

Sun Blade™ 6000 Virtualized Multi-Fabric 10 GbE Network ExpressModule

Low cost, seamless cable aggregation



The Sun Blade™ 6000 Virtualized Multi-Fabric 10 Gigabit Ethernet (GbE) Network ExpressModule (NEM) is designed to decrease datacenter clutter by reducing cabling by up to 10:1. With significant improvements in cable aggregation, this new approach to blade switching eliminates switch management and interoperability problems, addresses in-chassis blade-to-blade communication requirements, and simplifies device management. Plus, it comes with a distinct cost advantage over traditional blade switches.

Highlights

- IO consolidation which results in 10:1 cable reduction
- Enterprise-class network 10 GbE and 1 GbE connectivity
- Supports up to two NEMs per Sun Blade 6000 chassis, providing up to four 10 GbE ports, 20 1 GbE ports, eight SAS ports per system (when in redundant configuration)
- Hot-pluggable to eliminate disruption to blade activities during insertion/removal
- Integrated SAS storage networking
- Unique Network ExpressModule form factor, designed specifically for the Sun Blade 6000 Modular System

Simplify your datacenter

Traditional blade switches and pass through options present challenges with blade I/O connectivity. A pass through is a simple approach, but a lot of cables are needed, complicating datacenter operations and not allowing for in-chassis blade-to-blade communication. A traditional blade switch has its advantages, but can have very expensive per port costs. Sun brings a unique, simplifying approach to I/O innovation with this modular architecture.

The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM is a multi-function connectivity module for the Sun Blade 6000 Modular System. This NEM provides virtualized 10 GbE LAN network connectivity and supports SAS storage connectivity.

Industry-leading feature set

The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM provides a unique set of advanced networking features including:

- Virtualized and integrated architecture – Blade appears to have a dedicated 10 GbE port

- From the network, the NEM looks like a switch, resulting in reduced interoperability and simplified management
- In-chassis blade-to-blade communication
- High-performance PCIe connectivity with Sun Blades for superior performance
- Management with Sun Blade CMM and ILOM
- A performance advantage over competing architectures due to NEM connected to the blades via PCIe bus not GbE
- Scalable bandwidth
- Integrated chassis management infrastructure

Innovative form factor

Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM form factor provides a method of deploying bulk remote I/O that allows tool-less installation/removal and packs more performance and functionality in a smaller space while delivering higher network throughput. This NEM makes efficient use of datacenter real estate by reducing the number of cables.

Modular architecture provides scalability and investment protection

Most traditional servers require a box-swap in order to take advantage of each new release of CPU and I/O technology. This problem is solved with the Sun Blade 6000 family's modular architecture design. Everything including I/O is modular and hot-pluggable saving you time and money and providing flexibility to grow with future business needs.

Increased levels of reliability, availability, and serviceability (RAS)

The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM is easy to install and manage. The flexible architecture of the Sun Blade 6000 Modular System is based entirely on the hot-pluggable components—I/O, processing, system management, and chassis infrastructure. All critical components, including the NEM modules, are hot-swap and redundant. This is the state-of-the-art in hot-swap enterprise-class RAS features and it works together to boost your datacenter efficiency and uptime, and lower your total cost of ownership (TCO).

Learn More.

For more information visit sun.com/servers/blades/6000iomodule/10gbnem or sun.com/storagetek/networking

Sun Blade 6000 Virtualized Multi-Fabric 10 GbE Network ExpressModule Specifications

Supported operating systems

- Solaris™ 10 OS U6 and above
- Red Hat Enterprise Linux 4.7 (64-bit)
- Red Hat Enterprise Linux 5.2 (64-bit)
- RHEL 5.1 64-bit
- SUSE Linux Enterprise Server 10 SP2
- Windows 2003 (32-/64-bit)
- Windows 2008 (32-/64-bit) (check release notes for availability)
- VMware ESX3.5 U2/ESX 3.5i (check release notes for availability)

Supported Sun Blade 6000 Server Blades

- Sun Blade T6300 Server Module (check release notes for availability)
- Sun Blade T6320 Server Module (check release notes for availability)
- Sun Blade T6340 Server Module (check release notes for availability)
- Sun Blade x6220 Server Module
- Sun Blade X6240 Server Module
- Sun Blade X6250 Server Module
- Sun Blade X6270 Server Module
- Sun Blade X6440 Server Module
- Sun Blade X6450 Server Module

Ports

- I2C to CMM
- Four external x4 mini-SAS ports
- Ten 10/100/1000 Mb/sec Ethernet pass through ports
- Two SFP+ 10 Gbe ports (SR, LR, LR-M, ZR)

Health monitoring capabilities

- Voltage monitoring
- Temperature monitoring
- Fault detection

Server module interfaces

- PCIe Gen 1.x -> PCIe Gen 1.1
- SAS 2x -> SAS 1.0 2x
- 10/100/1000 Mb/sec

Updates

- All software and FW is field upgraded

Indicators

- Ethernet link/status and activity
- SFP+ link/status and activity
- SIS LEDs, locate button
- External SAS port link/activity

Power supplies

- 3.3V_Aux from C10 midplane
- 12V from C10 midplane

Power dissipation

- ~53W @ 35C for idle power and ~63 to 65W for 10 blades connected to Hydra generating maximum traffic

Environment

Cooling	• Top to back forced air
Humidity	• 10-90% non-condensing
Operating temperature	• 5°C to 32°C (41°F to 90°F)
Nonoperating temperature	• -40°C to 65°C (-40°F to 149°F)
Operating optimum ambient temperature	• 22°C (71.6 °F)
Operating relative humidity	• 10 to 90% RH, noncondensing, 27°C max. wet bulb
Nonoperating relative humidity	• 5 to 93% RH, noncondensing, 38°C max. wet bulb
Operating altitude	• Up to 3,048m (10,000 ft.), maximum ambient temperature is derated by 1°C per 300m (984 ft.) above 900m (2,953 ft.)
Nonoperating altitude	• Up to 12,000m (39,370 ft.)

IEEE networking and SAS standards

1 Gb links	<ul style="list-style-type: none"> • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports • IEEE 802.1Q VLAN • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification
10 Gb links	<ul style="list-style-type: none"> • IEEE 802.3ae 10GBASE-SR • IEEE 802.3aq 10GBASE-LRM
SAS support	• SAS 1.0

Agency approvals

- UL recognized
- CUR recognized
- TUV certified
- FCC rules, Part 15, Class A
- ICES-003, Class A
- EMC Directive 2004/108/EC (CE Mark)
- EN55022, Class A
- EN55024
- Australian EMC Framework (C-Tick Mark)
- VCCI, Class A (Japan)
- RoHS compliant for environmental requirements
- China RoHS compliant

Description and ordering Information:

- Sun Blade 6000 Virtualized Multi-Fabric 10 GbE Network ExpressModule
- Sun model number: X4238