

Oracle Server X7-8 Product Notes



E71927-17
November 2022



Oracle Server X7-8 Product Notes,

E71927-17

Copyright © 2017, 2022, Oracle and/or its affiliates.

Primary Author: Mark McGothigan Trudi Reisner

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle®, Java, and MySQL are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

Using This Documentation

Product Documentation Library	vi
Feedback	vi

1 Oracle Server X7-8 Product Information

Supported Hardware	1-1
Supported Firmware	1-2
Supported Operating Systems	1-2
New Features and Changes in Software 3.2.2	1-3
Server Management Tools	1-4
Supported Storage Drives	1-4
Supported PCIe Cards	1-5
Oracle Server X7-8 Product Accessibility	1-6
Oracle Server X7-8 Hardware Accessibility	1-6
Oracle ILOM Accessibility	1-7
Oracle Hardware Management Pack Accessibility	1-8
BIOS Accessibility	1-8
Documentation Accessibility	1-8
Diversity and Inclusion	1-9

2 Hardware Issues

Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers	2-1
Failure of a Single Server Fan Module Might Impact Performance	2-3
Remove and Replace a Fan Module Within 30 Seconds	2-3
Lockstep Memory (Channel) Mode Is Not Supported	2-4
MAC Address Mapping to Ethernet Ports	2-4
Oracle Dual Port 25 Gb Ethernet Adapter Hot Plug Is Not Supported	2-4
Oracle ILOM Reports Fault with Oracle Dual Port 25 Gb Ethernet Adapter During System Reset	2-5
Oracle ILOM Reports Fault alert.chassis.domain.boot.power-on-failed After System Stop	2-5

3 BIOS Issues

Do Not Use the Network Adapter iSCSI Configuration in BIOS	3-1
Perform Power Cycle After Changing the Disk Freeze Lock Option	3-1
System BIOS Fast Boot Might Not Work Correctly When Updating System Software	3-1

4 Oracle ILOM Issues

DIMM Fault SPX86A-800A-95 - Memtest Single Symbol Test Failed - ILOM 5.1.0.21	4-1
System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade	4-3
Oracle ILOM Reports a Fault After Software Upgrade to 4.0.4.20 with Intermittent Occurrence	4-7
Power On Failure After Oracle ILOM Software Upgrade to 4.0.4.20	4-7
Oracle ILOM Reports a BIOS Upgrade Failure Error Fault after Downgrading Software to Software 1.1.2 with BIOS Delay	4-8
Oracle ILOM Reports Fault alert.chassis.fw.bios-upgrade-failure After Firmware Upgrade or Downgrade	4-8
Oracle ILOM Software Downgrade From SW1.1.0 to SW1.0.1 Host Stays In Reboot Loop	4-10
Software 4.0.3.21 X7-8 Exadata Firmware Upgrade from SW1.0 to SW1.2 UEFICfg Stays in Boot Loop	4-10
POST Halts on port80=0xEF after Software Upgrade or Downgrade (Preserve+Delay_BIOS)	4-11
Oracle ILOM Software Downgrade from 1.3.0 to 1.1.4 Using ipmiflash and Power Cycle Fails Turn On	4-12
Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x	4-12
System Might Not Set BIOS to Defaults After Power Cycle	4-13
SSL Must Be Turned On When Booting a Redirected ISO Image	4-13
Reset Takes a Long Time and Causes the Server to Power Cycle	4-13
Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service	4-14
Oracle VTS Network Test Floods Serial Console Triggering Soft Lockups	4-15

5 Oracle Solaris Issues

Unable to Mount an ISO Image to Install Oracle Solaris Over Remote KVMS	5-1
Oracle Solaris Installation Hangs When Remote KVMS Is Running	5-2

6 Linux Issues

Perform a Yum Update When Using Oracle Linux UEK Kernel	6-1
Installing Oracle Linux 7.3 on an NVMe Storage Device Larger Than 2 TB Might Fail	6-1
Kdump Might Fail When All 16 PCIe Cards Are Installed	6-2
I/O Processing Delays With Warning and Retry Messages	6-2

Linux MMIO Kernel Configuration Can Affect Oracle Hardware Management Pack fwupdate Tool for Intel NIC/LOM Updates	6-3
---	-----

7 Windows Issues

NVMe Phantom Drives Appear When Using Windows Server 2016 Inbox Drivers	7-1
NVMe Hot-Plug Is Not Supported	7-2
Windows Server Hot-Plug Requires Registry Changes	7-3

8 VMware ESXi Issues

VMware ESXi 6.5 U1 Does Not Include the Driver for the Oracle Dual Port 25 Gb Ethernet Adapter	8-1
---	-----

9 Software and Critical Patch Updates

Update Your System to the Latest Software Release	9-1
Server Security, Software Releases, and Critical Patch Updates	9-1
Important – Install Latest OS Updates, Patches, and Firmware	9-2

10 Getting Firmware and Software Updates

Firmware and Software Updates	10-1
Firmware and Software Update Options	10-1
Software Releases	10-2
Getting Updates From My Oracle Support	10-3
Download Firmware and Software Updates From My Oracle Support	10-3
Update System Firmware Using Oracle ILOM	10-3
Installing System Firmware Using Other Methods	10-5
Downloading an OS or Software Applications	10-6
Oracle Support	10-6

Using This Documentation

- **Overview** – Provides late-breaking information about Oracle Server X7-8
- **Audience** – System administrators, network administrators, and service technicians
- **Required knowledge** – Advanced understanding of server systems

Copyright © 1994, 2022, Oracle et/ou ses affiliés.

- [Product Documentation Library](#)
- [Feedback](#)

Product Documentation Library

Documentation and resources for this product and related products are available at <https://www.oracle.com/goto/x7-8/docs> .

Feedback

Provide feedback about this documentation at <https://www.oracle.com/goto/docfeedback> .

1

Oracle Server X7-8 Product Information

For the most updated information about supported firmware and operating systems, important operating notes, and known issues, refer to the latest platform Product Notes document, which is available in the Oracle Server X7-8 Documentation Library at <https://www.oracle.com/goto/x7-8/docs>.

Refer to the `readme` file for a list of fixed issues.

- [Supported Hardware](#)
- [Supported Firmware](#)
- [Supported Operating Systems](#)
- [New Features and Changes in Software 3.2.2](#)
- [Server Management Tools](#)
- [Supported Storage Drives](#)
- [Supported PCIe Cards](#)
- [Oracle Server X7-8 Product Accessibility](#)

Supported Hardware

You can find detailed information about supported hardware in these Oracle Server X7-8 documents.

- *Oracle Server X7-8 Installation Guide*
- *Oracle Server X7-8 Service Manual*

Within those documents, you can find descriptions of supported hardware components, including the following:

- Processors
- Memory modules (DIMMs)
- Storage drives
- Host bus adapters and other PCIe cards

Related Topics

- [Supported Storage Drives](#)
- [Supported PCIe Cards](#)
- [Oracle System Handbook](#)

Supported Firmware

Some product features are enabled only when the latest versions of patches or firmware are installed. You must install the latest system software release for optimal performance, security, and stability. See [Important – Install Latest OS Updates, Patches, and Firmware](#).

You can find detailed information about supported firmware releases here:

- [Latest Firmware Releases for Oracle x86 Servers](#)
- [Firmware Downloads and Release History for Oracle Systems](#)

Information about the latest firmware and Software Release, including tools, drivers, component firmware versions, and bug fixes is available in the ReadMe file for each Software Release. To learn how to access the ReadMe file, see [Getting Firmware and Software Updates](#).

Supported Operating Systems

To identify operating systems supported on your server, go to an Oracle Hardware Compatibility List (HCL) or to the third-party operating system certification information. The following table provides links.

Operating System	Link to HCL or Other Certification Information
Oracle Linux	https://linux.oracle.com/pls/apex/f?p=117:1:3991604960223967
Oracle VM	https://linux.oracle.com/pls/apex/f?p=117:1:3991604960223967
Microsoft Windows Server	https://www.windowsservercatalog.com/
VMware ESXi	https://www.vmware.com/resources/compatibility/search.php

The following table lists the latest supported operating systems and virtual machine software. Supported operating systems and software are cumulative with each release; that is, later software releases contain all components of earlier software releases.

Platform Software Release	Latest Supported Operating Systems
3.2.2 or later	Oracle Linux 7 Update 9
3.1.3 to 3.1.4	<ul style="list-style-type: none"> • Oracle Linux 7 Update 7, 8
1.5.0 to 3.1.0	No changes to supported operating systems or virtual machine software.

Platform Software Release	Latest Supported Operating Systems
1.1.2 to 1.4.1	<ul style="list-style-type: none"> • Oracle Linux 7.4 with Unbreakable Enterprise Kernel Release 4 Update 4 (UEK R4u4) or the Red Hat Compatible Kernel • Oracle Linux 6.9 with Unbreakable Enterprise Kernel Release 4 Update 4 (UEK R4u4) or the Red Hat Compatible Kernel • Oracle VM 3.4.4 • Oracle Solaris 11.3 • Windows Server 2016 • Windows Server 2012 R2 • VMware ESXi 6.5 Update 1
1.0.0	<ul style="list-style-type: none"> • Oracle Linux 7.4 with Unbreakable Enterprise Kernel Release 4 Update 4 (UEK R4u4) or the Red Hat Compatible Kernel • Oracle Linux 6.9 with Unbreakable Enterprise Kernel Release 4 Update 4 (UEK R4u4) or the Red Hat Compatible Kernel • Oracle VM 3.4.4 • Oracle Solaris 11.3 • Windows Server 2016 • Windows Server 2012 R2 • VMware ESXi 6.5 Update 1

New Features and Changes in Software 3.2.2

New features, major enhancements, bug fixes, and other changes that are introduced in platform software release 3.2.2 include:

- Oracle Integrated Lights Out Manager (ILOM) 5.0.2 features
- Oracle Hardware Management Pack 2.4.8
- Security updates
- Fixed issues:

Bug ID 32033315, memory error misdiagnosis.

Bug ID 31118365, Bug ID 32298843. Fixed in Oracle ILOM 5.0.1.28 and 5.0.1.29.

The following table lists software release 3.2.2 supported operating systems and virtual machine software.

Operating System	Supported Versions
Oracle Linux	Oracle Linux 7 Update 3, Oracle Linux 7 Update 4, Oracle Linux 7 Update 5, Oracle Linux 7 Update 6, Oracle Linux 7 Update 7, Oracle Linux 7 Update 8, Oracle Linux 7 Update 9 Oracle Linux 8 Update 1, Oracle Linux 8 Update 2, Oracle Linux 8 Update 3
Oracle VM	Oracle VM Server 3.4.4, Oracle VM Server 3.4.5, Oracle VM Server 3.4.6
Oracle Solaris	Oracle Solaris 11 Update 3, Oracle Solaris 11 Update 4
VMware ESXi	VMware ESXi 6.5 Update 1, VMware ESXi 6.5 Update 2, VMware ESXi 6.5 Update 3, VMware ESXi 6.7, VMware ESXi 6.7 Update 1, VMware ESXi 6.7 Update 3, VMware ESXi 7.0 VMware vSphere 6.7 U3, vSphere 7.0, vSphere 7.0 U1, vSphere 7.0 U2

Operating System	Supported Versions
Windows	Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2016, Microsoft Windows Server 2019

Server Management Tools

The following single system management tools are available for the server:

- **Oracle Integrated Lights Out Management (ILOM)**. For information, refer to the product information page at: <https://www.oracle.com/servers/technologies/integrated-lights-out-manager.html> . For documentation, refer to the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: <https://www.oracle.com/goto/ilom/docs>

You can find descriptions of new Oracle ILOM 5.0 features in the *Oracle ILOM Feature Updates and Release Notes*.

- **Oracle Hardware Management Pack**, available with the Oracle Solaris OS or as a standalone product with other OS. For information, refer to the product information page at: <https://www.oracle.com/servers/technologies/hardware-management-pack.html> . For documentation and OS support matrix, refer to the Oracle Hardware Management Pack 2.4 Documentation Library at: <https://www.oracle.com/goto/ohmp/docs>

Oracle Hardware Management Pack for Oracle Solaris 11.4 Documentation Library at https://docs.oracle.com/cd/E79568_01/index.html

In addition, the following software is available to manage multiple systems in a data center:

Oracle Enterprise Manager Ops Center, available software to manage multiple systems in a data center. For information, refer to the product information page at: <https://www.oracle.com/enterprise-manager/technologies/> . For documentation, refer to the Oracle Enterprise Manager Cloud Control Documentation Library at: <https://docs.oracle.com/en/enterprise-manager/related-products.html>

Supported Storage Drives

The table below lists the storage drives and part numbers that are supported for use with Oracle Server X7-8. Support for storage drives depends on the server model and its configuration. Basic storage drive support is listed below.

Internal Solid State Drive (SSD)

- 800 GB 2.5-inch SAS SSD: 7115078 (factory installation). Refer to https://docs.oracle.com/cd/E85538_01/index.html
- 800 GB 2.5-inch SAS SSD without encryption: 7118668 (factory installation), 7118709 (orderable option).

Internal Hard Disk Drive (HDD)

- 14 TB 7200 rpm 3.5-inch SAS-3 HDD: 7600029 (factory installation), 7600183 (orderable option). Refer to https://docs.oracle.com/cd/F15116_01/index.html
- 14 TB 7200 rpm 3.5-inch SAS-3 HDD without encryption: 7600030 (factory installation), 7600184 (orderable option)

- 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD: 7111107 (factory installation), 7111108 (orderable option). Refer to https://docs.oracle.com/cd/E59286_01/index.html
- 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD without encryption: 7118662 (factory installation), 7118670 (orderable option)

Supported PCIe Cards

Server SMODs contain an Oracle Storage 12 Gb SAS PCIe RAID HBA, Internal: 16 port (7117126).

Note the following restriction:

- Do not mix Emulex and QLogic versions of the Oracle Storage Dual-Port 32Gb Fibre Channel PCIe Low Profile Host Bus Adapter in the system. You can use PCIe option cards from only one vendor in the system.
- Do not mix Oracle Flash Accelerator F640 PCIe Card v2s and Oracle Flash Accelerator F640 PCIe Cards in the system.
- Slots 13, 14, 15, and 16 do not support boot devices.

The table below lists the PCI Express (PCIe) cards that are supported for use with Oracle Server X7-8.

PCIe Card Installation Order	PCIe Card	Maximum in 4-CPU System	Slot Installation Order in 4-CPU System	Maximum in 8-CPU System	Slot Installation Order in 8-CPU System
1	Oracle Flash Accelerator F640 PCIe Card v2: 6.4 TB, NVMe PCIe 3.0 7120561 (factory installation), 7120562 (orderable option)	4	System A: 8,6,4,2 System B: 16,14,12,10	8	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1
2	Oracle Flash Accelerator F640 PCIe Card 7115454 (factory installation), 7115455 (orderable option)	4	System A: 8,6,4,2 System B: 16,14,12,10	8	Slots 16,8,14,6,12,4,10,2
3	Oracle Dual Port QDR InfiniBand Adapter M3 7104073 (factory installation), 7104074 (orderable option)	4	System A: 7,5,3,1 System B: 15,13,11,9	4	Slots 15,7,13,5,11,3,9,1
4	Oracle Storage Dual-Port 32 Gb Fibre Channel PCIe Low Profile HBA, QLogic (FC short wave optics) 7115460 (factory installation), 7115462 (orderable option)	4	System A: 8,6,4,2,7,5,3,1 System B: 16,14,12,10,15,13,11,9	4	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1

PCIe Card Installati on Order	PCIe Card	Maximu m in 4-CPU System	Slot Installation Order in 4-CPU System	Maximu m in 8-CPU System	Slot Installation Order in 8-CPU System
5	Oracle Storage Dual-Port 32 Gb Fibre Channel PCIe Low Profile HBA, Emulex (FC short wave optics) 7115459 (factory installation), 7115461 (orderable option)	4	System A: 8,6,4,2,7,5,3,1 System B: 16,14,12,10,15,13,11,9	4	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1
6	Oracle Quad 10 Gb and Dual 40 Gb Ethernet Adapter 7114148 (factory installation), 7114134 (orderable option)	4	System A: 8,6,4,2,7,5,3,1 System B: 16,14,12,10,15,13,11,9	4	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1
7	Oracle Dual Port 25 Gb Ethernet Adapter 7118015 (factory installation), 7118016 (orderable option)	2	System A: 8,6,4,2,7,5,3,1 System B: 16,14,12,10,15,13,11,9	4	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1
8	Oracle Quad Port 10GBase-T Adapter 7111182 (factory installation), 7111181 (orderable option)	2	System A: 8,6,4,2,7,5,3,1 System B: 16,14,12,10,15,13,11,9	4	Slots 16,8,14,6,12,4,10,2,15,7,1 3,5,11,3,9,1

Oracle Server X7-8 Product Accessibility

Oracle strives to make its products, services, and supporting documentation usable and accessible to the disabled community. To that end, products, services, and documentation include features that make the product accessible to users of assistive technology.

For more information about Oracle's commitment to accessibility, go to <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc> .

- [Oracle Server X7-8 Hardware Accessibility](#)
- [Oracle ILOM Accessibility](#)
- [Oracle Hardware Management Pack Accessibility](#)
- [BIOS Accessibility](#)
- [Documentation Accessibility](#)
- [Diversity and Inclusion](#)

Oracle Server X7-8 Hardware Accessibility

Oracle Server X7-8 hardware has color-coded labels, component touch points, and status indicators (LEDs) that provide information about the system. These labels,

touch points, and indicators can be inaccessible features for sight-impaired users. The product's HTML documentation provides context and descriptive text available to assistive technologies to aid in interpreting status and understanding the system. For information about system-level descriptions, see the *Oracle Server X7-8 Service Manual* at <https://www.oracle.com/goto/x7-8/docs>.

You can also use the built-in Oracle Integrated Lights Out Manager (ILOM) to obtain information about the system. Oracle ILOM provides a browser-based interface (BUI) and a command-line interface (CLI) that support assistive technologies for real-time viewing of system status, indicator interpretation, and system configuration. For details, see [Oracle ILOM Accessibility](#).

Oracle ILOM Accessibility

You can use the Oracle ILOM BUI to monitor and manage the server hardware. The Oracle ILOM BUI does not require a special accessibility mode; rather, its accessibility features are always available. The BUI was developed using standard HTML and JavaScript and its features conform to accessibility guidelines.

To navigate a BUI page and select items or enter commands, use standard keyboard inputs, such as the Tab key to go to a selection, or the up and down arrow keys to scroll through the page. You can use standard keyboard combinations to make menu selections.

For example, using the Oracle ILOM Open Problems BUI page, you can identify faulted memory modules (DIMMs) or processors (CPUs) that would otherwise be identified by a lighted LED indicator on the motherboard. Likewise, you can use the Oracle ILOM BUI to monitor the hardware power states that are also indicated by flashing LED indicators on the hardware.

The Oracle ILOM CLI is an alternative and equivalent way to access the Oracle ILOM BUI features and functionality. Because the operating systems that run on the Oracle server hardware support assistive technologies to read the content of the screen, you can use the CLI as an equivalent means to access the color-based, mouse-based, and other visual-based utilities that are part of the BUI. For example, you can use a keyboard to enter CLI commands to identify faulted hardware components, check system status, and monitor system health.

You can use the Oracle ILOM Remote Console Plus application to access both a text-based serial console and a graphics-based video console that enable you to remotely redirect host server system keyboard, video, mouse, and storage devices. Note, however, that the Oracle ILOM Java Remote Console Plus does not support scaling of the video frame within the Java application. You need to use assistive technology to enlarge or reduce the content in the Java Remote Console Plus display.

As an alternative method to using the BIOS Setup Utility to configure BIOS settings, Oracle ILOM provides a set of configurable properties that can help you manage the BIOS configuration parameters on an Oracle x86 server. Using Oracle ILOM, you can do the following:

- Back up a copy of the BIOS configuration parameters to an XML file using the Oracle ILOM BUI.
- Edit the XML file using a standard XML editor. The BIOS XML tags correlate directly to the BIOS screen labels.
- Restore the XML file of the backed up or edited configuration parameters to BIOS.

The BUI and CLI methods for using Oracle ILOM are described in the accessible HTML documentation for Oracle ILOM at <https://www.oracle.com/goto/ilom/docs>.

Oracle Hardware Management Pack Accessibility

Oracle Hardware Management Pack software is a set of CLI tools. Oracle Hardware Management Pack software does not include product-specific accessibility features. Using a keyboard, you can run the CLI tools as text commands from the operating system of a supported Oracle server. All output is text-based.

Additionally, most Oracle Hardware Management Pack tools support command output to a text log file or XML file, which can be used for text-to-speech conversion. Accessible man pages are available that describe the Hardware Management Pack tools on the system on which those tools are installed.

You can install and uninstall Oracle Hardware Management Pack by using text commands entered from the CLI. Assistive technology products such as screen readers, digital speech synthesizers, or magnifiers can be used to read the content of the screen.

Refer to the assistive technology product documentation for information about operating system and command-line interface support.

The CLI tools for using the software are described in the accessible HTML documentation for Hardware Management Pack at <https://www.oracle.com/goto/ohmp/docs>.

BIOS Accessibility

When viewing BIOS output from a terminal using the serial console redirection feature, some terminals do not support function key input. However, BIOS supports the mapping of function keys to Control key sequences when serial redirection is enabled. Descriptions of the function key to Control key sequence mappings are provided in the product documentation, typically within the server Service Manual. You can navigate the BIOS Setup Utility by using either a mouse or keyboard commands.

As an alternative method of configuring BIOS settings using the BIOS Setup Utility screens, Oracle ILOM provides a set of configurable properties that can help you manage the BIOS configuration parameters on an Oracle x86 server. For more information, see [Oracle ILOM Accessibility](#).

BIOS information and its functions are typically documented in the *Oracle Server X7-8 Service Manual* and *Oracle Server X7-8 Installation Guide*.

Documentation Accessibility

Documentation for Oracle hardware is provided in HTML and PDF formats. The HTML documents are accessible using standard operating system controls and assistive technology. PDF documents are considered support documents because the PDF content is available in accessible HTML format.

Product documentation provides figures, other types of images, and screenshots that do not rely on color for interpretation. Within the documented figures, callouts indicate the referenced component information. The callouts are mapped within a table to provide text descriptions of the referenced parts of the figures. In addition, alternative

text is provided for all tables and images that provides the context of the information and images.

Note that screen readers might not always correctly read the code examples in the documentation. For example, the conventions for writing code require that closing braces should appear on an otherwise empty line. However, some screen readers might not always read a line of text that consists solely of a bracket or brace.

The documentation might contain links to web sites of other companies and organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these web sites.

You can access the accessible HTML documentation for Oracle Server X7-8 products at <https://www.oracle.com/goto/x7-8/docs> .

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle recognizes the influence of ethnic and cultural values and is working to remove language from our products and documentation that might be considered insensitive. While doing so, we are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is an ongoing, long-term process.

2

Hardware Issues

This section describes important operating notes and known hardware issues for Oracle Server X7-8.

- [Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers](#)
- [Failure of a Single Server Fan Module Might Impact Performance](#)
- [Remove and Replace a Fan Module Within 30 Seconds](#)
- [Lockstep Memory \(Channel\) Mode Is Not Supported](#)
- [MAC Address Mapping to Ethernet Ports](#)
- [Oracle Dual Port 25 Gb Ethernet Adapter Hot Plug Is Not Supported](#)
- [Oracle ILOM Reports Fault with Oracle Dual Port 25 Gb Ethernet Adapter During System Reset](#)
- [Oracle ILOM Reports Fault alert.chassis.domain.boot.power-on-failed After System Stop](#)

Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers

Important Operating Note

On Oracle x86 servers using MegaRAID disk controllers, Serial Attached SCSI (SAS) data path errors can occur. To triage and isolate a data path problem on the SAS disk controller, disk backplane (DBP), SAS cable, SAS expander, or hard disk drive (HDD), gather and review the events in the disk controller event log. Classify and analyze all failure events reported by the disk controller based on the server SAS topology.

To classify a MegaRAID disk controller event:

- Gather and parse the MegaRAID disk controller event logs either by running the automated `sundiag` utility or manually using the `StorCLI` command.
 - For Oracle Exadata Database Machine database or storage cell servers, run the `sundiag` utility.
 - For Oracle Server X7-8, use the `StorCLI` command.

4-Socket Configuration Controller Event Log

Manually gather and parse the controller event log by using the `StorCLI` command.

At the root prompt, type:

```
# storcli /c0/eall/sall show errorcounters
Controller=0
Status=Success
Description = Show Drive/Cable Error Counters Succeeded.
```


 **Note:**

Use the existing name of the event log as the name for the disk controller event log. This produces a MegaRAID controller event log with the given file name `event.log`.

These error counters reflect drive or slot errors separately. The following table contains the drive, and error counter for the driver error and the slot.

Drive	Error Counter for Drive Error	Error Counter for Slot
/c0/e252/s0	0	0
/c0/e252/s1	0	0
/c0/e252/s2	0	1
/c0/e252/s3	0	0

8-Socket Configuration Controller Event Log

Manually gather and parse the controller event log by using the `storcli` command.

 **Note:**

Use the existing name of the event log as the name for the disk controller event log. This produces a MegaRAID controller event log with the given file name `event.log`.

For an 8-socket configuration, run `storcli` twice, one for `c0` and one for `c1`:

Run `storcli` for `c0`:

```
[root@sca05-0a81e75a ~]# storcli /c0/eall/sall show errorcounters
Controller = 0
Status = Success
Description = Show Drive/Cable Error Counters Succeeded.
```

Run `storcli` for `c1`:

```
[root@sca05-0a81e75a ~]# storcli /c1/eall/sall show errorcounters
Controller = 0
Status = Success
Description = Show Drive/Cable Error Counters Succeeded.
```

The following table contains the drive, and error counter for the driver error and the slot for `c0`.

Drive	Error Counter for Drive Error	Error Counter for Slot
/c0/e252/s0	0	0
/c0/e252/s1	0	0

Drive	Error Counter for Drive Error	Error Counter for Slot
/c0/e252/s2	0	1
/c0/e252/s3	0	0

The following table contains the drive, and error counter for the driver error and the slot for c1.

Drive	Error Counter for Drive Error	Error Counter for Slot
/c1/e252/s0	0	0
/c1/e252/s1	0	0
/c1/e252/s2	0	0
/c1/e252/s3	0	0

The following SCSI sense key errors found in the event log in SAS data path failures indicate a SAS data path fault:

```
B/4B/05 :SERIOUS: DATA OFFSET ERROR
B/4B/03 :SERIOUS: ACK/NAK TIMEOUT
B/47/01 :SERIOUS: DATA PHASE CRC ERROR DETECTED
B/4B/00 :SERIOUS: DATA PHASE ERROR
```

A communication fault between the disk and the host bus adapter causes these errors. The presence of these errors, even on a single disk, means there is a data path issue. The RAID controller, SAS cables, SAS expander, or disk backplane might be causing the interruption to the communication in the path between the RAID controller and the disks.

Oracle Service personnel can find more information about the diagnosis and triage of hard disk and SAS data path failures on x86 servers at the My Oracle Support web site: <https://support.oracle.com> . Refer to the Knowledge Article Doc ID 2161195.1. If there are multiple, simultaneous disk problems on an Exadata server, Oracle Service personnel can refer to Knowledge Article Doc ID 1370640.1.

Failure of a Single Server Fan Module Might Impact Performance

Important Operating Note

If a single server fan module fails and the server's operating temperature rises above 30 degrees C (86 degrees F), the performance of the server processors might be reduced.

Remove and Replace a Fan Module Within 30 Seconds

Important Operating Note

When removing and replacing a server fan module, you must complete the entire removal and replacement procedure within 30 seconds in order to maintain adequate cooling within the system. In anticipation of this time limit, prior to starting the replacement procedure,

obtain the replacement fan module and verify that the new fan module is ready for installation. Remove and replace only one fan module at a time.

Fan modules are hot-swappable components, with N+1 fan redundancy. Each fan module contains two complete counter-rotating fans with two fan rotors per fan. Fan rotors provide separate tachometer signals so that the fan module reports tach signals to Oracle ILOM. Even if only one fan is faulted within the fan module, the Oracle ILOM service processor detects that fans have failed to spin while the fan module is being removed for replacement. If replacing the fan module is not replaced within 30 seconds of removal, Oracle ILOM will take protective action to shut down the system to prevent thermal damage to the system. This is expected behavior.

Lockstep Memory (Channel) Mode Is Not Supported

Important Operating Note

Oracle Server X7-8 does not support lockstep memory mode, which is also known as double device data correction, or Extended ECC.

MAC Address Mapping to Ethernet Ports

Important Operating Note

A system serial label that displays the MAC ID (and the associated barcode) for the server is attached to the top, front-left side of the Oracle Server X7-8 server disk cage bezel.

This MAC ID (and barcode) corresponds to a hexadecimal (base 16) MAC address for a sequence of six consecutive MAC addresses. These six MAC addresses correspond to the server network ports, as shown in the following table.

Base MAC Address	Corresponding Ethernet Port
"base" + 0	NET 0
"base" + 1	NET 1
"base" + 2	NET 2
"base" + 3	NET 3
"base" + 4	SP (NET MGT)
"base" + 5	Used only when Network Controller-Sideband Interface (NC-SI) sideband management is configured.

Oracle Dual Port 25 Gb Ethernet Adapter Hot Plug Is Not Supported

Bug ID: 26713370

Issue: Oracle Dual Port 25 Gb Ethernet Adapters are supported by all supported operating systems. However, Oracle Dual Port 25 Gb Ethernet Adapter hot plug is not supported on Oracle Server X7-8 software release 1.0.0.

Affected Hardware: Oracle Dual Port 25 Gb Ethernet Adapter

Workaround: You must power down the system before removing and replacing Oracle Dual Port 25 Gb Ethernet Adapters.

Oracle ILOM Reports Fault with Oracle Dual Port 25 Gb Ethernet Adapter During System Reset

Bug ID: 26259122

Issue: The Oracle Dual Port 25 Gb Ethernet Adapter can experience a completion timeout fault during a system warm reset operation. The fault is logged by Oracle ILOM.

Affected Hardware: Oracle Dual Port 25 Gb Ethernet Adapter

Workaround: This issue has no functional impact on normal system behavior and can be ignored.

Oracle ILOM Reports Fault `alert.chassis.domain.boot.power-on-failed` After System Stop

Bug ID: 26629988

Issue: On rare occasion, the Oracle Server X7-8 may remain powered off after the Oracle ILOM `start /System` command, an SMOD power button press, or after the host reset. When this condition occurs, Oracle ILOM reports the following failure:
`alert.chassis.domain.boot.power-on-failed`.

Affected Hardware: Oracle Server X7-8

Workaround: Power on the server again. If the second power-on attempt fails, contact an Oracle Service representative for assistance.

3

BIOS Issues

This section describes important operating notes and known BIOS issues for Oracle Server X7-8.

- [Do Not Use the Network Adapter iSCSI Configuration in BIOS](#)
- [Perform Power Cycle After Changing the Disk Freeze Lock Option](#)
- [System BIOS Fast Boot Might Not Work Correctly When Updating System Software](#)

Do Not Use the Network Adapter iSCSI Configuration in BIOS

Important Operating Note

There are two locations in the Oracle Server X7-8 system BIOS where you can configure iSCSI settings:

- Advanced → iSCSI Configuration
- Advanced → Broadcom NetXtreme 25G Gigabit Ethernet → iSCSI Boot Configuration Menu

Configure the system iSCSI settings only in Advanced → iSCSI Configuration. Do not use the network adapter iSCSI configuration option to configure the system iSCSI settings.

Perform Power Cycle After Changing the Disk Freeze Lock Option

Important Operating Note

After you change the Disk Freeze Lock option in the system BIOS, perform a power cycle on the server. The Disk Freeze Lock option updates in the BIOS after you select Save & Exit in the BIOS Setup Utility, but the drive remains frozen or locked until you perform a power cycle.

System BIOS Fast Boot Might Not Work Correctly When Updating System Software

Bug ID: 27146850

Issue: The System BIOS Fast Boot feature might not work correctly when updating to a new software release. This issue might occur when updating from system SW1.0.0 or SW1.0.1, to SW1.1.0 or SW1.1.1. This issue is benign and does not cause any problems during the software update.

Affected Hardware: System BIOS

Workaround: Do not preserve the BIOS configuration when updating to a new software release.

4

Oracle ILOM Issues

This section describes important operating notes and known Oracle ILOM issues for Oracle Server X7-8.

For updated information about Oracle ILOM, refer to Oracle Integrated Lights Out Manager (ILOM) documentation at [Servers Documentation - Systems Management](#).

- [DIMM Fault SPX86A-800A-95 - Memtest Single Symbol Test Failed - ILOM 5.1.0.21](#)
- [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#)
- [Oracle ILOM Reports a Fault After Software Upgrade to 4.0.4.20 with Intermittent Occurrence](#)
- [Power On Failure After Oracle ILOM Software Upgrade to 4.0.4.20](#)
- [Oracle ILOM Reports a BIOS Upgrade Failure Error Fault after Downgrading Software to Software 1.1.2 with BIOS Delay](#)
- [Oracle ILOM Reports Fault alert.chassis.fw.bios-upgrade-failure After Firmware Upgrade or Downgrade](#)
- [Oracle ILOM Software Downgrade From SW1.1.0 to SW1.0.1 Host Stays In Reboot Loop](#)
- [Software 4.0.3.21 X7-8 Exadata Firmware Upgrade from SW1.0 to SW1.2 UEFICfg Stays in Boot Loop](#)
- [POST Halts on port80=0xEF after Software Upgrade or Downgrade \(Preserve+Delay_BIOS\)](#)
- [Oracle ILOM Software Downgrade from 1.3.0 to 1.1.4 Using ipmiflash and Power Cycle Fails Turn On](#)
- [Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x](#)
- [System Might Not Set BIOS to Defaults After Power Cycle](#)
- [SSL Must Be Turned On When Booting a Redirected ISO Image](#)
- [Reset Takes a Long Time and Causes the Server to Power Cycle](#)
- [Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service](#)
- [Oracle VTS Network Test Floods Serial Console Triggering Soft Lockups](#)

DIMM Fault SPX86A-800A-95 - Memtest Single Symbol Test Failed - ILOM 5.1.0.21

Bug ID: 34325538, 34445460

Issue: The following DIMM Fault message is seen: SPX86A-800A-95 - Memtest Single Symbol Test Failed (Doc ID 2317012.1) SPX86A-800A-95 indicates that the ILOM fault manager has received an error report indicating a memory DIMM produced correctable errors (CE) during both passes of the memory test.

If the server encounters multiple runtime memory fault related events, increased runtime error messages may be related to DIMM memory testing conditions. Oracle ILOM Adaptive Double DRAM Device Correction (ADDDC) and Post Package Repair (PPR) features are enabled in the server firmware. ADDDC Sparing is a RAS feature to test memory reliability. The Advanced Memory Test (AMT) in the Memory Reference Code (MRC) can fail a DIMM with a single symbol error and then PPR would try to repair the defect.

When enabled, PPR may be able to repair affected DRAM areas on a DIMM. PPR runs when ADDDC was previously activated before reboot or MRC initialization failed memory tests. Upon encountering any memory related fault event during MRC initialization or experiencing certain memory correctable events during runtime that triggers ADDDC on first occurrence, then PPR would be activated after the next system initialization/reboot and attempt to repair the DIMM.

 **Note:**

Certain DIMM manufacturers may exhibit different memory failure patterns, and may not support soft PPR configuration (which enables temporarily attempting a repair action).

Affected Hardware: Oracle Server X9-2, Oracle Server X9-2L, Oracle Server X8-8, Oracle Server X8-2, Oracle Server X8-2L, Oracle Server X7-8, Oracle Server X7-2, Oracle Server X7-2L

 **Note:**

Not all server systems enable ADDDC.

Affected Software:

The following x86 server software Oracle ILOM releases or later, support PPR (Post-Package Repair).

- Oracle Server X9-2 SW1.1.0 ILOM 5.0.2.21 (Does not enable ADDDC.)
- Oracle Server X9-2L SW1.1.0 ILOM 5.0.2.21 (Does not enable ADDDC.)
- Oracle Server X8-8 SW3.2.2.1 ILOM 5.0.2.22 (Does not enable ADDDC.)
- Oracle Server X8-2 SW3.2.2 ILOM 5.0.2.24
- Oracle Server X8-2L SW3.2.2 ILOM 5.0.2.24
- Oracle Server X7-8 SW3.2.2.1 ILOM 5.0.2.22 (Does not enable ADDDC.)
- Oracle Server X7-2 SW3.2.2 ILOM 5.0.2.24
- Oracle Server X7-2L SW3.2.2 ILOM 5.0.2.24

Workaround: Some DIMM faults are recoverable errors if PPR is enabled on the server. If multiple DIMM memory errors are detected on the server:

1. Log in to the Oracle ILOM command-line interface (CLI) using an account with admin (a) role privileges.

- From the Oracle ILOM CLI, launch the Oracle ILOM Fault Management Shell.

```
-> start /SP/faultmgmt/shell
Are you sure you want to start /SP/faultmgmt/shell (y/n)? y
```

- Display information about server components using Oracle ILOM FMA CLI command.

```
faultmgmtsp> fmadm faulty
```

- Manually clear server faults using Oracle ILOM FMA CLI command.

```
faultmgmtsp> fmadm repair <FRU>
```

- Exit the Oracle ILOM Fault Management Shell and return to the the Oracle ILOM CLI command prompt.

```
faultmgmtsp> exit
```

- Upgrade the server to the latest ILOM/UEFI firmware release that supports PPR. The system resets during the firmware upgrade and runs memory tests again.
- If memory related events faults continue to be logged, replace the faulted DIMMs in the server. Log an Oracle Support case through the support portal for further assistance.

For updated information about Oracle ILOM, refer to Oracle Integrated Lights Out Manager (ILOM) documentation at [Servers Documentation - Systems Management](#).

Oracle Service personnel can find more information about the diagnosis and triage of DIMM Fault failures on x86 servers at [My Oracle Support](#). Refer to the Knowledge Article Doc ID 2698328.1. If there are multiple, simultaneous DIMM Fault message problems on a server, Oracle Service personnel can refer to Knowledge Articles Doc IDs 1603015.1 (KA single symbol error) and 2317012.1 (KA multiple symbol errors).



Note:

Adaptive Double DRAM Device Correction (ADDDC) is also referred to as Adaptive Device Correction (ADC) in some Oracle documents.

System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade

Important Operating Note

Bug IDs: 28707152, 28632145, 28597111, 27154649, 28188424, 27209590, 28447223

Bug ID	Issue
28707152	/SYS/PS1 fault.chassis.device.sppost intermittent occurrence
28632145	POWER-ON-FAILURE AFTER ILOM UPGRADE TO 4.0.4.20 R127037
28597111	Downgrading to SW 1.1.2 (ILOM: 123532 BIOS: 46.02.07.00) with BIOS Delay causes BIOS update failure error.
27154649	Oracle Server X7-8 ILOM FW downgrade from SW1.1 to SW1.0.1 host stuck in reboot loop

Bug ID	Issue
28188424	SW 4.0.3.21 x7-8 exadata firmware upgrade from SW1.0 to SW1.2 ueficfg boot loop
27209590	POST halts on port80=0xEF after up/downgrade (Preserve+Delay_BIOS)
28447223	Oracle ILOM: X7-8 downgrade 1.3 -> sw 1.1.4 via ipmiflash & power cycle fails turn on

Issue: On rare occasions, after Oracle Server X7-8 Oracle ILOM software upgrade or downgrade, Oracle Server X7-8 might not power on or the Service Processor POST process stops. You can identify the issue if powering on the server system using a chassis power button fails, or Oracle ILOM power-on user interfaces fail, or the HOST_AUTO_POWER_ON policy fails.



Note:

Update your system to the latest Software Release before you use the system. Downgrade software only when required for testing.

Affected Software: The following table contains the Oracle Server X7-8 affected software.

Release	Firmware Upgrade Issues	Firmware Downgrade Issues
SW1.0.0 (Oracle ILOM 4.0.0.23)	Upgrade from 1.0 to any software release. Power cycle power-on stops after Software Release update. Workaround: Clear CMOS from Diag Shell and AC power cycle.	Software release 1.2.0 downgrade to Software Release 1.0.0 or Software Release 1.0.1 sends hosts into infinite reboot loop. Workaround: Power off host and clear CMOS from Diag Shell.
SW1.0.1 (Oracle ILOM 4.0.0.31)	Cannot skip 2 ME Changes. For example: Software Release 1.0.1 to Software Release 1.2.0.	Software release 1.2.0 downgrade to Software Release 1.0.0 or Software Release 1.0.1 sends hosts into infinite reboot loop. Workaround: Power off host and clear CMOS from Diag Shell.
SW1.1.0 (Oracle ILOM 4.0.2.20)	No issues	No issues
SW1.1.1 (Oracle ILOM 4.0.2.20.a)	No issues	Downgrade from Software Release 1.1.0 or higher to Software Release 1.0.1 or Software Release 1.1.0. Workaround: Power off host and clear CMOS from Diag Shell.
SW1.1.3 (Oracle ILOM 4.0.2.29)	No issues	No issues
SW1.1.4 (Oracle ILOM 4.0.2.29.a)	No issues	Fixed issue 28447223 X7-8 downgrade Software Release 1.3 to Software Release 1.1.4 via ipmiflash & power cycle fails to turn on Workaround: Manual power on.

Release	Firmware Upgrade Issues	Firmware Downgrade Issues
SW1.2.0 (Oracle ILOM 4.0.3.21)	No issues	Do not downgrade to Software Release 1.2.0 from Software Release 1.3.0, Software Release 1.3.2 to maintain security fixes. Software Release 1.2.0 downgrade to Software Release 1.0.1 or Software Release 1.0.0 sends the host into infinite reboot loop. Workaround: Power off host and clear CMOS from Diag Shell.
SW1.3.0 (Oracle ILOM 4.0.4.20)	No issues	Do not downgrade to Software Release 1.2.0 from Software Release 1.3.0, Software Release 1.3.2 to maintain security fixes. Fixed issue 28447223 X7-8 downgrade 1.3 -> sw 1.1.4 via ipmiflash & power cycle fails turn on Workaround: Power off host and clear CMOS from Diag Shell.
SW1.3.2 (Oracle ILOM 4.0.4.28.00)	FPGA Issue fix for Software Release 1.0.0 up to Software Release 1.3.2. Clear CMOS, reset, AC power cycle.	Downgrading from Oracle Server X7-8 firmware version 1.3.2 (with FPGA fix) to any Software Release from 1.3.0 to 1.0.0 can expose the FPGA issue. Do not downgrade to Software Release 1.2.0 from Software Release 1.3.0, or Software Release 1.3.2 to maintain security fixes.

Affected Hardware: Oracle Server X7-8

Workaround: There are multiple ways to avoid or workaround power cycle issues. Choose from the following methods.

- To avoid power cycle issues when upgrading or downgrading firmware, do not preserve the BIOS configuration.
- You must update your server firmware and software as soon as possible after a new Software Release becomes available. Software releases often include bug fixes, and updating your server ensures that your server has the latest firmware and software. These updates will increase your system performance, security, and stability.
- In general, to minimize the chances of encountering power cycle issues, use the latest software update.

 **Note:**

Update your system to the latest Software Release before you use the system. Downgrade software only when required for testing.

- Upgrade software updates in stepwise increments, between major versions. For example: From Software Release 1.0 to Software Release 1.1, From Software Release 1.1 to Software Release 1.2, From Software Release 1.2 to Software Release 1.3.
- On rare occasions, after Oracle Server X7-8 does not power on, first check, then view and clear faults using Oracle ILOM FMA (Fault Management Architecture) interfaces. For information about Oracle ILOM FMA, refer to Oracle Integrated Lights Out Manager (ILOM) 4.0 Information Library at <https://www.oracle.com/goto/ilom/docs>.

- When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Recovery: If a system encounters this issue during a firmware upgrade or downgrade, do the following to recover:

From Oracle ILOM CLI:

1. Power off the host.


```
-> stop -script -force /System
```
2. Wait 30 seconds.
3. Power on the host.


```
-> start -script /System
```

From Oracle ILOM web interface Summary screen:

1. Power off the host.
2. Wait 30 seconds.
3. Power on the host.
4. The Administrator can safely clear the fault after recovery.

For details, refer to "Managing Server Hardware Faults Using the Oracle ILOM Fault Management Shell" in the *Oracle Server X7-8 Service Manual*.

If a system encounters this issue during a firmware upgrade or downgrade, and still does not power on after resolving and clearing hardware faults, or does not complete the Service Processor POST process, perform the following steps to power off the host and clear CMOS from the Diag Shell.

1. Power off the host.

Refer to the *Oracle Server X7-8 Installation Guide*.
2. Clear system CMOS.
 - a. If powered on, force host power off:

```
-> stop -script -force /System
```
 - b. Start the Diag Shell:

```
-> start -script /SP/diag/shell
```
 - c. From the Diag Shell, clear the system CMOS:

```
diag-> hwdiag system clear_cmos
```
 - d. Exit the Diag Shell:

```
diag> exit
```
 - e. Start the host:

```
-> start -script /System
```
3. In the rare case that the Oracle Server X7-8 still fails to power on, perform an AC power cycle, by removing and reinstalling the server AC power cables.

Refer to the *Oracle Server X7-8 Service Manual*.
4. If the AC power cycle attempt fails, contact an Oracle Service representative for assistance.

Oracle ILOM Reports a Fault After Software Upgrade to 4.0.4.20 with Intermittent Occurrence

Bug ID: 28707152

Issue: After Oracle Server X7-8 is upgraded with Oracle ILOM Software Release 4.0.2.20 or lower, Oracle ILOM reports the following fault: `fault.chassis.device.sppost`. This issue is fixed in Software Release 1.3.2 that includes the 3B.2F FPGA image. On rare occasion, the fault asserts during the FPGA firmware upgrade before Oracle ILOM has upgraded to the 3B.2F FPGA image that includes the fix. The server might not complete the Service Processor power-on self-test (POST) process.

 **Note:**

Update your system to the latest Software Release before you use the system.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle ILOM Software Releases from 4.0.0.23 to 4.0.2.20.

Workaround: Clear the faults after the Oracle ILOM firmware upgrade completes and the faults should not reappear. This issue has no functional impact on normal system behavior and can be ignored.

For details, refer to "Managing Server Hardware Faults Using the Oracle ILOM Fault Management Shell" in the *Oracle Server X7-8 Service Manual*.

See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

Power On Failure After Oracle ILOM Software Upgrade to 4.0.4.20

Bug ID: 28632145

Issue: On rare occasion, after Oracle Server X7-8 upgrading to Software Release 1.3.0 with Oracle ILOM 4.0.4.20, the server might not Power On automatically and the Service Processor power-on self-test (POST) process might not complete.

 **Note:**

Update your system to the latest Software Release before you use the system.
Downgrade software only when required for testing.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle Server X7-8 Software Release 1.3.0

Workaround: See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Oracle ILOM Reports a BIOS Upgrade Failure Error Fault after Downgrading Software to Software 1.1.2 with BIOS Delay

Bug ID: 28597111

Issue: When downgrading Oracle Server X7-8 firmware and software to Software Release 1.1.2 (ILOM: 123532 BIOS: 46.02.07.00) with BIOS Delay, a BIOS update failure error displays.

When this fault occurs, Oracle ILOM reports the following failure:
`alert.chassis.fw.bios-upgrade-failure`

Oracle Server X7-8 might not Power On automatically and the Service Processor power-on self-test (POST) process might not complete after downgrading from Oracle ILOM Software Release 1.3.0 or later to Software Release 1.1.2 using IPMIflash (with preserve BIOS configuration).



Note:

Update your system to the latest Software Release before you use the system. Downgrade software only when required for testing.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle Server X7-8 Software Release 1.1.2

Workaround: See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Oracle ILOM Reports Fault `alert.chassis.fw.bios-upgrade-failure` After Firmware Upgrade or Downgrade

Bug ID: 27209590 Fixed in Oracle ILOM 4.0.2.25.b.

Issue: When upgrading Oracle Server X7-8 software from Software Release 1.0.0 (Oracle ILOM 4.0.0.23) or Software Release 1.0.1 (Oracle ILOM 4.0.0.31) to Software

Release 1.1.0 (Oracle ILOM 4.0.2.20) or Software Release 1.1.1 (Oracle ILOM 4.0.2.20.a), or downgrading, the host may not be able to power on the first time if the following options are used:

- Preserve BIOS configuration
- Delay BIOS upgrade until next server power off

When this fault occurs, Oracle ILOM reports the following failure: `alert.chassis.fw.bios-upgrade-failure`

Affected Software: Oracle Server X7-8 Software Release 1.0.0 (Oracle ILOM 4.0.0.23), Software Release 1.0.1 (Oracle ILOM 4.0.0.31), Software Release 1.1.0 (Oracle ILOM 4.0.2.20), Software Release 1.1.1 (Oracle ILOM 4.0.2.20.a)

Workaround: There are multiple ways to avoid or workaround this issue. Choose one of the following methods.

To avoid this issue when trying to update to Software Release 1.1.0, do not preserve the BIOS configuration and do not use delay BIOS upgrade options.

Method to upgrade to Software Release 1.1.0 and avoid this issue:

1. Create a backup BIOS XML file before updating to Software Release 1.1.0 (Oracle ILOM 4.0.2.20) or Software Release 1.1.1 (Oracle ILOM 4.0.2.20.a).
2. Update to Software Release 1.1.0 (Oracle ILOM 4.0.2.20) or Software Release 1.1.1 (Oracle ILOM 4.0.2.20.a) without using preserve BIOS configuration and delay BIOS options.
3. Boot the host so boot devices are discovered by BIOS.
4. Power off the host.


```
-> stop -script -force /System
```
5. Load the BIOS XML file created in step 1.

Recovery: If a system encounters this issue during a firmware upgrade, do the following to recover:

From Oracle ILOM CLI:

1. Power off the host.


```
-> stop -script -force /System
```
2. Wait 30 seconds.
3. Power on the host.


```
-> start -script /System
```

From Oracle ILOM web interface Summary screen:

1. Power off the host.
2. Wait 30 seconds.
3. Power on the host.
4. The Administrator can safely clear the fault after recovery.

For details, refer to "Managing Server Hardware Faults Using the Oracle ILOM Fault Management Shell" in the *Oracle Server X7-8 Service Manual*.

See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Oracle ILOM Software Downgrade From SW1.1.0 to SW1.0.1 Host Stays In Reboot Loop

Bug ID: 27154649 Fixed in Oracle ILOM 4.0.2.20.

Issue: On rare occasion, when downgrading an Oracle Server X7-8 system from Software Release 1.1.0 (Oracle ILOM 4.0.2.20) back to Software Release 1.0.0 (Oracle ILOM 4.0.0.23) or Software Release 1.0.1 (Oracle ILOM 4.0.0.31), the server can continually reset and the host may fail to boot completely the first time.

Affected Software: Oracle Server X7-8 Software Release 1.0.0 (Oracle ILOM 4.0.0.23), Software Release 1.0.1 (Oracle ILOM 4.0.0.31), Software Release 1.1.0 (Oracle ILOM 4.0.2.20), Software Release 1.1.1 (Oracle ILOM 4.0.2.20.a)

Workaround: When this condition occurs, power off the host, clear CMOS and power on the host again.

When the host cannot boot completely the first time, after a firmware downgrade back to Software Release 1.0.0 (Oracle ILOM 4.0.0.23) or Software Release 1.0.1 (Oracle ILOM 4.0.0.31), issue the following commands from Oracle ILOM CLI to recover.

1. Force host power off: `-> stop -script -force /System`
2. Start the Diag Shell: `-> start -script /SP/diag/shell`
3. From the Diag Shell, clear the system CMOS: `diag-> hwdiag system clear_cmos`
4. Exit the Diag Shell: `diag> exit`
5. Start the host: `-> start -script /System`

See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Software 4.0.3.21 X7-8 Exadata Firmware Upgrade from SW1.0 to SW1.2 UEFIfcg Stays in Boot Loop

Bug ID: 28188424 Fixed in Oracle ILOM 4.0.3.21.

Issue: Oracle Server X7-8 can continually reset after Software Release 4.0.3.21 x7-8 Exadata server firmware and software upgrade from Software Release 1.0 to Software Release 1.2 UEFI configuration (uefifcg) and remain in a boot loop.

The server might not Power On automatically and the Service Processor power-on self-test (POST) process might not complete after downgrading Oracle ILOM Software Release 1.0.0 to Software Release 1.2.0 using IPMIflash (with preserve BIOS configuration).

**Note:**

Update your system to the latest Software Release before you use the system.
Downgrade software only when required for testing.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle Server X7-8 Software Release 1.0.0, Software Release 1.2.0

Workaround: See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

POST Halts on port80=0xEF after Software Upgrade or Downgrade (Preserve+Delay_BIOS)

Bug ID: 27209590 Fixed in Oracle ILOM 4.0.2.25.b.

Issue: Oracle Server X7-8 Service Processor power-on self-test (POST) stops on port80=0xEF after upgrading or downgrading system software.

Oracle Server X7-8 Service Processor power-on self-test (POST) process might not complete after upgrading or downgrading system Software Release 1.3.0 to Software Release 1.1.4 using IPMIflash (Preserve+Delay_BIOS with preserve BIOS configuration).

**Note:**

Update your system to the latest Software Release before you use the system.
Downgrade software only when required for testing.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle Server X7-8 Software Release 1.3.0, Software Release 1.1.4

Workaround: See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When upgrading or downgrading firmware, do not preserve the BIOS configuration.

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Oracle ILOM Software Downgrade from 1.3.0 to 1.1.4 Using ipmiflash and Power Cycle Fails Turn On

Bug ID: 28447223 Fixed in Oracle ILOM 4.0.2.20.

Issue: On rare occasion, Oracle Server X7-8 might not Power On automatically and the Service Processor power-on self-test (POST) process might not complete after downgrading Oracle ILOM Software Release 1.3.0 to Software Release 1.1.4 using IPMiflash (with preserve BIOS configuration).

Note:

Update your system to the latest Software Release before you use the system. Downgrade software only when required for testing.

Affected Hardware: Oracle Server X7-8

Affected Software: Oracle Server X7-8 Software Release 1.3.0, Software Release 1.1.4

Workaround: See [System Might Not Power On with POST After Oracle ILOM Software Upgrade or Downgrade](#).

When a power-off condition occurs, press the System A or System B server power button on the host system, or use Oracle ILOM CLI commands to power on the Oracle Server X7-8 host system from a local or remote location. Refer to *Power On the Server* in *Oracle Server X7-8 Service Manual*.

Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x

Important Operating Note

Present Behavior: The Oracle ILOM TLSv1.1 configuration property is Enabled by default.

Future Behavior: The following changes will occur to the TLSv1.1 configuration property sometime after the Oracle ILOM 4.0.3 firmware release:

- First Change: The TLSv1.1 configuration property will default to Disabled in the next minor release of Oracle ILOM.
- Second Change: The TLSv1.1 configuration property will no longer be supported and will be removed from all Oracle ILOM user interfaces in the next major release of Oracle ILOM.

For future updates regarding TLSv1.1 support in Oracle ILOM, refer to latest release information in the Oracle ILOM Feature Updates and Release Notes for Firmware 4.0.x at https://docs.oracle.com/cd/E81115_01/index.html.

System Might Not Set BIOS to Defaults After Power Cycle

Bug ID: 26785322

Issue: On rare occasions, typically after an AC power cycle, Oracle Server X7-8 might not set BIOS to defaults. You can identify this issue when the **reset_to_defaults** property does not change from **factory** to **none** after 15 minutes.

To verify the BIOS settings, enter the following command:

```
-> show -d properties  
  
/System/BIOS reset_to_defaults  
/System/BIOS  
Properties:  
reset_to_defaults = factory
```

Affected Hardware: Oracle Server X7-8

Workaround: If you encounter this issue, log in to Oracle ILOM and reset the service processor (SP) with the following command:

```
-> reset /SP
```

After you reset the SP, re-enter the command to verify the BIOS default settings.

SSL Must Be Turned On When Booting a Redirected ISO Image

Important Operating Note

When booting a redirected ISO image for an operating system installation, turn on SSL (Secure Sockets Layer), which is the default setting. If you do not turn on SSL, the installation might stall or fail. This issue affects all supported operating systems.

Reset Takes a Long Time and Causes the Server to Power Cycle

Important Operating Note

If you have a pending BIOS upgrade, a routine reset takes longer than expected, and causes the server to power cycle and reboot several times. This is expected behavior, as it is necessary to power cycle the server to upgrade the BIOS firmware. If the upgrade includes an FPGA update, it can take as long as 30 minutes to complete the upgrade and the service processor (SP) resets during the process. Since the SP resets during the process, you will need to re-establish any active connection to the SP after the update.

A pending BIOS upgrade exists when the following conditions are true:

- You update the BIOS and service processor firmware using Oracle Integrated Lights Out Manager (ILOM).
- You select the Oracle ILOM option to Delay BIOS Upgrade.

- The host is powered on.

If you reboot the server expecting a routine server reset and instead initiate a (delayed) BIOS upgrade, wait until the upgrade finishes. Do not interrupt the process, as this can result in corrupted firmware and server down time.

Caution:

Firmware corruption and system downtime. Interrupting the firmware upgrade process can corrupt the firmware and render the server inoperable. Do not interrupt the upgrade. Allow the process to finish.

Note:

Oracle ILOM and BIOS updates are designed to work together. When you have a pending BIOS upgrade, it is recommended that you install the upgrade by resetting or power cycling your server as soon as possible.

For details, refer to "Update the BIOS and Service Processor Firmware (Oracle ILOM)" in the *Oracle X7 Series Servers Administration Guide* at <https://www.oracle.com/goto/x86adminddiag/docs>.

Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service

Important Operating Note

Present Behavior: IPMI 2.0 Management Sessions - **Enabled** (default setting).

Future Behavior: The following IPMI Management Service changes will occur in a future Oracle ILOM firmware release after firmware version 4.0.2.

- **First IPMI Service Support Change** – The default configuration property for IPMI 2.0 Sessions will change from Enabled to Disabled. Clients relying on Oracle ILOM IPMI 2.0 session support by default will no longer be able to communicate with Oracle ILOM. To enable IPMI communication with Oracle ILOM, perform one of the following:
 - Use the Oracle IPMI TLS service and interface. For more information, refer to "IPMI TLS Service and Interface" in the *Oracle ILOM Protocol Management Reference SNMP and IPMI Firmware Release 4.0.x*.
 - or
 - Manually enable the configuration property for IPMI 2.0 Session. For details, refer to "IPMI Service Configuration Properties" in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware Release 4.0.x*.
- **Second IPMI Service Support Change** – Removal of IPMI 2.0 client support. IPMI 2.0 clients no longer will be able to communicate with Oracle ILOM. Clients relying on IPMI communication will need to use the IPMI TLS service and interface. For more information, refer to "IPMI TLS Service and Interface" in the

Oracle ILOM Protocol Management Reference SNMP and IPMI Firmware Release 4.0.x.

For future updates about IPMI Management Service support in Oracle ILOM, refer to the latest firmware release information published in the *Oracle ILOM Feature Updates and Release Notes Firmware Release 4.0.x* at <https://www.oracle.com/goto/ilom/docs>.

Oracle VTS Network Test Floods Serial Console Triggering Soft Lockups

Bug ID: 27240264

Issue: The Network test in Oracle VTS floods the Oracle ILOM SP serial console triggering soft lockup events.

Affected Software: Oracle VTS 8.2.0-patch 1.4

Workaround: There are multiple ways to avoid or workaround this issue. Choose one of the following methods.

Disable the Network test (see example below) in the profile and rerun Oracle VTS to resolve the soft lockups issue.

Set the following Network test profile (see example below) and rerun Oracle VTS to resolve soft lockups:

```
*****Test_Groups*****  
[*]Processor           Options  idle(Pass=0/Error=0)  
[*]System_Interconnect Options  idle(Pass=0/Error=0)  
[*]Memory              Options  idle(Pass=0/Error=0)  
[ ]Network            Options  idle(Pass=0/Error=0)  
[*]Disk                Options  idle(Pass=0/Error=0)  
[*]Removable_Disk     Options  idle(Pass=0/Error=0)
```

Run Oracle VTS Network test for a shorter time to reduce soft lockup events.

1. Select Options:

```
[*]Network Options idle(Pass=0/Error=0)
```

2. Enter 10 into Test Time. Select Apply.

```
Test Time:[0-99999] 10
```

3. Save the profile.

4. Restart the test.

5

Oracle Solaris Issues

This section describes important operating notes and known Oracle Solaris issues for Oracle Server X7-8.

- [Unable to Mount an ISO Image to Install Oracle Solaris Over Remote KVMS](#)
- [Oracle Solaris Installation Hangs When Remote KVMS Is Running](#)

Unable to Mount an ISO Image to Install Oracle Solaris Over Remote KVMS

Bug ID: 25767311

Issue: Attempting a remote Oracle Solaris 11.3 installation using an ISO image with the Oracle ILOM Remote Console Plus application might fail because the ISO installation media fails to mount.

Affected Hardware: Oracle Server X7-8 using Oracle ILOM Remote Console Plus

Status: Fixed in Oracle Solaris 11.3 SRU 27.

Workaround: To perform an installation of Oracle Solaris 11.3 using the Oracle ILOM Remote Console Plus with a remotely mounted ISO image, do the following:

1. Log into the Oracle ILOM CLI on the target system.
2. Enter the following command:

```
-> set /SP/network/interconnect/ hostmanaged=false state=disabled
```
3. Perform the remote installation of Oracle Solaris 11.3.

This entails setting up an Oracle ILOM Remote Console Plus session and mounting the installation ISO image. Refer to the Operating System Installation Guide for your server.
4. When installation is complete, log back into the Oracle ILOM CLI on the target system.
5. Enter the following commands:

```
-> set /SP/network/interconnect/ hostmanaged=false state=enabled  
-> set /SP/network/interconnect/ hostmanaged=true
```

 **Note:**

It is important to re-enable host management of the ILOM interconnect port for host-based management tools, such as Oracle Hardware Management Pack, to function correctly.

Oracle Solaris Installation Hangs When Remote KVMs Is Running

Bug ID: 25653304

Issue: The Oracle Solaris 11.3 OS installer hangs while scanning for an active VGA frame buffer.

Affected Software: Oracle Solaris 11.3

Workaround: Perform the Oracle Solaris 11.3 OS installation from the system serial console:

1. Start an Oracle ILOM serial console session, type:

```
-> start /HOST/console
```

```
Are you sure you want to start /HOST/console (y/n)? y
```

2. Boot the system and select the `ttya` option in the GRUB boot menu. For example:

 **Note:**

Depending on your terminal type, it might be necessary to press the ESC key before pressing the up or down arrow to stop the GRUB countdown timer. This will then allow you to select `ttya` in the GRUB menu.

```
GNU GRUB version 1.99,5.11.0.175.3.0.0.30.0
```

```
Oracle Solaris 11.3.23.4.0
```

```
Oracle Solaris 11.3.23.4.0 ttya
```

```
Oracle Solaris 11.3.23.4.0 ttyb
```

```
Entry [Boot from Hard Disk] not supported on this firmware
```

```
Use the ^ and v keys to select which entry is highlighted.
```

```
Press enter to boot the selected OS, 'e' to edit the commands  
before booting or 'c' for a command-line.
```

 **Note:**

The workaround for Bug 25767311 is also required when installing from a Remote KVMs or Oracle ILOM redirected image. See [Unable to Mount an ISO Image to Install Oracle Solaris Over Remote KVMs](#).

6

Linux Issues

This section describes important operating notes and known Linux issues for Oracle Server X7-8.

- [Perform a Yum Update When Using Oracle Linux UEK Kernel](#)
- [Installing Oracle Linux 7.3 on an NVMe Storage Device Larger Than 2 TB Might Fail](#)
- [Kdump Might Fail When All 16 PCIe Cards Are Installed](#)
- [I/O Processing Delays With Warning and Retry Messages](#)
- [Linux MMIO Kernel Configuration Can Affect Oracle Hardware Management Pack fwupdate Tool for Intel NIC/LOM Updates](#)

Perform a Yum Update When Using Oracle Linux UEK Kernel

Important Operating Note

When using the Unbreakable Enterprise Kernel Release 4 Update 4 (UEK R4u4) with Oracle Linux 6 or Oracle Linux 7, perform a yum update to obtain the latest UEK R4 release updates. Oracle Server X7-8 requires Unbreakable Enterprise Kernel version 4.1.12-94.5.7 or later.

For more information and instructions for updating Unbreakable Enterprise Kernel Release 4, refer to the Unbreakable Enterprise Kernel web site at: http://docs.oracle.com/cd/E93554_01/.

For OS installation information, see *Oracle Linux OS Installation in Oracle Server X7-8 Operating Systems Installation Guide*.

Installing Oracle Linux 7.3 on an NVMe Storage Device Larger Than 2 TB Might Fail

Bug ID: 25702796

Issue: When installing Oracle Linux 7.3 on a system with an NVMe storage device (either a storage drive or add-in PCIe card) with larger than 2 TB capacity, the installation might fail due to a Linux kernel panic. This might appear during install as a stack trace on the console. The install process hangs without warning or any other symptom, and the installation does not complete.

Affected Software: Oracle Linux 7.3

Workaround: To avoid this panic during the install, select manual partitioning when configuring the NVMe storage device and ensure that any partition larger than 2 TB capacity uses the ext4 file system instead of XFS. If you perform an automated install using a kickstart configuration file, ensure that your storage partitions on NVMe devices use the ext4 file system, if the partitions are larger than 2 TB.

Kdump Might Fail When All 16 PCIe Cards Are Installed

Bug ID: 25233304, 26235050

Issue: On systems running Oracle Linux when all 16 PCIe cards are installed, kdump might fail.

Affected Software: Oracle Linux 7.3

Workaround: To ensure that kdump works properly, change the `crashkernel` settings.

In `grub.cfg`, replace `crashkernel=auto` with the following settings:

```
crashkernel=2048M,high crashkernel=256M,low
```

Change the `nr_cpus` setting to the following value:

```
/etc/sysconfig/kdump nr_cpus=4
```

I/O Processing Delays With Warning and Retry Messages

Bug ID: 27045051, 27044222, 27044007

Issue: On systems configured with Oracle Flash Accelerator F640 PCIe cards, under heavy workloads, the system might display the following kernel warning and retry messages in the `dmesg` and `/var/log/messages` files that result from I/O processing delays:

- soft lockups
- nvme and SAS scmd timeouts
- `blk_update_get` failures
- `rcu_sched`: stalls
- block device driver error recovery messages, including command and controller aborts and resets, unassociated with underlying media errors

Affected Software: Oracle Linux 7.3

Workaround: Perform the following tasks.

- Increase the workload numa balancing
- Reduce the workload stress level
- Disable the Oracle Linux serial console and global logging of kernel messages:
 1. Remove the serial console boot options (such as `console=ttyS0,9600`) from `/boot/efi/EFI/redhat/grub.cfg`.
 2. Add `kernel.printk=1` to `/etc/sysctl.conf`.
 3. Reboot the system.

In rare cases, I/O requests might return EIO or ETIMEDOUT errors. In these cases, retry the I/O by the user application.

Linux MMIO Kernel Configuration Can Affect Oracle Hardware Management Pack fwupdate Tool for Intel NIC/LOM Updates

Important Operating Note

On systems running Linux with Intel network interface cards or LAN-on-Motherboard (LOM) controllers, if MMIO memory access is set to strict access in the Linux kernel (iomem=strict or as part of the kernel build configuration) you will see the following message in syslog/dmegg when running the Oracle Hardware Management Pack fwupdate tool:

```
kernel: Program fwupdate tried to access /dev/mem between  
c4a00000->c4a01000. (Address may vary)
```

This message is expected and should not cause an issue with the operation of the operating system. There will be one message each time `fwupdate` is run and the kernel is in strict MMIO access mode.

However, when the kernel is running in this mode, `fwupdate` will not be able to access Intel-based network controllers to either list information or update firmware.

For more information on this issue including a workaround, see the "Linux MMIO Access Settings Can Affect `fwupdate` Commands On Intel Network Controllers" section in the *Oracle Hardware Management Pack 2.4 Server CLI Tools User's Guide* at: <https://www.oracle.com/goto/ohmp/docs> .

7

Windows Issues

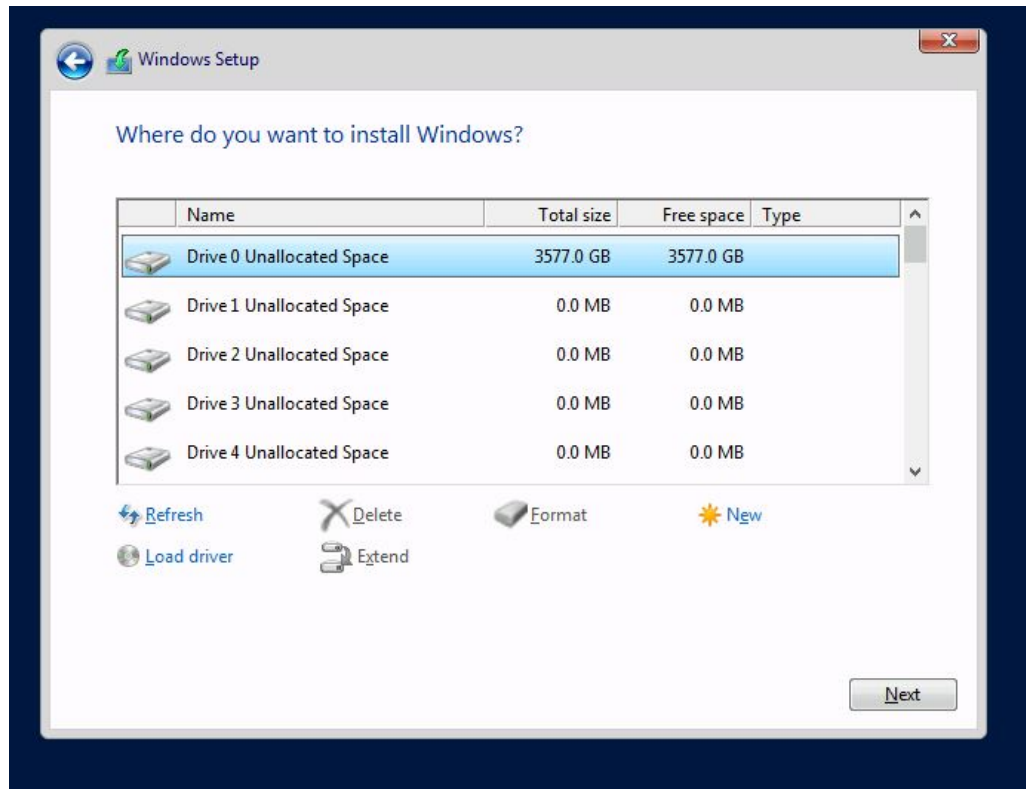
This section describes important operating notes and known Windows Server operating system issues for Oracle Server X7-8.

- [NVMe Phantom Drives Appear When Using Windows Server 2016 Inbox Drivers](#)
- [NVMe Hot-Plug Is Not Supported](#)
- [Windows Server Hot-Plug Requires Registry Changes](#)

NVMe Phantom Drives Appear When Using Windows Server 2016 Inbox Drivers

Bug ID: 32158109

Issue: During Windows Server 2016 installation on a system with an NVMe storage drive, Windows Setup lists the NVMe storage device and 127 phantom listings of the same NVMe storage device. These phantom storage devices each show a total size and free space of 0.0 MB. For example:



After you install Windows Server 2016, the 127 phantom drives also appear in Windows Device Manager. This issue is due to an out-of-date inbox Windows Server 2016 NVMe driver that does not support the multiple namespace feature of some NVMe storage devices.

Affected Software: Microsoft Windows Server 2016, version 1607 (OS build 14393.3986).

Affected Hardware: Any system with NVMe storage drives that supports multiple namespaces.

Workaround: After Windows Server 2016 is installed, perform a Microsoft Windows Update. A newer version of the Windows Server 2016 NVMe driver installs and corrects the issue. After the update, the phantom drives are no longer listed for your NVMe storage device.

NVMe Hot-Plug Is Not Supported

Important Operating Note

NVMe storage drives are supported by the Microsoft Windows Server 2012 R2 and Windows Server 2016 operating systems. However, NVMe hot-plug is not supported on Oracle Server X7-8 under Windows Server 2016 and Windows Server 2012 R2. You must power down the system before removing and replacing NVMe storage drives.

For more information, refer to *Servicing Components* in *Oracle Server X7-8 Service Manual*.

Windows Server Hot-Plug Requires Registry Changes

Bug ID: 26053145

Issue: The workaround is required for hot-plug to work with Windows Server 2012 R2 and Windows Server 2016. Even with the workaround, NVMe hot-plug is not supported, as explained in the previous Product Note, *NVMe Hot Plug Is Not Supported*.

Affected Software: Microsoft Windows Server 2012 R2 and Microsoft Windows Server 2016

Workaround: To add the Parameter key to the pci service in the Windows registry, and enter a mask value for each root port associated with the NVMe devices, do the following:

1. Import the .reg file.
2. From the Windows Desktop, press the **Windows key+R** or select **Start → Run**.
3. Type `regedit`.
4. Navigate to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\pci`.
5. Right-click `pci` and select **New → Key**.
6. To name the Key, type: `Parameters`.
7. Right-click `Parameters` and select **New → Binary Value**.
8. For each new binary value, type the following names and values:

Binary Value	Name	Value
1st	80862030	00 00 00 10 00 00 00 00
2nd	80862031	00 00 00 10 00 00 00 00
3rd	80862032	00 00 00 10 00 00 00 00
4th	80862033	00 00 00 10 00 00 00 00

9. Exit the Windows Registry Editor to save the entries.
10. Reboot the system.

8

VMware ESXi Issues

This section lists important operating notes and known VMware ESXi issues for Oracle Server X7-8.

- [VMware ESXi 6.5 U1 Does Not Include the Driver for the Oracle Dual Port 25 Gb Ethernet Adapter](#)

VMware ESXi 6.5 U1 Does Not Include the Driver for the Oracle Dual Port 25 Gb Ethernet Adapter

Important Operating Note

VMware ESXi 6.5 U1 does not include the driver for the Oracle Dual Port 25 Gb Ethernet Adapter. To use this adapter with Oracle Server X7-8, download the driver from the VMware Drivers and Tools web site at: https://my.vmware.com/web/vmware/info/slug/datacenter_cloud_infrastructure/vmware_vsphere/6_5#drivers_tools . Select Driver CDs and download the VMware ESXi 6.5 bnxtnet 20.6.302.0 NIC Driver CD for Broadcom NetXtreme-C/E BCM573xx/BCM574xx driver.

9

Software and Critical Patch Updates

This section includes important operating information and requirements for Oracle Server X7-8.

- [Update Your System to the Latest Software Release](#)
- [Server Security, Software Releases, and Critical Patch Updates](#)
- [Important – Install Latest OS Updates, Patches, and Firmware](#)

Update Your System to the Latest Software Release

It is highly recommended that you update your system to the latest Software Release before you use the system. Software Releases often include bug fixes, and updating your system ensures that your server software is compatible with the latest server firmware and other component firmware and software.

You can download the latest Software Release, which includes firmware and software updates, from My Oracle Support at <https://support.oracle.com> . For information about downloading firmware and software from My Oracle Support, see [Getting Firmware and Software Updates](#).

Server Security, Software Releases, and Critical Patch Updates

Oracle notifies customers about security vulnerability fixes for all its products four times a year through the Critical Patch Update (CPU) program. Customers should review the CPU advisories to ensure that the latest Software Release updates are applied to their Oracle products. Note that updates for Engineered Systems will be specifically published for a specific Engineered Systems product (that is, you need not look at specific updates for individual software components included in your Engineered System). For more information about the Oracle CPU program, go to <https://www.oracle.com/security-alerts/> .

To download a Software Release, go to My Oracle Support at <https://support.oracle.com> .

To ensure continued security of your system, Oracle strongly recommends that you apply the latest Software Releases. Server Software Releases include Oracle ILOM, BIOS, and other firmware updates, often referred to as “patches.” Oracle publishes these patches regularly on the My Oracle Support site. Applying these patches will help ensure optimal system performance, security, and stability. You can identify the latest Software Release for your system at <https://www.oracle.com/servers/technologies/firmware/release-history-jsp.html> .

Oracle also recommends that you update to the latest operating system release when it becomes available. Although a minimum operating system release is supported, updating to the latest OS release will ensure that you have the most up-to-date software and security patches. To confirm that you have the latest OS release, refer to the Oracle Hardware Compatibility Lists or third-party operating system certification information. See [Supported Operating Systems](#).

For details about how to download the latest system software update, see [Getting Firmware and Software Updates](#).

Important – Install Latest OS Updates, Patches, and Firmware

Some product features are enabled only when the latest versions of operating system, patches, and firmware are installed. To retain optimal system performance, security, and stability, you must install the latest available operating systems, patches, and firmware.

To verify that the Oracle ILOM firmware version is a minimum 5.0.1.24 or newer:

1. Use Oracle ILOM to verify the system firmware version.
 - From the web interface, click System Information → Summary, then view the property information for the System Firmware Version in the General Information table.
 - From the command-line interface, at the command prompt (->), type: `show / System/Firmware`

For more details, refer to information about viewing system information and inventory in your server Administration Guide, which is available at <https://www.oracle.com/goto/x86adminddiag/docs>.

2. Ensure that the firmware version is at the minimum required version, noted above, or a subsequent release, if available.
3. If the required firmware version (or newer) is not installed:
 - a. Download the latest Software Release from My Oracle Support at <https://support.oracle.com>.
For more information, see [Getting Firmware and Software Updates](#).
 - b. Install the downloaded firmware.
See [Update System Firmware Using Oracle ILOM](#).

Refer to the information about performing firmware updates in the *Oracle ILOM Administrators Guide for Configuration and Maintenance*, which is available at <https://www.oracle.com/goto/ilom/docs>. Ensure that you perform the preparatory steps described in that document before updating the firmware.

Note:

Occasionally after installing the firmware, the Oracle ILOM web interface cannot display the power state correctly on the power control page. To correct this problem, clear your browser cache before logging in to the Oracle ILOM web interface.

10

Getting Firmware and Software Updates

This section explains the options for accessing server firmware and software updates using My Oracle Support.

Customers are required to install the latest available operating system (OS), patches, and firmware versions for optimal system performance, security, and stability.

- [Firmware and Software Updates](#)
- [Firmware and Software Update Options](#)
- [Software Releases](#)
- [Getting Updates From My Oracle Support](#)
- [Download Firmware and Software Updates From My Oracle Support](#)
- [Update System Firmware Using Oracle ILOM](#)
- [Installing System Firmware Using Other Methods](#)
- [Downloading an OS or Software Applications](#)
- [Oracle Support](#)

Firmware and Software Updates

Firmware and software for your server are updated periodically. These updates are made available as software releases. The software releases are a set of downloadable files (patches) that include all available firmware, software, hardware drivers, tools, and utilities for the server. All of these files have been tested together and verified to work with your server.

You must update your server firmware and software as soon as possible after a new software release becomes available. Software releases often include bug fixes, and updating your server ensures that your server has the latest firmware and software. These updates will increase your system performance, security, and stability.

To determine which firmware version is installed on your server, you can use either the Oracle ILOM web interface or the command-line interface (CLI).

- From the web interface, click System Information → Summary, then view the property value for System Firmware Version in the General Information table.
- From the CLI, at the command prompt, type: `show /System/Firmware`

The server Product Notes list the current server software release and firmware version that are available.

Firmware and Software Update Options

Use one of the following options to update your server to the latest firmware and software:

- **My Oracle Support** – All system software releases are available from the My Oracle Support web site at <https://support.oracle.com> .

For information about what is available from the My Oracle Support web site, see [Software Releases](#).

- **Other Methods** – You can use Oracle Enterprise Manager Ops Center, Oracle Hardware Management Pack, or Oracle ILOM to update your server software and firmware.

For information, see [Installing System Firmware Using Other Methods](#).

Software Releases

Software releases on My Oracle Support are grouped by product family (such as Oracle Server), then the product (the specific server), and finally the software release version. A software release contains all the updated software and firmware for your server as a set of downloadable files (patches), including firmware, drivers, tools, or utilities, all tested together to be compatible with your server.

Each patch is within a zip file that contains set of firmware and software subdirectories and files, along with a ReadMe file. The ReadMe file provides information about the patch, such as what has changed since the prior software release and the bugs that have been fixed in the current release.

My Oracle Support provides the set of software releases for your server as described in the following table. You can obtain these software releases by downloading the files from My Oracle Support.

Package Name	Description	When to Download This Package
X7-8 SW <i>release</i> – Firmware Pack	Contains all system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
X7-8 SW <i>release</i> – OS Pack	Includes a package of all tools, drivers, and utilities for a specific OS. An OS Pack is available for each supported operating system version. Software includes Oracle Hardware Management Pack, LSI MegaRAID software, and any other optional software that Oracle recommends. For the Windows OS, the OS Pack also includes Intel Network Teaming and Install Pack.	You need to update OS-specific tools, drivers, or utilities.
X7-8 SW <i>release</i> – All Packs	Includes the Firmware Pack and all OS Packs. This pack does not include the Oracle VTS image.	You need to update a combination of system firmware and OS-specific software.
X7-8 SW <i>release</i> – Diagnostics	Includes Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.

Getting Updates From My Oracle Support

You can obtain updated firmware and software from the My Oracle Support web site at <https://support.oracle.com> . For instructions, see [Download Firmware and Software Updates From My Oracle Support](#).

Download Firmware and Software Updates From My Oracle Support

1. Go to the My Oracle Support web site: <https://support.oracle.com>.
2. Sign in to My Oracle Support.
3. At the top of the page, click the Patches & Updates tab.
The Patch Search pane appears at the right of the screen.
4. Within the Search tab area, click Product or Family (Advanced).
The Search tab area appears with search fields.
5. In the Product field, select the product from the drop-down list.
Alternatively, type a full or partial product name (for example, Oracle Server X7-8) until a match appears.
6. In the Release field, select a software release from the drop-down list.
Expand the list to see all available software releases.
7. Click Search.
The Patch Advanced Search Results screen appears, listing the patches for the software release.
See [Software Releases](#) for a description of the available software releases.
8. To select a patch for a software release, click the patch number next to the software release version.
You can use the Shift key to select more than one patch.
A pop-up action panel appears. The panel contains several action options, including the ReadMe, Download, and Add to Plan options. For information about the Add to Plan option, click the associated button and select "Why use a plan?".
9. To review the ReadMe file for this patch, click ReadMe.
10. To download the patch for the software release, click Download.
11. In the File Download dialog box, click the patch zip file name.
The patch for the software release downloads. The download is an archive zip file, which you must extract to find the directory containing the image.pkg file

Update System Firmware Using Oracle ILOM

- Determine the Oracle ILOM firmware version currently installed on the system. At the Oracle ILOM prompt, type: `show /System/Firmware`

- Download the Firmware Pack (Patch) update from My Oracle Support.

 **Note:**

This procedure uses the Oracle ILOM command-line interface to update the system firmware. You can also update system firmware using the Oracle ILOM web interface. For web interface instructions, refer to the Oracle ILOM documentation at <https://www.oracle.com/goto/ilom/docs>.

To update system firmware, follow these steps:

You can update Oracle ILOM system firmware while the host is powered on. The Oracle ILOM firmware image includes firmware for the service processor (SP, Oracle ILOM) and the server's host components (FPGAs). The Oracle ILOM firmware update goes into immediate effect. However, the update of host components is deferred until the affected host is power cycled. Because Oracle ILOM can be updated while the host is powered on, this feature reduces the total system downtime.

1. Notify Oracle ILOM SP users of the scheduled firmware update and ask them to close all client sessions until after the firmware update is complete. Do not perform any other Oracle ILOM tasks during the firmware update.
2. Navigate to the directory where you saved the FIRMWARE PACK (Patch) archive zip file.
3. Extract the FIRMWARE PACK files from the archive zip file.

When you extract the files, the *<image.pkg>* file is in the `Firmware/service-processor` directory.

For example:

```
% unzip p26981570_102_Generic.zip
Archive: 26981570_102_Generic.zip
creating Oracle_Server_X7-2-1.0.2.87665-FIRMWARE_PACK/Firmware/service-processor/
inflating: Oracle_Server_X7-2-1.0.2.87665-FIRMWARE_PACK/Firmware/service-processor/
ILOM-4_0_0_28_r121827-ORACLE_SERVER_X7-2-rom.pkg
```

4. Review the README file that accompanies the firmware image to be aware of any special release notes or instructions.
5. Update the firmware using the Oracle ILOM command-line interface:
 - a. Log in to Oracle ILOM with an account with Admin privileges.
 - b. Load the firmware image from the stored location using the `load -source` command followed by the directory path to the firmware image you want to install. Type:

```
-> load -source protocol://server_IPaddress/<path_to_image>/<image.pkg>
```

Where *protocol* can be: `http`, `https`, `ftp`, `tftp`, `sftp`, `scp`

For example, if you are accessing the server through a tftp server with an IP address of 198.51.100.123 in a directory called `ilom/jdoe` and with the *<image.pkg>* named `firmware.pkg`, enter the following command:

```
-> load -source tftp://198.51.100.123/tftpboot/ilom/jdoe/  
firmware.pkg
```

The following information is displayed:

An upgrade takes several minutes to complete. Oracle ILOM will enter a special mode to load new firmware. No other tasks can be performed in Oracle ILOM until the firmware upgrade is complete and Oracle ILOM is reset.

You can choose to postpone the server BIOS upgrade until the next server power off. If you do not do that, you should perform a clean shutdown of the server before continuing.

c. Answer the following prompts:

```
Are you sure you want to load the specified file? y
```

```
Preserve existing SP configuration (y/n)? y
```

This prompt preserves your existing Oracle ILOM settings after the firmware update is complete.

```
Preserve existing BIOS configuration (y/n)? y
```

This prompt preserves your existing BIOS configuration settings after the firmware upgrade is complete.

```
Delay BIOS upgrade until the next poweroff or reset (y/n)? y
```

Answer "Y" (yes) to the Delay BIOS Upgrade question and, if the host is ON and there are host components to be updated, the host remains powered on and the host component updates are deferred until the next time the host powers off and powers on (next reset/reboot).

Answer "N" (no) to the Delay BIOS Upgrade question and, if the host is ON and there are host components to be updated, the host is forced OFF so that host component updates can be applied immediately. After Oracle ILOM reboots, the host is powered on automatically if it was forced off.

 **Note:**

If the server has a pending BIOS upgrade, the power reset could take longer to complete. This is expected behavior, as it is necessary to power cycle the server to upgrade the BIOS firmware. If the upgrade includes an FPGA update, the process can take as long as 26 minutes to complete.

d. Wait for the Oracle ILOM status message to confirm that the process is complete.

6. To verify that the updated firmware is installed, at the Oracle ILOM prompt, type:

```
-> show /System/Firmware
```

Installing System Firmware Using Other Methods

In addition to using Oracle ILOM, you can install firmware and software updates using one of the following methods:

- **Oracle Enterprise Manager Ops Center** – Use Oracle Enterprise Manager Ops Center to automatically download the latest firmware from Oracle and then install the firmware

onto one or more servers. Firmware updates can also be loaded manually into the Enterprise Controller.

For information, refer to the product information page at: <https://www.oracle.com/enterprise-manager/technologies/> . For documentation, refer to the Oracle Enterprise Manager Cloud Control Documentation Library at: <https://docs.oracle.com/en/enterprise-manager/related-products.html>

- **Oracle Hardware Management Pack** – Use the `fwupdate` CLI Tool in the Oracle Hardware Management Pack software to update firmware in the system.

For information, refer to the product information page at: <https://www.oracle.com/servers/technologies/hardware-management-pack.html> . For documentation, refer to the Oracle Hardware Management Pack Documentation Library at: <https://www.oracle.com/goto/ohmp/docs>

- **Oracle Integrated Lights Out Management (ILOM)**. For information, refer to the product information page at: <https://www.oracle.com/servers/technologies/integrated-lights-out-manager.html> . For documentation, refer to the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: <https://www.oracle.com/goto/ilom/docs>

Downloading an OS or Software Applications

You can download an operating system (OS) or software applications for all licensed Oracle products from Oracle Software Delivery Cloud (formerly called Oracle eDelivery). Software is available in zip and ISO formats, which you can unzip or burn to DVDs, respectively. All of the download links on the Oracle Technology Network (OTN) point to the Software Delivery Cloud, making this site the authoritative source for all Oracle OS and application downloads. To access Oracle Software Delivery Cloud, go to <https://edelivery.oracle.com/osdc/faces/SoftwareDelivery> .

Oracle Support

If you need help getting firmware or software updates, or downloading a complete software application, you can call Oracle Support. Use the appropriate number from the Oracle Global Customer Support Contacts Directory at:

<https://www.oracle.com/support/contact.html>