# Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module Product Notes

Part No: 821–0874
June 2014, Rev B

141023@25097

# Contents

# Using This Documentation

This section describes related documentation, submitting feedback to Oracle, and a document change history.



## Related Books

The following is a list of documents related to Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module. These and additional support documents are available on the web at:

`http://download.oracle.com/docs/cd/E19530-01/`

| Document | Description |
|---|---|
| *Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module Product Notes* | Important late-breaking information about the Virtualized M2 NEM. |
| *SFP+ Module Installation Guide for the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module* | How to install the SFP+ modules for the Virtualized M2 NEM. |
| *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection* | Information on using ILOM to monitor the Virtualized M2 NEM. |
| *Sun Blade 6000 Modular System Safety and Compliance Guide* | Safety and compliance information about your the Sun Blade 6000 modular system. |
| *Sun Blade 6000 Modular System Product Notes* | Important late-breaking information about the Sun Blade 6000 modular system. |
| *Sun Blade Storage Module M2 Administration Guide* | How to perform administration tasks with the Sun Blade Storage Module M2. |

Translated versions of some of these documents are available at the web site described previously in Simplified Chinese, Japanese, Korean, Spanish, and French. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

# About This Documentation (PDF and HTML)

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendices or section numbering.

# We Welcome Your Comments

We are interested in improving our documentation and welcome your comments and suggestions. To share your comments, go to `http://www.oracle.com/goto/docfeedback`.

# Change History

The following lists the release history of this documentation set.

- July 2010. Initial publication.
- August 2010. Updated *Product Notes* with information for product software release 1.0.1.
- November 2010. Updated *Product Notes* with information for product software release 1.1.
- January 2011. Updated *Product Notes* for CR 7005233. Updated *User Guide* to add information about starting `hotplugd(1M)` service in Solaris 10 OS 09/10.
- April 2011. Updated *Product Notes* for CR 7020854. Updated *User Guide* to add information about updating SAS firmware.
- September 2011. Updated *Product Notes* information for the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM Software release 1.2. Added new OS support. Added T3–1B SPARC blade support. Added CR 7075694. Updated *User Guide* to add information about configuring Linux for PCIe hot plug.
- August 2012. Updated *Product Notes* for CR 7183913 and 6932684.
- September 2012. Updated *User Guide* to add instructions for service processor firmware image recovery (CR 7102112). Updated *Product Notes* information for the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM Software release 1.3.
- June 2014. Updated *Product Notes* information to support Sun Blade X3-2B and Sun Blade X4-2B.

# Overview of the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM Product Notes

These product notes contain important and late-breaking information about the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module (Virtualized M2 NEM).

These product notes contain the following topics:

# Product Information

This section covers the following topics:



## Supported Software and Firmware

For information on how to access product firmware and software, see "Get Software and Firmware Downloads" on page 11.

For information on available software releases for the Virtualized M2 NEM, see the following topics:



### Software Release 1.3

Software release 1.3 contains an update to the Virtualized NEM Oracle ILOM firmware and additional operating system drivers.

The following is updated in software 1.3:

- Oracle ILOM firmware: 3.0.14.19 r64079
- Added support for the following operating systems:
  - Oracle Linux (5.7, 5.8, 6.1, 6.2), RHEL (5.7, 5.8, 6.1, 6.2), SUSE 11 SP1 and SP2, Windows Server 2008 and 2008 R2 SP1. Drivers are available as part of the Virtualized NEM Software Release 1.3, see "Get Software and Firmware Downloads" on page 11.
  - Oracle VM 3.0.2, 3.0.3

- VMware ESXi 5

## Software Release 1.2

Software release 1.2 contains an update to the Virtualized NEM SAS expander and Oracle ILOM firmware, and additional operating system drivers.

The following is updated in software 1.2:

- SAS expander firmware: 5.3.8.0
- Oracle ILOM firmware: 3.0.14.19 r61829
- Added support for the following operating systems:
  - Oracle Solaris 10 9/10
  - Oracle Linux (5.6, 6.0, 6.1), RHEL (5.6, 6.0, 6.1), Windows Server 2008 R2 SP1. Drivers are available as part of the Virtualized NEM Software Release 1.2, see "Get Software and Firmware Downloads" on page 11.
  - VMware 4.1 (obtain the drivers from the VMware download site.

## Software Release 1.1

Software release 1.1 contains an update to the Virtualized NEM SAS expander firmware and additional operating system drivers.

The following is updated in software 1.1:

- SAS expander firmware: 5.3.7.0
- Drivers for the following operating systems: OEL 5.5, RHEL 5.5, and SLES 11 SP1

## Software Release 1.0.1

Software release 1.0.1 contains an update to the Virtualized NEM SAS expander firmware to enable the SG-SAS6-REM-Z REM to be supported with Sun Blade Server X6270 M2.

The following is updated in software 1.0.1:

- SAS expander firmware: 5.3.6.0

---

**Note –** The CMM ILOM must also be updated with software version 3.2.2 (ILOM 3.0.10.15b) to enable SG-SAS6-REM-Z REM support.

---

## Software Release 1.0

The following firmware and software is available at the initial release of the Virtualized M2 NEM:

- SAS expander firmware: 5.3.4.0
- Oracle ILOM firmware: 3.0.10.16 r55537
- Drivers for supported operating systems are available on the Tools and Drivers CD.

  For the Oracle Linux OS, use the corresponding RHEL drivers.

## Supported Operating Systems

The following minimum operating systems are supported for the Virtualized M2 NEM.

- Solaris 10 Operating System (OS) 10/09 (64-bit)
- Oracle Solaris 10 Operating System (OS) 09/10 (64-bit)
- Oracle Linux (OEL) 5.4, 5.5, 5.6, 5.7 and 5.8 (64-bit)
- Oracle Linux (OEL) 6.0, 6.1 and 6.2 (64-bit)
- Oracle VM Server 3.0.2 and 3.0.3
- Red Hat Enterprise Linux (RHEL) 5.4, 5.5, 5.6, 5.7 and 5.8 (64-bit)
- Red Hat Enterprise Linux (RHEL) 6.0, 6.1 and 6.2 (64-bit)
- SUSE Linux Enterprise Server (SLES) 10 SP4 (64-bit)
- SLES 11 and SLES 11 SP1 and SP2 (64-bit)
- Windows Server 2008 SP2 (32 and 64-bit)
- Windows Server 2008 R2 and R2 SP1 (64-bit)
- VMware ESX 4.0 U1
- VMware ESX 4.1
- VMware ESXi 5

## ▼ Get Software and Firmware Downloads

1. **Go to `http://support.oracle.com`.**
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
4. **In the Patch Search box, click Product or Family (Advanced Search).**
5. **In the "Product is" field, type a full or partial product name (for example, Sun Blade 6000 VMF NEM M2) until a list of matches is displayed and select the product of interest.**

6. **In the "Release is" pull-down list, click the Down arrow.**
7. **In the window that appears, click the triangle (>) by the product folder icon to show the choices and then select the release of interest and click Close.**
8. **In the Patches Search box, click Search.**
   A list of product downloads (listed as patches) appears.
9. **After the search completes, select the Patch Name of interest.**
10. **In the task tab that appears, click Download.**

# Supported Hardware

This section contains the following topics:



## Supported Server and Storage Modules

The Sun Blade Storage Module M2 is the only storage module that is supported for use with the Virtualized M2 NEM.

The following table lists the supported server modules and associated FEMs and REMs that are supported for use with the Virtualized NEM M2:

| Server Module | Supported FEM | Supported REM |
|---|---|---|
| Sun Blade X4-2B (1GbE) | N/A | N/A |
| Sun Blade X3-2B | X4263A-N | SG-SAS6-R-REM-Z |
| Sun Blade Server X6270 M2 | X4278A, X4263A-N | SG-SAS6-R-REM-Z |
| Sun Blade Server T6320 | X4835A-N | SG-SAS6-REM-Z |
| Sun Blade Server T6320 M2 | X4835A-N | SG-SAS6-REM-Z |
| Sun Blade Server T6340 | X4835A-N | SG-SAS6-REM-Z |
| Sun Blade Server T3–1B | X4263A-N | SG-SAS6-REM-Z |

**Note –** The Sun Storage 6Gb SAS REMs include software and firmware. To download the latest updates for these REMs, go to the LSI Support site.

**Note –** The Sun Blade X4-2B Server Module supports Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM with very limited conditions including support for 1GbE ports only. 10GbE ports are not operational.

# Sun Blade 6000 Chassis and Midplane

The Virtualized M2 NEM must be installed in a Sun Blade 6000 chassis with a PCIe 2.0 midplane and the minimum supported CMM version firmware:

- The Sun Blade 6000 chassis A90–D comes with PCIe 2.0 midplane support and requires a minimum CMM firmware version of 3.0.12.10 (included in Sun Blade 6000 software release 4.0).
- The Sun Blade 6000 chassis A90–B might have a PCIe 2.0 midplane and requires a minimum CMM firmware version of 3.0.10.15a (included in Sun Blade 6000 software release 3.2.1). If the chassis does not come with a PCIe 2.0 compliant midplane, the midplane can be upgraded.

  You can check that the chassis has the a PCIe 2.0 midplane by logging into the CMM ILOM and performing one of the following steps:

  - Using the web interface, select CMM from the left pane and go to System Information —> Components and click on /CH in the Component Manager Status table.
  - Using the CLI, enter the `show/CH` command at the prompt.

    The midplane manufacturing part number is displayed in the fru_part_number field.

    - If the part number is 541–3789–xx or greater, the PCIe 2.0 midplane is installed.
    - If the part number is 541–1983–0x, the previous version of the PCIe midplane is installed and you should upgrade to the PCIe 2.0 midplane. The midplane is a field-replaceable unit (FRU) and must be removed and installed only by authorized Oracle service personnel.

Refer to the *Sun Blade 6000 Modular System Product Notes* for the latest information.

# Hardware and Networking Issues

The following table lists the current hardware issues.

| Issue | Workaround? |
|---|---|
| "Packet Drop at 1Gb with 100m Cable (6879222)" on page 15 | Yes |
| "Special Instructions for Network PXE Booting for the Sun Blade X3–2B Server (7183913)" on page 15 | Yes |

## Packet Drop at 1Gb with 100m Cable (6879222)

On-board Ethernet devices might see an excessive rate of packet drop, when you use cables longer than 66 meters and the link speed is negotiated at 1Gb.

### ▼ Workaround

- **Do one or both of the following:**
  - **Use an Ethernet cable 66 meters or shorter.**
  - **Force the Ethernet link to 100Mb.**

## Special Instructions for Network PXE Booting for the Sun Blade X3–2B Server (7183913)

For the Oracle Sun Blade X3–2B server (formerly the Sun Blade X6270 M3), the 10 GbE ports are not visible as network (PXE) boot options until the server's FEMs (Fabric Expansion Modules) are configured in the BIOS utility.

## ▼ Workaround

1. **Start the server and enter the BIOS Setup Utility by pressing F2 when prompted during the boot process.**
2. **At the BIOS Setup Utility main menu, to go the IO menu.**
3. **In the IO menu, arrow down to "FEM 0" and press enter.**
4. **In the FEM 0 options, enable the "OpROM Enable" parameter.**
5. **Go to Save and Exit and save changes and reset the blade.**
6. **During reboot, re-enter the BIOS Setup Utility by pressing F2 when prompted.**
7. **At the BIOS Setup Utility main menu, to go the Boot menu.**
8. **Confirm that BIOS Boot Mode is set to "Legacy".**
   The 10 GbE ports should now be listed under the "Legacy Boot Option Priority" list.
9. **Reorder ports for use in network (PXE) booting.**
   Ports that are not needed for network boot can be disabled.
10. **Go to Save and Exit and save changes and reset the blade.**

# ILOM Issues

The following table lists the current ILOM issues.

| Issue | Workaround? |
|---|---|
| "ILOM Failover and Private Mode Cannot Be Enabled Simultaneously (6911661)" on page 17 | Yes |
| "Cannot Set NEM SP IP Address When NEM Is Powered Off (6938660)" on page 18 | Yes |
| "`ipmitool` Command Fails (6940791)" on page 18 | Yes |
| "FMA Not Supported (6938667)" on page 19 | No |
| "Prepare-to-Remove and Return-to-Service Does Not Work on NEM ILOM (6948103)" on page 19 | Yes |
| "Green Rear SAS Link LEDs All Turn On When Setting Prepare-to-Remove (6950981)" on page 19 | No |
| "NEM SAS Firmware Updates Must be Performed from the CMM and Not the NEM SP (7020854)" on page 20 | Yes |

## ILOM Failover and Private Mode Cannot Be Enabled Simultaneously (6911661)

Changing the state of both the failover and private mode options simultaneously, in either the ILOM web interface or CLI, will result in neither change taking effect. If a blade is subsequently inserted into the chassis, it will neither detect nor configure the NEM Ethernet 10GbE interfaces.

### ▼ Workaround

For detailed instructions on enabling failover and private mode, see "Enabling Private and Failover Mode" in *Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module User's Guide*.

- **Do one of the following:**
  - **To avoid this issue, individually enable or disable each option separately.**
  - **To recover from this issue:**
    a. **Undo one of the changes that you made and apply it.**
    b. **Redo the change and apply it.**

# Cannot Set NEM SP IP Address When NEM Is Powered Off (6938660)

When NEM SP is set for static mode, the NEM SP IP cannot be set if the NEM is powered off. An attempt to set the IP address appears to succeed, but does not successfully complete the update.

## ▼ Workaround

- **Make sure that you power on the NEM SP prior to attempting to update or set the static NEM IP address.**

# `ipmitool` Command Fails (6940791)

On rare occasions, when using an `ipmitool` command from a remote host to a NEM client, the following error message appears:

```
SDR Record ID 0x0009 invalid length
```

## ▼ Workaround

1. **When the failure occurs, retry the ipmitool command.**
2. **If the command fails again, wait 30 seconds and retry the command.**
3. **If the command continues to fail, call your service representative.**

# FMA Not Supported (6938667)

ILOM does not support FMA on Virtualized NEM M2 ILOM. The FMA shell and utilities are not present as with other ILOM platforms.

# Prepare-to-Remove and Return-to-Service Does Not Work on NEM ILOM (6948103)

When attempting to initiate a `prepare_to_remove` or `return to service` software assisted hot-plug action in the Virtualized M2 NEM CLI interface, the NEM does not complete the hot plug action.

## ▼ Workaround

- **Do one of the following:**
  - **Execute the hot plug commands from the CMM CLI interface:**
    a. **Log into the CMM CLI.**
    b. **Change directories to the NEM directory:**
       **`cd /CH/NEM`*x*`/`**
       Where *x* is NEM0 or NEM1.
    c. **Refer to "Performing Hot Plug Insertion and Removal" in** *Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module User's Guide* **for instructions on how to complete the software hot plug process through the CMM CLI.**
  - **Use the Attention button as described in "Performing Hot Plug Insertion and Removal" in** *Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module User's Guide* **to initiate a hardware-based hot-plug removal.**

# Green Rear SAS Link LEDs All Turn On When Setting Prepare-to-Remove (6950981)

When attempting a hot-plug removal with the CMM or Virtualized M2 NEM CLI command, the external mini-SAS LEDs might illuminate on the Virtualized M2 NEM rear mini-SAS ports.

There is no impact to the functionality of Virtualized M2 NEM. The external mini-SAS connectors are not currently supported on Virtualized M2 NEM.

# NEM SAS Firmware Updates Must be Performed from the CMM and Not the NEM SP (7020854)

Updating the SAS firmware for your Virtualized M2 NEM must be done through the CMM. Attempting to perform a NEM SAS firmware update from the NEM SP either through the network or serial port will cause the update to fail.

Both ILOM and SAS firmware updates are performed through the CMM. For detailed instructions, refer to the ILOM supplement section of the *Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM User's Guide*.

# Operating System Issues

The following table lists current operating system issues.

| Issue | Workaround? |
|---|---|
| "Oracle Linux: Server Module Might Hang When NEM Replaced Repeatedly (6935520)" on page 21 | Yes |
| "Oracle Solaris: `Hotplugd(1M)` Daemon Must Be Started Before Initiating Hot Plug Actions In Oracle Solaris 10 OS 09/10 (7005233)" on page 22 | Yes |
| "Oracle Solaris: Virtualized M2 NEM hxge 10 GbE Driver Can Hang Under High Stress (6932684)" on page 22 | Yes |
| "Linux: Configuring PCIe Hot Plug in Linux (7075694)" on page 23 | Yes |
| "Windows: Incorrect Driver Version Displayed When Driver File Properties is Viewed (7069358)" on page 23 | No |

## Oracle Linux: Server Module Might Hang When NEM Replaced Repeatedly (6935520)

If a server module with a SAS Storage 6Gb SAS REM HBA controller is running with Oracle Enterprise Linux 5.4, and if one or both Virtualized M2 NEMs are repeatedly replaced in close succession, the blade might hang.

### ▼ Workaround

- **Do one of the following, as needed:**
  - **When replacing a NEM, wait 5 minutes between removing the failed NEM and installing a new NEM.**
  - **If the server module does hang, reboot the server module to recover from the error.**

# Oracle Solaris: Hotplugd(1M) Daemon Must Be Started Before Initiating Hot Plug Actions In Oracle Solaris 10 OS 09/10 (7005233)

Starting with Oracle Solaris 10 OS 09/10, hot plug actions with the Virtualized M2 NEM cannot be initiated until the `hotplugd(1M)` daemon is started. The hot plug daemon provides user-level services for the management of hot plug connections. It is a system daemon started by the Service Management Facility. Its fault management resource identifier (FMRI) is:

```
svc:/system/hotplug:default
```

The `hotplug(1M)` command and any other client program that uses the private `.libhotplug` library to query information about hotplug connections or initiate hot plug commands depends on this daemon.

## ▼ Workaround

Before attempting to initiate a hot plug action in Solaris 10 OS 09/10, or later, start the hot plug daemon.

- **To enable the hotplug daemon, enter the following command:**

  ```
  # svcadm enable svc:/system/hotplug:default
  ```

# Oracle Solaris: Virtualized M2 NEM hxge 10 GbE Driver Can Hang Under High Stress (6932684)

In Oracle Solaris, the Virtualized M2 NEM hxge devices can become unpingable and hxge entries can disappear from the arp table under high stress conditions (such as during jumbo maxq payload testing). The arp table does not get updated with the hxge entry even after a ping is issued.

## ▼ Workaround

The workaround is to manually add the hxge 10 GbE interface into arp table or, if necessary, reboot the blade server.

- **To add an hxge entry into the arp table, enter the command:**

  **`arp -s <`***`hxge_ipaddress`***`> <`***`mac_address`***`>`**

  Repeat the command for each hxge interface.

# Linux: Configuring PCIe Hot Plug in Linux (7075694)

Before attempting to perform a hot plug action on your the Virtualized M2 NEM, first configure any blade host running a Linux operating system specified in the workaround listed below to support PCIe hot plug.

## ▼ Workaround

1. **Open the `/etc/modprobe.conf` or `/etc/modprobe.conf.local` file in a text editor.**

2. **Add the following command:**

   ```
   install acpiphp /bin/true
   ```

3. *Either*, **persistently load the `pciehp` module per OS as follows:**

   - In Oracle Linux or RHEL 5.x, enter the commands at a terminal prompt:

     ```
     # echo modprobe pciehp >> /etc/rc.modules
     # chmod +x /etc/rc.modules
     ```

     **Note –** This step is not required for Oracle Linux or RHEL 6.x as PCIe hot plug support is built-in.

   - In SLES, open the `/etc/sysconfig/kernel` configuration file in a text editor. Change:

     `MODULES_LOADED_ON_BOOT=""`

     to:

     **`MODULES_LOADED_ON_BOOT="pciehp"`**

4. *Or,* **execute the following command at a terminal prompt before performing a hot plug action:**

   ```
   # modprobe pciehp
   ```

# Windows: Incorrect Driver Version Displayed When Driver File Properties is Viewed (7069358)

The Microsoft Windows Server 2008 and Windows Server 2008 R2 drivers version 1.0.19.0 for the Virtualized M2 NEM does not display the correct driver version when the driver file (HPMPort.sys) is right-clicked and Properties is selected. The driver displays version 1.0.18.0 when the actual driver is version 1.0.19.0.

The driver version does, however, display correctly when viewed in Device Manager.

This discrepancy can be safely ignored.