Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter

The Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter is one NIC that can be configured to either 10 GbE or 40 GbE.

KEY FEATURES

- Dual 40 Gb/sec ports, low-profile network interface card(NIC).
- Dynamic port configuration to 40 Gb/sec using software utility tool.
- Industry-standard PCIe 3.0 compliant delivering upto 80 Gb/sec bandwidth.
- Network virtualization features such as SRIOV, virtual bridging and up to 128 virtual functions.
- Support for LAN, iSCS, and jumbo frames.

KEY BENEFITS

- Delivers 10/40 Gb/sec connectivity to latest 10/40 Gb/sec Ethernet switches.
- Virtualization and network overlay features for cloud-enabled software-defined data centers.
- Converges network storage and application traffic with LAN and SAN.
- Reduces CapEx and OpEx by eliminating I/O bottlenecks and by simplifying network topology.

Oracle Quad 10 Gb or Oracle Dual 40 Gb Ethernet Adapter is the latest high-bandwidth, low power network interface card based on the Intel® Ethernet Controller XL710. This dual-port QSFP+ 3.0 x8 low profile adapter is designed to provide multi-port network connectivity in data centers. Today's cloud enabled software defined data centers require higher networking speeds,and higher performance for mission critical applications. Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter addresses these needs with two QSFP+ interfaces that provide up to 80 Gb/sec bandwidth.

Overview

Today's cloud-enabled data centers with multi-core compute nodes, high performance storage appliances, software defined networking, and virtualization technologies are driving the need for high bandwidth, scalable network interface adapters. Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter with two 40 Gb/sec ports, virtualization, cloud features, and LAN/SAN convergence is ideal for server and storage connectivity in data centers and enterprises. The next-generation Ethernet adapter ports are set to a factory default of four 10 Gb/sec with only the top 40 Gb port enabled. The adapter comes with an ability to dynamically change the ports to two 40 Gb/sec using a software utility. The dynamic configuration of the port modes is a game changer for infrastructure-as-a-service(IaaS) cloud providers that want to take advantage of their existing 10 GbE infrastructure.

Advanced Features

- Advanced single root I/O virtualization(SRIOV) capabilities with up to 16 physical functions (PFs) and up to 128 virtual functions (VFs)
- Support for network overlay using Network Virtualization using Generic Routing Encapsulation(NVGRE) or Virtual Extensible LAN(VXLAN)
- Sophisticated packet header parsing with up to 64 different packet types
- Simplified network convergence by consolidating LAN and SAN (iSCSI)

Interfaces

- Two QSFP+ connector ports housed on top and bottom cage: top QSFP+ port can be configured as a single 40 GbE port using straight QSFP+ cables or as 4x10 GbE ports using a splitter cable
- PCIe 3.0 with X8, x4, and x1 lanes

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Performance

- Bandwidth performance 80 Gb/sec when in 2x40 GbE mode
- Jumbo frames (up to 9,014 bytes) support

FEATURES

Feature	Protocols
Ethernet	IEEE 802.1Q VLAN
	IEEE 802.3ad link aggregation
	IEEE 802.1p and 802.1D
	Enhanced transmission selection (ETS), priority-based flow control (PFC) and data center bridging (DCB)
	IEEE P802.1AE/D5.1 media access control (MAC) security
Converged network	Local area network (LAN)
	iSCSI
Controller support	Energy efficient Ethernet (reduces power at idle)
	CI latency tolerance reporting(LTR) and DMA coalescing
	Pv6 offloads: check sum, LSO
Virtualization	Virtual machine(VM) device queues (VMDq and VEMDq1-64)
	SR-IOV with 64 virtual functions per port
	Advanced packet filtering
	L2 Ethernet MAC address filters (unicast and multicast)
	Packet mirroring and loopback
I/O Features	TX and RX buffers, and RX/TX queues each port
	Rate limit VM transmit traffic per transmit queue
	Low latency – TSO interleaving and TCP receive side coalescing(RSC)
	TX/RX, IP, SCTP, TCP, UDP checksum offloading, and IPSec offloading
	NIC teaming

Hardware systems/Platforms Supported

- Netra Servers :
  - Oracle's Netra Server X5-2,
- SPARC Servers :
  - Oracle's SPARC M7-8 server, Oracle's SPARC M7-16 server, Oracle's SPARC T7-1 server, Oracle's SPARC T7-2 server, Oracle's SPARC T7-4 server.
- X86 Servers :
  - Oracle Server X6-2. Oracle Server X6-2L, Oracle Server X5-4, Oracle Server X5-8

- Additional servers will be added when they are supported.

Operating Systems

- Oracle Linux 6.7
- Oracle Solaris 11.3 SRU6
- Red Hat Enterprise Linux (RHEL) 6.4 and 6.5
- SUSE Linux Enterprise Server (SLES) 11 SP3
- Windows 2008 R2 SP1 and Windows Server 2012, 2012R2
- FreeBSD 9
- UEFI 2.1, 2.3

Hypervisors

- Oracle VM 3.3,4
- VMWare ESXi 5.5
- Microsoft's Hyper-V

Management Interface

- System management bus (SMBus) and network controller sideband interface (NC-SI) pass through
- RMON statistic counters and SNMP
- PXE and iSCSI and iSCSI remote boot or Oracle's F-Code
- Offline cable diagnostics

Power, Dimensions, and Weight

- Typical power consumption: 3.6-4.9 watts
- Form factor: low profile
- Physical dimensions: 2.703 in. x 6.578 in.

Operating Environment

- Voltage: AC input 100-120/200-240 V; 9.0A max; 50/60 Hz. DC input -48 V to -60 V, 19 A max
- Operating temperature* 0º C to 55º C (32º F to 131ºF)
- Operating humidity 10% to 90% RH, non condensing, 27º C maximum wet bulb
- Operating altitude up to 45º C (º F) /1829 m, 35º C (º F) /1219 m,
- Non-operating: 12,000m
- Storage temperature -40º C to 70º C (-40º F to 158º F).
- Storage humidity maximum: 90% non-condensing relative humidity at 35 º C

*Temperature listed for the system in which the card is installed in. The actual internal ambient inside the system local to the card might be higher.

Marketing Part Numbers

1. **7114148**   Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter (for factory installation)

2. **7114134** Oracle Quad 10 Gb Ethernet Adapter or Oracle Dual 40 Gb Ethernet Adapter (X-option)

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Cabling Options

Cables supported with this Adapter :

QSFP to QSFP : Direct-Attach Passive Copper Cable Options (QSFP transceivers not required)	
Part Number	**Description**
X2121A-1M-N	QSFP to QSFP passive copper cable, 1 meters
X2121A-3M-N	QSFP to QSFP passive copper cable, 3 meters
X2121A-5M-N	QSFP to QSFP passive copper cable, 5 meters

QSFP to 4 SFP+ Splitter Cable Options	
Part Number	**Description**
X2125A-1M-N	Copper splitter cable assembly: 1 meter, QSFP+ to 4 SFP+
X2125A-3M-N	Copper splitter cable assembly: 3 meters, QSFP+ to 4 SFP+
X2125A-5M-N	Copper splitter cable assembly: 5 meters, QSFP+ to 4 SFP+

Optical Cables (Tranceivers) MPO to MPO Optical	
Part Number	**Description**
7105199	High Bandwidth QSFP optical cable : 5 meters, MPO to MPO
7102869	High Bandwidth QSFP optical cable : 10 meters, MPO to MPO
7102870	High Bandwidth QSFP optical cable : 20 meters, MPO to MPO
7102871	High Bandwidth QSFP optical cable : 50 meters, MPO to MPO
7105206	High Bandwidth QSFP optical cable : 100 meters, MPO to MPO

Optical Cables (Requires Tranceivers) MPO to 4 LC Splitter & MPO/MTP to (2) LC Splitter	
Part Number	**Description**
X2127A-10M	MPO to 4LC Optical Splitter Cable : 10 meters, multimode
X2127A-20M	MPO to 4LC Optical Splitter Cable : 20 meters, multimode
X2127A-50M	MPO to 4LC Optical Splitter Cable : 50 meters, multimode
7114369	Optical Splitter Cable MPO/MTP to 2 LC on ports 3 and 4 OM3 : 10 meters
7114370	Optical Splitter Cable MPO/MTP to 2 LC on ports 3 and 4 OM3 : 20 meters
7114371	Optical Splitter Cable MPO/MTP to 2 LC on ports 3 and 4 OM3 : 50 meters

Optical Transceiver Options

Requires Optical Cables QSFP:

Part Number	**Description**
X2124A-N	QSFP parallel fiber optic short wave transceiver
7114094	QSFP+ parallel fiber optic long wave transceiver