



# Sun Blade™ 8000 Series Product Notes

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Supplemental Release 2.2

Sun Microsystems, Inc.  
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# Sun Blade 8000 Series Product Notes

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The *Sun Blade 8000 Series Product Notes* provides information about new features, known limitations, and documentation updates for the Sun Blade™ 8000 Modular System and the Sun Blade 8000 P Modular System. These two systems are referred to as the Sun Blade 8000 Series.

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**Note** – The information provided in these Product Notes is not included in the main Sun Blade 8000 Series documentation. Product Note information is designed for system administrators who are experienced with the installation and configuration of the basic system components and its software.

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This following information is provided in these Product Notes:

- [“Critical Installation Issue” on page 2](#)
- [“How to Obtain Updates From Sun” on page 2](#)
- [“New Hardware Features” on page 3](#)
- [“New Software Features” on page 4](#)
- [“Summary of Fixed Issues” on page 8](#)
  - [“Details About Fixed Issues” on page 8](#)
- [“Summary of Known Open Issues” on page 10](#)
  - [“Details About Known Open Issues” on page 12](#)
- [“Documentation for X8440 Quad-Core Server Module — Ganged and Unganged Memory Channel Options” on page 24](#)
- [“How to Contact Sun Technical Support” on page 26](#)
- [“Sun Welcomes Your Comments” on page 26](#)

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## Critical Installation Issue

Review the following issue for critical information about the installation and configuration of the Sun Blade 8000 Series Modular Systems:

- [“SLES9-SP3 – Starting X Windows Can Hang System Running SLES9-SP3” on page 16](#)

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## Updated Product Note Information

Updated Product Notes for the Sun Blade 8000 Series Modular Systems are posted on the web, as needed. For the most recent version of the Product Notes, go to the main Sun documentation portal at the following site and search for “Sun Blade 8000 Modular System”: <http://docs.sun.com>

Alternatively, you can also find the Sun Blade 8000 Modular System documentation page at: <http://docs.sun.com/app/docs/coll/blade8000>

New issues for each product release are added to the Product Notes. Be sure to read the most recent version of the Product Notes that is available on the web.

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## How to Obtain Updates From Sun

You can obtain updates and patches from your Sun authorized sales representative or service provider, or by downloading them from the SunSolve Online<sup>SM</sup> web site: <http://sunsolve.sun.com/>

For patch instructions, see the README file that accompanies each patch.

For downloads of released software, visit the Sun Download Center at: <http://www.sun.com/downloads>

For additional Sun Blade 8000 or 8000 P product information, go to the product web site:

- <http://www.sun.com/servers/blades/8000>
- <http://www.sun.com/servers/blades/8000P>

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# New Hardware Features

Review the following section for information about new hardware features

- [“Sun StorageTek Dual 4 Gb Fibre Channel Dual GbE Express Module HBA” on page 3](#)
- [“Sun 10-Port 4x DDR InfiniBand PCIe Network Express Module” on page 3](#)

## Sun StorageTek Dual 4 Gb Fibre Channel Dual GbE Express Module HBA

As of Supplement Release 2.2, ILOM 2.0.10 provides support for the Sun 10-Port Combo GbE/4GB FC Express Module (EM). For more information about this EM, see *Sun StorageTek Dual 4 Gb FC Dual GbE HBA, Emulex Installation Guide* (820-3784) at: <https://docs.sun.com>

## Sun 10-Port 4x DDR InfiniBand PCIe Network Express Module

The Sun 10-Port 4x DDR InfiniBand PCIe Network Express Module (NEM) is supported by the Solaris 10 Operating System.

Solaris support is unbundled. If you are using Solaris 10 8/07, you can access the "InfiniBand Updates 1" package at this site:

[https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS\\_SMI-Site/en\\_US/-/USD/ViewProductDetail-Start?ProductRef=Sol-infiniband-u1-g-f@CDS-CDS\\_SMI](https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS_SMI-Site/en_US/-/USD/ViewProductDetail-Start?ProductRef=Sol-infiniband-u1-g-f@CDS-CDS_SMI)

However, there is a newer package that requires a minimum of Solaris 10 5/08. You can access the "InfiniBand Updates 2" package at this site:

[https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS\\_SMI-Site/en\\_US/-/USD/ViewProductDetail-Start?ProductRef=Sol-Infiniband-U2-g-f@CDS-CDS\\_SMI](https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS_SMI-Site/en_US/-/USD/ViewProductDetail-Start?ProductRef=Sol-Infiniband-U2-g-f@CDS-CDS_SMI)

For more information about this NEM (marketing part number X1289A-Z) see *Sun 10-Port 4x DDR InfiniBand PCIe Network Express Module User's Guide* (820-0810) at: <http://docs.sun.com>.

# New Software Features

This section presents information about the following new or updated Sun Blade 8000 Series software features:

- “ILOM Firmware and Software Updates” on page 4
- “Change in BIOS Versioning Number Scheme” on page 6
- “Supported Operating Systems” on page 6

## ILOM Firmware and Software Updates

The Sun Blade 8000 Supplemental Releases provide updated firmware and software for the Sun Blade 8000 Series Modular Systems. You can obtain the latest Supplemental Release at the following site:

<http://www.sun.com/servers/blades/8000/downloads.jsp>

**TABLE 1** ILOM Software and BIOS Versions Available in Supplemental Release

Sun Blade 8000 Supplemental Release	ILOM Version for the SP	ILOM Version for the CMM	BIOS Version	Applicable Hardware
1.0	1.1	1.1	• 0ABHL053	CMM, X8400 Server Module
1.0.1	1.1.2	1.1.2	• 0ABHL058	CMM, X8400 Server Module
1.0.2	1.1.4	No update	• 0ABHL059	X8400 Server Module only
1.1	1.1.3	No update	• 0ABJL023	X8420 Server Module only
1.2	1.1.5	1.1.5	• 0ABHL068 (for X8400) • 0ABJL032 (for X8420)	• CMM, • Sun Blade 8000 Chassis, • Sun Blade 8000 P Chassis, • X8400 Server Module, • X8420 Server Module
1.2.1	1.1.9	1.1.5	• 0ABHL069 (for X8400) • 0ABJL033 (for X8420)	• Sun Blade 8000 Chassis • Sun Blade 8000 P Chassis, • X8400 Server Module, • X8420 Server Module

**TABLE 1** ILOM Software and BIOS Versions Available in Supplemental Release

Sun Blade 8000 Supplemental Release	ILOM Version for the SP	ILOM Version for the CMM	BIOS Version	Applicable Hardware ( <i>Continued</i> )
1.2.2	1.1.12	1.1.5	02.04.01.00 (for X8420)	<ul style="list-style-type: none"> <li>• X8420 Server Module only</li> </ul>
2.0	2.0.1.1	2.0.1.1	<ul style="list-style-type: none"> <li>• 1.3.4.0 for X8400</li> <li>• 2.3.5.0 for X8420</li> <li>• 4.1.21.0 for X8440</li> </ul>	<ul style="list-style-type: none"> <li>• Sun Blade 8000 Chassis</li> <li>• Sun Blade 8000 P Chassis</li> <li>• X8400 Server Module</li> <li>• X8420 Server Module</li> <li>• X8440 Server Module</li> </ul>
2.0.2	2.0.1.5	2.0.1.5	<ul style="list-style-type: none"> <li>• 01.04.08.00 for X8400</li> <li>• 02.04.01.00 for X8420</li> <li>• 04.03.18.00 for X8440</li> </ul>	<ul style="list-style-type: none"> <li>• Sun Blade 8000 Chassis</li> <li>• Sun Blade 8000 P Chassis</li> <li>• X8400 Server Module</li> <li>• X8420 Server Module</li> <li>• X8440 Server Module</li> </ul>
2.1	2.0.1.7	2.0.1.7	<ul style="list-style-type: none"> <li>• 06.01.35.00 for X8450.</li> </ul>	<ul style="list-style-type: none"> <li>• Sun Blade 8000 Series Chassis Monitoring Module (CMM)</li> <li>• X8450 Server Module</li> </ul>
2.0.3	2.0.1.6	2.0.1.7	<ul style="list-style-type: none"> <li>• 04.04.04.00 for X8440</li> </ul>	<ul style="list-style-type: none"> <li>• X8440 Server Module</li> </ul>
2.1.1	2.0.1.8	2.0.1.7	<ul style="list-style-type: none"> <li>• 06.01.37.00 for X8450</li> </ul>	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> </ul>
2.2	2.0.1.12	2.01.10	<ul style="list-style-type: none"> <li>• 01.04.08.00 for X8400</li> </ul>	<ul style="list-style-type: none"> <li>• All Sun Blade 8000 Series server modules</li> <li>• Sun Blade 8000 Series Chassis Monitoring Module</li> </ul>
	2.0.1.13		<ul style="list-style-type: none"> <li>• 02.04.10.00 for X8420</li> </ul>	
	2.0.1.11		<ul style="list-style-type: none"> <li>• 04.04.05.00 for X8440</li> </ul>	
	2.0.1.10		<ul style="list-style-type: none"> <li>• 06.01.39.00 for X8450</li> </ul>	

## Change in BIOS Versioning Number Scheme

As of Supplemental Release 2.0, the BIOS version number represents four fields that are separated by dots. Each field represents a value. A brief description of these fields and their values follows.

BIOS versioning number fields: `XX.YY.ZZ.PP`

*where:*

- `XX` = 01-99 Product code:
  - 01 = X8400 Server Module
  - 02 = X8420 Server Module
  - 04 = X8440 Server Module
  - 06 = X8450 Server Module
- `YY` = 01-99 Field update number
- `ZZ` = 01-99 Build number
- `PP` = 00-99 Upgrade number (internal use)

## Change in ILOM Versioning Number Scheme

As of Supplemental Release 2.0, the ILOM version number represents four fields that are separated by dots. Each field represents a value. A description of these fields and their values follows.

ILOM versioning number fields that represent the release: `a.b.c.d`

*where:*

- `a` = ILOM major version
- `b` = ILOM minor version
- `c` = Sun Blade 8000 Series specific release number
- `d` = Sun Blade 8000 Series specific internal release number

## Supported Operating Systems

The Sun Blade 8000 Series Modular Systems currently support the following operating systems that are listed in [TABLE 2](#).



**TABLE 2** Supported Operating Systems.

Server Modules	Supported Operating Systems
X8400 X8420 X8440	<ul style="list-style-type: none"> <li>• Solaris 10 08/07 or later (X8440 Server Module)</li> <li>• Solaris 10 06/06 or later (X8400 or X8420 Server Module)</li> <li>• Red Hat Enterprise Linux Advanced Server 4 Update 3 or later for x86 (32-bit and 64-bit)</li> <li>• Red Hat Enterprise Linux 5 or later for x86 (64-bit)</li> <li>• SUSE Linux Enterprise Server 9 with SP3 or later for x86 (64-bit)</li> <li>• SUSE Linux Enterprise Server 10 or later for x86</li> <li>• Microsoft Windows Server 2003 Enterprise Edition (SP1 or R2) (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2003 Standard Edition (SP1 or R2) (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2008 Enterprise Edition (32 or 64-bit)</li> <li>• Microsoft Windows Server 2008 Standard Edition (32 or 64-bit)</li> <li>• VMware ESX Server 3.0.1 or later (X8400 and X8420 Server Modules)</li> <li>• VMware ESX Server 3.0.2 or later (X8440 dual-core Server Modules)</li> <li>• VMware ESX Server 3.5 Update 1 (X8440 quad-core Server Modules)</li> </ul>
X8450	<ul style="list-style-type: none"> <li>• Solaris 10 08/07 (with patches) or later</li> <li>• Red Hat Enterprise Linux Advanced Server 4 Update 6 or later for x86 (32-bit and 64-bit)</li> <li>• Red Hat Enterprise Linux 5 or later for x86 (64-bit)</li> <li>• SUSE Linux Enterprise Server 9 with SP4 or later for x86 (64-bit)</li> <li>• SUSE Linux Enterprise Server 10 with SP1 or later for x86 (64-bit)</li> <li>• Microsoft Windows Server 2003 Enterprise Edition (SP1, SP2, or R2) (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2003 Standard Edition (SP1, SP2, or R2) (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2008 Standard Edition (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2008 Enterprise Edition (32-bit and 64-bit)</li> <li>• VMware ESX Server 3.0.2 with patch ESX-1003524 (X8450 dual-core Server Modules)</li> <li>• VMware ESX Server 3.0.2 or later (X8450 quad-core Server Modules)</li> </ul>

For information about these operating systems, go to:

<http://www.sun.com/servers/blades/8000/os.jsp>

# Summary of Fixed Issues

TABLE 3 summarizes the fixed issues for the Sun Blade 8000 Series Modular Systems as of Supplemental Release 2.2. It also includes information about which version of the software or hardware a particular issue impacted.

**Note** – When an issue has been fixed for a significant length of time, that issue, along with its description and any workaround no longer appears in the current Product Notes document. However, the Supplemental Release README file provides information about all past and current issues related to the system. For the most recent version of the README file, go to the Sun Blade 8000 Modular System – download listings at:

<http://www.sun.com/servers/blades/8000/downloads.jsp>.

TABLE 3 Fixed Issues

Issue and Related Page Number in This Document	Impacts This Software, Hardware, or Supplemental Release	Fixed in This Software or Supplemental Release
<b>ILOM</b>		
<a href="#">“CMM Policy Tab Missing From Web Interface” on page 9</a>	<ul style="list-style-type: none"><li>• 2.0.1.5</li></ul>	<ul style="list-style-type: none"><li>• Supplemental Software Release 2.2</li></ul>
<a href="#">“CMM Reserve Power Supply Count Is Not Persistent Across Power Cycles of Chassis” on page 9</a>	<ul style="list-style-type: none"><li>• 2.0.1.1</li></ul>	<ul style="list-style-type: none"><li>• Supplemental Software Release 2.2</li></ul>
<a href="#">“CMM Auto Chassis Power On Policy Not Working” on page 9</a>	<ul style="list-style-type: none"><li>• 2.0.1.1</li><li>• 2.0.1.5</li><li>• 2.0.1.7</li></ul>	<ul style="list-style-type: none"><li>• Supplemental Software Release 2.2</li></ul>

## Details About Fixed Issues

The details for fixed issues are sorted by function and are presented in these sections:

- [“CMM Policy Tab Missing From Web Interface” on page 9](#)
- [“CMM Reserve Power Supply Count Is Not Persistent Across Power Cycles of Chassis” on page 9](#)
- [“CMM Auto Chassis Power On Policy Not Working” on page 9](#)

## CMM Policy Tab Missing From Web Interface

**Impacted Supplemental Release:** 2.0.1.5

**Issue PN 1:** CMM Policy tab missing from web interface (CR6709034)

**Description:** Policy second-level tab is missing from CMM Configuration tab in the ILOM web interface. Policy directory in CLI is present.

**Workaround:** This issue has been fixed as of Supplemental Release 2.2.

## CMM Reserve Power Supply Count Is Not Persistent Across Power Cycles of Chassis

**Impacted Supplemental Release:** 2.0.1.1

**Issue PN 2:** CMM reserve power supply count is not persistent across power cycles of chassis. (CR6681987)

**Description:** The reserve power supply count should remain persistent across power cycles.

**Workaround:** This issue has been fixed as of Supplemental Release 2.2.

## CMM Auto Chassis Power On Policy Not Working

**Impacted Supplemental Release:** 2.0.1.1, 2.0.1.5, 2.0.1.7

**Issue PN 3:** CMM Auto Chassis Power On Policy not working.

**Description:** The CMM Auto Chassis Power On policy should automatically power on the chassis after a power loss.

**Workaround:** This issue has been fixed as of Supplemental Release 2.2.

# Summary of Known Open Issues

TABLE 4 summarizes all known open issues for the Sun Blade 8000 Series Modular Systems as of Supplemental Release 2.2. It also includes information about which version of the software or hardware a particular issue impacted.

**TABLE 4** Open Issues as of Supplemental Release 2.2

Issue and Related Page Number in This Document	Impacts This Software, Hardware, or Supplemental Release
Sun Blade 8000P Chassis I/O	
"Simultaneous Insertion of Multiple Power Supplies Can Cause Temporary CMM Outage and Unexpected Shutdown of Server Modules" on page 13	<ul style="list-style-type: none"> <li>• Sun Blade 8000P Chassis</li> </ul>
BIOS	
"After Some Firmware Upgrades, 'CMOS Checksum Bad' Message Might Occur and Customized BIOS Settings Might Be Lost" on page 13	<ul style="list-style-type: none"> <li>• All Sun Blade Series Server Modules</li> <li>• Supplemental Release 2.0.2 and 2.1</li> </ul>
"X8440 Quad-Core BIOS User-Configurable Option for Memory Channel Ganging/Unganging Presents Some Trade-Offs to RAS Capabilities" on page 13	<ul style="list-style-type: none"> <li>• Sun Blade X8440 Dual-Core Server Module</li> </ul>
Solaris	
"InfiniBand ExpressModule and NEM Hot-Plugging Is Not Supported With Solaris OS" on page 14	<ul style="list-style-type: none"> <li>• All Sun Blade 8000 Series Server Modules</li> <li>• Solaris 10 6/06, 11/06 and 8/07</li> </ul>
"Blank Screen Results During Operating System Installations If a Physical Monitor Is Connected and KVMs Is Used" on page 15	<ul style="list-style-type: none"> <li>• All Solaris or Linux Operating Systems</li> <li>• X8450 Server Module</li> </ul>
"X Server Does Not Start Automatically if Solaris Was Installed Over the Serial Port" on page 15	<ul style="list-style-type: none"> <li>• All Sun Blade 8000 Series Server Module</li> <li>• Solaris 10 6/06 and 11/06 Distribution Media only</li> </ul>
Linux	
"SLES9-SP3 – Starting X Windows Can Hang System Running SLES9-SP3" on page 16	<ul style="list-style-type: none"> <li>• All X8000 Series Server Modules</li> <li>• SLES9-SP3</li> </ul>
"SLES10 – System Stalls and Blank Screen Appears at Boot" on page 16	<ul style="list-style-type: none"> <li>• All X8000 Series Server Modules</li> <li>• SLES10</li> </ul>

**TABLE 4** Open Issues as of Supplemental Release 2.2 (Continued)

Issue and Related Page Number in This Document	Impacts This Software, Hardware, or Supplemental Release
"The Speedstep-Centrino Driver for SLES9 SP4 Crashes When Loaded on a Sun Blade X8450 Server Module" on page 16	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
"On the X8450 Server Module Some Combinations of Installed Hardware and Monitors Adversely Affect the SLES9 SP4 Installation Program" on page 18	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
"Legacy Hot-plug (driver acpiphp.ko) Does Not Find Any Hot-plug Slots on the X8450 Server Module and Therefore Does Not Work" on page 18	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
"SLES9 SP4 64bit with 128GB RAM Will Not Boot on X8440 Quad-Core" on page 19	<ul style="list-style-type: none"> <li>• X8450 Quad Core Server Module</li> </ul>
"RHEL5 – Kernel Panic - Not Syncing: Fatal Exception" on page 20	<ul style="list-style-type: none"> <li>• All X8000 Series Server Modules</li> <li>• RHEL5</li> </ul>
"RHEL5 Operating System Cannot Do Legacy Hot-plug on the X8450 Server Module Unless Message Signal Interrupts (MSIs) Are Disabled" on page 20	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
"RHEL5 Runs Out of Low Memory on X8450 When Booting With 128GB RAM" on page 20	<ul style="list-style-type: none"> <li>• All X8450 Server Modules</li> <li>• RHEL5</li> <li>• Supplemental Release 2.1</li> </ul>
<b>ILOM</b>	
"Location of a Failed DIMM on the X8450 Might Be Incorrectly Reported If Using IPMItool" on page 21	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
<b>SIA</b>	
"Sun Installation Assistant Kernel Hangs on X8450 Server Module with 128 Gbytes of RAM" on page 21	<ul style="list-style-type: none"> <li>• X8450 Server Module</li> <li>• Supplemental Release 2.1</li> </ul>
<b>Documentation</b>	
"X8440 Quad-Core Server Module — BIOS User-Configurable Ganged and Unganged Options Not Documented" on page 22	<ul style="list-style-type: none"> <li>• X8450 Dual-Core Server Modules</li> <li>• X8440 Quad-Core Server Modules</li> <li>• Supplemental Releases 2.0.3 and 2.1.1</li> </ul>
"Faulted Hardware - CMM Needs to Be Re-seated to Clear Fault" on page 23	<ul style="list-style-type: none"> <li>• All Sun Blade Series Server Modules</li> <li>• Supplemental Software Releases 2.0 and 2.0.2</li> </ul>

**TABLE 4** Open Issues as of Supplemental Release 2.2 (Continued)

Issue and Related Page Number in This Document	Impacts This Software, Hardware, or Supplemental Release
<a href="#">“Chassis Auto Power On Policy Changed As Of ILOM 2.0.1.12” on page 23</a>	<ul style="list-style-type: none"><li>• CMM - ILOM 2.0.1.12</li><li>• Supplemental Software Release 2.2</li></ul>
<a href="#">“Unable to Search for Entries in Sun Blade 8000 Series Online Information System” on page 23</a>	<ul style="list-style-type: none"><li>• All Sun Blade 8000 Series Server Modules and Chassis Components</li><li>• Supplemental Software Release 2.0.2</li></ul>
<a href="#">“Unable to Search For Entries In Sun Blade 8000 Series Installation Guide” on page 24</a>	<ul style="list-style-type: none"><li>• All Sun Blade 8000 Series Server Modules and Chassis Components</li><li>• Supplemental Software Release 2.0.2</li></ul>

## Details About Known Open Issues

The details for all known open issues are sorted by function and presented in the following sections:

- [“Sun Blade 8000P Chassis I/O Open Issue Details” on page 13](#)
- [“BIOS Open Issue Details” on page 13](#)
- [“Solaris Open Issue Details” on page 14](#)
- [“Linux Open Issue Details” on page 16](#)
- [“SIA Open Issues Details” on page 21](#)
- [“Documentation Open Issue Details” on page 22](#)

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**Note** – To easily refer to a particular open issue in the Product Notes, a Product Note Number is included at the beginning of each open issue. The Product Note (PN) number represents the sequence in which issues appear within a section. The Change Request (CR) number for a specific issue is also provided at the end of the issue synopsis.

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## Sun Blade 8000P Chassis I/O Open Issue Details

### **Simultaneous Insertion of Multiple Power Supplies Can Cause Temporary CMM Outage and Unexpected Shutdown of Server Modules**

**Impacted Supplemental Release:** 2.1

**Impacted Hardware:** Sun Blade 8000P Chassis - Power Supplies

**Issue PN 1:** Hot-inserting multiple power supplies in the Sun Blade 8000P Chassis confuses the CMM, and may cause the server modules to shut down unexpectedly. (CR 6623139)

**Description:** The simultaneous insertion of multiple power supplies (for chassis maximum of four) while power is on causes the currently running blades to power off. Power is shut down to the blades. The CMM interfaces can also become unresponsive for up to several minutes.

**Workaround:** When inserting more than one power supply into the Sun Blade 8000P chassis, wait for each new power supply to be energized for 10 seconds before adding the next power supply.

## BIOS Open Issue Details

### **After Some Firmware Upgrades, 'CMOS Checksum Bad' Message Might Occur and Customized BIOS Settings Might Be Lost**

**Impacted Supplemental Release:** 2.0.2 and 2.1

**Issue PN 1:** "CMOS Checksum Bad" has occurred after F/W upgrade. (CR 6636410)

**Description:** A newer version of BIOS may require changes to the layout of CMOS. This makes the old layout incompatible with the new BIOS, and so sometimes the new BIOS will report a corrupt (invalid) CMOS because of this. Note that the CMOS was not actually corrupted in this case, rather it was just not formatted as the new BIOS expected.

**Workaround:** Access the BIOS Setup utility and load optimal defaults. After loading the optimal defaults, configure user-specific changes (if required).

### **X8440 Quad-Core BIOS User-Configurable Option for Memory Channel Ganging/Unganging Presents Some Trade-Offs to RAS Capabilities**

**Impacted Supplemental Release:** 2.0.3

**Issue PN 2:** The new BIOS menu options enables you to select between unganged and ganged memory configurations (dual independent memory configurations). (CR 6598076 and CR 6574775)

**Description:** The standard memory configuration employed on previous Opteron processors was referred to as a "ganged" memory configuration where each memory request would access both DRAM channels by issuing the same address to both channels simultaneously. When in ganged mode, the memory channels operate in lockstep. The new "unganged" memory interface enables each memory channel to operate independently. Each memory request is serviced by accessing a single memory channel. These features allow you to turn on or off some performance enhancing memory features.

AMD has measured a significant performance improvement (>10%) on many benchmarks when configuring the memory subsystem to use unganged memory channels and therefore it is desirable to provide customers the option to enable this mode of operation. However, there is a reliability impact associated with configuring the memory controller to operate in unganged mode. When operating in unganged mode `chipkill` will **not** be supported, a failed x4 DRAM device will contribute two failed symbols to the code word and the error will no longer be correctable. Customers choosing to enable unganged memory may experience a higher incidence of uncorrectable memory failures.

**Workaround.** The ganged and unganged memory configurations are customer-configurable. The ganged memory option is set by default. For more information about enabling ganged or unganged memory options, see ["Documentation for X8440 Quad-Core Server Module — Ganged and Unganged Memory Channel Options"](#) on page 24.

## Solaris Open Issue Details

### **InfiniBand ExpressModule and NEM Hot-Plugging Is Not Supported With Solaris OS**

**Impacted OS:** Solaris 10 6/06, 11/06, and 8/07

**Impacted Hardware:** All server modules (X8400, X8420, X8440, X8450)

**Issue PN 1:** Hot-insertion and hot-removal of an InfiniBand PCI Express ExpressModule (IB EM) or IB Network Express Module (NEM) is not supported with the Solaris Operating System at this time.

**Description:** Solaris software does not support hot-insertion or hot-removal of an IB EM or IB NEM at this time.

**Workaround:** Do not hot-insert or hot-remove an IB EM or IB NEM while using the Solaris OS. Shut down the Solaris OS gracefully before removing or inserting the IB EM or IB NEM.



## **Blank Screen Results During Operating System Installations If a Physical Monitor Is Connected and KVMs Is Used**

**Impacted OS:** All Solaris and Linux operating systems.

**Impacted hardware:** X8450 Server Module

**Issue PN 2:** The Solaris or Linux install will fail if you use a physical monitor and KVMs at same time (CR 6637370)

**Description:** If Solaris or Linux operating system installations are performed while a physical monitor is connected, a blank screen may be observed on the KVMs session. This is because the X Server used by both Solaris and Linux queries the hardware and automatically drives maximum resolution. If the resulting resolution is greater than the resolution supported by KVMs, the KVMs screen goes blank.

**Workaround:** For Solaris and Linux installations, do not connect a physical monitor if you are planning to use KVMs during the installation. If a physical monitor was already connected prior to you starting the installation, disconnect it before you start the installation.

## **X Server Does Not Start Automatically if Solaris Was Installed Over the Serial Port**

**Impacted OS:** Solaris 10 6/06 and 11/06 Distribution Media only

**Impacted Hardware:** All server modules (X8400, X8420, X8440, X8450)

**Issue PN 3:** The X Server does not automatically start upon boot if you are using the preinstalled disk image or if you installed Solaris software over the serial line (TTYA). You will not see a graphical login screen or a graphical windowing environment. (CR 6481824)

**Description:** If you installed the Solaris software over the serial line, the X Server will not start automatically on subsequent reboots.

**Workaround:** Reboot your system with the following command:

```
# reboot -- -B console=text
```

---

**Note –** You need to complete this workaround only once. Subsequent reboots should automatically start the X Server. Also note that this command makes a one-time change to the system console setting. Subsequent reboots will revert your console setting to its prior value.

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## Linux Open Issue Details

### **SLES9-SP3 – Starting X Windows Can Hang System Running SLES9-SP3**

**Impacted OS:** SLES9-SP3

**Impacted Hardware:** X8400, X8420, X8440

**Issue PN 1:** There is a bug in the SLES9-SP3 kernel that causes X Windows to hang when you attempt to start the process. The hang is in the kernel and there is no way to kill it. However, the system is still functional and you can access the system remotely. To kill the X Windows process, you need to reboot the system.  
(CR 6494591)

**Description:** The SLES9-SP3 kernel does not handle mapping of physical page numbers to AMD node IDs properly for certain memory configurations. Specifically, the problem occurs when the first populated node (starting at Node 0) contains exactly 2 Gbytes of memory.

**Workaround:** Ensure that the first populated node on the system contains more than 2 Gbytes of physical memory. For example, assume that you have 10 Gbytes of RAM and 1-Gbyte DIMMs. Sun recommends that each node have DIMM pairs. In this example, Node 0 will have 4 Gbytes of memory and the remaining nodes can be populated as needed. If you populate Node 1 first, then Node 1 must have 4 Gbytes of memory. Note that having greater than 2 Gbytes of memory is a restriction only for the first populated node. In the example, if Node 0 has 4-Gbyte memory and Node 1 has 2-Gbyte memory, and so forth, the problem will not occur. However if Node 0 has 2-Gbyte memory, the problem will occur regardless of the amount of memory in the other nodes.

### **SLES10 – System Stalls and Blank Screen Appears at Boot**

**Impacted OS:** SLES10

**Impacted Hardware:** X8400, X8420, X8440

**Issue PN 2:** When there is no memory in Node 0, SLES10 panics during boot.  
(CR 6586986)

**Workaround:** Install memory in Node 0.

### **The Speedstep-Centrino Driver for SLES9 SP4 Crashes When Loaded on a Sun Blade X8450 Server Module**

**Impacted Supplemental Release:** 2.1

**Impacted Hardware:** X8450 Server Module

**Issue PN 3:** X8450: SLES9 SP4 speedstep\_centrino frequency scaling driver crashes on some Intel CPUs. (CR 6641512, CR 6639082)

**Description:** The speedstep-centrino driver for SLES 9 SP4 crashes on servers with some Intel CPUs. The CPUs in X8450 (Intel(R) Xeon(R) CPU E73xx) are affected.

The rcpowersaved service is responsible for loading appropriate drivers that allow dynamic changes to CPU speed and power usage. In the SLES9 SP4 operating system, speedstep\_centрино is the CPU frequency scaling driver for the CPUs in the X8450. Novell/SUSE has documented a bug at: [https://bugzilla.novell.com/show\\_bug.cgi?id=341576](https://bugzilla.novell.com/show_bug.cgi?id=341576). The bug report states the following:

1. **Speedstep-centrino crashes when it is loaded and cannot be unloaded.**
2. **Resources are created in /sys and /sys and / are prevented from unmounting during shutdown and reboot.**
3. **Error messages are sent to logs.**

Novell has committed to releasing a patch to fix for this problem in the first scheduled kernel maintenance update for SLES9 SP4.

**Workaround:** None. A patch release will be made available to fix this problem.

Until the fix becomes available, users are advised to disable the powersaved services. Follow these steps to disable the powersaved service:

---

**Note** – This procedure assumes the server module is running and the speedstep\_centрино driver is loaded.

---

1. `chkconfig powersavd off`

This command disables the powersaved init script.

2. `sync; sync`

The sync commands flush the file system buffers in preparation for hang on reboot init 6.

3. `init 6`

This `init` command reboots the server module. The server module will probably hang when trying to unmount /sys.

4. **Power cycle the server module to finish the reboot.**

When the server module reboots, speedstep\_centрино will not autoloading.

Check periodically for the patch release to fix this problem. When the patch becomes available, download and install it.

After obtaining and installing the patch, you may want to re-enable the powersaved service to take advantage of the powersaving features of CPU frequency scaling. To re-enable the powersaved service so that it is enabled at every future server module boot, type: `chkconfig powersaved on`

### **On the X8450 Server Module Some Combinations of Installed Hardware and Monitors Adversely Affect the SLES9 SP4 Installation Program**

**Impacted Supplemental Release:** 2.1

**Impacted OS:** SLES9 SP4

**Impacted Hardware:** X8450 Server Module

**Issue PN 4:** SLES9 SP4 installer may need `vga=0x314` argument when booting from the Preboot Execution Environment (PXE) server or CD-ROM. (CR 6662891, CR 6628668)

**Description:** When booting the X8450 Server Module with the SLES9 SP4 installation media from CD-ROM or the PXE server, the following problems may occur:

- The graphical user interface (GUI) installer may refuse to run and default to text mode install, or
- If a QLogic FC card is installed prior to booting the installation, the console may display a blank screen and the machine may hang.

**Workaround:** Both of these problems can be avoided by passing either of the following arguments to the kernel when booting the SLES9 SP4 installer:

- `vga=0x314`
- or
- `vga=788`

### **Legacy Hot-plug (driver `acpiphp.ko`) Does Not Find Any Hot-plug Slots on the X8450 Server Module and Therefore Does Not Work**

**Impacted Supplemental Release:** 2.1

**Impacted OS:** SLES9 SP4, SLES10 SP1 and RHEL4.6

**Issue PN 5:** SLES9 SP4, SLES10 SP1 and RHEL4.6 legacy hotplug driver `acpiphp.ko` does not work. (CR 6641533, CR6603404)

**Description:** The Linux hot-plug driver `acpiphp.ko` does not work in the following of operating systems:

- 32-bit RHEL4.6
- 64-bit RHEL4.6
- 64-bit SLES9 SP4
- 64-bit SLES10

The acpiphp driver does not recurse down PCI bridges to look for hot-plug (ejectable) slots. On the X8450 Server Module, all hot plug slots reside behind bridges (virtual bridges, that is, PCI-E switches). Therefore, the operating systems referenced above cannot execute hotplug on IO cards attached to the X8450. The operating system vendors have documented this bug. The bug identification numbers are as follows:

- Novell/SuSE Bug ID: 346854
- Redhat Bug ID: 415981

**Workaround:** If you need to run Linux and must have hotplug capability, RHEL5.x is currently the only Linux operating system that supports the acpiphp driver.

Redhat and Novell are planning to release patches that will fix this problem. When the fixed driver is available, download and install the patch in order to hot-plug IO cards attached to the X8450 Server Module.

Check periodically for the patch release to fix this problem.

### **SLES9 SP4 64bit with 128GB RAM Will Not Boot on X8440 Quad-Core**

**Impacted OS:** SLES9 SP4

**Impacted Hardware:** X8450 Quad Core CPU Configuration

**Issue PN 6:** The following kernel panic message appears when attempting to boot SLES9 SP4 on the X8440 Quad Core server module with 128GB RAM:

```
Kernel panic - not syncing: map_single: bounce buffer is not DMA'able
```

**Description:** The kernel included on the install media for Novell SLES9sp4 is kernel-smp-2.6.5-7.308.x86\_64. This kernel will panic when booting on a X8440 Quad Core server module with RAM greater than 64GB RAM. (CR6692833, CR6686229)

**Workaround:** SLES-9-SP4 (x86\_64): Update the OS with the 311 kernel patch (or later) to resolve this low memory issue. This update is available from support.novell.com or standard online update methods.

## **RHEL5 – Kernel Panic - Not Syncing: Fatal Exception**

**Impacted OS:** RHEL5

**Impacted Hardware:** All server modules (X8400, X8420, X8440, X8450)

**Issue PN 7:** When there is no memory in Node 0, RHEL5 panics during boot. (CR 6505641 and RedHat Bug ID: 21864)

**Workaround:** This issue is fixed in RHEL5.1.

## **RHEL5 Operating System Cannot Do Legacy Hot-plug on the X8450 Server Module Unless Message Signal Interrupts (MSIs) Are Disabled**

**Impacted Supplemental Release:** 2.1

**Issue PN 8:** RHEL5 cannot do legacy hot-plug on the X8450 unless MSIs are disabled. (CR 6660222, CR 6643346)

**Description:** When using the RHEL5 operating system on the X8450 Server Module, hot-plug operations will not work on certain NEM or EM slots as long as MSIs (message signaled interrupts) are enabled. If hot-plug operations on the RHEL5 operating system are required, see the workaround below.

---

**Note –** This issue does not affect other supported Linux operating system kernel revisions.

---

**Workaround:** Use the kernel command line argument `pci=noms` to disable MSI.

## **RHEL5 Runs Out of Low Memory on X8450 When Booting With 128GB RAM**

**Impacted Supplemental Release:** 2.1

**Impacted Hardware:** X8450 Server Module

**Impacted OS:** RHEL5

**Issue PN 9:** Users may run into an issue when booting RHEL5 on an X8450 Server Module with 128 Gbytes (GB)RAM. If 128GB is present in the system, the RHEL5 kernel may run out of low memory and panic at boot time. (CR 6679811)

**Workarounds:** Pass the command line argument `mem=<some value>` to enable the kernel to boot. Memory values recommended to pass include `mem=2024M` at the low end and `mem=128000M` at the high end.

## ILOM - IPMI Tool Open Issues

### **Location of a Failed DIMM on the X8450 Might Be Incorrectly Reported If Using IPMItool**

**Impacted Supplemental Releases:** 2.0.2 and 2.1

**Issue PN 1:** A single DIMM in location D2 fails but the IPMItool is reporting the DIMM location as D8 instead of D2. (CR 6628635 and CR 6675496)

**Description:** IPMItool is unable to properly decode the DIMM location information for correctable and uncorrectable memory errors on the X8450. When DIMM failures occur, the slot location as viewed by IPMItool (D2, D4, and so on) is likely to be incorrect.

**Workaround:** Use either ILOM CLI or the ILOM web interface to determine the correct slot information for failed DIMMs.

To use CLI:

1. **Log in to the ILOM CLI as Administrator.**
2. **Type:** `show /SP/logs/event/list`

To use the ILOM web interface:

1. **Open a web browser to log in to the ILOM web interface.**
2. **Click the System Monitoring tab and select Event Logs. The Event Log appears.**

## SIA Open Issues Details

### **Sun Installation Assistant Kernel Hangs on X8450 Server Module with 128 Gbytes of RAM**

**Impacted Supplemental Release:** 2.1

**Issue PN 1: X8450:** SIA Kernel will hang on machines with 128 Gbytes (GB) RAM; must pass kernel argument to boot. (CR 6650090)

**Description:** Sun Installation Assistant (SIA) Kernel hangs on X8450 blades with 128 GB of RAM. The problem can only be corrected by removing RAM or adding the `mem=kernel` argument when booting SIA.

**Workarounds:** There are two recommended workarounds.

**Workaround #1:** Add the `mem=kernel` argument when booting SIA as follows:

1. **With 128 GB installed, boot from the SIA CD.**

2. At the "boot:" prompt, type one of the following commands:

- x8450 [ENTER]
- install mem=2048M [ENTER]
- or install mem=128000M [ENTER]

**Workaround #2:** Reduce the amount of memory as follows:

1. Remove some DIMMs to get the memory below 128 GB. Try removing 64 GB.
2. Run SIA and install the operating system.
3. Shut-down the server module after the operating system installation completes.
4. Re-populate all DIMM slots and reboot to the installed operating system.

## Documentation Open Issue Details

### **X8440 Quad-Core Server Module — BIOS User-Configurable Ganged and Unganged Options Not Documented**

**Impacted Supplemental Releases:** 2.0.3

**Issue PN 1:** The online documentation does not contain topics for configuring the ganged and unganged CPU Memory channel options for the X8440 quad-core server module.

**Workaround.** See [“Documentation for X8440 Quad-Core Server Module — Ganged and Unganged Memory Channel Options”](#) on page 24



## **Faulted Hardware - CMM Needs to Be Re-seated to Clear Fault**

**Impacted Supplemental Releases:** 2.0, 2.0.2, 2.1

**Issue PN 2:** The online documentation does not state that the recommended way to clear a hardware fault is to replace the failed component. (CR6685429)

**Description:** For most faults, you can use the ILOM management interfaces to manually issue a command to clear a component's fault state. However, if you clear a faulted state on a CMM, the component sensors will continue to determine that the fault condition still exists and the fault will immediately be declared again.

The ILOM CLI or web interface method is provided as a convenience for troubleshooting. The documentation does not state that CMM faults are not clearable without re-seating the CMM.

**Workaround:** If a CMM faults, the fault is not clearable without unplugging or replacing the CMM since the redundant CMM is holding the faulted CMM in reset and not allowing it to automatically power-on again.

## **Chassis Auto Power On Policy Changed As Of ILOM 2.0.1.12**

**Impacted Supplemental Release:** 2.0.1.12

**Issue PN 3:** The online documentation does identify the latest chassis auto power on policy for ILOM 2.0.1.12 or later. (CR6752117)

**Description and Workaround:** The current chassis power on policy supported in ILOM 2.0.1.12 behaves in the following way:

- If Chassis\_Auto\_Power\_ON is disabled, then when power is applied to the chassis and CMM, the chassis power (/CH) will remain OFF.
- If Chassis\_Auto\_Power\_ON is enabled and the last power state for the chassis was OFF before the chassis power cords were removed, then the chassis will remain OFF when the power is re-applied to the chassis.
- If Chassis\_Auto\_Power\_ON is enabled and the last power state for the chassis was ON before the chassis power cords were removed, then the chassis will automatically power on when the power is re-applied to the chassis.

## **Unable to Search for Entries in Sun Blade 8000 Series Online Information System**

**Reported in Supplemental Release:** 2.0.2 and 2.1

**Issue PN 4:** The *Sun Blade 8000 Series Online Information System* is no longer searchable from the Sun Microsystems public documentation web site.

**Workaround:** To view or to search for topics in the *Sun Blade 8000 Series Online Information System (OIS)*, you must download the OIS to your local machine. The OIS is available on the Sun documentation site (<http://docs.sun.com>) for download at:

<http://docs.sun.com/app/docs/doc/819-5846-15>

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**Note** – The URL presented above might change as updated versions of the OIS are posted to the Sun documentation site. To ensure you locate the latest version of the OIS, search for the OIS title or part number (819-5846) on the Sun documentation site.

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### Unable to Search For Entries In Sun Blade 8000 Series Installation Guide

**Reported in Supplemental Release:** 2.0.2 and 2.1

**Issue PN 5:** Content within the *Sun Blade 8000 Series Installation Guide* is not searchable from the Sun Microsystems public documentation web site.

**Workaround:** To view and search for topics in the *Sun Blade 8000 Series Installation Guide*, you must locate and open the PDF version of the *Sun Blade 8000 Series Installation Guide*. The PDF version of the *Sun Blade 8000 Series Installation Guide* is available on the Sun documentation web site (<https://docs.sun.com>) at:

<http://docs.sun.com/app/docs/doc/819-5647-15>

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**Note** – The URL presented above might change as updated versions of the *Sun Blade 8000 Series Installation Guide* are posted to the Sun documentation site. To ensure you locate the latest version of this guide, search for the title or part number (819-5647) of the guide on the Sun documentation site (<https://docs.sun.com>).

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## Documentation for X8440 Quad-Core Server Module — Ganged and Unganged Memory Channel Options

You can configure the X8440 Server Module processor to (1) behave as a single dual-channel DRAM Controller (DCT); known as *ganged mode*; or (2) to behave as two single-channel DCT; known as *unganged mode*.

In an **unganged mode** configuration, a DIMM operates independently as a 64-bit interface. In a **ganged mode** configuration, two identical DIMMs operate in parallel to create a 128-bit interface.

By default, all DIMMs on the X8440 Server Module are populated in identical pairs and operate as a dual-channel 128-bit interface. If required, you can configure the X8440 processor to support an ungangued mode configuration, where each DIMM operates independently as a 64-bit interface. For more information on how to enable or disable ganged or ungangued mode configurations, see the following procedure [“To Enable or Disable X8440 Ganged or Unganged DIMM Modes”](#) on page 25.

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**Caution** – When ungangued mode is enabled on an X8440 Server Module, the processor performance might be enhanced but the RAS feature for 4-bit ECC (error checking and correcting) is no longer supported.

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## ▼ To Enable or Disable X8440 Ganged or Unganged DIMM Modes

Follow these steps to enable or disable X8440 Ganged or Unganged memory configurations using the BIOS Setup utility.

1. **In the BIOS Setup utility menu bar, select Chipset->NorthBridge->Memory Configuration.**

The Memory Configuration menu appears.

2. **In the Memory Configuration menu, do one of the following:**

- To enable single-channel DIMM operation, set the Unganged Mode (Disabled) option to Enable.

*or*

- To enable dual-channel DIMM operation, set the Unganged Mode (Enable) option to Disable

3. **In the Memory Configuration menu, do one of the following:**

- If you enabled a single-channel configuration in Step 2, then set the Channel Interleaving (Disabled) option to Auto.

*or*

- If you enabled a dual-channel DIMM configuration in Step 2, then set Channel Interleaving (Auto) to Disabled.

For more information about how to replace a memory module or add options to a Sun Blade server module, see the *Sun Blade 8000 Online Information System* (OIS). The OIS is available on the Sun documentation site (<http://docs.sun.com>) for download at:

<http://docs.sun.com/app/docs/doc/819-5846-15>

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## How to Contact Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

<http://sunsolve.sun.com/>

See the Support menu for links to the Knowledgebase.

If you need to contact Sun technical support, please have the following information available so that technical support representatives can best assist you in resolving problems:

- Description of the problem, including the situation where the problem occurs and its impact on your operation
  - Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
  - Detailed steps on the methods you have used to reproduce the problem
  - Any error logs or core dumps
- 

## Sun Welcomes Your Comments

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Please include the title and part number of your document with your feedback:

*Sun Blade 8000 Series Product Notes*, part number 819-5651-22