

**Sun Dual 10GbE PCIe 2.0  
Fabric Expansion Module**

Product Notes



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# Important Information About the Sun Dual 10GbE PCIe 2.0 Fabric Expansion Module

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These product notes contain information about new features, known limitations, and documentation updates for the Sun Dual 10GbE PCIe 2.0 Fabric Expansion Module (FEM) from Oracle.

New issues are added to the product notes, as needed. Ensure that you read the most recent version of the product notes that is available on the web. For the most recent version of the product notes, go to the Sun documentation portal at the following site:

<http://www.oracle.com/technetwork/documentation/oracle-net-sec-hw-190016.html>

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## Intel 10GbE Driver Support for Linux and Windows

Information on the Intel 10GbE drivers for Linux and Windows, including tools and documentation, can be found at the following web site:

<http://www.intel.com/support/network/adapter/10gbe/xfsrdualserver>

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**Note** – To use the FCoE software with the Windows OS, you must download and reinstall the FCoE driver from the Oracle download site after you install the OS. Refer to the *Sun Dual 10GbE PCIe 2.0 Fibre Channel Over Ethernet Software User's Guide*.

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## Oracle Solaris Operating System Support

The FEM is supported on the following versions of the Oracle Solaris Operating System (Oracle Solaris OS):

- Oracle Solaris 10 5/09 OS SPARC and newer (with patches)
- Oracle Solaris 10 5/09 OS x86 and newer (with patches)
- OpenSolaris 2009.6 OS (with updated IPS driver package)

For the most up-to-date supported Oracle Solaris OS information, see the product web page at:

(<http://www.oracle.com/us/products/servers-storage/networking/ethernet/index.html>)

## Oracle Solaris 10 OS Patch Information

The FEM is supported on Oracle Solaris 10 5/09 OS and newer with the patches listed in [TABLE 1](#).

The patches are available at:

(<http://www.oracle.com/us/support/software/premier/my-oracle-support-068523.html>)

**TABLE 1** Oracle Solaris 10 OS Patches for the FEM

Oracle Solaris Platform	Patch ID	Description
Oracle Solaris 10 SPARC	143354-02 or newer	SunOS 5.10: ixgbe patch
Oracle Solaris 10 x86	143355-02 or newer	SunOS 5.10_x86: ixgbe patch

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**Note** – Before contacting support, ensure that all mandatory patches are installed on your server. Check the My Oracle Support web site on a regular basis for the availability of new patches.

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To determine if a patch is present on your system, see “To Download Patches” on page 3.

## ▼ To Download Patches

### 1. Determine whether the patches have been installed on your system.

For example, using the `showrev` command, type the following for each patch number:

```
# showrev -p | grep "Patch: 143354"
```

- If you see patch information listed for the queried patch, and the dash extension (the last two digits) matches or exceeds the required version, your system has the proper patches already installed and no further action is required.

For example, if Patch 143354-02 or later is installed, your system has the required version of this patch.

- If you do not see patch information listed for the queried patch, or if the dash extension precedes the required version, go to [Step 2](#).

### 2. Go to My Oracle Support to download the patch.

Using the PatchFinder tool, specify the base Patch ID number (the first six digits) to access the current release of a patch.

### 3. Download the latest version of the patch.

### 4. Follow the installation instructions provided in a specific patch’s README file.

## OpenSolaris IPS Driver Package Information

At the time this document was released, OpenSolaris 2009.06 did not include support for the most recent version of the `ixgbe` driver. However, an updated OpenSolaris IPS driver package is available at:

<http://pkg.opensolaris.org/dev/>

This IPS driver package, which enables most Intel 82599 Family of 10GbE PCIe network devices, can be used to update the OpenSolaris 2009.06 release

From a command line, a privileged user can type:

```
$ pfexec pkg set-publisher -O http://pkg.opensolaris.org/dev opensolaris.org
$ pfexec pkg image-update
```

Users preferring a GUI interface can select the Open the System -> Administration -> Package Manager utility and select Update All.

For OpenSolaris users who will rely on this device as the primary in- and out-bound network connection, not having a bundled driver will mean the interface is inactive. So any network functions to load a driver through the package manager will fail. Solutions to loading extra drivers for OpenSolaris include the following:

- Add a different NIC temporarily or redirect primary network traffic to an alternate NIC on the system to achieve the update.
- Go to the OpenSolaris.org download center, and find the latest Oracle Solaris Express Community Edition installation media. Burn the CD/DVD ISO image onto media. Install the SUNWixgbe package from that media using the `pkgadd(1M)` command.
- Use the OpenSolaris Distribution Constructor tools, and add the driver to an installation image. Refer to the documentation at:

(<http://www.OpenSolaris.org>)

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## Known Issues

The following know issues apply to the FEM.

### Oracle Solaris ixgbe Driver Does Not Support 1GbE

Although the OpenBoot driver used for netboot supports both 10G and 1G, the current version of the Oracle Solaris ixgbe driver supports 10G only. Therefore, netboot at 1G fails if the FEM port is the only 1GbE connection to the local network. For netboot to succeed, the host must have another 1GbE connection to the network, other than the FEM port.

## TCP RX throughput Regresses 25% on Gen1 Systems (CR 6875360)

The FEM is not currently supported in PCIe Gen1 systems. If you plug the FEM into a Gen1 system, it will exhibit degraded performance. This situation is described in the Intel Errata 24 for the Intel 82599 controller.

**Workaround:** If you want to use the FEM, follow Intel's recommendation of setting PCIe payload size to 256 bytes or higher, if supported in the BIOS.

## kstat Link Status Indicates Full Duplex Even When There Is No Link (CR 6874953)

When a FEM link is down, for example the cable is not connected, the `kstat link_duplex` variable incorrectly displays the value 2 (full duplex) instead of the value 0 (unknown). In addition, any software that relies on the `kstat link_duplex` value also displays incorrect duplex information.

**Workaround:** Do not rely on the value of the `kstat link_duplex` variable. Instead look at the value of the `kstat link_up` variable. The `link_up` variable is accurate. When the link is down, the `kstat link_up` variable will have a value of 0.

## ixgbe Driver Does Not Support the OracleVTS External Loopback Test (CR 6893562)

If the OracleVTS external loopback test (`netlbttest`) is run against a FEM, OracleVTS fails with a message similar to the following:

```
FATAL ixgbe0: "Interface does not support external loopback"
```

**Workaround:** External loopback is not supported for the FEM. Test the FEM by connecting it to a switch or another system with 10GbE optical ports.

## ixgbe.conf Does Not Show the Correct Value of Maximum MTU Size (CR 6879035)

The 16366 maximum value for the `default_mtu` parameter in the `/kernel/drv/ixgbe.conf` file and the maximum SDU size in the `ixgbe` man page are incorrect for the FEM. The maximum value for both is 15500.

**Workaround:** You can set the MTU on a per-link basis using the `ifconfig(1M)` command. Ensure that you do not set the MTU value larger than 15500 for the FEM. Doing so might cause the link to hang.

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## Fibre Channel Over Ethernet

The FEM supports Intel's Fibre Channel Over Ethernet (FCoE) software. For more information about Oracle's FCoE implementation, refer to the following documents:

- *Sun Dual 10GbE PCIe 2.0 Fibre Channel Over Ethernet Software User's Guide*
- *Sun Dual 10GbE PCIe 2.0 Fibre Channel Over Ethernet Software Product Notes*

To obtain copies of these documents, go here:

<http://www.oracle.com/technetwork/documentation/oracle-net-sec-hw-190016.html>

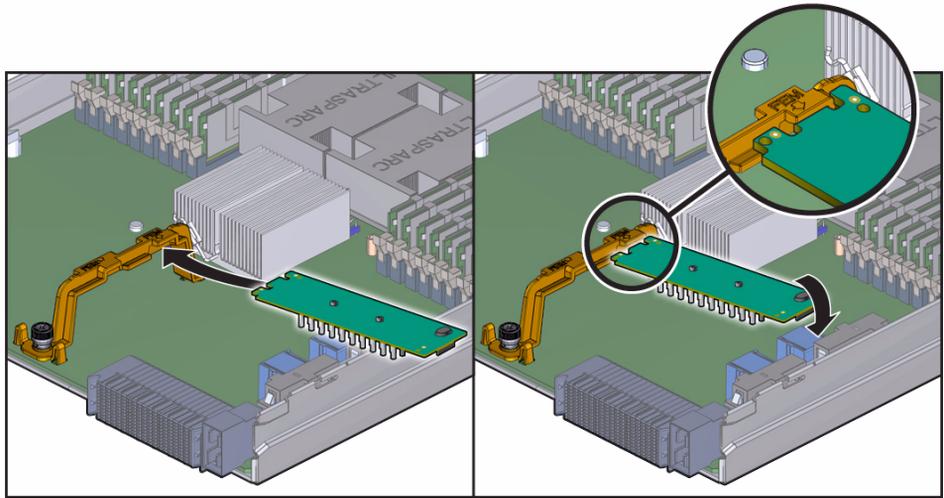
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**Note** – As of this release, FCoE is not supported in the Oracle Solaris OS.

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## Incorrect Slot Shown in User Guide (CR 7060763)

The *Sun Dual 10GbE PCIe 2.0 Fabric Expansion Module User's Guide* shows the incorrect slot for a minimal configuration. The following illustration shows the proper placement of the Sun Dual 10GbE PCIe 2.0 Fabric Expansion Module from Oracle in the right hand expansion slot.



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## Feedback

Provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>

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## Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	<a href="http://support.oracle.com">http://support.oracle.com</a>
	For hearing impaired: <a href="http://www.oracle.com/accessibility/support.html">http://www.oracle.com/accessibility/support.html</a>
Learn about Oracle's commitment to accessibility	<a href="http://www.oracle.com/us/corporate/accessibility/index.html">http://www.oracle.com/us/corporate/accessibility/index.html</a>

