

Rackable CloudRack™ C2

Breakthrough Density and Configurability for Cluster Computing



Key Benefits

- **Breakthrough Density** – 23U and 46U cabinets with up to 1280 cores per cabinet
- **Innovative Power XE™** – Power distribution technology using 99 percent efficient 12V DC power; eliminates “stranded power” and provides nearly perfect phase balancing
- **Reliability** – N+1 redundant input 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 40° C (104° F)
- **BTO Optimization** – The widest range of performance, processor, efficiency, disk, memory, and networking combinations ever offered

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 1280 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 23U and 46U 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 12V DC 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. Finally, Power XE provides real time power metering for the ultimate in rack level manageability.

Turn up the Thermostat!

CloudRack C2 is thermally optimized to allow data centers to operate at much higher temperatures, up to 40° C (104° F). 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

Rackable BTO processes assure CloudRack C2 systems are tailored to your cluster computing environment and optimized to support your specific computing applications. Cabinets in 23U and 46U 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.



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CloudRack™ C2 TR2000 Server Trays for CR2000 Cabinets

Server Tray Model	TR2108-2SC1	TR2106-3SC1	TR2106-SC2	TR2108-2F1	TR2106-6AT1	TR2108-2X38	TR2106-3X38
No. of Boards/Tray	2	3	1	2	6	2	3
No. of Internal Drives/Tray	8 SATA II, Quick Release 3.5" Drives	6 SATA II, Quick Release 3.5" Drives	6 SATA II, Quick Release 3.5" Drives	8 SATA II, Quick Release 3.5" Drives	6 SATA II, Quick Release 2.5" Drives	8 SATA II, Quick Release 3.5" Drives	6 SATA II, Quick Release 3.5" Drives
Supported CPUs/board	Dual Socket, Dual Core Intel Xeon 5100 or 5200 Series Processors or 2 Quad Core Intel Xeon 5300 or 5400 Series Processors	Dual Socket, Dual Core Intel Xeon 5100 or 5200 Series Processors or 2 Quad Core Intel Xeon 5300 or 5400 Series Processors	Dual Socket, Dual Core Intel Xeon 5100 or 5200 Series Processors or 2 Quad Core Intel Xeon 5300 or 5400 Series Processors	Dual Socket, AMD Dual Core 2200 or Quad Core 2300 Series (Barcelona & Shanghai) Processors	Single Socket, AMD Athlon™ X2 Dual Core CPU	Single Socket, Dual-Core Intel Xeon 3000 series, Quad Core Intel Xeon 3200 or 3300 series, Core 2 Duo or Core 2 Quad Processor	Single Socket, Dual-Core Intel Xeon 3000 series, Quad Core Intel Xeon 3200 or 3300 series, Core 2 Duo or Core 2 Quad Processor
Board Architecture/ Chipset	Intel 5100	Intel 5100	Intel 5100	nVidia MCP55Pro	AMD M690E+SB600	Intel X38 Express	Intel X38 Express
Cost Effective Memory /board	Up to 24GB (6xDDR2-667)	Up to 24GB (6xDDR2-667)	Up to 24GB (6xDDR2-667)	Up to 32GB (8x DDR2-667/800)	Up to 4GB (2x DDR2-800 Un-buffered ECC)	Up to 8GB (4x DDR2 667/800 Un-buffered ECC)	Up to 8GB (4x DDR2 667/800 Un-buffered ECC)
RAID Levels	JBOD, 0,1	JBOD, 0,1	JBOD, 0,1	JBOD, 0,1	None	JBOD, 0,1	JBOD, 0,1
Integrated Switch Module	No	No	No	No	Yes, 8 Port	No	No

CloudRack™ C2 CR2000 Cabinets

Cabinet Model	CR2000-23U	CR2000-46U
No. of Trays/Cabinet	Up to 20 with 3U allowed for switches or other networking equipment	Up to 40 with 6U allowed for switches or other networking equipment
No. of boards /Cabinet	Up to 60 Dual Socket or Up to 120 Single Socket	Up to 120 Dual Socket or Up to 240 Single Socket
No. of Processor (& Cores) /Cabinet	Up to 120 (480 Cores)	Up to 240 (960 Cores)
Max No. of 3.5" Drives/ Cabinet	Up to 160	Up to 320
Max No. of 2.5" Drives/ Cabinet	Up to 120	Up to 240
Server Mounting	Full-depth server trays slide in & blind-mate to power connectors in rear of cabinet. Networking or other equipment are secured via brackets & support trays	Full-depth server trays slide in & blind-mate to power connectors in rear of cabinet. Networking or other equipment are secured via brackets & support trays
Thermal Management	Front to back airflow via common cooling infrastructure at the cabinet level enabling operation up to 104°F (40°C) ambient temperature.	Front to back airflow via common cooling infrastructure at the cabinet level enabling operation up to 104°F (40°C) ambient temperature.
Cooling Redundancy	N+1 redundant, hot swappable fan arrays in rear of cabinet	N+1 redundant, hot swappable fan arrays in rear of cabinet
Input Power	3 phase input power (3x L630 whips) with real time power meter	3 phase input power (3xL630 whips) with real time power meter
Power Redundancy	N+1 redundant & hot swappable front end DC rectifiers	N+1 redundant & hot swappable front end DC rectifiers
Power Distribution	12V DC rail inside the cabinet	12V DC rail inside the cabinet
Cable Management	Integrated features as part of the cabinet	Integrated features as part of the cabinet
Cabinet Dimensions (HxWxD)	TBD total height (23U) x 24" x 40" (without the 6" deep fan assembly extension in rear)	89.2" (46U) x 24" x 40" (without the 6" deep fan assembly extension in rear)

See www.rackable.com/cloudrackC2 for complete component configuration specifications



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