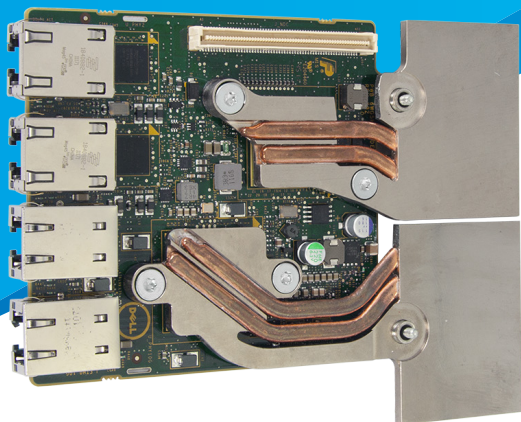


QLogic® 57800S 1GB and 10GBASE-T rNDC

Dual-Port 1GbE RJ45 and Dual-Port 10GBASE-T Converged Network Daughter Card for Dell PowerEdge Rack Servers



- Delivers full line-rate 10GbE performance across both 10Gbps ports
- Provides 1GbE and 10GbE connectivity options for greater deployment flexibility
- Consolidates network 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 network (TCP/IP) and storage (FCoE and iSCSI) data traffic
- Interoperable with 100Mbps, 1000Mbps, and 10Gbps

OVERVIEW

QLogic® offers a quad-port Converged Network Daughter Card that provides two 1-gigabit Ethernet (GbE) and two 10GbE connectivity ports for Dell™ PowerEdge™ rack servers. The 57800S card leverages QLogic's long-standing industry leadership in Ethernet, providing the highest levels of performance, efficiency, and scalability for the enterprise data center.

For more effective utilization of the 10GbE bandwidth, the QLogic 57800S-based rack Converged Network Daughter Card (rNDC) offers Dell Switch Independent Partitioning, which enables the segmentation of a single 10GbE port into two virtual ports, with flexible allocation of bandwidth to each port. Segmentation allows IT organizations to improve resource utilization while lowering infrastructure and operational costs.

Virtualization, cloud computing, High-Performance Computing (HPC), convergence, and clustering initiatives are increasing workload demands. The QLogic 57800S-based rack Converged Network Daughter Card is the solution of choice for workload-intensive computing environments, providing a reliable, high-performance 10GbE connectivity solution.

FEATURES

- Quad-port connectivity (two 1GbE and two 10GbE) for Dell PowerEdge rack servers
- x8 PCI Express® (PCIe®) v2.0 (5 GT/s) support
- Full iSCSI hardware offload
- Full Fibre Channel over Ethernet (FCoE) hardware offload¹
- Network boot support:
 - iSCSI remote boot
 - FCoE boot from SAN
 - Pre-execution environment (PXE) 2.0
- MSI and MSI-X support
- IPv4 and IPv6 offloads
- PCI-SIG® single root input/output virtualization (SR-IOV)
- Comprehensive stateless offloads
- RX/TX multiqueue
- Receive side scaling (RSS)

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

FEATURES *(continued)*

- Transmit side scaling (TSS)
- Jumbo frames support
- Network teaming, failover, and load balancing:
 - Smart Load Balancing™ (SLB)
 - Link aggregation control protocol (LACP) and generic trunking
- Data center bridging (DCB)
- FCoE Converged Network Daughter Card¹ 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 (NPIV)

BENEFITS**Accelerates Server Performance**

- Boosts network performance with full line-rate 10GbE performance across all ports
- Increases server performance with full hardware offload for storage traffic
- Delivers the highest networking performance and lowest CPU utilization with TCP/IP offload (TOE)
- 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

¹ To provide FCoE features, Converged Network Daughter Cards with 10G BASE-T connectivity require MFW 7.10.11 or greater and matching drivers for the operating system in which the card will be installed..

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, which segments 10GbE ports and reallocates their bandwidth and resources to address the application's performance requirements
- Unifies the NIC and storage management using the integrated Dell Remote Access Controller (iDRAC) and Lifecycle Controller management framework or QLogic Control Suite (QCS)
- Provides dual-port 10GbE and dual-port 1GbE connectivity for deployment flexibility

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—10GbE Ports Only

- SR-IOV (128 maximum virtual functions per device)
- 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 frames)

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
- Hardware transparent packet aggregation (TPA)
- Receive segment coalescing (RSC)
- Interrupt coalescing
- RSS and TSS—Maximum of 16 queues per any (1GbE or 10GbE) 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 802.3i 10BASE-TX
- IEEE 802.3ae (10Gb Ethernet)
- IEEE 802.1q (VLAN)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)
- IPv4 (RFC 791)
- IPv6 (RFC 2460)
- IEEE 802.1Qbb (Priority-Based Flow Control)
- IEEE 802.1Qaz (DCBX and Enhanced Transmission Selection)
- IEEE 802.3az (Energy Efficient Ethernet)

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
- 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 1Gbps Ethernet and dual 10Gbps Ethernet

Form Factor

- Network daughter card
- 3.66in × 2.93in (92.9mm × 74.4mm)

Supported Servers

- 13th Generation: R630, R730, R730xd, and T630
- 12th Generation: R620, R720, R720xd, R820, and R920

Connector

- 10G BASE-T and 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 57800S Quad-Port 2, 1GB × 2, 10GbE RJ45 and 10GBASE-T rNDC

- With server, order PG SKU# 430-4427
- Without server, order PG SKU# 430-4409