SGI® Cloudrack™ X2

The Scalable Workgroup Cluster

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 576 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 an 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 servers 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 95°F (35°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 rackmount servers.

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

SGI DTO processes assure CloudRack X2 systems are tailored to your computing environment and optimized to support your specific computing applications. Enclosures are available to address needs ranging from HPC work-group clusters to high-performance quad-socket database servers and scale-out Internet deployments. GPU-based configurations are even available to speed graphics calculations. For investment protection, CloudRack X2 is ready to take advantage of next generation AMD designs. CloudRack X2 systems are rigorously tested then shipped to your data center floor, ready for immediate integration.

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SGI Cloudrack X2 System Specifications

Enclosure Specifications	
Enclosure Model	• CR2000-14U
Enclosure Type	• 19" rackmount enclosure or standalone use on casters
Max. Trays	• Nine plus 2U available for networking equipment
Max. Servers	• 18 dual-socket
Max. Processors (Cores)	• 36 (576 cores)
Max. 3.5" Drives (Max. Capacity)	• 108 (324TB)
Max. 2.5" Drives (Max. Capacity)	• 108 (108TB)
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 95°F (35°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

Rack-mounted front

Back

Compatible Server Tray Model Specifications	TR2108-C1	TR2108-2C2	TR2106-G13
Servers	• One dual-socket	• Two dual-socket	• One dual-socket
Chipset	• AMD SR5650 + SP5100	• Two AMD SR5650 + SP5100	• AMD SR5690 + SP5100
Max. Processors	• Two AMD Opteron™ six- or eight- core 4200 series (two/server)	• Four AMD Opteron™ six- or eight- core 4200 series (two/server)	• Two AMD Opteron™ 12- or 16- core 6200 series (two/server)
Max. Cores	• 16	• 32 (16/server)	• 32
Max. Memory	• 96GB	• 192GB (96GB/server)	• 256GB
Memory Slots & Type	• 12 x 1333/1066/800 MHz DDR3 ECC reg. (12/server)	• 24 x 1333/1066/800 MHz DDR3 ECC reg. (12/server)	• 16 x 1600/1333/1066/800 MHz DDR3 ECC reg. (16/server)
Hard Disk Drives (Max. Capacity)	• Eight 3.5" (max. 24TB) SATA II quick-release drives (four/server)	• Eight 3.5" (max. 24TB) SATA II quick-release drives (four/server)	• Six 3.5" (max. 18TB) SAS or SATA II quick-release drives
Networking	• Three GigE (Intel® 82576EB + 82574L)/server	• Three GigE (Intel® 82576EB + 82574L)/server	• Three GigE (Intel® 82576EB + 82574L)/server

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