

**Oracle® Dual Port 25/100 Gb Ethernet
Adapter Product Notes, Mellanox**

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OracleDual Port 25/100 Gb Ethernet Adapter Product Notes, Mellanox

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Using This Documentation

- **Overview** – Provides late-breaking information about the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter.
- **Audience** – System administrators, network administrators, and service technicians
- **Required knowledge** – Advanced understanding of server systems

In this document, the term “adapter” refers to the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter, the term “x86” refers to 64-bit and 32-bit systems manufactured using processors compatible with the AMD64, Intel Xeon, or Intel Pentium product families, the term SPARC refers to 64 bit systems such as T8-1, T8-2, T8-4 and M8-8 servers, and the term “Oracle Solaris” refers to latest software version (i.e. Oracle Solaris 11.4) supported on x86 and SPARC server systems.

Note - The Dual Port 25/100 Gb Mellanox Ethernet adapter cards are based on the Mellanox ConnectX®-5 integrated circuit devices.

Product Documentation Library

Documentation and resources for this product and related products are available at <https://docs.oracle.com/en/networking/ethernet/dual-port-25-100-ethernet-adapter/> .

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

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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 also provided, but are not an accessible format. 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 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. 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 Dual Port 25/100 Gb Mellanox Ethernet Adapter products at <https://docs.oracle.com/en/networking/ethernet/dual-port-25-100-ethernet-adapter/>.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers and partners we are working to remove insensitive terms from our products and documentation. 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 ongoing and will take time and external cooperation.

Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter Product Information

The content in this document applies to the following Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapters:

- Oracle Dual Port 25 Gb Mellanox Ethernet Adapter
- Oracle Dual Port 100 Gb Mellanox Ethernet Adapter

Note - Performance may be limited depending on the server configuration in which the 100 GbE Adapter Card is being used. Maximum performance of the 100 GbE Adapter Card can only be achieved on systems supporting PCIe 4.0 with 16 data lanes.

- Oracle Dual Port 100 Gb Ethernet Adapter, Mellanox for Mezzanine form factor (for factory installation) (X86 Support Only)

Note - The Dual Port 25/100 Gb Mellanox Ethernet Adapters are based on the Mellanox ConnectX®-5 integrated circuit devices.

For the most updated information about supported firmware and operating systems, important operating notes, and known issues, refer to the latest Product Notes document, which is available in the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter Documentation Library at <https://docs.oracle.com/en/networking/ethernet/dual-port-25-100-ethernet-adapter/>.

Servers and Operating Systems Supported

The Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter support the following servers and operating systems .

Note - For detailed information about using an adapter card with your server, see the Service Manual and Product Notes for your server, available at <https://docs.oracle.com/en/servers/index.html>.

Server Platforms Supported	Operating Systems Supported	Dual Port 25 Gb Max Card Quantity Supported Per Server	Dual Port 100 Gb Max Card Quantity Supported Per Server	Dual Port 100 Gb (Mezzanine Form Factor) Max Card Quantity Supported Server
<ul style="list-style-type: none"> ■ Oracle Server X9-2 ■ Oracle Server X9-2L ■ Oracle ZFS Storage Appliance ZS9-2 	<ul style="list-style-type: none"> ■ Oracle Linux 8 Update 3 with the Unbreakable Enterprise Kernel Release 6 (UEK 6) Update 2, UEK 5 Update 5 ■ Oracle Linux 7 Update 9 with UEK 6 Update 2, UEK 5 Update 5 ■ Windows Server 2019, 2016 ■ VMware ESXi 7 Update 2 ■ VMware ESXi 6.7 Update 3 ■ Oracle Solaris 11.4 SRU33 	2	2	1
<ul style="list-style-type: none"> ■ Oracle SPARC T8-1 Server ■ Oracle SPARC T8-2 Server ■ Oracle SPARC T8-4 Server ■ Oracle SPARC M8-8 Server 	<ul style="list-style-type: none"> ■ Oracle Solaris 11.4 SRU33 (minimum version required for Oracle Solaris operation) ■ Oracle Solaris 11.4 SRU36 (minimum version required to use Oracle Hardware Management Pack (HMP) Firmware Update tool v2.4.8.0) 	Not Applicable	<ul style="list-style-type: none"> ■ (SPARC T8-1) 2 ■ (SPARC T8-2) 4 ■ (SPARC T8-4) 4 ■ (SPARC M8-8) 8 	Not Applicable

Other servers and processors might be added to this list in the future, if they qualify. Check your server Product Notes for confirmation that your server has subsequently been qualified for device support.

Note - Refer to your server Product Notes for up-to date information on supported servers, operating systems, and required patchsets.

Minimum Supported Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter Firmware Version

The Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter minimum supported firmware version is 16.29.1414.

To obtain the latest adapter firmware (FW bin file), go to:

- My Oracle Support web site at <https://support.oracle.com>.
- Firmware release download page: <http://www.oracle.com/technetwork/systems/patches/firmware/firmware-140779.html>.
- For information on updating drivers and firmware for the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter, refer to “Getting Firmware and Software Updates” on page 17.

Host Firmware Supported

The Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter supports the minimum required host firmware described in the following tables.

For the latest software releases, refer to the supported server Product Notes.

Server	Minimum Required Host Firmware Version
Oracle Server X9-2	Oracle Server X9-2 SW 1.1.0 - FIRMWARE PACK
Oracle Server X9-2L	Oracle Server X9-2L SW 1.1.0 - FIRMWARE PACK
Oracle Storage Appliance ZS9-2	Oracle Storage Appliance ZS9-2 SW 1.1.0 - FIRMWARE PACK
Oracle SPARC T8-1, T8-2, T8-4, and M8-8 Servers	Oracle SPARC T8 and M8 Series Servers: System Firmware 9.10.3.

Ethernet Transceivers and Cables Supported

The following table describes the Ethernet transceivers and cables supported by Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter.

Adapter Card	Switch Port	Transceiver	Cable Requirement
25 GbE	1 Gbps, 10 Gbps, 25 Gbps	N/A	■ SFP28 Twinax passive copper cable.

Ethernet Transceivers and Cables Supported

Adapter Card	Switch Port	Transceiver	Cable Requirement
			Cable Lengths: 1, 2, 3, and 5 meters.
	10 Gbps	SFP+SR	<ul style="list-style-type: none"> ■ Duplex LC Terminated Multi-mode Fiber OM3. Cable Length: 70 meters maximum
	10 Gbps	SFP+ LR	Duplex LC Terminated Single-mode Fiber OS1. Cable Length: 10 kilometers maximum
	25 Gbps	SFP28 SR	<ul style="list-style-type: none"> ■ Duplex LC Terminated Multi-mode Fiber OM3. ■ Duplex LC Terminated Multi mode Fiber OM 4 Cable Length: 70 meters maximum Cable Length: 100 meter
	25 Gbps	SFP28 LR	Duplex LC Terminated Single-mode Fiber OS1. Cable Length: 10 kilometers maximum
	10 Gbps, 25 Gbps	Dual Rate SFP28 SR	<ul style="list-style-type: none"> ■ Duplex LC Terminated Multi-mode Fiber OM3. ■ Duplex LC Terminated Multi-mode Fiber OM4. Cable Length: 70 meters maximum Cable Length: 100 meter maximum
100 GbE	10 Gbps, 25 Gbps, 40 Gbps, 100 Gbps	N/A	DAC Copper Cable assembly. Cable Lengths: 3 meters or 5 meters
	100 Gbs	QSFP28 SR	Fiber Optical cable assembly: MT ferrule terminated, 12-fiber, multimode, MPO. Cable Lengths: 10, 20, 50, or 100 meters

Known Issues

This section describes the known issues associated with the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter.

Known Issues

This section contains the known issues for the Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter.

X9-2/2-L: Long Delay (105 seconds) When Ethernet Bonding Mode Set to Round Robin

Bug ID: 32568476

Issue: Traffic paused for 105 seconds when Ethernet bonding mode is set to round-robin.

Affected Hardware: Oracle x9-2/2-L Servers with Dual Port 25 GB Mellanox Ethernet Adapter

Affected OS: Oracle Linux 7

Affected Ethernet Adapter Firmware: 16.29.1414

Workaround: There is no workaround available in firmware release 16.29.1414. Check for updates (workaround or fix) in the subsequent firmware releases.

SPARC T8-4: IO Domain Hangs Reboot Test

Bug ID: 33055855

Issue: Concurrently rebooting of guest domains with VF configured hangs after 30+ loops.
Console Warning: mlxng0: VF pciv_send() failed with status -5

Affected Hardware: SPARC T8-4 with Oracle Dual Port 100 GB Mellanox Ethernet Adapter

Affected Ethernet Adapter Firmware: 16.29.1414

Affected OS: Oracle Solaris 11.4

Workaround: Failure to boot is rare, however, if an IO domain fails to boot, the workaround is to type the following commands: "`ldm stop -f [IOdomain] ldm start [IOdomain]`"

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 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” on page 18.
- **Other Methods** – You can use Oracle System Assistant (OSA) or Oracle Hardware Management Pack to update your server software and firmware.
For information, see “Updating Firmware” on page 20.

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 Read Me file. The Read Me 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
Firmware Pack	Contains all system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
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 Mega Raid 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.

Package Name	Description	When to Download This Package
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.
Diagnostics	Includes Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.

Getting Updates From My Oracle Support

To download updates from My Oracle Support, see the following procedure for instructions.

▼ 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. **In 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 Dual Port 25/100 Gb Mellanox Ethernet Adapter) 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” on page 18](#) 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 Read Me, 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 Read Me file for this patch, click Read Me.**
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.

Updating Firmware

Use the firmware update tool to update the firmware. You can get the tool in these ways for the Oracle Solaris x86, Linux, and Windows environment:

- **Oracle System Assistant (OSA)** – A built-in tool on x86 servers or a USB thumb drive shipped with the server, which contains the firmware update tool. For firmware update instructions, refer to the text files in OSA.
- **Oracle Hardware Management Pack** – You can use the fwupdate CLI Tool within the Oracle Hardware Management Pack software to update firmware within the system. For information, refer to the Oracle Hardware Management Pack Documentation Library at: <https://docs.oracle.com/en/servers/management.html>

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 e Delivery). 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/>.

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>

Software and Critical Patch Updates

This section includes important operating information and requirements for Oracle Dual Port 25/100 Gb Mellanox Ethernet Adapter.

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 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” on page 17.

Server Security, Software Releases, and Critical Patch Updates

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 <http://www.oracle.com/technetwork/systems/patches/firmware/release-history-jsp-138416.html>.

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

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 <http://www.oracle.com/technetwork/topics/security/alerts-086861.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 “[Servers and Operating Systems Supported](#)” on page 11.

For details about how to download the latest system software update, see “[Getting Firmware and Software Updates](#)” on page 17.

▼ Important – Install Latest OS Updates, Patches, and Firmware

A System Software Release is associated with Oracle ILOM firmware version, and with the latest operating system support updates and patches. Newer Oracle ILOM firmware versions have a higher number or a letter added. For example, a current Oracle ILOM firmware version number might be 4.0.2.24, and a future Oracle ILOM firmware version number might be 4.0.2.24a.

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 system, patches, and firmware.

To verify that the server is running the minimum supported Oracle ILOM firmware version or newer. Refer to the server Product Notes for the minimum supported firmware version.

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/x86admindiag/docs>.

2. **Ensure that the firmware version is at the minimum required version.**
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” on page 17.

- b. **Install the downloaded firmware.**

See “Updating Firmware” on page 20.

Refer to the information about performing firmware updates in the *Oracle ILOM Administrators Guide for Configuration and Maintenance Firmware Release 5.0.x*, which is available at <https://docs.oracle.com/en/servers/management.html>. 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.
