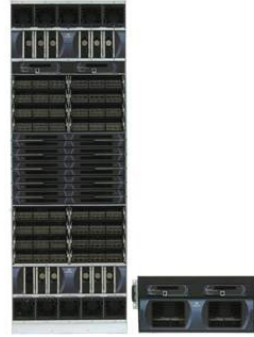




# 12800 InfiniBand™ Switch

## 18-864 Port 40Gbps (QDR) Modular InfiniBand Switch



### Benefits

- Quad Data Rate (QDR) line rate performance
- Predictable low latency under heavy loads
- Flexible QoS maximizes bandwidth use
- Modular configuration flexibility
- Protects existing InfiniBand (IB) investments
- Highly reliable and available
- Easy to manage
- Lowest per-port power and cooling requirements

### Features

- 18-864 ports of IB QDR (40Gbps) performance with support for DDR and SDR
- Scales to 51.8-Tbps aggregate bandwidth
- TrueScale architecture, with scalable, predictable low latency
- Multiple Virtual Lanes (VLs) per physical port
- Supports virtual fabric partitioning
- Fully-redundant system design
- Option to use Ultra High Density (UHD) leafs for maximum connectivity or Ultra High Performance (UHP) leafs for maximum performance
- Integrated chassis management capabilities for installation, configuration, and ongoing monitoring
- Optional InfiniBand Fabric Suite (IFS) management solution that provides an expanded fabric views and fabric tools
- RoHS 6 compliant
- Minimal power and cooling requirements
- Complies with InfiniBand Trade Association (IBTA) version 1.2 standard

For 10 years, InfiniBand (IB) networks have been deployed to address the needs of the most demanding high performance computing (HPC) applications and grand challenges. The QLogic® 12800 IB switch is a new class of data center interconnect that links HPC resources using a scalable, 40Gbps, low latency fabric. Customers can tailor the modular product to meet present and future needs. The QLogic 12800 is a series of products that delivers unmatched of high-speed networking features and functions.

**Low Latency.** QLogic's 12800 provides scalable, predictable low latency, even at 90% traffic use. Predictable latency means HPC applications can be scaled easily without worrying about diminished cluster performance or costly system tuning efforts.

**Flexible Partitioning.** The QLogic 12800 advanced design is based on an architecture that provides comprehensive virtual fabric partitioning capabilities that enable the IB fabric to support the evolving requirements of an organization. The TrueScale architecture, together with IFS, allows the fabric to be shared by mission critical applications while delivering maximum bandwidth utilization.

**Modular Design.** IB port, power, cooling, and management modules are common amongst the series giving customers the flexibility to deploy and grow HPC environments in a cost-effective fashion.

**Investment Protection.** The 12800 Series of switch products adheres to the IB Trade Association version 1.2 specification, ensuring the ability to interoperate with all other IBTA compliant devices.

**Highly Reliable.** This system is designed for high availability with features that include: port-to-port and module-to-module failover, non-disruptive firmware upgrades, component level diagnostics and alarming, and both in-band and out-of-band management.

**Easy to Manage.** The 12800 uses QLogic's advanced IFS software for quicker installation and configuration. IFS has advanced tools to verify fabric configuration, topology, and performance. Faults are automatically isolated to the component level and reported.

**Simple Installation and Configuration.** Using the installation and configuration wizards contained in the IFS package allows end users to bring up fabrics in days instead of weeks.

**Power Optimized.** Maximum performance is delivered with minimal power and cooling requirements as part of QLogic's Star Power commitment to developing green solutions for the data center.

## 12800 InfiniBand™ Switch 18-864 Port 40Gbps (QDR) Modular InfiniBand Switch

## Chassis Options

## 12800-360

- 18 to 864 ports
- 51.8 Tbps capacity
- Supports up to 36 leaf modules

## 12800-180

- 18 to 432 ports
- 25.9 Tbps switching capacity
- Supports up to 18 leaf modules

## 12800-120

- 18 to 288 ports
- 17.2 Tbps switching capacity
- Supports up to 12 leaf modules

## 12800-060

- 18 to 144 ports
- 8.64 Tbps switching capacity
- Supports up to 6 leaf modules

## 12800-040

- 18 to 96 ports
- 5.76 Tbps switching capacity
- Supports up to 4 leaf modules

## Leaf Module Options

## UHP Module

- 18 8x QDR ports

## UHD Module

- 24 4x QDR IB ports

## Switch Specifications

- 40/20/10-Gbps auto-negotiation Links
- Virtual lanes: 8 plus 1 management
- Maximum MTU size: 4096 bytes
- Maximum multicast table Size: 1024 entries
- Switching latency: 140 to 420 ns
- Supports Quad Small Form Factor Pluggable (QSFP) optical and copper cable specifications

## Interoperability

- Compliant with IBTA versions 1.0a, 1.1, 1.2

## Fabric Management

## Management Methods

- Command Line Interface
- Optional external server-based InfiniBand compliant subnet manager
- Optional embedded fabric management
- IBTA compliant SMA, PMA and BMA
- Chassis management GUI
- SNMP support

## Access Methods

- 10/100 Ethernet Base-T (RJ45)
- Serial port (RS-232 with DB9)

## LEDs

- 2 per leaf module plus 1 per InfiniBand port
- 2 per single-spine module
- 4 per dual-spine module
- 3 per power supply module
- 8 per management module
- 3 per serial port/Ethernet module

## Physical

## 12800-360

- H x W x D: 1288.4 x 439.6 x 650 mm (50.7 x 17.3 x 26 in)
- 81.9 kg (180 lbs)

## 12800-180

- H x W x D: 622.6 x 439.6 x 650 mm (24.5 x 17.3 x 26 in)
- 50.1 kg (110 lbs)

## 12800-120

- H x W x D: 444.7 x 439.6 x 650 mm (17.5 x 17.3 x 26 in)
- 41 kg (90 lbs)

## 12800-060

- H x W x D: 266.8 x 439.6 x 650 mm (10.5 x 17.3 x 26 in)
- 31.9 kg (70 lbs)

## 12800-040

- H x W x D: 221.1 x 439.6 x 650 mm (8.7 x 17.3 x 26 in)
- 18.2 kg (40 lbs)

## Environmental

## Operating

- Temperature: 0° to 40° C
- Humidity: 5 to 85% non-condensing
- Altitude: 0 to 10,000 feet
- Vibration: 5-500 Hz, 0.27 g, 5 sweeps
- Shock: 3.5 g, 3 ms, half sine, 20 repetitions

## Non-Operating

- Temperature: -40° to 65° C
- Humidity: 5 to 90% non-condensing
- Altitude: 0 to 40,000 feet
- Vibration: 2-200 Hz, 0.5 g, 5 sweeps
- Shock: 50 g, 4216 mm/s, 13 msec, 3 axis

## Electrical

- Voltage: 100 to 240 VAC; 50 to 60 Hz
- Receptacle: IEC320-C19
- Power Consumption: 85 to 6749 Watts

## Airflow

- Front-to-Back

## Agency Approvals

- Safety: UL/CSA/IEC/EN 60950-1
- EMI: FCC/VCCI/EN/IEC Class A
- Marking: FCC/ICES-003/TUV-CUE/CE/VCCI/C-Tick/GOST/KCC
- RoHS 6



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