The Scalable Workgroup Cluster

SGI® CloudRack™ X2

KEY FEATURES

Flexibility
Deploy standalone or as 14U rack-mount enclosure up to 216 cores per enclosure

Innovative Power XE™
power distribution technology using 99 percent efficient 12VDC power

Reliability
N+1 redundant power, self-managed air flow with redundant fan arrays and extended server life with centralized, redundant components

Extreme Thermal Efficiency
Ability to run your data center at higher temperatures, up to 104º F (40º C)

BTO Optimization
The widest range of performance, processor, efficiency, disk, memory, and networking combinations ever offered

Introducing the Scalable Workgroup Cluster

CloudRack X2 is a unified enclosure that combines extreme densities with breakthrough energy efficiency for cluster computing. CloudRack X2 opens up new deployment capabilities for CloudRack technology. Deploying the enclosure as a standalone unit on casters yields the ideal workgroup cluster. For scale-out data center usage, CloudRack X2 can also be easily mounted in any standard 19" rack-mount environment.

CloudRack X2 assures maximum power usage, cooling efficiency, and staggering server densities with up to 216 cores per enclosure in a footprint of only five square feet. CloudRack X2 capitalizes on an ultra-efficient Eco-logical™ design that uses fan-less and cover-less 1U server trays installed vertically in the 14U enclosure.

Innovative Power XE™

Power XE is a enclosure-level power distribution technology that obviates individual, server-level power supplies in favor of hot-swappable, redundant rack-level power supplies with no incremental cost or loss of efficiency. Hot-pluggable, N+1 redundant rectifiers significantly improve power distribution effectiveness by converting incoming AC power to 99 percent efficient 12VDC power at the server level. Further, Power XE maximizes the number of serves that can operate on the same circuit by minimizing power harmonics in the power mains.

Turn up the Thermostat!

CloudRack X2 is thermally optimized to safely operate in much higher ambient temperatures, up to 104°F (40°C). This can mean significant operating cost savings from reduced power consumption by Computer Room Air Conditioning (CRAC) units. Hot swappable, easily serviceable N+1 redundant autonomic fan arrays provide thermally managed enclosure-level airflow. These intelligent fans remarkably reduce fan power consumption by over 80 percent compared to conventional enclosures.

Build to Order, Optimized for Internet, HPC and Graphics Environments

SGI BTO processes assure CloudRack X2 systems are tailored to your cluster computing environment and optimized to support your specific computing applications. Enclosures are available to address needs ranging from HPC workgroup clusters to high-performance quad-socket database servers to MicroSlice™ architecture-based single-socket servers capable of reaching extreme price/performance ratios for Web applications. GPU-based configurations are even available to speed graphics calculations. CloudRack X2 systems are rigorously tested then shipped to your data center floor, ready for immediate integration.

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SGI CloudRack X2

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www.sgi.com/CloudRackX2

CloudRack X2 Enclosure Specifications

Enclosure Model	CR2000-14U
Enclosure Type	19" Rack-mount enclosure or standalone use on casters
Max. Trays	Nine plus 2U available for networking equipment
Max. Servers	18 dual-socket or 54 single-socket
Max. Processors (Cores)	36 (216 cores)
Max. 3.5" Drives (Max. Capacity)	72 (144TB)
Max. 2.5" Drives (Max. Capacity)	108 (54TB)
Cooling Architecture	N+1 redundant, hot swappable fan arrays in rear of enclosure. Server trays are fanless to maximize reliability and thermal efficiency.
Airflow	Front-to-back, ideal for hot-aisle, cold-aisle environments
Max. Ambient Temperature	Up to 104°F (40°C). Does not apply to all configurations.
Input Power	180–250VAC (50–60Hz)
Power Architecture	Power XE™ 12VDC internal power distribution. AC-DC rectifiers can be configured with N+1 redundancy.
Max. Rectifier Modules	Three
Dimensions (HxWxD)	24.4" (14U) x 17.6" x 41". Height is 27.2" on optional casters.

Front


Back

Rack-mounted front

Sample CloudRack X2 Compatible Server Tray Specifications

Server Tray Model	TR2108-2F1	TR2106-3ATP1	TR2106-6AT1
Servers	Two dual-socket	Three single-socket	Six single-socket
Chipset	Two NVIDIA nForce Pro 3600 MCP	Three NVIDIA GeForce 7050PV + nForce 630a	Six AMD RS690E + SB600
Max. Processors	Four AMD Opteron dual-core 2200, quad-core 2300 or six-core 2400 series (two/server)	Three AMD Socket AM2+ dual-core Athlon X2, tri-core Phenom X3 or quad-core Phenom X4 (one/server)	Six AMD Socket AM2 dual-core Athlon X2 (one/server)
Max. Cores	24 (12/server)	12 (four/server)	12 (two/server)
Max. Memory	128GB (64GB/server)	24GB (8GB/server)	24GB (4GB/server)
Memory Slots & Type	16 x 800 MHz DDR2 ECC Reg (eight/server)	12 x 1066 MHz Unb. DDR2 ECC or non-ECC (four/server)	12 x 800 MHz Unb. DDR2 ECC (two/server)
Hard Disk Drives (Max. Capacity)	Eight 3.5" (max. 16TB) SAS or SATA II quick-release drives (four/server)	Six 3.5" (max. 12TB) SATA II quick-release drives (two/server)	Six 2.5" (max. 3TB) SATA II quick-release drives (one/server)
Networking	Two GigE/server	One GigE/server	One GigE/server

A complete listing of all CloudRack trays compatible with CloudRack X2 along with full specifications can be found at sgi.com/CloudRackX2.

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