

# Sun Blade Storage Module M2 Product Notes



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# Preface

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This preface describes related documentation, submitting feedback, and a document change history.

- “Related Books” on page 5
- “About This Documentation (PDF and HTML)” on page 6
- “Documentation Comments” on page 6
- “Change History” on page 6

## Product Information Web Site

For information about the Sun Blade Storage M2 module, go to the product site:

<http://www.oracle.com/goto/storagemodulem2>.

At that site, you can find links to the following information and downloads:

- Product information and specifications
- Software and firmware downloads

## Related Books

The following is a list of documents related to Oracle's Sun Blade Storage Module M2. These and additional support documents are available on the web at:

<http://download.oracle.com/docs/cd/E19452-01/index.html>

Document	Description
Sun Blade Storage Module M2 Product Documentation	Integrated HTML version of all starred (*) documents, including Search and Index.
<i>Sun Blade Storage Module M2 Getting Started Guide</i>	Setup quick reference.
<i>Sun Blade Storage Module M2 Installation Guide*</i>	How to install the storage module into a blade chassis and interpret operation LEDs.

Document	Description
<i>Sun Blade Storage Module M2 Product Notes*</i>	Important late-breaking information about the storage module.
<i>Sun Blade Storage Module M2 Administration Guide*</i>	How to assign storage to hosts and manage your storage module.
<i>Sun Blade Storage Module M2 Service Manual*</i>	How to service and maintain your storage module.
<i>Sun Blade Storage Module M2 Safety and Compliance Guide</i>	Safety and compliance information about your storage module.

Translated versions of some of these documents are available at the web site described previously in Simplified Chinese, Korean, Japanese, French and Spanish. 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.

## Documentation Comments

Oracle is interested in improving the product documentation and welcome your comments and suggestions. You can submit comments at <http://www.oracle.com/goto/docfeedback>.

## Change History

The following lists the release history of this documentation set:

- July 2010, initial publication.
- August 2010, information added for Sun Blade Storage Module M2 software release 1.0.1. This includes support for connecting a Sun Blade X6270 M2 server module with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) to the storage module.
- November 2010, information added for Sun Blade Storage Module M2 software release 1.1. Added new OS support, CR 6981082, fix for CR 6971532.
- December 2010, flash module (FMod) support removed from product (including 24 FMod slots on main board).

- September 2011, information added for Sun Blade Storage Module M2 software release 1.2. Added new OS support. Added support for the Sun Blade T3-B1 server module. Mention of SSD support removed. Added support for new 300 and 600 GB hard disk drives. Added support for the Sun Blade 6000 Switched NEM 24p 10GbE.



# Overview of the Sun Blade Storage Module M2 Product Notes

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The following sections are covered.

- “Supported Firmware, Hardware and Software” on page 11
- “Hardware Issues” on page 17
- “Solaris Operating System Issues” on page 23
- “Linux Operating System Issues” on page 33



# Supported Firmware, Hardware and Software

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The following topics contain information on software and firmware supported for the Sun Blade Storage Module M2:

- “Storage Module Firmware Release History” on page 11
- “Supported Hardware” on page 12
- “Supported Operating Systems” on page 14
- “Integrated Lights Out Manager (ILOM)” on page 15
- “Get Software and Firmware Downloads” on page 16

## Storage Module Firmware Release History

The following is the firmware revision history of the Sun Blade Storage Module M2. Software is available from the Oracle web site (see “[Get Software and Firmware Downloads](#)” on page 16).

Storage Module SAS Expander Firmware Revision	Available in Web Software Release	Sun Blade 6000 Chassis Firmware Required	Description	Supported Firmware Deployment Platform
5.3.8.0	Sun Blade Storage Module M2 Software Release 1.2	<ul style="list-style-type: none"><li>▪ The minimum CMM ILOM firmware required for the A90–B (501–7379) chassis is 3.0.12.11, included in chassis software release 3.3.</li><li>▪ The minimum CMM ILOM firmware required for the A90–D (511–1531) chassis is 3.0.16.14, included in chassis software release 4.1</li></ul>	<ul style="list-style-type: none"><li>▪ Added operating system support</li><li>▪ Added support for the Sun Blade T3–B1 Server Module</li></ul>	<ul style="list-style-type: none"><li>▪ CMM ILOM (x86 and SPARC)</li><li>▪ Oracle Hardware Management Pack 2.0.1 (x86) or later</li></ul>

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Storage Module SAS Expander Firmware Revision	Available in Web Software Release	Sun Blade 6000 Chassis Firmware Required	Description	Supported Firmware Deployment Platform
5.3.7.0	Sun Blade Storage Module M2 Software Release 1.1	<ul style="list-style-type: none"> <li>■ The minimum CMM ILOM firmware required for the A90–B (501–7379) chassis is 3.0.10.15b, included in chassis software release 3.2.2.</li> <li>■ The minimum CMM ILOM firmware required for the A90–D (511–1531) chassis is 3.0.12.10, included in chassis software release 4.0.</li> </ul>	<ul style="list-style-type: none"> <li>■ Added operating system support</li> <li>■ Fixed CR 6971532</li> </ul>	<ul style="list-style-type: none"> <li>■ CMM ILOM (x86 and SPARC)</li> <li>■ Oracle Hardware Management Pack 2.0.1 (x86) or later</li> </ul>
5.3.6.0	Sun Blade Storage Module M2 Software Release 1.0.1	The minimum CMM ILOM firmware required for the A90–B (501–7379) chassis is 3.0.10.15b, included in chassis software release 3.2.2.	Added support for the Sun Blade X6270 M2 Server Module	<ul style="list-style-type: none"> <li>■ CMM ILOM (x86 and SPARC)</li> <li>■ Oracle Hardware Management Pack 2.0.1 (x86) or later</li> </ul>
5.3.5.0	Not applicable	The minimum CMM ILOM firmware required for the A90–B (501–7379) chassis is 3.0.10.15a, included in chassis software release 3.2.1.	Initial product release	Not applicable

## Supported Hardware

The following hardware is supported for use with your storage module. To download available software, see “[Get Software and Firmware Downloads](#)” on page 16. Patches are available from Sun System Software Stacks (<http://www.oracle.com/technetwork/systems/software-stacks/stacks/index.html>).

Servers	SAS-2 REMs	Chassis	SAS-2 NEMs
Sun Blade T3-B1 (SPARC), with system firmware 8.1.0.c or later (Sunsolve patch 147315-02).	<ul style="list-style-type: none"> <li>■ Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) See note 2 below.</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Modular System with PCIe 2.0 midplane</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM See note 4 below.</li> <li>■ Sun Blade 6000 Switched NEM 24p 10GbE See notes 4 and 5 below.</li> </ul>
Sun Blade T6320 G2 (SPARC), with system firmware 7.2.8 or later (Sunsolve patch 139440-11).  See note 1 below.	<ul style="list-style-type: none"> <li>■ Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) See note 2 below.</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Modular System with PCIe 2.0 midplane</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM See note 4 below.</li> <li>■ Sun Blade 6000 Switched NEM 24p 10GbE See notes 4 and 5 below.</li> </ul>
Sun Blade T6340 (SPARC), with system firmware 7.2.8 or later (Sunsolve patch 139448-10).  See note 1 below.	<ul style="list-style-type: none"> <li>■ Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) See note 2 below.</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Modular System with PCIe 2.0 midplane</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM See note 4 below.</li> <li>■ Sun Blade 6000 Switched NEM 24p 10GbE See notes 4 and 5 below.</li> </ul>
Sun Blade X6270 M2 (x86)	<ul style="list-style-type: none"> <li>■ Sun Storage 6Gb SAS REM RAID HBA (SGX-SAS6-R-REM-Z) See note 2 below.</li> <li>■ Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) See note 2 and 3 below.</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Modular System with PCIe 2.0 midplane</li> <li>■ Sun Blade 6000 Modular System with PCIe 2.0 midplane</li> </ul>	<ul style="list-style-type: none"> <li>■ Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM See note 4 below.</li> <li>■ Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM See note 4 below.</li> <li>■ Sun Blade 6000 Switched NEM 24p 10GbE See notes 4 and 5 below.</li> </ul>

**Notes:**

1. The **Sun Blade T6320 and T6340 server modules** are supported for use in a SAS-2 environment with a SAS-2 REM, but are limited to a maximum 3 Gb/s data transfer speed.

2. The Sun Storage 6Gb SAS REMs include software and firmware. You should always use the latest versions. To download the latest updates for these REMs, go to the [LSI Support site](#).
3. The **Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) in a Sun Blade X6270 M2 server module** is only supported for use with a Sun Blade Storage Module M2 if the storage module firmware is 5.3.6.0 or later. The minimum firmware for the storage module in this configuration is included in Sun Blade Storage Module M2 software release 1.0.1.
4. As of the release of this document, there is no support for using the external SAS-2 connectors of a SAS-2 NEM (such as the **Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM**) to add external storage. Additional external storage may be added by installing a PCIe ExpressModule (EM) HBA and connecting external storage devices to it. The external storage is then controlled by the server module and its PCIe EM, and is not part of the chassis SAS-2 domain.
5. The **Sun Blade 6000 Ethernet Switched NEM 24p 10GbE** is only supported for use with a Sun Blade Storage M2 if NEM software release 1.1 or later is installed.

## Supported Operating Systems

The following lists the minimum version operating system support for the storage module:

- Oracle Solaris 10 OS 10/09 (64-bit only) with the latest patches to support your server's REM.
  - For SPARC systems using the Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), you need to install the following patch versions (or later): 142259-03, 143523-04, 141870-03.
  - For x86 systems using the Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), you need to install the following patch version (or later): 142901-13, 141871-03.

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**Note** – To obtain the latest patches for the Solaris OS, go to [“Get Software and Firmware Downloads” on page 16](#)

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- Oracle Solaris 10 OS 9/10 (64-bit only). *Support added in storage module software release 1.2.*
- Oracle Linux 5.4 (64-bit only).
- Oracle Linux 5.5 (64-bit only). *Support added in storage module software release 1.1.*
- Oracle Linux 5.6, 6.0 and 6.1 (64-bit only). *Support added in storage module software release 1.2.*
- Red Hat Enterprise Linux 5.4 (64-bit only).
- Red Hat Enterprise Linux 5.5 (64-bit only). *Support added in storage module software release 1.1.*

- Red Hat Enterprise Linux 5.6, 6.0 and 6.1 (64-bit only). *Support added in storage module software release 1.2.*
- SUSE Linux Enterprise Server 10 SP3 (64-bit only, with or without Xen). *No longer Supported as of storage module software release 1.2.*
- SUSE Linux Enterprise Server 10 SP4 (64-bit only, with or without Xen). *Supported added in storage module software release 1.2.*
- SUSE Linux Enterprise Server 11 (64-bit only, with or without Xen). *Support added in storage module software release 1.2.*
- SUSE Linux Enterprise Server 11 SP1 (64-bit only, with or without Xen). *Support added in storage module software release 1.1.*
- Microsoft Windows Server 2008 (32 and 64-bit) and R2 (64-bit only).
- Microsoft Windows Server 2008 R2 SP1 (64-bit only). *Support added in storage module software release 1.2.*
- VMware ESX/ESXi 4.0 U1.
- VMware ESX/ESXi 4.1 U1. *Support added in storage module software release 1.2.*

For the latest list of supported operating systems, see: <http://www.oracle.com/goto/storagemodule2>

## Integrated Lights Out Manager (ILOM)

The storage module utilizes the Sun Blade 6000 Modular System Chassis Monitoring Module (CMM) Integrated Lights Out Manager (ILOM) for monitoring and zoning functions. The CMM ILOM allows you to manage all chassis components. The CMM ILOM runs on a separate Service Processor (SP) powered by the chassis.

The following interfaces provide network access to ILOM: command-line interface (CLI), web interface, SNMP, and IPMI.

For more information on Oracle ILOM, refer to the following documentation:

- Oracle ILOM online documentation: <http://www.oracle.com/technetwork/documentation/sys-mgmt-networking-190072.html#ilom>
- *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and 6048 Modular Systems:* <http://download.oracle.com/docs/cd/E19860-01/index.html>

## ▼ **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 Storage Module 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 pane that appears, click Download.

# Hardware Issues

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This section covers hardware issues for the Sun Blade Storage Module M2. See [“Hardware Current Issues”](#) on page 17.

## Hardware Current Issues

The following table lists the issues that are covered in this section. Click on an issue title to see further details about the issue.

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**Note** – FMods and ESMs are not supported in this release.

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Hardware Current Issues	Workaround
<a href="#">“NEM 0 Cannot Be Empty (6956590)”</a> on page 18	Yes
<a href="#">“Identifying a Single Disk When There are a Large Number of Virtual Disks Presented to the Host (6930346)”</a> on page 18	Yes
<a href="#">“Sun Blade X6270 M2 BIOS Can Only See 24 Drives (6929975)”</a> on page 19	No
<a href="#">“Storage Module Shows Powered Off When It is Actually Powered On (6823893)”</a> on page 19	Yes
<a href="#">“Performing Hot Plug Actions During Sun Blade Zone Manager Configuration Can Cause Timeout Errors (6960734)”</a> on page 19	Yes
<a href="#">“Storage Module Drives Might Not Be Listed In the Sun Storage 6Gb SAS REM BIOS Topology Menu (6951183)”</a> on page 20	Yes
<a href="#">“REM BIOS Configuration Utility Might Show a Single Path to Dual Path SAS Drives (6981082)”</a> on page 21	Yes
<a href="#">“Adding a Sun Blade Storage Module M2 Into an Chassis SAS-2 Domain Might Cause Existing Storage Module Drives to Go Offline (6971532)”</a> on page 21	Yes (fixed in SW 1.1)

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## NEM 0 Cannot Be Empty (6956590)

There must be a NEM installed in the chassis NEM slot 0 for the storage module to operate correctly. Operating your storage module with NEM slot 0 empty is not supported.

### Workaround

Ensure that a NEM is installed in NEM slot 0.

## Identifying a Single Disk When There are a Large Number of Virtual Disks Presented to the Host (6930346)

If there is a large amount of single volume or multiple virtual disks presented to the host system, it might be difficult to identify the boot disk as seen by the host system BIOS.

### Workaround

1. **If your server module REM is a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), do the following:**
  - a. Allow the system to boot to the HBA MPT BIOS.
  - b. When prompted select Ctrl-C to enter the MPT BIOS.
  - c. Select the IR HBA from the prompt and press enter.
  - d. Select the correct Hard Disk that the OS will be used to load the OS.
  - e. Press Alt+B to mark the list as the preferred boot device.
  - f. Record the WWN (World Wide Name, also known as SAS ID) from the selected list.
  - g. Save the setting and reboot the host system.
  - h. Enter the server's system BIOS by pressing F2 during boot.
  - i. Select the appropriate boot disk in the Drive Priority list.
  - j. Save the settings and reboot the host system.
  - k. Load the appropriate OS and identify the boot disk by the recorded WWN.
2. **If your server module REM is a Sun Storage 6Gb SAS REM RAID HBA (SGX-SAS6-R-REM-Z), do the following:**
  - a. Allow the system to boot to the HBA WebBIOS Setup screen.
  - b. When prompted select Ctrl-N to enter WebBIOS.
  - c. Use the HBA WebBIOS set up to create the required RAID and Virtual Disk configuration as described in the MegaRAID HBA User's Guide.
  - d. Record the Virtual Disk ID and WWN (World Wide Name, also known as SAS ID).
  - e. Save the setting and reboot the host system.
  - f. Enter the server's system BIOS by pressing F2 during boot.

- g. Select the appropriate boot disk in the Drive Priority list.
- h. Save the settings and reboot the host system.
- i. Load the appropriate OS and identify the boot disk by the recorded WWN.

## **Sun Blade X6270 M2 BIOS Can Only See 24 Drives (6929975)**

The BIOS of the Sun Blade X6270 M2 can see up to 24 drives connected to the system. If you enter the server's BIOS setup program by pressing F2 during boot, and have connected storage that exceeds 24 drives, you might not be able to select a boot drive if it was not among the first 24 drives scanned.

See “Identifying a Single Disk When There are a Large Number of Virtual Disks Presented to the Host (6930346)” on page 18.

## **Storage Module Shows Powered Off When It is Actually Powered On (6823893)**

When power is removed from the Sun Blade Storage Module M2, whether by power cycling the storage module itself or the entire chassis, the power state shown by the CMM command show /CH/ will show the blade as powered off when it is actually powered on.

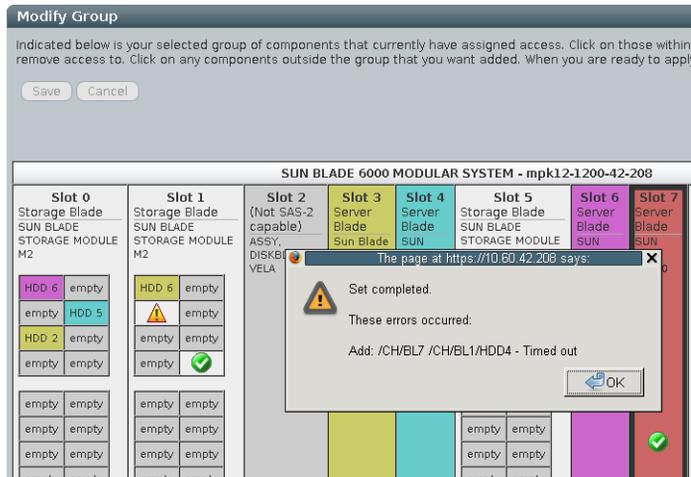
### **Workaround**

If you run into this issue, try running the `start /CH/` command from the CMM command line interface.

## **Performing Hot Plug Actions During Sun Blade Zone Manager Configuration Can Cause Timeout Errors (6960734)**

When assigning Sun Blade Storage Module M2 resources to hosts using the Sun Blade Zone Manager feature of the CMM ILOM, do not attempt hot plug actions to avoid timeout errors.

The following error might be seen in the Sun Blade Zone Manager window if you perform a hot plug action in the SAS-2 domain (comprised of SAS-2 servers, NEMs, and storage module resources) during the assigning of storage module resources:



## Workaround

If you need to perform a hot plug action to a component in the SAS-2 domain, refresh the Sun Blade Zone Manager window prior to saving configurations to ensure listed SAS devices match what's actually in the chassis.

## Storage Module Drives Might Not Be Listed In the Sun Storage 6Gb SAS REM BIOS Topology Menu (6951183)

Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) BIOS might not be able to view all of the drives assigned to a Sun Blade X6270 M2 server module when attempting to view them in the SAS Topology menu of the Sun Storage 6Gb SAS REM HBA BIOS utility. Furthermore, the list of drives can change with each invocation of the Sun Storage 6Gb SAS REM HBA BIOS utility.

Due to this issue, Sun Blade Storage Module M2 drives should **not** be used as OS boot drives in this configuration (Sun Blade X6270 M2 server module with the Sun Storage 6Gb SAS REM HBA connected to the storage module). However, Sun Blade X6270 M2 internally attached drives do not have this issue and can be used as boot drives.

## Workaround

To ensure that your boot drive is a server module internal drive use the following procedure:

1. Log into the CMM ILOM and run the Sun Blade Zone Manager (found under the Storage tab), unassign any Sun Storage Module M2 drives assigned to the Sun Blade X6270 M2 server as outlined in the *Sun Blade Storage Module M2 Administration Guide*.

This will make it easier for you to identify internally attached server module drives for the next step in this process.

2. Use the Sun Storage 6Gb SAS REM HBA BIOS utility to assign an internally attached hard disk drive in the Sun Blade X6270 M2 server module as the Boot device.  
Follow the instructions in the *Sun Storage 6Gb SAS REM HBA Installation Guide* to create a RAID volume on the drive.
3. Install a supported OS on the Sun Blade X6270 M2 server module internal drive.
4. Return to the CMM ILOM Sun Blade Zone Manager and reassign Sun Storage Module M2 drives that were previously assigned to the Sun Blade X6270 M2 server module as outlined in the *Sun Blade Storage Module M2 Administration Guide*.
5. Use the Sun Storage 6Gb SAS REM HBA OS tools to create the RAID assignments as described in the *Sun Storage 6Gb SAS REM HBA Installation Guide*.

## REM BIOS Configuration Utility Might Show a Single Path to Dual Path SAS Drives (6981082)

When viewing storage module drives using the Sun Storage 6Gb SAS REM BIOS Configuration Utility, it might show dual path SAS disks in the storage module as single path disks.

### Workaround

This issue can be safely ignored as the server operating system will see both paths of the storage module SAS disk drives.

## Hardware Fixed Issues

The following table lists the fixed issues. Click on an issue title to see further details about the issue.

Hardware Fixed Issues	Fixed In
<a href="#">“Adding a Sun Blade Storage Module M2 Into an Chassis SAS–2 Domain Might Cause Existing Storage Module Drives to Go Offline (6971532)” on page 21</a>	Software Release 1.1

## Adding a Sun Blade Storage Module M2 Into an Chassis SAS–2 Domain Might Cause Existing Storage Module Drives to Go Offline (6971532)

This issue has been fixed in Sun Blade Storage Module M2 software release 1.1.

If you have a Sun Blade X6270 M2 server module with existing storage assignments to a server with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), and you add a new Sun Blade Storage Module M2 to the chassis SAS-2 domain, some pre-existing drives assigned to the server might go offline and no longer be visible to the server.

## Workaround

1. Schedule a service maintenance window to add the new storage module.

You will need to quiesce all IO traffic in the Sun Blade 6000 modular system chassis by suspending or shutting down applications and/or host OSes, as applicable.

2. Insert the new (unzoned, unconfigured) Sun Blade Storage Module M2 into a free slot in the chassis.
3. Check that previously existing host-to-storage assignments are still established and functional.

Assignment details can be checked in the CMM ILOM Sun Blade Zone Manager, and confirmed at the host server using Sun Storage 6Gb SAS REM HBA OS tools to confirm that previously existing disks and volumes are still online. For more about the Sun Blade Zone Manager, refer to the *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and 6048 Modular Systems*. For more about HBA OS tools, refer to the *Sun Storage 6 Gb SAS REM HBA Installation Guide*.

4. If previously existing assignments are missing, power cycle the server module. Allow the server module to reboot the OS.
5. Check the state of the storage assignments as described in Step 3.
6. Assign the storage of the newly inserted Sun Blade Storage Module M2 using the CMM ILOM Sun Blade Zone Manager. Refer to the *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and 6048 Modular Systems*.
7. Create volumes on the newly assigned storage using the assigned host's HBA OS tools.

# Solaris Operating System Issues

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This section covers issues with the Solaris operating system. See “[Solaris Operating System Current Issues](#)” on page 23.

## Solaris Operating System Current Issues

The following table lists the issues that are covered in this section. Click on an issue title to see further details about the issue.

Solaris Operating System Current Issues	Workaround Available?
<a href="#">“Disk Fault and Ready-to-Remove LEDs Do Not Work in Oracle Solaris 10 (6926642)” on page 24</a>	Yes
<a href="#">“s tmsboot Fails to Map Root Device After a Fresh OS Install (6931924)” on page 24</a>	Yes
<a href="#">“Using s tmsboot -d to Disable MPxIO Can Cause the System to Not Reboot Successfully (6923599)” on page 25</a>	Yes
<a href="#">“Changes in Drive Physical Configuration Causes the Solaris format Utility to Hang (6890270, 6930996)” on page 26</a>	Yes
<a href="#">“Removal of Devices Breaks mpathadm in Solaris (6908971, 6919439)” on page 26</a>	Yes
<a href="#">“c f gadm -c unconfigure Fails if Path Specified is to an MPxIO Enabled Device (6948701)” on page 27</a>	Yes
<a href="#">“Command for Creating RAID 10 Volume Not Named Correctly (6943131)” on page 28</a>	Yes
<a href="#">“Storage Module Disk Ready-to-Remove LED Does Not Work Using c f gadm (6946124)” on page 28</a>	Yes

## Disk Fault and Ready-to-Remove LEDs Do Not Work in Oracle Solaris 10 (6926642)

The Oracle Solaris 10 OS does not support the disk Fault or Ready-to-Remove LED function for disks in the storage module.

This issue affects the Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z).

### Workaround

1. View the error log of the REM MegaRAID Storage Manager (MSM) to view drive status.
2. If a drive needs to be removed, use the Locate Physical Drive option under the Operations menu in MegaRAID Storage Manager (MSM) to light the drive's LED.
3. Remove the drive.

## stmsboot Fails to Map Root Device After a Fresh OS Install (6931924)

Enabling MPXIO manually on a newly installed system with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) will result in error messages. When `stmsboot -e` is manually run to enable MPxIO, the following harmless messages will print during the booting process:

```
Error: Your root device is not mapped.
```

In order to prevent or eliminate the message, perform the following workaround.

### Workaround

1. Login as root user on the system displaying the message.
2. Run `stmsboot -e` to enable multipathing. For example:

```
host-1-root@[/]>stmsboot -e
```

```
WARNING: stmsboot operates on each supported multipath-capable controller  
detected in a host. In your system, these controllers are
```

```
/pci@1f,700000/pci@0/pci@2/pci@0/pci@8/LSILogic,sas@1  
/pci@1f,700000/pci@0/pci@9/LSI,sas@0/iport@f0
```

```
If you do NOT wish to operate on these controllers, please quit stmsboot  
and re-invoke with -D { fp | mpt | mpt_sas} to specify which controllers  
you wish to modify your multipathing configuration for.
```

```
Do you wish to continue? [y/n] (default: y) y
```

3. Reboot the system. For example:

```
host-1-root[/]>reboot
```

4. Login as root user and run `stmsboot -e` again. Answer **y** to the Do you wish to continue prompt. For example:

```
host-1-root[/]>stmsboot -e
```

```
WARNING: stmsboot operates on each supported multipath-capable controller
         detected in a host. In your system, these controllers are
```

```
/pci@1f,700000/pci@0/pci@2/pci@0/pci@8/LSILogic,sas@1
/pci@1f,700000/pci@0/pci@9/LSI,sas@0/iport@f0
```

```
If you do NOT wish to operate on these controllers, please quit stmsboot
and re-invoke with -D { fp | mpt | mpt_sas} to specify which controllers
you wish to modify your multipathing configuration for.
```

```
Do you wish to continue? [y/n] (default: y) y
STMS is already enabled. No changes or reboots needed
```

The system tells you that STMS is already enabled and no reboot is necessary. A reboot is still required to ensure the error message will be cleared.

5. Reboot the system. For example:

```
host-1-root[/]>reboot
```

---

**Note** – This issue is fixed in the Solaris 10 5/10 OS.

---

## Using stmsboot -d to Disable MPxIO Can Cause the System to Not Reboot Successfully (6923599)

When a Sun Blade Storage Module M2 is connected through the chassis to a supported Sun Blade server module using a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), if you use "stmsboot -d" to disable MPxIO, the system cannot be rebooted successfully. The standby path is used as the boot path and you will not be able to mount the root filesystem. The recovery instruction to a previous STMS configuration will be printed on the console. This includes the root device name. The instructions reside in file `/etc/mpxio/recover_instructions`.

### Workaround

If you run into this issue, do the following:

1. Boot from another boot device:
  - boot net
  - or—
  - CD/DVD
  - or—

- Another disk which has the right OS image on it
2. Use `fsck` access your root device and then mount your root device to a directory (for example: `/mnt`).
  3. Now you can restore the `mpt_sas.conf` and `vfstab` files using the `cp` command, and then use `/usr/sbin/svccfg` to recover.

A sequence of sample commands are shown below, but remember that the timestamps are used for the backup files. Yours will be different. These are in the recovery instruction file and will be printed on the console.

```
# cp /mnt/etc/mpxio/mpt_sas.conf.disable.2010_05_07_10_12 /mnt/kernel/drv/mpt_sas.conf
# cp /mnt/etc/mpxio/vfstab.disable.2010_05_07_10_12 /mnt/etc/vfstab
# /usr/sbin/svccfg -f /mnt/etc/mpxio/svccfg_recover
# bootadm update-archive -R /mnt
```

## Changes in Drive Physical Configuration Causes the Solaris format Utility to Hang (6890270, 6930996)

On a server running Solaris 10 OS 10/09 using a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), if the host drive configuration is changed by moving physical drives around or by adding/deleting drives using the CMM ILOM Sun Blade Zone Manager, the Solaris format utility will stop working.

### Workaround

If you encounter this issue, reboot the host. To fix this problem, install Solaris patch 142676-02, available from <http://sunsolve.sun.com>.

## Removal of Devices Breaks mpathadm in Solaris (6908971, 6919439)

On a server running Solaris 10 OS 10/09 using a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), the following hot plug actions will cause `mpathadm` to stop working:

- Hotplug or hot removal of a physical drive.
- Hotplug or hot removal of a Sun Blade Storage Module M2.
- Hotplug or hot removal of a SAS NEM.

### Workaround

If you encounter this issue, reboot the host. To fix this problem, install Solaris patch 141871-03 (x86 systems) or patch 141870-03 (SPARC), available from <http://sunsolve.sun.com>.

## cfgadm - c unconfigure Fails if Path Specified is to an MPXIO Enabled Device (6948701)

On a Sun Blade X6270 M2 with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z), the Solaris `cfgadm -c unconfigure` command fails if the path specified is to an MPXIO enabled device.

### Workaround

1. Select the disk that you want to unplug.

In this example we want to unplug the drive `c0t5000C5000F0FE227d0`.

```
# format
Searching for disks...done
AVAILABLE DISK SELECTIONS:
0. c0t5000C5000F0E5AFFd0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
   /scsi_vhci/disk@g5000c5000f0e5aff
1. c0t5000C5000F0FE227d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
   /scsi_vhci/disk@g5000c5000f0fe227
```

2. Run `mount (1M)` to identify whether the device is mounted or if it is a boot drive.

The following is an example on how to identify if the drive is mounted:

```
# mount | grep c0t5000C5000F0E5AFFd0 /mnt on
/dev/dsk/c0t5000C5000F0E5AFFd0s6 read/write/setuid/devices/intr/largefiles
/logging/xattr/onerror=panic/dev=600016 on Fri Jun 4 10:37:08 2010
```

To identify if the drive is a boot drive, see the following example:

```
bash-3.00# mount | grep c0t5000C5000F0FE227d0 / on
/dev/dsk/c0t5000C5000F0FE227d0s0 read/write/setuid/devices/intr/largefiles
/logging/xattr/onerror=panic/dev=800010 on Wed Jun 9 09:58:24 2010

/export/home on /dev/dsk/c0t5000C5000F0FE227d0s7 read/write/setuid/devices/intr
/largefiles/logging/xattr/onerror=panic/dev=800017 on Wed Jun 9 09:59:13 2010
```

Note: "/" root directory

3. Run `fuser (1M)` command to identify the process(es) accessing the disk.

Example of no processes accessing the disk:

```
# fuser -d /dev/dsk/c0t5000C5000F0E5AFFd0s2 /dev/dsk
/c0t5000C5000F0E5AFFd0s2:
```

Example when a process is accessing the disk (`fuser` identifies the process):

```
bash-3.00# fuser -d /dev/dsk/c0t5000C5000F0FE227d0s2 /dev/dsk
/c0t5000C5000F0FE227d0s2: 1036o

bash-3.00# ps -ef | grep 1036
root 1036 982 0 11:56:34 pts/2 0:02 dd if=/dev/dsk/c0t5000C5000F0E5AFFd0s2
of=/dev/dsk/c0t5000C5000F0FE227d0s7
```

4. Kill all of the processes identified in Step 3. For example:

```
kill -p PID
```

or

```
kill -P PID
```

5. Do one of the following to remove the disk:

- If the disk *is not* a boot drive, umount the mount points and then run `sync (1M)` to flush the disk:

```
# umount /mnt
# mount |grep c0t5000C5000F0E5AFFd0
# sync
Remove the disk safely.
```

- If the disk *is* a boot drive, run `sync (1M)` to flush the disk and shutdown the system:

```
bash-3.00# sync
bash-3.00# init 0
Remove the disk safely.
```

## Command for Creating RAID 10 Volume Not Named Correctly (6943131)

The supported RAID types for the Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) are 0, 1, and 10. However, there is also no FCode command (in the SPARC OBP environment), or SAS2IRCU command to specifically create a RAID 10 volume.

### Workaround

If you want to create a RAID 10 volume, the SAS2IRCU includes a command that allows you create a RAID 1E volume (`create-raid1e-volume`). When you use the `create-raid1e-volume` command to create a volume, the SAS2IRCU utility actually creates a RAID 10 volume.

## Storage Module Disk Ready-to-Remove LED Does Not Work Using `cfgadm` (6946124)

The Ready-to-Remove LED to locate a drive does not work when using the `cfgadm -c unconfigure` command on Sun Blade T6320 or Sun Blade T6340 blade servers.

### Workaround

1. Run the `format` command to select the device that you need to locate.

Example:

```
bash-3.00# format
Searching for disks...done
AVAILABLE DISK SELECTIONS:
```

0. c0t5000C5000F8AD1FFd0 <SUN300G cyl 46873 alt 2 hd 20 sec 625>  
/scsi\_vhci/disk@g5000c5000f8ad1ff
1. c0t5000C5000F8BB997d0 <SUN300G cyl 46873 alt 2 hd 20 sec 625>  
/scsi\_vhci/disk@g5000c5000f8bb997
2. c0t5000C50003D3D85Bd0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>  
/scsi\_vhci/disk@g5000c50003d3d85b
3. c0t5000C50012EEE447d0 <SUN146G cyl 14087 alt 2 hd 24 sec 848>  
/scsi\_vhci/disk@g5000c50012eee447
4. c0t5000C5000258C457d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>  
/scsi\_vhci/disk@g5000c5000258c457
5. c0t5000CCA00A4A924Cd0 <SUN300G cyl 46873 alt 2 hd 20 sec 625>  
/scsi\_vhci/disk@g5000cca00a4a924c

Specify disk (enter its number): 4  
selecting c0t5000C5000258C457d0

2. Find the serial number for the device that you selected in Step 1.
  - a. Issue the command: **iostat -En > iostat\_output**
  - b. Sselect the iostat\_output file and search for "Cxtx...." number of the disk identified in step 1.

```
bash-3.00# cat iostat_output
```

```
c0t5000C50003D3D85Bd0 Soft Errors: 0 Hard Errors: 0 Transport Errors: 0
Vendor: SEAGATE Product: ST973402SSUN72G Revision: 0603 Serial No: 0715215EVK
Size: 73.41GB <73407865856 bytes>
Media Error: 0 Device Not Ready: 0 No Device: 0 Recoverable: 0
Illegal Request: 0 Predictive Failure Analysis: 0
c0t5000C5000258C457d0 Soft Errors: 0 Hard Errors: 0 Transport Errors: 0 <==
Vendor: SEAGATE Product: ST973451SSUN72G Revision: 0302 Serial No: 0802V16VTE
Size: 73.41GB <73407865856 bytes>
Media Error: 0 Device Not Ready: 0 No Device: 0 Recoverable: 0
Illegal Request: 0 Predictive Failure Analysis: 0
c1t0d0 Soft Errors: 4 Hard Errors: 2 Transport Errors: 0
Vendor: AMI Product: Virtual CDROM Revision: 1.00 Serial No:
Size: 0.00GB <0 bytes>
Media Error: 0 Device Not Ready: 0 No Device: 2 Recoverable: 0
Illegal Request: 4 Predictive Failure Analysis: 0
c0t5000CCA00A4A924Cd0 Soft Errors: 0 Hard Errors: 0 Transport Errors: 0
Vendor: HITACHI Product: H103030SCSUN300G Revision: A2A8 Serial No: 0950GA0B7E
Size: 300.00GB <300000000000 bytes>
Media Error: 0 Device Not Ready: 0 No Device: 0 Recoverable: 0
Illegal Request: 0 Predictive Failure Analysis: 0
c0t5000C50012EEE447d0 Soft Errors: 0 Hard Errors: 0 Transport Errors: 0
Vendor: SEAGATE Product: ST914603SSUN146G Revision: 0768 Serial No: 092180GMM6
Size: 146.81GB <146810536448 bytes>
/c0t5000C5000258C457d0
```

- c. Make a note of the serial number from the iostat\_output file for the locate device. For example:

```
c0t5000C5000258C457d0 Soft Errors: 0 Hard Errors: 0 Transport Errors: 0
Vendor: SEAGATE Product: ST973451SSUN72G Revision: 0302 Serial No: 0802V16VTE
```

3. Run the REM's sas2ircu utility to do the following:
  - a. Find the SAS2 controller number/index using sas2ircu LIST command.

```
bash-3.00# ./sas2ircu LIST
LSI Corporation SAS2 IR Configuration Utility.
```

Version 3.250.02.00 (2009.09.29)  
Copyright (c) 2009 LSI Corporation. All rights reserved.

Index	Adapter Type	Vendor ID	Device ID	Pci Address	SubSys Ven ID	SubSys Dev ID
0	SAS2008	1000h	72h	00h:700h:00h:00h	1000h	3180h

SAS2IRCU: Utility Completed Successfully.

- b. Find the drives connected to this controller using `sas2ircu n display > sas2ircu_output`.

Where *n* is the controller number from the Step 3a.

```
bash-3.00# ./sas2ircu 0 display > sas2ircu_output
```

- Look for the serial number that matches the value in Step 2 from the `sas2ircu_output` file.
- Once the serial number is identified, look for the enclosure/slot# that corresponds to this device.

If the enclosure ID# is 1, it indicates the drives are in a server blade. If Enclosure# is not 1, that indicates the drives are in a storage module.

The slot# refers to the disk slot number on the server blade or storage module.

- Example for drives in a Sun Blade T6320 or T6340:

---

**Note** – In this example, the Enclosure and Slot numbers are 1, which means the drive is sitting in Slot#1 labeled as HDD1 on the server blade.

---

```
bash-3.00# cat sas2ircu_output
```

```
Device is a Hard disk
Enclosure #           : 1
Slot #                : 1
State                 : Ready (RDY)
Size (in MB)/(in sectors) : 7007/143374737
Manufacturer          : SEAGATE
Model Number          : ST973451SSUN72G
Firmware Revision     : 0302
Serial No             : 0802V16VTE
Protocol              : SAS
Drive Type            : SAS_HDD
```

- For drives in a Sun Blade X6270 M2, an example would be:

```
bash-3.00# cat sas2ircu_output
```

```
Device is a Hard disk
Enclosure #           : 6
Slot #                : 7
State                 : Ready (RDY)
Size (in MB)/(in sectors) : 286102/585937499
Manufacturer          : HITACHI
Model Number          : H103030SCSUN300G
Firmware Revision     : A2A8
```

```
Serial No           : 0950GBEVNE
Protocol            : SAS
Drive Type          : SAS_HDD
```

6. Locate the drive in storage module.

Once you identify the Enclosure# and Slot#, use LOCATE subcommand of sas2ircu. The locate ID on the drive will start blinking (amber). If you replace the drive with another drive, turn off the locate LED using LOCATE sub command of sas2ircu. For example:

```
bash-3.00# ./sas2ircu 0 LOCATE 6:7 ON
```

```
LSI Corporation SAS2 IR Configuration Utility.
Version 3.250.02.00 (2009.09.29)
Copyright (c) 2009 LSI Corporation. All rights reserved.
```

```
SAS2IRCU: LOCATE command completed successfully.
SAS2IRCU: Command LOCATE Completed Successfully.
SAS2IRCU: Utility Completed Successfully.
```

Please turn off drive locate LED after replacing the drive using following command:

```
bash-3.00# ./sas2ircu 0 LOCATE 6:7 OFF
```



# Linux Operating System Issues

---

This section covers Linux operating system issues for the Sun Blade Storage Module M2. See [“Linux Operating System Current Issues”](#) on page 33.

## Linux Operating System Current Issues

The following table lists the issues that are covered in this section. Click on an issue title to see further details about the issue.

Linux Operating System Current Issues	Workaround
<a href="#">“Special Actions Required to Boot Oracle Enterprise Linux or Red Hat Enterprise Linux from a Sun Blade X6270 M2 Server Module (6957510, 6957566)”</a> on page 33	Yes
<a href="#">“Select a Boot Device From the First Eight Devices In the List with SLES 11 (6957569)”</a> on page 35	Yes
<a href="#">“Storage Module Devices Might Still Be Listed in RHEL 5.4 or OEL 5.4 After the Storage Module is Removed From the Chassis (6959945)”</a> on page 35	Yes

## Special Actions Required to Boot Oracle Enterprise Linux or Red Hat Enterprise Linux from a Sun Blade X6270 M2 Server Module (6957510, 6957566)

Some special actions are required before you can boot Oracle Enterprise Linux or Red Hat Enterprise Linux from a Sun Blade X6270 M2 server module with a Sun Storage 6Gb SAS REM RAID HBA (SGX-SAS6-R-REM-Z).

---

**Note** – If you have a Sun Blade X6270 M2 server module with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) connected to the storage module, do **not** configure drives on the storage module as the server's boot drive. Instead, you can configure internally attached Sun Blade X6270 M2 server module drives as the boot drive.

---

- Whether the drive is on the storage module or the Sun Blade X6270 M2 server module, you must tell the OS where to find it.
- If the drive is on the storage module, you must assign it to a RAID volume.

Use the following workaround procedures.

## Workaround

Use the following procedure to create a boot drive for a Sun Blade X6270 M2 server module equipped with an Sun Storage 6Gb SAS REM RAID HBA that will run either Oracle Enterprise Linux or Red Hat Enterprise Linux.

1. Boot the system.
2. During the boot process, select Ctrl-H to enter the REM's WebBIOS configuration utility.
3. Create a logical volume for the boot drive.  
Using the REM utility to create the volume means that the REM firmware will manage the volume including multipath control. After you have saved your volume, you will reboot the system.
4. Re-enter WebBIOS by using Ctrl-H during boot.
5. At the main WebBIOS screen, select Virtual Drives.
6. Check to confirm that the Virtual drive you want to act as the boot drive has the Set Boot Drive option selected.  
If not, the option will say Set\_Boot Drive (current=none). Select the Set Boot Drive option to enable it and then click Go.
7. Return to the WebBIOS main screen and click Controller Properties.
8. Click Next at the first properties screen.
9. At the second Controller Properties screen, ensure that the Controller BIOS field is "Enabled".  
If not, set it to Enabled and click the Submit button.
10. Save and exit the utility to restart the system.
11. Install Linux on the bootable logical volume you created with the REM.  
Refer to the REM and Linux documentation for specifics.

## Select a Boot Device From the First Eight Devices In the List with SLES 11 (6957569)

SLES 11 can only boot from the first eight devices in the boot devices list. When you select a boot device or install a boot loader on a device that is farther down in the list, it produces an error message:

```
The device map includes more than 8 devices and the boot device is out of range.  
The range is limited by bios to first 8 devices"
```

### Workaround

To prevent the device map error message, choose a device that falls into a position less than 8 in the device list. To install the boot loader to a disk:

1. During the installation of SLES 11, click on the Expert tab when you get to the Installation Setting screen.
2. Click the Boot loader installation tab.
3. Click on Boot loader installation details  
The list you see is the boot order list.
4. Choose a boot device that falls into a position less than 8 in the device list.  
If more than one disk is listed, select a disk and click Up or Down to reorder the displayed disks to ensure that your boot disk is in the top 8 devices.
5. Click OK two times to save the changes.

## Storage Module Devices Might Still Be Listed in RHEL 5.4 or OEL 5.4 After the Storage Module is Removed From the Chassis (6959945)

If you have a Sun Blade X6270 M2 server module with a Sun Storage 6Gb SAS REM HBA (SGX-SAS6-REM-Z) running OEL or RHEL 5.4, you might not see storage devices as successfully removed from the system after a Sun Blade Storage Module M2 is removed from the chassis. In other words, even with the storage module completely removed from the chassis, storage assigned to the server might still be listed as available by the server's OEL or RHEL OS.

### Workaround

To avoid this issue, do the following:

1. Schedule a service maintenance window to perform the storage module removal action.  
You will need to quiesce all IO traffic in the Sun Blade 6000 Modular System chassis by suspending or shutting down applications and/or host OSes, as applicable.

2. Physically remove the Sun Blade Storage Module M2 from the system.
3. Confirm that the storage module devices assigned to your OEL or RHEL server have been removed by running the command:

```
# fdisk -l
```

If the command hangs or the removed devices still appear, reboot the host blade.