SGI CloudRack X2

The Scalable Workgroup Cluster

Key Features

Innovative Power XE™ power distribution technology

High reliability — extended server life with centralized and redundant components

Design to Order — the widest range of hardware combinations ever offered

Introducing the Scalable Workgroup Cluster

CloudRack X2 is a unified enclosure that combines extreme density 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 density with up to 288 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 service-able 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 that 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 workgroup 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 Intel designs. CloudRack X2 systems are rigorously tested then shipped to your data center floor, ready for immediate integration.

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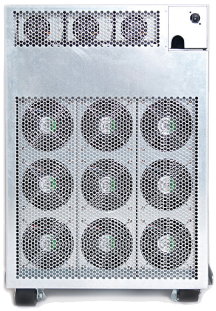
SGI CloudRack X2 System Specifications

sgi.com/cloudrackx2

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 (288 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.

Rack-mounted front

Front


Back

Compatible Server Tray Model Specifications	TR2106-TY9	TR2106-TY7	TR2102-2TY9	TR2106-RP6	TR2108-2RN2
Servers	• One dual-socket	• One dual-socket	• Two dual-socket	• One dual-socket	• Two dual-socket
Chipset	• Intel® 5500 or 5520	• Intel® 5520	• Intel® 5500 or 5520	• Intel® C600	• Intel® C600
Max. Processors	• Two Intel® Xeon® quad- or six-core 5500 or 5600 series	• Two Intel® Xeon® quad- or six-core 5500 or 5600 series	• Four Intel® Xeon® quad- or six-core 5500 or 5600 series (two/server)	• Two Intel® Xeon® E5-2600 family	• Four Intel® Xeon® E5-2400 family
Max. Cores	• 12	• 12	• 24(12/server)	• 16	• 32
Max. Memory	• 96GB	• 144GB	• 192GB (96GB/server)	• 256GB	• 384GB
Memory Slots & Type	• 12 x 1333/1066/800 MHz DDR3 ECC reg.	• 18 x 1333/1066/800 MHz DDR3 ECC reg.	• 24 x 1333/1066/800 MHz DDR3 ECC reg. (12/server)	• 16x 1600/1333/1066/800 MHz DDR3 ECC reg. or unbuffered	• 16x 1600/1333/1066/800 MHz DDR3 ECC reg. or unbuffered
Hard Disk Drives (Max. Capacity)	• Four 2.5" (max. 4TB) SATA II hot-swap drives plus two 3.5" (max. 4TB) SATA II quick-release drives	• Six 3.5" (max. 12TB) SATA II quick-release drives (four/server)	• Two 2.5" (max. 1TB) SATA II hot-swap drives (one/server)	• Six 3.5" (max. 18TB) SATA III or SAS quick-release drives	• Eight 3.5" (max. 24TB) SATA III or SAS quick-release drives
Networking	• Dual GigE (Intel® 82576) and optional QSFP QDR Mellanox InfiniBand port	• Four GigE (Intel® 82576EB + 82574L)	• Dual GigE (Intel® 82576) and optional QSFP QDR Mellanox InfiniBand port/server	• Three GigE (two Intel® I350 and one Intel® 82574L)	• Two GigE (Intel® I350) and optional QDR Mellanox InfiniBand port/server

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

Global Sales and Support: sgi.com/global