

Relion™ 1702

Intel Xeon 5500 'Twin' Servers

Latest Intel Technology for High Performance Computing Clusters



Features

- » 1U rack mountable server with two independent x86-64 nodes
- » New Intel architecture with directly connected RAM and QuickPath Interconnect I/O link
- » Up to two Intel 5500 series quad core processors per node
- » Up to 96GB RAM per node
- » Integrated IPMI 2.0 management

Benefits

- » Ideal for large cluster deployments: double the density of conventional 1U servers
- » Latest Quad Core Performance for computational intensive applications
- » Superior RAM bandwidth for memory intensive HPC code
- » Integrated InfiniBand QDR/DDR options leave expansion slot available

Application Areas

- » HPC clusters with high performance, low latency interconnects
- » Multithreaded, floating point intensive applications
- » Memory intensive applications that benefit from new faster direct RAM architecture
- » Medium to large size clusters with automated remote management

Latest High-Performance Architecture - Intel Nehalem

Penguin Relion 1702 is based on the all-new Intel Xeon 5500 series 'Nehalem' CPUs and accompanying 'Tylersburg' chipset. This latest Intel dual processor, quad core platform is a complete redefinition of the x86 architecture. The new platform moves system RAM closer to the processors, making data readily available to the CPU cores. The Nehalem architecture also introduces substantially upgraded I/O capabilities which meet or exceed the performance of current high performance cluster interconnect fabrics and storage backends.

Economical, Double Density Cluster Platform

Penguin Relion 1702 servers are ideally suited for High Performance Computing clusters, packing double the number of compute nodes and CPUs per rack unit compared to conventional 1U rack mount form factors. Optional InfiniBand DDR (Double Data Rate, 20Gbps) and QDR (Quad Data Rate, 40Gbps) interfaces are available. Despite it's compact form factor, the Relion 1702 has a full PCI Express generation 2 x16 expansion slot to accommodate additional high performance interconnects or GPU coprocessors like NVIDIA Tesla. For automated, remote management of large cluster deployments Relion 1702 includes IPMI 2.0 server health monitoring.

Penguin Application Ready Clusters

Besides cluster optimized Relion 1702 servers, Penguin Computing also offers completely integrated Application Ready Clusters for High Performance Computing applications. Our cluster solutions include Penguin servers, associated communications and storage infrastructure, and necessary power and cooling solutions. Penguin has in-depth expertise in InfiniBand fabrics, including the latest QDR generation, 10 Gigabit Ethernet, fiber channel host connectivity, SAN switches, storage backends as well as high-performance, distributed file system configurations.

Designed for Linux

All Penguin servers have been tested for compatibility with major commercial and free Linux distributions. Relion servers are available with Red Hat Enterprise Linux, SuSE Linux Enterprise Server or CentOS preinstalled. HPC clusters built from Relion servers can be effectively provisioned and managed by Scyld ClusterWare software from Penguin. Scyld ClusterWare is a fourth generation cluster management platform designed to make a cluster as easy to manage as a single system. Scyld ClusterWare has been architected by



Technical Specifications - Penguin Relion 1702 Server

	Relion 1702
Form Factor	1U rack mount server with two independent x86-64 nodes
Processors	Up to two Intel Xeon 5500 series quad core processors
Bus Speed	Intel QuickPath Interconnect, up to 6.4GT/s depending on CPU option selected
Cache	8MB level 3 cache
Chipset	Intel 5520 'Tylersburg'
Memory	DDR3-1333, 12 DIMM slots, up to 96GB per node
Expansion Slots	PCI Express generation 2 slot with 16 lanes, one slot per node
Internal Storage	4 hot swap drive bays for 3.5" SATA hard drives, 2 drives per node Enterprise grade 7200rpm SATA drives in multiple capacities up to 1TB
Network Interfaces	Integrated Intel 10/100/1000 Mbps Ethernet, two ports per node, 4 ports total
Ports	2 x USB 2.0 per node 2 x LAN + management LAN per node VGA
Management	IPMI 2.0 management processor with support for remote power control, remote console and server health monitoring
Power Supply	980W power supply shared by both nodes
Dimensions	3.44" H x 16.93" W x 27.38" D
Warranty	Standard 3-year warranty included with every Penguin Computing server

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