

# Compaq StorageWorks

## Fibre Channel HBA Upgrade Instructions, 32-bit Sbus (SWSA4-SB) to 64-bit (SWSA4-SC)

This document describes the process for replacing a Compaq/JNI 32-bit Sbus FC adapter (SWSA4-SB) with a Compaq/JNI 64-bit Sbus FC adapter (SWSA4-SC).

**Abstract:** The 32-bit HBA is no longer available from the vendor, it has been replaced with a new 64-bit HBA. If a 32-bit HBA fails in the field, the only available replacement is a 64-bit HBA. This document describes the Solaris driver implications of this replacement/upgrade. This document ONLY applies to the Sun Solaris Operating System.

Table 1-1 describes the different HBAs and required drivers under the Solaris O/S:

**Table 1-1 32-bit and 64-bit Driver Comparison**

HBA	Compaq P/N	Vendor P/N	Driver package	Driver name
32 bit	SWSA4-SB	FC-1063	CPQfca	fca
64 bit	SWSA4-SC	FC64-1063	CPQfcaw	fcaw

The driver package refers to the name of the Solaris Software package that the driver is supplied in. These packages are found on the Compaq StorageWorks RAID Manager software CD-ROM.

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**IMPORTANT:** Before starting the upgrade, make sure that you have a copy of the StorageWorks RAID Manager software version 8.3b CD-ROM. This upgrade procedure will only work with version 8.3b of the RAID Manager software. If this CD-ROM was not included in your spare kit, it can be ordered from ASM (formerly SSB) under component number AG-RFBRC-BE.

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## Upgrade Procedure Summary

In general, the upgrade process consists of the following steps:

- Remove the defective 32-bit board, and install the new 64-bit board
- If the 32-bit driver (CPQfca) is no longer needed, remove it
- If the 64-bit driver (CPQfcaw) is not already loaded, load it
- Change the `/kernel/drv/sd.conf` file to add support for the changed adapter.

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### Upgrade Procedure

#### Remove the defective 32-bit board, and install the new 64-bit board.

1. Shut down the system properly, and work in a static-free environment.
2. Follow normal Sun servicing procedures to remove the defective (32-bit) Sbus adapter, and install the new 64-bit adapter **in the same Sbus slot**.
3. While the system is down, take inventory of what Compaq FC adapters are installed (both 32 and 64-bit).
4. Power-on the system, and boot into single-user (maintenance) mode.
5. Check to make sure that the system “sees” all the installed FC boards. Use the command:

```
prtconf | grep fca
```

You should see a separate instance listed for each adapter installed.

6. Mount the RAID Manager Software for Solaris CD-ROM, and prepare to load it.
  - a. Insert the CD-ROM in the drive. Mount it with the command:

```
mount -r -F hsfs /dev/sr0 /mnt
```

- b. Change directory to the location of the packages. Use the following command:

```
cd /mnt/agents/solaris
```

7. After the previous steps have been successfully completed, continue to the next step: removing the 32-bit driver.

#### If the 32-bit driver (CPQfca) is no longer needed, remove it.

1. Check to see if any 32-bit adapters are still installed. Use the hardware inventory from step 1.3, and the following command:

```
prtconf | grep fca
```

**NOTE:** In the output from the following command, look for the string “fca” not “fcaw”. Remember that the 32-bit driver package is called “fca”.

2. If any 32-bit adapters are present, **DO NOT** remove the 32-bit driver. Continue on to loading the 64-bit driver.
3. Remove the 32-bit driver with the following command:

```
pkgrm CPQfca
```

4. After the CPQfca driver has been successfully removed, continue to the next step, loading the 64-bit driver.

**If the 64-bit driver (CPQfcaw) is not already loaded, load it.**

1. Check to see if the 64-bit driver is loaded. Use the following command:

```
pkginfo | grep -i cpqfcaw
```

2. If the CPQfcaw package is already loaded, skip to the last series of steps, adding support for the adapter. Otherwise, load the CPQfcaw package with the following command:

```
pkgadd -d . CPQfcaw
```

3. After the CPQfcaw driver has been successfully loaded, continue to the next step.

**Change the /kernel/drv/sd.conf file to add support for the changed adapter.**

1. Use the config.sh utility, provided in the Compaq RAID manager software, to add support for the new adapter and remove support for the old adapter. Use the command:

```
/opt/steam/bin/config.sh
```

**NOTE:** This command assumes that the default directory (/opt) was used to load the RAID manager software. If this is not the case, use the following command to list the directory that the RAID manager software was loaded in:

```
pkginfo -l CPQhsg80
```

If the CPQhsg80 package is not loaded, you will have to load it before proceeding. Refer to the documentation on the StorageWorks RAID Manager version 8.3b CD-ROM for installation instructions. After successfully loading the RAID Manager software, restart these upgrade instructions from the beginning.

2. Select option 20, to Add/Change adapters.
3. Chose option 2, to Add an Adapter.
4. After asking for verification, the utility will scan the system for any new adapters. The utility will find SCSI and Fibre Channel adapters, but you don't want to add support for SCSI adapters. Enter Y to add support for all new Fibre Channel (fca\*) adapter found, and hit enter to accept the default choices for supported targets. Enter N if you are questioned about adding SCSI adapters.
5. Chose option 3, to remove an Adapter. A list of all configured adapters will be displayed. You want to find the two adapter entries that share a common device path. These are the old 32-bit adapter, and the new 64-bit adapter entry. In the following example, look at adapters number 4 and 5:

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NN	Adapter	Inst	Control.	Targets	Driver Path
1	fcaw	0	fcaw	64,65	/io-unit@f,e1200000/sbi@0,0/fcaw@1,0
2	fca	0	fca	64,65	/io-unit@f,e1200000/sbi@0,0/fca@0,0
3	fcaw	1	fcaw	64,65	/io-unit@f,e1200000/sbi@0,0/fcaw@3,0
4	fca	1	fca	64,65	/io-unit@f,e1200000/sbi@0,0/fca@2,0
5	fcaw	2	fcaw	64,65	/io-unit@f,e1200000/sbi@0,0/fcaw@2,0

You can tell that these two adapters were in the same sbus slot at different times, because the device paths (**/io-unit@f,e1200000/sbi@0,0/XXXX@2,0**) are the same. The only difference is that one was a 32-bit HBA (fca), and one is a 64-bit HBA (fcaw).

**NOTE: Note:** Make sure that the new adapter is set for the same targets as the old adapter was. If the default targets you selected in step 4 are incorrect, you can modify them with option 4, Modify an adapter, later.

Now you can delete the old (32-bit) adapter entry. Select the adapter number (in our example, it should be number 4). Do the same for each fca-fcaw adapter pair that you replaced in the start of this upgrade procedure.

6. Chose option 5, to exit.

7. Chose option q, to quit the RAID manager configuration menu.

8. Shtdown the system. Use the following command:

```
/etc/shutdown -g0 -i0 -y
```

9. At the Open Boot Prom prompt (ok), reboot the system (reconfiguration boot). Use the command:

```
boot -r
```

10. When the system has booted into multi-user mode, test the upgraded adapter(s).