Sun Dual Port 4x QDR IB Host Channel Adapter PCIe ExpressModule

Product Notes

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Sun Dual Port 4x QDR IB Host Channel Adapter PCIe ExpressModule Product Notes

This document provides news and issues about installation and use of Oracle's Sun Dual Port 4x DDR IB Host Channel Adapter PCIe ExpressModule.

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Hardware and Software Requirements

Before using the Sun Dual Port 4x QDR IB Host Channel Adapter PCIe ExpressModule, ensure that your system meets the following hardware and software requirements.

TABLE 1 Hardware and Software Requirements

Supported Hardware	Supported Operating Systems	Other Software
Sun Blade X6270 Sun Blade X6440 Sun Blade X6240 Sun Blade T6340 and other Sun Blade servers	Solaris 10 10/09 Operating System Red Hat Enterprise Linux 4-U6 (32-bit and 64-bit) Red Hat Enterprise Linux 4-U7 (32-bit and 64-bit; on PCIe Gen-2 platforms) Red Hat Enterprise Linux 5.1 (64-bit) Red Hat Enterprise Linux 5.2 (64-bit) Red Hat enterprise Linux 5.3 (64-bit; on PCIe Gen-2 platforms) SUSE Linux Enterprise Server 10 SP1 (64-bit) SUSE Linux Enterprise Server 10 SP2 (64-bit; on PCIe Gen-2 platforms)	`SUNWhermon` package provides the required driver (`hermon`) for the Solaris OS `MLNX-OFED` 1.3.1 or higher must be used with any Linux distribution.

The preceding information is up-to-date at the time this manual was written. Go to `http://www.sun.com` for the latest information. Subsequent versions of this document have a higher number following the final dash. That is, 820-6540-11 becomes 820-6540-12.

Downloading Firmware

The most recent firmware for this InfiniBand ExpressModule (Sun X41216A-Z) is available at:

`http://www.mellanox.com/support/firmware_table_Sun.php`

Select the software and documentation downloads in the row of the table with the following description: Dual 20Gigabit/Sec 4X InfiniBand Host Channel Adapter PCI Express ExpressModule, RoHS.

To install the firmware, refer to the release notes at this Mellanox site.

Solaris 10 10/09 Issues

Kernel Could Panic After 1-2 Hours of Running Heavy IPoIB Traffic Sun Blade T6340 Servers (CR 6878568)

In test environments on Sun Blade T6340 servers under extreme IPoIB load, the Sun Dual Port 4x QDR IB Host Channel Adapter PCIe ExpressModule could report a CQE Local Protection Error (HCA reported error) followed by a system panic due to an error reported in the PCIe root complex.

If this issue occurs, messages similar to the following are displayed:

```
Feb 27 03:55:03 c145-8 hermon: NOTICE: hermon0: Device Error: CQE local
protection error
panic[cpu91]/thread=2a1029a3ca0: Fatal error has occured in: PCIe root
complex.(0x10)(0x0)
(There may be additional information intervening between these two messages.)
This has been identified as being a result of a patch that was recommended
     for IB users of Solaris 10/09:
     Sparc system:  patch 143352-01
     x86 sytems:    patch 143353-01
```

Note – This issue has not been reported in a customer environment.

Workaround: If the CQE Local Protection Error followed by a PCIe panic does occur, reboot the system and check to see if the affected patch (143352 SPARC or 143353 x86) is installed on your system. Use the `showrev` command:

```
# showrev - p | grep "Patch: 143352"
```

Or:

```
# showrev - p | grep "Patch: 143353"
```

If the patch has been installed, remove the patch with the `patchrm` command and reboot the system. You might see slightly decreased performance in some networking operations over InfiniBand as a result of removing this patch.

If the panic occurs and this patch is not installed, inform your authorized Oracle service representative of the failure and provide the available details.

Third-Party HCA Firmware Issue (CR 6915273)

This issue applies to third-party HCAs (QDR HCAs) that are equivalent to the Sun Dual Port 4x QDR IB Host Channel Adapter PCIe ExpressModule.

In some cases, running with less than the most current firmware on a QDR HCA could result in a panic because the firmware incorrectly reports an error. If the error occurs, you see a message similar to the following:

```
panic[cpu3]/thread=fffffe80000d1c60: Hermon Fatal Internal Error.
    Hermon state=0xffffffff800e2000
```

In the message log a message similar to the following is displayed:

```
NOTICE: hermon0: Device Error: EQE hca internal error
```

Workaround: This issue is unlikely to occur with legacy Sun HCAs or new HCAs from Oracle, because these HCAs ship with the current firmware. If this error does occur, reboot the system and use the `firmwareflash` command to display the current firmware version. The minimum firmware version must be 2.7.000.

```
# firmwareflash -l -c IB
Device[101] /devices/pci@0,0/pci10de,377@f/pci15b3,634a@0:devctl
  Class [IB]
  GUID: System Image - 0003ba000100cda7
                Node Image - 0003ba000100cda4
                Port 1     - 0003ba000100cda5
                Port 2     - 0003ba000100cda6
  Firmware revision  : 2.7.000
        Product            : 375-3549-01 (Sun PCIe DDR X4217A)
        PSID               : SUN0070000001
```

If the firmware is not at Version 2.7.000 or higher, refer to the user's guide for obtaining and updating the firmware on all HCAs in the system. Once updated, reboot the system to enable the new firmware.

If this problem occurs on a system in which all HCAs are already at this minimum firmware revision, inform your authorized Oracle service representative of the failure and provide the available details.

Older Firmware Issue

Boot Over InfiniBand Component of the Firmware Could Exceed the Option ROM Capacity (CR 6800225)

On some platforms, certain option cards might not get initialized due to the host channel adapter (HCA) taking most of the available Option ROM space in the BIOS.

Workaround: Check for and install a later version of the HCA firmware at http://www.sun.com.

Third-Party Web Sites

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