

Oracle Dual Port 25 Gb Ethernet Adapter

ORACLE® NETWORKING



KEY FEATURES

- Two SFP28 ports, supporting 25 Gb, 10 Gb, and 1 Gb Ethernet
- Server virtualization resources for up to 128 virtual machines
- Support for the overlay networks
- RoCE-enabled

KEY BENEFITS

- Delivers 2.5x the bandwidth over previous-generation adapters
- Improves efficiency and lowers costs by placing more virtual machines on each server
- Virtualizes the data center Ethernet network infrastructure, enabling virtual machines to be provisioned with virtual networks
- Accelerates clustered and scale-out enterprise applications

Oracle Dual Port 25 Gb Ethernet Adapter brings the essential features for deploying network infrastructure in next-generation clouds to Oracle servers and storage systems. The adapter converges network and storage traffic, dramatically expands resources for server virtualization, supports network overlays for virtualization of data center L2 network infrastructure, and enables Remote Direct Memory Access (RDMA) for acceleration of clustered applications.

Overview

High-performance enterprise clouds place unique requirements on network infrastructure. To efficiently utilize the cloud's physical resources, infrastructure must support the network and storage needs of high-density, virtualized servers and also be capable of virtualizing L2 network infrastructure to enable virtual servers to be interconnected with secure virtual networks. To address these demands, leading cloud deployments are embracing 25 Gb Ethernet, scaling virtualization capabilities, and leveraging overlay network technologies.

Oracle Dual Port 25 Gb Ethernet Adapter is an ideal server interface for next-generation cloud-enabled data centers. The adapter brings the resources necessary to unleash the full power of multicore, high-performance servers and storage systems. Key features and benefits include

- **25 Gb Ethernet ports:** 2.5x the I/O bandwidth to enable support for more virtual machines (VMs) per server
- **128 PCIe virtual functions:** 4x the virtual I/O resources for VMs
- **Overlay network support:** Virtualizes the physical network infrastructure allowing VMs to connect to different networks through software defined networking
- **RDMA over Converged Ethernet (RoCE):** Accelerates applications and improves server and storage efficiency

Oracle Dual Port 25 Gb Ethernet Adapter dramatically reduces CPU and system resource utilization and consolidates software-defined I/O services for servers and storage systems, providing the most-efficient, flexible, and high-performance server interface for cloud deployments.

KEY FUNCTIONALITY AND TECHNICAL SPECIFICATIONS

Ethernet

Features

- 25 Gb/10 Gb/1 Gb Ethernet
- IEEE 802.3ad, Link Aggregation
- IEEE 802.1q, VLAN tags
- IEEE 802.3x flow control support
- IEEE 802.1p
- Jumbo frame support (9.6 KB)
- DCB support: PFC, ETS, QCN, DCBx

Advanced Features

- RDMA over Converged Ethernet (RoCE) v1 and v2
- Low device latency

Offloads

- Checksum offloads for IP, TCP, and UDP
- Large segment offload (LSO)
- Receive side scaling (RSS)
- Transmit side scaling (TSS)
- Header/payload split
- TCP segmentation offload (TSO)
- Stateless offloads for overlay network tunneling protocols: VXLAN, NVGRE, GRE, and Geneve

Boot

- PXE and UEFI boot
- iSCSI boot over SAN

Virtualization

Network Virtualization

- VXLAN, NVGRE, GRE, and Geneve

Converged Networking

- LAN
- iSCSI

Server Virtualization

- SR-IOV
 - » 16 physical functions
 - » 128 virtual functions
- Virtual machine queue (VMQ) support
- vSwitch acceleration

PCI Express (PCIe)

PCIe Interface

- Standard low-profile PCIe form factor; bracket dimensions are PCI 3.0 CEM compliant: 6.665 in. x 3.154 in.
- PCIe base 3.0 compliant, 1.1 and 2.0 compatible
- 2.5 GT/sec, 5.0 GT/sec, or 8.0 GT/sec link rate x8 (up to 128 GT/sec bidirectional)

Features

- SR-IOV support with 16 physical functions and up to 128 virtual functions
- MSI-X support

Supported Operating Systems, Hypervisors, and Distributions

Operating Systems

- Oracle Linux
- Oracle Solaris
- Windows Server
- Red Hat Linux

Hypervisors

- Oracle VM Server
- VMware ESX
- Hyper-V

Oracle's Ethernet adapters are components of the Oracle server or storage system in which they are installed. See the list of supported option cards for the applicable server or storage system to determine the relevant operating system support for the system and adapter combination.

For the current list of supported systems, please review the systems I/O support matrices:

community.oracle.com/community/server_&_storage_systems/systems-io

Physical Interface

Two SFP28 ports supporting 25GBase-CR, 25GBase-SR, 25GBase-LR, 10GBase-CR, 10GBase-SR, and 10GBase-LR

Operating Environment

- Operating voltage: 12 V, 3.3 V
- Operating temperature: 0° C to 55° C
- Power consumption: 9.1 W (Typical)

Regulatory Compliance

Regulations^{1,2}

- Product safety: UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences, EN60825 for optical transceivers
- EMC
 - Emissions: FCC 47 CFR 15, ICES-003, EN55032, EN55022, EN61000-3-2, EN61000-3-3
 - Immunity: EN55024

Certifications²

- North America Safety (NRTL)
- European Union (EU)
- International CB Scheme

European Union Directives

- 2014/35/EU Low Voltage Directive
- 2014/30/EU EMC Directive
- 2011/65/EU RoHS Directive
- 2012/19/EU WEEE Directive

1. All standards and certifications referenced are to the latest official version. For additional detail, please contact your sales representative.

2. Other country regulations/certifications may apply.

- *VCCI (Japan)*





**Cables and
Transceivers****Supported Cables and Transceivers**

Oracle supplies Ethernet cables and transceivers that are supported with Oracle Dual Port 25 Gb Ethernet Adapter. For more information, see *Oracle Dual Port 25 Gb Ethernet Adapter Frequently Asked Questions*.

**CONTACT US**

For more information about Oracle Dual Port 25 Gb Ethernet Adapter, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

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