Overview and Frequently Asked Questions
Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module

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Overview

Oracle's Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module is the second generation virtualized NEM in the Oracle Sun Blade NEM family. This multi-function connectivity module for the Sun Blade 6000 modular system provides virtualized 10GbE LAN network connectivity, 1GbE Pass-through and supports SAS-2 storage connectivity.

Data Center Simplicity with Uncompromised Performance

The Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 Network Express Module offers IT managers a simple design with high-performance I/O throughput and low overall TCO. This virtualized NEM includes a "virtualized NIC" that removes a physical layer of switching within the chassis—requiring fewer NICs to be attached to each server module. Its virtual I/O technology allows up to 10 server modules to share common high performance 10GbE LAN network connectivity while supporting SAS-2 storage connectivity.

While traditional pass-thru devices can provide blade I/O connectivity, they require a lot of cabling. This NEM simplifies networking even more with its 10:1 cable reduction.

The Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM is easy to install and manage. Its architecture is based on completely hot-pluggable components—I/O, processing, system management, and chassis infrastructure. The NEM is inserted into the Sun Blade 6000 chassis and can be accessed externally. The hot-swap feature can be deployed without interruption to chassis power.

The NEM can be managed through the Sun Blade 6000's Chassis Management Module (CMM)--requiring zero management for the NEM itself. Without compromising high-performance and I/O throughput, the virtualized NEM's simplified design allows you to be more flexible in your blade I/O connectivity.

The Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM gives IT administrators the flexibility to customize network speeds based on running applications through its virtualized server workloads for enterprise cloud, collaboration and virtualized business application workloads.

Customer Benefits

With its robust feature set, the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM allows customers to simplify their network while reducing the costs:

Simplify Network Connectivity

- Optimize server I/O with embedded virtualization technology that allows more server modules to be housed within a relatively compact blade package.
- Aggregate I/O across the 10 blades in the Sun Blade 6000 chassis.
- Configure for bandwidth or connectivity modes depending on workloads.

Save Time, Save Money

- Decrease TCO with zero management of the NEM. Instead of assigning an administrator to manage the NEMs, now customers can manage it through the Sun Blade 6000 Chassis Management Module.
- Simple, hot-swappable I/O design allows to reduce the technical staff performing upgrades. Upgrades become non-disruptive, easy and quick. Skilled IT staff members can focus on other business needs.
- Decrease number of NICs required per server module—reducing power requirements.
- Free data center real estate with a 10:1 cable reduction.

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Frequently Asked Questions

What is the Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM?

It is the second generation network express module for the Sun Blade 6000 modular system. It includes 1GbE Pass-thru fabric, 2x 10 GbE Virtualized SFP+ Modules, and 10 x2 SAS 2 Expanders. It is a zero management I/O virtualization module to connect the Sun Blade 6000 chassis into the datacenter network.

What are the major functionalities of the NEM?

The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE M2 NEM has three main functions:

- 10GbE NIC Virtualization: allows up to 5 server modules to share a single 10 GbE network port through the PCIe interface of the server blade. There are two 10GbE ports on each NEM.
- Pass-through Gigabit Ethernet ports: the pass-through Gigabit Ethernet ports are strictly passive and isolated from the other functional blocks with no interaction. There is one pass-through Ethernet port per server module.
- Gen-2 SAS storage expanders: the SAS storage expanders provide storage connectivity between the server modules and the blade storage modules.

What are the components of the Sun Blade 6000 Virtualized NEM?

This NEM consists of

- Two Virtualized NEM ASCI that enables the intelligent I/O virtualization between the 10 server modules connecting to the data center network.
- An integrated SAS 2 LSI Controller SASx36 Expander. On-Board SAS 2 Expander provides 20 SAS/SATA lanes to server modules.

What are the operating systems that have been certified to run on this NEM?

The Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM is certified to run Solaris, Oracle Enterprise Linux, Red Hat Enterprise Linux, SuSE Linux Enterprise Server, VMware and Windows. The current list of supported Operating Systems can be found at: http://wikis.sun.com/display/SystemsComm/Sun+Blade+Systems+Products

Which Sun Blade server modules are supported to work with this NEM?

- Sun Blade Server X6270 M2 server module
- Sun Blade Server X6270 server module
- Sun Blade Server T6320 server module
- Sun Blade Server T6340 server module
- Sun Blade Storage Module M2

How does the 10GbE virtualization work? What are the key technologies involved?

This NEM is architected to provide 10GbE Virtualized I/O to all 10 server modules in the Sun Blade 6000 chassis. Each NEM contains two virtualized NEM ASICs that aggregate I/O to the blade servers in the Sun Blade 6000 Chassis. Each server module appears to have its own 10GbE NIC through the Virtualized NEM ASICs. The server modules in the Sun Blade 6000 chassis share two physical SFP+ 10GbE ports via a dual channel 10GbE Serializer/Deserializer (SerDes) per ASIC. The Sun Blade server modules connect to this NEM via PCIe interfaces, thus saving cost of expensive NIC cards.

What are the different modes for the NEM?

The NEM contains two virtualized NEM ASICs, which operate in three different modes to enable 10GbE virtualization. These modes are

- Bandwidth mode: Both 10GbE Connectors active, providing 20GbE throughput. For this mode both SFP+

modules are connected and active. Each NEM ASIC provides 10GbE network access for five hosts or blade servers attached to it in the Sun Blade 6000 chassis.

- Connectivity mode: Single 10GbE Connector active, with single 10GbE SFP+ Module. The two NEM ASICs share I/O to the 10 blade servers in the Sun Blade 6000 chassis.
- Privacy Mode: No SFP+ Modules connected. The traffic then passes just between the blade servers in the Sun Blade 6000 chassis, still enabling intra-blade communications. No external communications in this mode via the NEM's 10GbE ports.

Where can I find more information about the Sun Blade 6000 Virtualized Multi-Fabric 10 GbE M2 NEM and the Sun Blade 6000 Modular System?

You can contact your Oracle sales representative directly or call 1-800-Oracle1.

In addition, more information about the Sun Blade 6000 Virtualized Multi-Fabric 10 GbE M2 NEM and other Oracle Ethernet products can be found at http://www.oracle.com/goto/networking/ethernet . Please go to http://www.oracle.com/goto/blades for more information about the Sun Blade 6000 modular systems.

Can I order the Sun Blade 6000 Virtualized Multi-Fabric 10 GbE M2 NEM today?

Yes, we are now taking orders for this product.

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