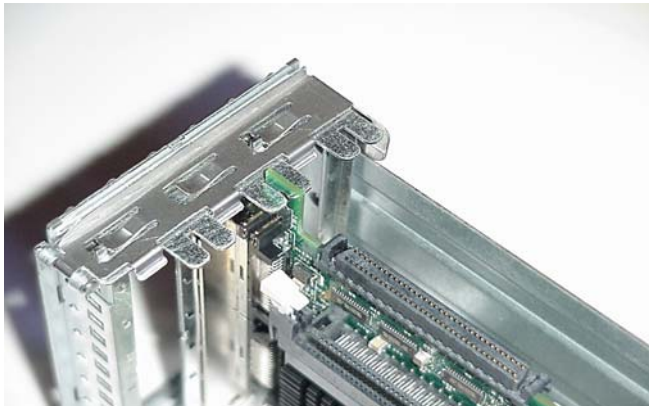
- a. Install the new Two-Port SCSI RAID card with TBBU in the middle slot, and install the original RAID card into the top slot (see FIGURE 5).

FIGURE 5 RAID Cards (Top Position is Furthest to the Right in This Figure)



- b. Slide the retention mechanism support bracket back towards the top of the carrier and tighten the screw.
- c. Close the latch and make sure that each RAID card is held between two fingers.
- d. Ensure that the latch is closed completely, as shown in FIGURE 6

FIGURE 6 RAID Cards Installed and Latch Closed



- e. Insert the riser assembly connector in the server board slot while aligning the tabs on the rear retention mechanism support bracket with the holes in the chassis.
- f. Firmly press the riser assembly straight down until it is seated in the server board slot.
- g. Check the pins on the SCSI ribbon cable to ensure none were bent during the removal process. If the SCSI cable is damaged in any way, use the replacement SCSI cable included in the FRU Upgrade kit.
- h. Reconnect the SCSI ribbon cable to the rear port marked as *CH0* on the top RAID card and connect the other end to the SCSI backplane (in the front of the unit near the disk drives).
Ensure that the SCSI ribbon cable connected to the RAID card is placed vertically alongside the power supply casing.
- i. Replace the chassis cover if you have no additional work to do inside chassis.
- j. Reconnect all peripheral cables to the system.

Note – If you did not previously have a keyboard and monitor connected to the Sun StorEdge 5210 NAS, you must now connect both a keyboard and monitor to the back of the Sun StorEdge 5210 NAS to continue this upgrade procedure, since both keyboard and monitor may be needed in steps later in this procedure.

13. Close up the system.
14. Connect each Sun StorEdge 5210 NAS Expansion Unit Channel A Out port to the respective Channel B In port.
15. Connect the SCSI cable from the original Sun StorEdge 5210 NAS Expansion Unit to the left port on the RAID card in the top slot (refer to FIGURE 7).
16. Connect and power on the systems (make sure the power cables for the Sun StorEdge 5210 NAS and Expansion Units are connected):
 - If you are using a UPS, be sure to connect the Expansion Unit(s) and the NAS filer to the UPS.
 - First power the Sun StorEdge 5210 NAS Expansion Units, *and then* the Sun StorEdge 5210 NAS.

Caution – To avoid data loss you must **Connect and power up the Expansion Unit(s) first**, before powering up the main NAS unit. Further, when you power off the Expansion Unit(s), wait five seconds before you power it back on. If you power the EU off and on too quickly, you may encounter unexpected results.

Note – You may see a Configuration Mismatch error while booting after connecting the monitor. If you see this error, choose to boot from NVRAM or you could lose your existing configuration data.

17. Update the RAID card BIOS and firmware if needed (you may need to upgrade the RAID card BIOS/Firmware if the card fails or a new version is released).

You can verify the latest firmware from the current Web patch on sunsolve.sun.com (search for 5210). Check the log for the current revision of the RAID Card. (the current minimum revision for the RAID Card is H420 for the BIOS, and 413Y for the firmware). The RAID Card BIOS and firmware should be at the latest revision and each card should have the same revision.

Note – You may see a BIOS mismatch on the display during the boot process. This confirms that you need to update your RAID card BIOS and firmware.

Caution – Do not perform this procedure when a drive has failed and is in the rebuilding state.

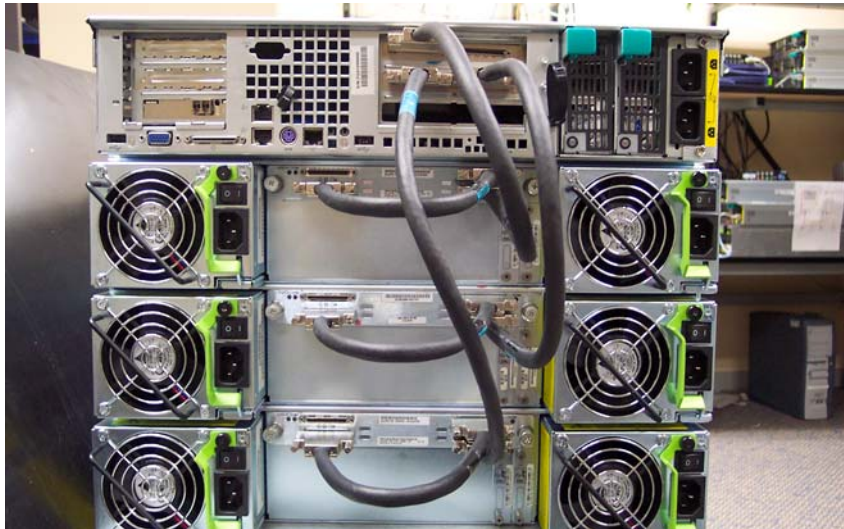
To update the BIOS and Firmware:

- a. Telnet to the Sun StorEdge 5210 NAS and type `admin` and the password, if prompted.
- b. Press the `Esc` key to get to the CLI prompt.
- c. Type `load unixtools` at the CLI prompt.
- d. Create a directory with the following command: `mkdir /cvol/firmware`
- e. Create a directory with the following command: `mkdir /cvol/firmware/mrc`
- f. FTP the file `verdeGEN.rom` to the `mrc` directory on the `cvol` using the `admin` username and password. Also change the mode to *binary* by typing `bin` after you log in.
- g. Reboot the Sun StorEdge 5210 NAS to automatically upgrade the RAID controller firmware.

You can confirm the upgrade either by viewing the Sun StorEdge 5210 NAS console messages (after flash and reboot) or LCD display (while flashing). The Sun StorEdge 5210 NAS automatically reboots when the upgrade completes. If the system does not reset, reset the system through the menu or LCD front panel.

18. Update the Sun StorEdge 5210 NAS software by selecting (from the navigation panel of the Web Administrator) System Operations > Update Software.
Note that:
 - The current software is also on `sunsolve.sun.com`
 - The current minimum revision is *4.03 Build 16*
 - It may take up to 30 minutes for the upgrade to complete and first scan of the SCSI buses to finish.
19. Connect the SCSI cable from the second Sun StorEdge 5210 NAS Expansion Unit to the right port on the Two-Port SCSI RAID card in the middle slot.
20. Connect the SCSI cable from the third Sun StorEdge 5210 NAS Expansion Unit to the left port on the Two-Port SCSI RAID card in the middle slot.

FIGURE 7 Connecting SCSI Cables from Each Sun StorEdge 5210 NAS Expansion Unit to the RAID Cards



21. Execute the following commands at the CLI prompt (from the client, start a telnet session to the system to get to the CLI prompt) using the date code as shown in FIGURE 2:

```
setbat <date code>  
savevars
```

For example, if the date code is 2204, type:

```
setbat 2204  
savevars
```


22. Initialize the LUNS.

The proper procedure for initializing your LUNS can be found in the *Sun StorEdge 5210 NAS Software Installation, Configuration, and User Guide* available on sunsolve.sun.com.

This concludes the Sun StorEdge 5210 NAS upgrade from 1.0 to 1.1. The Web Administrator displays the new LUNS, and you can now manage your file volumes as necessary.

