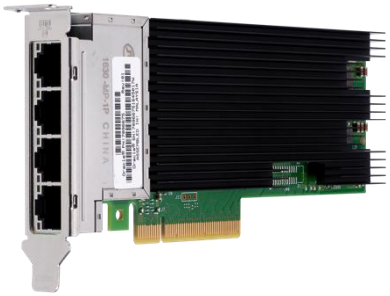
ORACLE DATA SHEET

Oracle Quad Port 10GBase-T Adapter

ORACLE NETWORKING

Oracle Quad Port 10GBase-T Adapter reduces the cost and complexity of deploying 10 Gb Ethernet infrastructure with Oracle servers and storage systems. In addition to supporting 10 Gb Ethernet over low-cost twisted-pair copper cabling, the adapter delivers network and server virtualization features, enhancing the efficiency and security of on-premises clouds and virtualized server deployments.



KEY FEATURES

- Support for 10GBase-T (IEEE 802.3an-2006)
- Latest network and server virtualization features
- Four 10 Gb ports on a single PCIe adapter

KEY BENEFITS

- Delivers 10 Gb/sec connectivity over ubiquitous, low-cost twisted-pair copper cabling
- Enables virtualization of the entire IT infrastructure, allowing data center infrastructure to be software-defined
- Connects servers to up to four physical networks

Overview

The transition of enterprise data center networks to 10 Gb Ethernet has been hampered by the cost and complexity in deploying 10 Gb infrastructure. To enable mass adoption of 10 Gb infrastructure, 10 Gb networking technology must allow enterprises to make the most of their existing architectural practices and their cable plant, which frequently employs twisted-pair copper cabling for server connectivity. Though the introduction of 10GBase-T began to commoditize 10 Gb/sec servers to access switch connectivity, the first generation of 10GBase-T NICs provided only two ports, requiring multiple adapters to be installed in servers to support the connectivity requirements of virtualized servers.

Oracle Quad Port 10GBase-T Adapter cuts the cost of deploying 10 Gb Ethernet infrastructure for Oracle servers and storage systems. The adapter supports 10 Gb Ethernet over twisted-pair copper cabling and provides four 10 Gb ports, decreasing the cost per port for deploying 10 Gb Ethernet by up to 70 percent compared to multimode fiber and up to 40 percent compared to previous generations of 10GBase-T adapters.

Oracle Quad Port 10GBase-T Adapter provides server virtualization, I/O convergence, and network virtualization capabilities ideal for deploying on-premises cloud and virtualization infrastructure. Key features include

- **Server virtualization:** Provides dedicated hardware resources for up to 128 Virtual Machines (VMs)
- **Network virtualization:** Provides support for network overlays, including VXLAN, NVGRE, and Geneve, which enables the data center's network infrastructure to be virtualized
- **I/O convergence:** Through lossless iSCSI, enables both network and storage connectivity to be provisioned with a single adapter

By combining the physical and virtual networking features required by high-density virtualized servers into a single adapter, Oracle Quad Port 10GBase-T Adapter enables customers to improve the economics and efficiency of on-premises cloud deployments.

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KEY FUNCTIONALITY AND TECHNICAL SPECIFICATIONS

Ethernet

Features
- *10 Gb/1 Gb/100 Mb Ethernet; auto-negotiating*
- *IEEE 802.3ad, Link Aggregation*
- *IEEE 802.1Q, VLAN tags*
- *IEEE 802.3 2005 flow control support*
- *IEEE 802.1p*
- *Jumbo frame support (9.6 KB)*

Advanced Features
- *Advanced packet filtering*
  - » *1,536 exact matched packets (unicast or multicast)*
  - » *512 hash entries each for unicast and multicast*
  - » *Optional filtering of invalid frames*

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

Boot
- *PXE Boot*
- *iSCSI boot over SAN*

Virtualization

Network Virtualization
- *VXLAN, NVGRE, and Geneve*

Converged Networking
- *LAN*
- *iSCSI*

Server Virtualization
- *SR-IOV*
  - » *16 physical functions*
  - » *128 virtual functions (32 per physical port)*
- *VM load balancing*
- *VMDq: Up to 256 maximum VMDq VMs supported*
- *Virtual bridging (VB) support:*
  - » *VEPA: IEEE 802.1Qbg support for virtual Ethernet port aggregator*
  - » *Virtual Ethernet Bridge (VEB)*

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 (32 per port)*
- *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

- *Four RJ45 copper ports*
- *Cable distances, 10GBASE-T*
  - » *100 m using CAT6a*
  - » *55 m using CAT6*

Operating Environment

- *Operating voltage: 12 V, 3.3 V*
- *Operating temperature: 0º C to 55º C*
- *Power consumption: 24.7 W (Typical, All ports operating at 10 Gb)*

Regulatory Compliance

Regulations[1, 2]

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

Certifications[2]

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

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.

CONTACT US

For more information about [insert product name], visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.