

SUN BLADE 6000 VIRTUALIZED MULTI-FABRIC 10 GIGABIT ETHERNET NETWORK EXPRESSMODULE

KEY FEATURES

LOW-COST, SEAMLESS CABLE AGGREGATION

- I/O 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, twenty 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 NEM form factor, designed specifically for the Sun Blade 6000 Modular System

Oracle's Sun Blade 6000 Virtualized Multi-Fabric 10 Gigabit Ethernet (GbE) Network ExpressModule (NEM) is designed to decrease data center 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.



Realize low-cost, seamless cable aggregation with the Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM.

Simplify Your Data Center

Traditional blade switches and pass-thru options present challenges with blade I/O connectivity. A pass-through is a simple approach, but a lot of cables are needed, complicating data center 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. Oracle 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 multifunction connectivity module for the Sun Blade 6000 Modular System. The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE 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 network, Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM looks like a switch, resulting in reduced interoperability and simplified management
- In-chassis blade-to-blade communication
- High-performance PCIe connectivity with Oracle blades for superior performance
- Management with Sun Blade CMM and Sun Blade 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

The 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 data center 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

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 state-of-the-art in hot-swap enterprise-class reliability, availability, and serviceability (RAS) features. It works together to boost data center efficiency and uptime and lower total cost of ownership (TCO).

Sun Blade 6000 Virtualized Multi-Fabric 10 Gigabit Ethernet Network ExpressModule Specifications

Supported Operating Systems	
<ul style="list-style-type: none"> • Oracle’s Solaris 10 OS U6 and above • Red Hat Enterprise Linux (RHEL) 4.7 (64 bit) • RHEL Linux 5.2 (64 bit) • RHEL 5.1 64 bit 	<ul style="list-style-type: none"> • SUSE Linux Enterprise Server 10 SP2 • Microsoft Windows 2003 (32/64 bit) • Windows 2008 (32/64 bit) • VMware ESX3.5 U2/ESX 3.5i
Check release notes for full availability	



Supported Sun Blade 6000 Server Blades	
<ul style="list-style-type: none"> • Sun Blade T6300 Server Module • Sun Blade T6320 Server Module • Sun Blade T6340 Server Module • Sun Blade X6220 Server Module • Sun Blade X6240 Server Module 	<ul style="list-style-type: none"> • Sun Blade X6250 Server Module • Sun Blade X6270 Server Module • Sun Blade X6440 Server Module • Sun Blade X6450 Server Module
Check release notes for full availability	
Ports	
<ul style="list-style-type: none"> • 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	Server Module Interfaces
<ul style="list-style-type: none"> • Voltage monitoring • Temperature monitoring • Fault detection 	<ul style="list-style-type: none"> • 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	Power Supplies
<ul style="list-style-type: none"> • Ethernet link/status and activity • SFP+ link/status and activity • SIS LEDs, locate button • External SAS port link/activity 	<ul style="list-style-type: none"> • 3.3 V_Aux from C10 midplane • 12 V from C10 midplane
Power Dissipation	
~53 W @ 35 C for idle power and ~63 W to 65 W for 10 blades connected to Hydra generating maximum traffic	
Environment	
Cooling	Top to back forced air
Humidity	10% to 90%, noncondensing
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 3,048 m (10,000 ft.), maximum ambient temperature is derated by 1°C per 300 m (984 ft.) above 900 m (2,953 ft.)
Nonoperating altitude	Up to 12,000 m (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 style="list-style-type: none"> • UL recognized • CUR recognized • TUV certified • FCC rules, Part 15, Class A • ICES-003, Class A • EMC Directive 2004/108/EC (CE Mark) 	<ul style="list-style-type: none"> • EN55022, Class A • EN55024 • Australian EMC Framework (C-Tick Mark) • VCCI, Class A (Japan) • RoHI compliant for environmental requirements • China RoHS compliant
Description and Ordering Information	
<ul style="list-style-type: none"> • Sun Blade 6000 Virtualized Multi-Fabric 10 GbE Network ExpressModule • Sun model number: X4238 	

Warranty

Visit oracle.com/sun/warranty for Oracle's global warranty support information on Sun products.

Services

Visit oracle.com/sun/services for information on Oracle's service program offerings for Sun products.

Contact Us

For more information about Oracle's Sun Blade 6000 Virtualized Multi-Fabric 10 Gigabit Ethernet Network ExpressModule, please visit oracle.com/sun or call +1.800.786.0404 to speak to an Oracle representative.



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