

Sun Blade™ 6048 Chassis

The most compute-dense blade server on the planet



Highlights

- Runs up to 48 Sun Blade™ server modules, up to 768 processing cores, in a rack/chassis unibody design that reduces assembly, installation, cost, and weight
- 51 percent more compute performance per rack than HP c-Class platform
- 71 percent more compute performance per rack than IBM BladeCenter H platform
- Minimize power and cooling needs, with up to 17 percent greater power efficiency
- Maximum flexibility — Supports existing Sun Blade 6000 UltraSPARC®, AMD Opteron™, and Intel® Xeon® Processor-based server modules, as well as the Solaris™, Linux, Windows, and VMware operating systems
- Streamlined Sun Blade Transparent Management to ease integration into existing datacenter and management infrastructure
- Hot-swappable, hot-pluggable, redundant modular components to optimize reliability, availability, serviceability
- Compute infrastructure for the Sun™ Constellation System



The newest member of the Sun Blade 6000 family, the robust Sun Blade 6048 modular system offers the highest compute-density platform for extreme performance, with a remarkable 48 server modules in the same footprint as a 42U rack. Designed for reliability and availability, the chassis supports cutting-edge connectivity, processor, and memory technology with cooling, power, and I/O headroom — as well as reduced system-support costs.

The Sun Blade 6048 modular system supports industry-standard Intel Xeon, UltraSPARC, and AMD Opteron processors, for improved performance and flexibility. In fact, it offers capacity for as many as 192 CPU sockets per rack — up to 71 percent more compute power than competitors. The Sun Blade 6048 chassis uses industry-standard PCI Express I/O architecture, reducing proprietary lock-in and simplifying network integration. The chassis' modular design features redundant, hot-swappable, hot-pluggable modules for system management, I/O, servers, networking, and infrastructure, including power and cooling. These modules can be upgraded independently or enhanced with new technology or infrastructure expansions, providing extreme scalability to accommodate future growth.

The Sun Blade 6048 modular system leverages a unique unibody chassis/rack design that eliminates independent racks and

chassis while saving approximately 500 pounds per rack, thus producing less stress on datacenter floors. It contains four shelves, each holding up to 12 server modules — a total of 48 easy-to-service server modules per system, along with up to eight PCIe Network Express Modules (NEMs) and up to 96 PCIe ExpressModules (EMs). Supporting the same server modules as the Sun Blade 6000 modular system, the system's modular I/O design and native PCIe midplane enable a mixture of individual server modules configured with different I/O modules. The Sun Blade 6048 modular system can also be maximized for utilization with the compact, scalable, and resilient Sun Blade 6048 InfiniBand Switched NEM, the industry's only chassis-integrated leaf switch and the fastest host channel adapter (HCA) available.

Sun Blade 6048 Chassis Specifications

Architecture

Form factor

Rack/chassis unibody design holding up to 48 server modules, up to 12 server modules per shelf. Optional 2U chassis expansion module provides additional rack space for mounting standard 19-inch components such as switches

I/O interfaces

The Sun Blade 6048 midplane supports the following protocols: PCI Express, Gigabit Ethernet, 10 Gigabit Ethernet, Fibre Channel (FC), and InfiniBand. Each server module has a direct connection to two PCIe ExpressModules for discrete I/O connectivity and two PCIe Network Express Modules (NEMs) for aggregate I/O connectivity

I/O modules

PCIe ExpressModules (I/O modules) — up to two per server module, up to 24 per shelf, up to 96 per chassis:

- 1 Gigabit Ethernet dual-port PCIe ExpressModule — copper (Intel 82571EB GbE controller-based)
- 1 Gigabit Ethernet dual-port PCIe ExpressModule — fiber (Intel 82571EB GbE controller-based)
- 1 Gigabit Ethernet quad-port PCIe ExpressModule — copper (Intel 82571EB controller-based)¹
- 1 Gigabit Ethernet quad-port PCIe ExpressModule — copper (Sun Neptune)
- 10 Gigabit Ethernet dual-port PCIe ExpressModule — fiber (Sun Neptune)
- 4 Gbps Fibre Channel dual-port PCIe ExpressModule (Qlogic ISP2432 FC controller-based)
- 4 Gbps Fibre Channel dual-port PCIe ExpressModule (Emulex Zephyr IOC FC controller-based)
- 4x InfiniBand SDR dual-port PCIe ExpressModule (Mellanox MT25208 InfiniHost III Ex controller-based)

- 4x InfiniBand DDR dual-port PCIe Express Module (Mellanox ConnectX)
- PCIe NEMs (single height) — up to two per shelf, up to eight per chassis
- Sun Blade 6048 Gigabit Ethernet 12-port passthru NEM (NEM12)
- Sun Blade 6048 InfiniBand Switched NEM (occupies two NEM slots) — includes two on-board DDR IB switches and 12 Gigabit Ethernet passthru ports

Manageability

Chassis Monitoring Modules (CMMs)

- One per shelf, four per chassis
- Helps enable remote connection to the service processor on each server module
- Reduces cabling by providing a single management connection to the chassis
- Helps ensure complete remote lights-out manageability of each shelf in the chassis
- Provides an optional aggregation point for monitoring of chassis shelf fans and power supplies with the CMM's own Integrated Lights Out Manager (iLOM) module

AC power

Eight per chassis, two per shelf — high-efficiency, hot-swappable, 1+1 redundant, load-sharing, load-balancing

1+1 PSU rating; 8,400 W each power supply module (three 2,800 W cores); can be configured to 5,600 W (two 2,800 W cores)

Voltage	200–240 V AC
Frequency	50–60 Hz
Current	16A per power supply input; total 24 AC inputs (three per power supply module) at 8,400 W; 16 AC inputs (two per power supply module) to achieve 5,600 W
AC input connection	Americas/domestic — NEMA L6-20P to EC320-C19M International — IEC309 to IEC320-C19

Learn More

To learn more about the Sun Blade 6048 chassis, go to sun.com/blades.

Component dimensions and physical specifications

Chassis height	2,073mm (81.61 in.)
Chassis depth	1,024.58mm (40.34 in.)
Chassis width	606.5mm (23.88 in.)
Chassis weight of a fully configured system	931.45 kg (2,053.5 lbs.)
Chassis weight of an empty system with doors (no fillers)	487.73 kg (1075.26 lbs.)

Subassembly weights

Server module	5.78–7.86 kg (12.75–17.3 lbs.)
Power supply module	13.6 kg (30 lbs.)
PCIe Network Express Module	2.12–6.8 kg (4.68–15 lbs.)
PCIe ExpressModule	0.35 kg (0.78 lbs.)
Rear fan module	1.04 kg (2.31 lbs.)
Chassis Monitoring Module	0.3175 kg (0.7 lbs.)
Front fan module	0.88 kg (1.95 lbs.)
Front indicator module	0.34 kg (0.75 lbs.)

¹ Available in upcoming release.



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