

Sun Datacenter InfiniBand Switch 72

Ultra-dense switch for small to mid-sized cluster deployments



Highlights

- High-density quad data rate (QDR) InfiniBand (IB) switch for up to 72 QDR 4x ports realized with 24 12x connectors in a single rack unit
- Reduces the cost and complexity of delivering small to moderate-scale high-performance computing (HPC) cluster solutions
- Full nonblocking 72-port QDR IB switch in a 1U form factor
- Integrates seamlessly with the Sun Blade 6048 Modular System to fit switching up to 576 server clusters into eight or fewer racks
- Simplifies management of clusters by reducing the number of cables 3:1



The Sun™ Datacenter InfiniBand Switch 72 enables you to bind Sun Blade and Sun™ Fire servers and storage systems into a highly scalable, space-efficient, flexible, high-performance cluster. It supports scaling from as few as two to up to 576 servers into cohesive clusters that can be used to drive virtually any mission-critical commercial application or strategic, compute-intensive project. The Sun Datacenter InfiniBand Switch 72 has the flexibility and scalability you need to support multiple-page models. It ensures that you derive the maximum value from your Sun Blade server investment while making the fullest use of your IT resources — to provide you with a strategic, competitive advantage in the market.

Fabric consolidation, power efficiency, and scalability

The Sun Datacenter InfiniBand Switch 72 joins the Sun™ Datacenter InfiniBand Switch 648 and Sun™ Datacenter InfiniBand Switch 36 in Sun's third-generation family of IB switches. These QDR IB switches afford extreme density and unrivaled cable aggregation for Sun Blade and Sun Fire servers and storage. Leveraging the adaptive routing capability of Mellanox's InfiniScale IV switch, along with support for IB 1.2 congestion control to dynamically reroute traffic, fabrics built upon Sun's QDR switch family alleviate clogged switch ports and restrict process traffic causing bottlenecks — eliminating hot spots in the fabric and driving maximal throughput at the lowest possible latencies.

The Sun Datacenter InfiniBand Switch 72 provides an ultra-slim, ultra-dense, complete switch fabric solution for Sun server clusters of up to 72 nodes. When used in conjunction with the Sun™ Blade 6048 modular system, QDR IB clusters of up to 576 servers can be created, replacing competitors' 17U+ solutions — and hundreds of cables — with one-third the number of cables. This end-to-end HPC solution offers extremely low latency using industry-standard IB transport, and commodity processors from AMD, Intel, and SPARC.

Every datacenter is set up differently, and each business has its own specific high-performance business requirements. Sun offers a range of services to integrate the Sun Datacenter InfiniBand Switch 72 into

your IT infrastructure. These services include Sun™ HPC Quick Start Services, to ensure proper configuration prior to deployment; our Sun™ Eco Services Suite, to address your need to control energy and heating/cooling costs; the Sun Customer Ready program, so your system arrives integrated and ready to deploy; and

SunSpectrum™ Support, Sun’s best-of-breed integrated hardware and software support to protect your IT investment. We also offer remote support, performance monitoring, and inventory management services through Sun™ Managed Operations Services.

Learn More

To learn more about the Sun Datacenter InfiniBand Switch 72, go to: sun.com/dcs72. To learn more about all of Sun’s IB solutions, go to: sun.com/networking.

Sun Datacenter InfiniBand Switch 72 Specifications

Switch architecture

- 72 ports derived from six fully meshed, internal, 36-port switching elements
- Embedded management module for IB subnet management
- Embedded management module provides IPMI and “shelf management”
- Redundant power supply
- LED indication of physical and logical link status

Interconnect system

- 72 total 4x ports require only 24 12x connectors
- 12x cables and connectors support three times the density of conventional QSFP cables
- Hybrid 12x splitter cable supports connectivity to three conventional QSFP end nodes
- Cable serial number in NVRAM readable by the chassis management module (CMM)
- Cable insertion detection

Switch specifications

Data throughput: 4.6 Tb/sec (full duplex)
 Port-to-port latency: 300 ns QDR
 Data virtual lanes: Eight
 Management virtual lanes: One
 MTU: 4,096 bytes

High availability features

- Redundant power supplies and fans
- Embedded IB management module enabled for redundant fabric management
- Logical network isolation — enabling creation of isolated “virtual clusters” supported by the same switch

- Support for traffic isolation and quality of service (QoS) management
- “Hitless” IB management failover – support for active/hot-standby dual manager configuration

Management capabilities

- Sun Integrated Lights Out Manager (ILOM) chassis management platform
- Monitors all critical chassis functions
- Supported management protocols: IPMI v1.5/v2.0, SNMP v1/v2c/v3, SSH, HTTP/HTTPS, syslog
- Connectors: Two 100Base-T Ethernet; one USB port
- Dual Ethernet management ports enable “daisy chaining” the management connections for multiple switches
- Automatic connectivity verification
- Embedded IB subnet manager designed for complete fabric solution
- IB 1.2-compliant managers and agents

Power requirements

- Ships with two field-replaceable power supplies
- Redundant power
- AC input power: 850 W maximum

Thermal management

Airflow: Front to rear

Dimensions and weight

Height: 44.5mm (1.75 in.) 1U
 Width: 445mm (17.52 in.)
 Depth: 609.6mm (24 in.)
 Weight: 11.4 kg (23 lbs.)

Serviceability

CRUs: Power supply unit, fan module, and battery

Warranty: One year

Enclosure hardware support: Three years

Call response: Eight hours

Environmental

AC power: 100–240 V AC, 47–63 Hz

Operating temperature: 10° C to 35° C (41° F to 89.6° F)

Relative humidity: 5–85%, noncondensing, 27° C max. wet bulb

Regulatory

Safety: UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country deviations

RFI/EMC: EN 55022/CISPR 22, Class A, FCC CFR 47 Part 15 Class A, EN 61000-3-2, EN 61000-3-3

Immunity: EN 55024/CISPR 24

Regulatory marks: CE, FCC, ICES, C-Tick, VCCI, GOST-R, BSMI, KCC, UL/cUL

Recommended services

Sun Eco Services Suite

Sun Customer Ready program

Sun HPC Quick Start Services

SunSpectrum Support

Sun Managed Operations Services

Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 USA Phone 1-650-960-1300 or 1-800-555-9SUN Web sun.com

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