

# QLogic® 57810S Dual 10GBASE-T

Dual-Port 10GBASE-T PCIe Standup Converged Network Adapter for Dell PowerEdge Servers



- Delivers full line-rate 10GbE performance across both ports
- Consolidates network traffic and storage traffic over converged 10GbE connections
- Enables provisioning of 10GbE ports for greater deployment flexibility through Dell Switch Independent Partitioning
- Boosts host CPU efficiency with hardware offload for storage (FCoE and iSCSI) data traffic
- Streamlines administrative tasks with management application and integration into Dell's embedded management framework (iDRAC7 and Lifecycle Controller)
- Interoperable with 100Mbps, 1000Mbps, and 10Gbps

## OVERVIEW

QLogic® offers a dual-port 10GBASE-T Converged Network Adapter for Dell™ PowerEdge™ rack and tower servers. The 57810S leverages QLogic's long-standing industry leadership in Ethernet, providing the highest level of performance, efficiency, and scalability for the enterprise data center.

For more effective utilization of the 10GbE bandwidth, the QLogic 57810S-based Converged Network Adapter offers Dell Switch Independent Partitioning, which enables segmentation of each 10GbE port into four virtual ports, with flexible allocation of bandwidth to each port. The segmentation allows IT organizations to improve resource utilization while lowering infrastructure and operational costs.

Virtualization, cloud computing, High Performance Computing, convergence, and clustering initiatives are increasing workload demands. The QLogic 57810S-based Converged Network Adapter is the solution of choice for workload-intensive computing environments, providing a reliable, high-performance 10GbE connectivity solution.

## FEATURES

- Dual-port 10GbE connectivity for Dell PowerEdge rack and tower servers
- x8 PCI Express® (PCIe®) v2.0 (5 GT/s) support
- Full iSCSI hardware offload
- Full Fibre Channel over Ethernet (FCoE) hardware offload<sup>1</sup>
- Network boot support:
  - iSCSI remote boot
  - FCoE boot from SAN<sup>1</sup>
  - Pre-execution environment (PXE) 2.0
- MSI and MSI-X support
- IPv4 and IPv6 offloads
- PCI-SIG® single root input/output virtualization (SR-IOV) support
- Comprehensive stateless offloads
- RX/TX multiqueue

<sup>1</sup> To provide FCoE features, QLogic Converged Network Adapters with 10GBASE-T connectivity require MF7 7.10.11 or later and matching drivers for the operating system in which the adapters are installed.

**FEATURES** *(continued)*

- Receive side scaling (RSS)
- Transmit side scaling (TSS)
- Jumbo frame support for frames larger than 1,500 bytes
- Network teaming, failover, and load balancing:
  - Smart Load Balancing™ (SLB)
  - Link aggregation control protocol (LACP) and generic trunking
- Data center bridging (DCB)
- FCoE converged NIC<sup>1</sup> features provide support for:
  - FCoE initialization protocol (FIP) and FCoE Ethertypes
  - Fabric-provided MAC address (FPMA)
  - Boot from SAN
  - Large, concurrent port logins and exchanges (4,096 each)
  - Native OS storage failover and load balancing
  - N\_Port ID virtualization (NPV)

<sup>1</sup> To provide FCoE features, Converged Network Adapter cards with 10GBASE-T connectivity require MFW 7.10.11 or greater and matching drivers for the operating system in which the card will be installed.

**BENEFITS****Accelerates Server Performance**

- Boosts network performance with full line-rate 10GbE throughput across both ports
- Increases server performance with full hardware offload for storage traffic
- Maximizes server processing performance by reducing CPU overhead and lowering interrupt latency through the use of the MSI-X standard
- Boosts performance in Windows® and Linux® environments by directing interrupts to the server's CPU cores, leveraging TSS and RSS

**Includes Robust Virtualization Capabilities**

- Enhances server CPU scaling through full support of virtualization technologies such as VMware® NetQueue and Microsoft® virtual machine queue (VMQ)
- Enhances network management and efficiency with support for VLAN and VLAN tagging

**Streamlines Deployment and Management**

- Increases network flexibility, scalability, and capacity with Dell Switch Independent Partitioning, segmenting 10GbE ports and reallocating their bandwidth and resources to address application's performance requirements
- Simplifies deployment and management complexity—QLogic Ethernet solutions are available across a wide range of Dell server platforms
- Unifies the NIC and storage management using the integrated Dell Remote Access Controller (iDRAC) and Lifecycle Controller management framework or QLogic Control Suite (QCS)

**DISCLAIMER**

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## Host Bus Interface Specifications

### Bus Interface

- PCI Express Gen2 x8

### Host Interrupts

- MSI-X supports independent queues

### I/O Virtualization

- Single-root input/output virtualization (SR-IOV)
  - Maximum virtual functions per device: 128
- Dell Switch Independent Partitioning (NPAR)
- Network Virtualization using Generic Routing Encapsulation (NVGRE) packet task offloads
- Virtual Extensible LAN (VXLAN) packet task offloads

### Compliance

- PCI Express base specification 2.0
- PCI bus power management interface (rev 1.2)
- Advanced configuration and power interface (ACPI) v2.0
- SMBus 2.0

## Ethernet Specifications

### Throughput

- 10Gbps full-duplex line rate per port

### Ethernet Frame

- 1,500 bytes and larger (jumbo frame)

### Stateless Offload

- TCP segmentation offload (TSO)
- Large send offload (LSO)
- Large receive offload (LRO)
- Giant send offload (GSO)
- TCP and user datagram protocol (UDP) checksum offloads (CO)
- Hardware transparent packet aggregation (TPA)
- Receive segment coalescing (RSC)
- Interrupt coalescing
- RSS and TSS:
  - Maximum of 16 queues per physical function (PF) in single function (SF) and Dell Switch Independent Partitioning modes
- VMware NetQueue and Microsoft VMQ:
  - VMware NetQueues and Windows Server® 2008 R2 Hyper-V VMQs up to 16 queues per any PF in SF and Dell Switch Independent Partitioning modes can be set by the user.

- Windows Server 2012 R2 Hyper-V automatically allocates up to 61 dynamic VMQs per any PF in SF and Dell Switch Independent Partitioning modes. The current host-allocated number is displayed by the Microsoft Windows PowerShell® `Get-NetAdapterVmq` command in the `NumberOfReceiveQueues` field.

### Compliance

- IEEE 802.3an 10GBASE-T
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3u 100BASE-TX
- IEEE 802.3az Energy-Efficient Ethernet (EEE)
- IEEE 802.3ae 10Gb Ethernet
- IEEE 802.1q VLAN
- IEEE 802.3ad Link Aggregation (LACP)
- IEEE 802.3x Flow Control
- IPv4 (RFC 791)
- IPv6 (RFC 2460)
- IEEE 802.1Qbb Priority-based Flow Control (PFC)
- IEEE 802.1Qaz DCBX and Enhanced Transmission Selection (ETS)

## Tools and Utilities

### Management Tools and Device Utilities

- QLogic Control Suite (QCS)
- Embedded management framework (iDRAC and Lifecycle Controller)
- Native OS management tools for networking

### Boot Support

- iSCSI remote boot
- FCoE boot from SAN<sup>1</sup>
- PXE 2.0

## Operating System Support

### Linux

- Red Hat® Enterprise Linux (RHEL) 5.7, 6.1, 7.0, and later
- Novell® SUSE® Linux Enterprise Server (SLES) 10 SP3, 11 SP1, 12, and later

### Microsoft

- Windows Server 2008 and 2008 R2
- Windows Server 2012 and 2012 R2, all editions

### VMware

- vSphere™ 5.x (all updates)

### Citrix®

- XenServer® 6.0 and later

## Physical Specifications

### Ports

- Dual 10Gbps BASE-T Ethernet ports

### Form Factor

- PCI Express short, low-profile card; also available in full-height
- 6.60in × 2.71in (167.64mm × 68.91mm)

### Supported Servers

- 13th Generation: R630, R730, R730xd, and T630
- 12th Generation: R320, R420, R520, R620, R720, R720xd, R820, T420, and T620

### Connector

- RJ45

### Cable

- CAT6a/7 up to 100 meters
- CAT6 up to 40 meters

### Certifications

- RoHS, FCC A, UL, CE, VCCI, BSMI, C-Tick, KCC, TUV, and ICES-003

## Environmental and Equipment Specifications

### Temperature

- Operating: 32°F to 131°F (0°C to 55°C)
- Storage: -40°F to 149°F (-40°C to 65°C)

### Relative Humidity

- 5% to 95% noncondensing

## Ordering Information

### QLogic 57810S Dual 10GbE PCIe Standup 10GBASE-T Converged Network Adapter

- With server, order PG SKU#:
  - Full-height bracket: 430-4419
  - Low-profile bracket: 430-4420
- Without server (separate kit), order PG SKU#:
  - Full-height bracket: 430-4413
  - Low-profile bracket: 430-4412