

Breakthrough Density and Configurability for Cluster Computing

KEY FEATURES

Breakthrough Density
24U and 42U cabinets with
up to 912 cores
per cabinet

Innovative Power XE™
power distribution
technology using
99 percent efficient 12VDC
power; eliminates
“stranded power” and
provides nearly perfect
phase balancing

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
104° F (40° C)

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

SGI® CloudRack™ C2



Cool, Clean and Efficient

CloudRack C2 is a unified cabinet that combines extreme densities with breakthrough energy efficiency for cluster computing. CloudRack C2 delivers dramatic bottom-line savings by eliminating “stranded power” (a data center’s power capacity which is paid for, but ultimately unused). It assures maximum power usage, cooling efficiency, and staggering server densities with up to 912 cores per cabinet. CloudRack C2 capitalizes on an ultra-efficient, rack-centric Eco-Logical™ design which uses fan-less and cover-less 1U server trays installed in 24 inch wide 24U and 42U intelligent cabinet configurations.

Innovative Power XE

Power XE is a cabinet-level power distribution technology that virtually eliminates the inherent data center “stranded power” problem and provides nearly perfect (> 95 percent) phase balancing. It 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 C2 is thermally optimized to allow data centers to operate at much higher temperatures, up to 104° F (40° C). Higher system temperature tolerance means significantly reduced power consumption by Computer Room Air Conditioning (CRAC) units which in turn drives radically reduced data center operating cost. Hot swappable, easily serviceable N+1 redundant autonomic fan arrays provide thermally managed cabinet-level airflow. These intelligent fans remarkably reduce fan power consumption by over 80 percent compared to conventional AC enclosures.

Build to Order Optimization

SGI BTO processes assure CloudRack C2 systems are tailored to your cluster computing environment and optimized to support your specific computing applications. Cabinets in 24U and 42U configurations are available with MicroSlice™ architecture-based server trays for improved price/performance. They are built ready to take advantage of next generation AMD and Intel designs for better performance, energy efficiency, and virtualization capabilities. CloudRack C2 systems are rigorously tested then shipped to your data center floor, ready for immediate integration.



SGI CloudRack C2

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CloudRack C2 Cabinet Specifications

www.sgi.com/CloudRackC2

Enclosure Model	CR2000-24U	CR2000-42U
Enclosure Type	Cabinet	Cabinet
Max. Trays	22 plus 2U available for networking equipment*	38 plus 4U available for networking equipment*
Max. Servers	66 dual-socket or 132 single-socket	114 dual-socket or 228 single-socket
Max. Processors (Cores)	132 (528 cores)	228 (912 cores)
Max. 3.5" Drives (Max. Capacity)	176 (352TB)	304 (608TB)
Max. 2.5" Drives (Max. Capacity)	264 (132TB)	456 (228TB)
Cooling Architecture	N+1 redundant, hot swappable fan arrays in rear of cabinet. Server trays are fanless to maximize reliability and thermal efficiency.	N+1 redundant, hot swappable fan arrays in rear of cabinet. Server trays are fanless to maximize reliability and thermal efficiency.
Airflow	Front-to-back, ideal for hot-aisle, cold-aisle environments	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.	Up to 104°F (40°C). Does not apply to all configurations.
Input Power	180–250VAC (50–60Hz) with multiple 2-phase and 3-phase PDU options	180–250VAC (50–60Hz) with multiple 2-phase and 3-phase PDU options
Power Architecture	Power XE™ 12VDC internal power distribution. AC-DC rectifiers can be configured with N+1 redundancy.	Power XE™ 12VDC internal power distribution. AC-DC rectifiers can be configured with N+1 redundancy.
Max. Rectifier Modules	Six	12
Dimensions (HxWxD)	47.2" (24U) x 24" x 46"	78.7" (42U) x 24" x 46"

* Optional 2U additional networking available with two fewer trays.

Sample CloudRack C2 Compatible Server Tray Specifications

Server Tray Model	TR2108-2F1	TR2108-2TY4	TR2106-3ATP1	TR2106-6AT1	TR2106-6DV1
Servers	Two dual-socket	Two dual-socket	Three single-socket	Six single-socket	Six single-socket
Chipset	Two NVIDIA nForce Pro 3600 MCP	Two Intel 5500	Three NVIDIA GeForce 7050PV + nForce 630a	Six AMD RS690E + SB600	Six Intel 945GC
Max. Processors	Four AMD Opteron dual-core 2200, quad-core 2300 or six-core 2400 series (two/server)	Four Intel Xeon quad-core 5500 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)	Six Intel single-core Atom (one/server)
Max. Cores	24 (12/server)	16 (eight/server)	12 (four/server)	12 (two/server)	Six (one/server)
Max. Memory	128GB (64GB/server)	96GB (48GB/server)	24GB (8GB/server)	24GB (4GB/server)	12GB (2GB/server)
Memory Slots & Type	16 x 800 MHz DDR2 ECC Reg (eight/server)	12 x 1333/1066/800 MHz DDR3 ECC Reg (six/server)	12 x 1066 MHz Unb. DDR2 ECC or non-ECC (four/server)	12 x 800 MHz Unb. DDR2 ECC (two/server)	6 x 800 MHz Unb. DDR2 non-ECC (one/server)
Hard Disk Drives (Max. Capacity)	Eight 3.5" (max. 16TB) SAS or SATA II quick-release drives (four/server)	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)	Six 2.5" (max. 3TB) SATA II quick-release drives (one/server)
Networking	Two GigE/server	Two GigE/server	One GigE/server	One GigE/server	One GigE/server

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A complete listing of all CloudRack trays compatible with CloudRack C2 along with full specifications can be found at sgi.com/CloudRackC2.

