



Sun™ Datacenter Switch 3x24

A datacenter InfiniBand switch for small and medium-sized HPC deployments



Highlights

- Reduces the cost and complexity of delivering small to moderate-scale HPC solutions
- 72 DDR 4x ports realized with 24 12x connectors in a single rack unit
- Integrates seamlessly with the Sun Blade™ 6048 modular system to fit two to 288 server clusters into only four rack units for external switching
- When combined with the Sun Blade 6048 modular system and the Sun Blade 6048 Switched InfiniBand (IB) Network Express Module (NEM), the Sun™ Datacenter Switch 3x24 makes clustering fast and efficient — requiring one-third the number of cables
- Total supercomputing solution offers extremely low latency using industry-standard IB transport, and commodity processors from AMD, Intel®, and SPARC®



The Sun Datacenter Switch 3x24 enables you to bind Sun's blade servers and storage systems into a highly scalable, space-efficient, flexible, high-performance supercomputer. It supports scaling from as few as two to up to 288 blade servers into cohesive clusters that can be used to drive virtually any mission-critical commercial application or strategic, compute-intensive scientific project. The Sun Datacenter Switch 3x24 has the flexibility and scalability you need to support multiple usage models. It ensures you derive the maximum value from your Sun Blade server investment while making the fullest use of your HPC resources — to provide you a strategic, competitive advantage in the market.

Fabric consolidation, power efficiency, and scalability

The Sun Datacenter Switch 3x24 provides an ultraslim, ultradense root switching layer for the Sun Blade 6048 modular system. It replaces competitors' 12+ U solutions — and hundreds of cables — with one third the number of cables, and fits the InfiniBand switch fabric for two to 288 blade servers into one to four rack units. This end-to-end supercomputing solution offers extremely low latency using industry-standard InfiniBand transport, and commodity processors from AMD Opteron™, Intel® Xeon®, and SPARC.

Constellation System when attached to the Sun Blade 6048 modular system — the world's first open petascale computing environment. It combines ultradense, high-performance computing, networking, storage, and software into an integrated system that delivers massive scalability, dramatically reduced complexity, and breakthrough economics. The Sun Constellation System brings key innovations to market and is designed for radical simplicity that puts a new level of high-performance computing within reach for many customers — from departmental use to the largest HPC deployments.

The Sun Datacenter Switch 3x24 joins the Sun Datacenter Switch 3456 in Sun's family of switches that are the center of the Sun™

Every datacenter is set up differently, and each business has its own specific high-performance business requirements.

Sun Datacenter Switch 3x24 Specifications

Sun offers a range of services to integrate the Sun Datacenter Switch 3x24 into your IT infrastructure. These services include SunSM HPC Quick Start Services, to ensure proper configuration prior to deployment; our SunSM 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 SunSpectrumSM 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 SunSM Managed Operations Services.

Switch architecture

- 72 ports derived from three fully independent internal 24-port switching elements
- Highly refined 12x connector that internally fans out to each 24-port switching element
- Designed for mounting in pairs atop the Sun Blade 6048 modular system
- Embedded management processor for IPMI and "shelf management"
- Redundant power supply
- LED indication of physical and logical link status

Interconnect system

- Passive 12x cables and custom-tooled miniature 12x connectors support three times the density of conventional CX4 cables
- 72 total 4x ports require only 24 12x connectors
- Active cable circuitry effectively doubles the supported cable length for DDR to 15 meters
- Hybrid 12x splitter cable supports connectivity to three conventional CX4 end nodes with active circuitry embedded in the CX4 connector
- Cable serial number in NVRAM readable by the chassis management module

- Local and remote cable insertion detection
- Remote node power-up detection through cable

Switch specifications

Data throughput: 2.5 Tb/sec.
Port-to-port latency: 150 ns, DDR; 200 ns, SDR
Data virtual lanes: Eight
Management virtual lanes: One
MTU: 2,048 bytes

Combined with Sun Blade 6048 Switched InfiniBand NEM, it supports scalability up to 288 end nodes in three-stage Clos fabric

Management capabilities

- Monitors all critical chassis functions
- Automatic connectivity verification
- InfiniBand 1.2-compliant managers and agents
- Supported management protocols: IPMI for chassis environmentals, SNMP v2, Telnet, SSH, HTTP, Sun MC, Sun Fabric Director
- Connectors: Two RS-232 (RJ45), one 10/100 Base-T Ethernet (RJ45), and one serial management port
- Solaris Subnet Manager designed for maximum scalability

Power requirements

- Ships with two field-replaceable power supplies
- N+1 power protection
- PSU is 200 W — power consumption approx. 150 W, worst case

Thermal management

Airflow: Front to rear

Dimensions and weight

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

Learn More

To learn more about the Sun Datacenter Switch 3x24, go to: sun.com/ds3x24; for more information on the Sun Datacenter Switch 3456, go to: sun.com/ds3456.

Serviceability

CRUs: Power supply unit and fan module
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, EN60950-1, IEC 60950 CB Scheme with all country deviations
Ergonomics: EK1-ITB-2000
RFI/EMC: EN55022/CISPR 22, Class A, FCC CFR47 Part 15 Class A, EN61000-3-2, EN61000-3-3
Immunity: EN55024/CISPR 24
Regulatory marks: UL/cUL, S-Mark, CE, FCC Class A, ICES-003 Class A, C-Tick, VCCI Class A, MIC

Recommended services

Sun HPC Quick Start Services
Sun Eco Services Suite
Sun Customer Ready program
SunSpectrum
Sun Managed Operations Services