Clusters that Work: Fast, Efficient, Cost Effective

SGI® Altix® XE Servers and Clusters

Delivering Breakthrough Cluster Flexibility, Performance and Value

KEY FEATURES

Top performance with Intel® Xeon® Processors

Flexible packaging with options for maximum extensibility or advanced compute density

Superior TCO, optimized for efficiency and performance density

Easy to build and deploy with custom-configurable, factory integrated clusters

Advanced Cluster Platform Provides Top Performance for Enhanced Productivity

SGI Altix XE servers and clusters deliver top value and performance, based on the winning combination of the latest Intel®Xeon®Processor 5500 series-based architecture and SGI expertise in designing and delivering the most advanced performance computing systems on the market today. The SGI Altix XE systems support up to 144GB of memory per node, and an ultra-dense architecture that packs up to sixteen cores in a slim 1U form factor. Add to this support for up to 40 Gb/sec (QDR) InfiniBand, quad-core processors, DDR3 memory, and an option to drive clusters with an Altix XE270 or XE500 head node for advanced extensibility, redundancy, reliability, and I/O rich-features—and you have the most powerful cluster solutions available.

Flexible Packaging to Optimally Address Needs

SGI Altix XE clusters are available in a choice of packages, designed to optimally meet diverse customer needs. SGI Altix XE340 compute nodes deliver ultimate cluster density, packing two eight core nodes into a slim 1U form factor. The powerful Altix XE270 and XE500 are an ideal cluster head node or stand-alone departmental server, offering additional extensibility and I/O options. SGI Altix XE servers run industry-standard operating systems, with a choice of SUSE® Linux Enterprise Server, Red Hat® Enterprise Linux®, and Microsoft® Windows® HPC Server 2008. In addition, the SGI® ProPack™ 6 for Linux® OS includes resource management tools and enhanced development libraries like Flexible File Input/Output (FFIO) which provides programmers with fine-grained control of I/O transfers to maximize performance.

Breakthrough Value with Low Total Cost of Ownership (TCO)

With a choice of packaging options to optimally match processing and budgetary requirements, the SGI Altix XE product family deliverslow total cost of ownership. An innovative board design that maximizes cluster compute density helps to optimize data center space and power-related expense, while reducing the cost of interconnect cabling and cards. Fewer cards and cables in turn enhance overall cluster reliability, delivering breakthrough customer value.

Factory Integrated Clusters Simplify Deployment

SGI Altix XE clusters can be customized to support the full spectrum of customer requirements, and are fully integrated and tested at the factory prior to shipment making them ready-to-deploy upon delivery. The SGI Altix XE cluster solution offers customers industry-leading software tools for cluster and workload management, and comes pre-loaded and tested so that clusters are delivered “ready to go”. SGI Altix XE clusters are backed by SGI world-class customer support organization, and a full 3-year warranty.

SGI Altix XE Servers and Clusters

www.sgi.com/servers

	SGI® Altix® XE270	SGI® Altix® XE340	SGI® Altix® XE500
Node Type	Head or Compute	Compute (2 nodes per XE340 chassis)	Head or Compute
Rack Units	2U	1U	3U
Processors	• Intel® Xeon® processor 5500 series	• Intel® Xeon® processor 5500 series	• Intel® Xeon® processor 5500 series
Memory	• Choice of up to 18 DDR3 DIMMs (2GB, 4GB, or 8GB DIMMs)	• Choice of up to 12 DDR3 DIMMs per node (2GB, 4GB, or 8GB DIMMs)	• Choice of up to 18 DDR3 DIMMs (2GB, 4GB, or 8GB DIMMs)
PCI Slots	• 2 x PCIe x8 gen 2 (low profile) • 1 x PCIe x4 gen 1 (low profile) • 2 x PCI-x 133/100 (low profile)	• 2 x PCIe x16 Gen2 (1 per node) - low profile	• 2 x PCIe x16 gen2 (full height) • 4 x PCIe x8 gen2 (full height)
Integrated I/O	• 2 x COM ports • 1 x VGA • 2 x Gigabit Ethernet • 4 x USB ports • 2 x PS/2 ports • 1x BMC port	• 2 x InfiniBand ports (1 per node), optional • 2 x COM ports (1 per node) • 2 x VGA (1 per node) • 4 x Gigabit Ethernet (2 per node) • 4 x USB ports (2 per node) • 2x BMC ports (1 per node)	• 1x BMC port • 2 x COM ports • 1 x VGA • 2 x Gigabit Ethernet • 6 x USB ports • 2 x PS/2 ports • 1 x Mic • 5 x Audio
Internal Storage	• Eight SATA or SAS drive bays with optional hardware RAID (0, 1, 5, 6, 10) • 3.5” SATA drives: 250GB, 500GB, 750GB, 1000GB • 3.5” SAS drives: 146GB, 300GB, 450GB • 8TB maximum storage • Optional DVD R/W	• Four SATA drive bays (2 per node) with optional SAS and hardware RAID0, 1 • 3.5” SATA drives: 250GB, 500GB, 750GB, 1000GB • 3.5” SAS drives: 146GB, 300GB, 450GB • 4TB maximum storage (2TB per node)	• Eight SATA or SAS drives with optional hardware RAID (0, 1, 5, 6, 10) • 3.5” SATA drives: 250GB, 500GB, 750GB, 1000GB • 3.5” SAS drives: 146GB, 300GB, 450GB • 8TB maximum storage • Optional DVD R/W
System Software	• SUSE® Linux® Enterprise Server 10 (and 11*) • Red Hat® Enterprise Linux® 4** and 5 • Microsoft® Windows® HPC Server 2008* • SGI ProPack™ 6 for Linux® * not available at MR ** XE340Gige, XE270 and XE500 stand alone systems only		
Software Solution Stack	• Cluster Management Software: SGI ISLE (TM) Cluster Manager: Platform™ Manager • Job Scheduling/ Workload Management: Altair® PBS Professional™ • Fabric Management: SGI InfiniBand Fabric Management (based on OFED) • Filesystem: XFS™ 64-bit journaledfilesystem (avail. on SUSE Linux OS), CXFS™ shared filesystem for SANs • Network File System: Samba, NFS		
Development Tools	• Programming Languages: Intel C++ Compiler, Intel Fortran Compiler, GNU compilers • Debuggers: Intel Debugger (idb) included w/Intel compilers, GNU gdb, TotalView Technologies TotalViewDebugger TotalView Technologies MemoryScape, Allinea DDT, Intel Thread Checker • Libraries: Intel Math Kernel Library, Intel Integrated Performance Primitives, Intel Threading Building Blocks • Parallel Programming: SGI Message Passing Toolkit, SGI Array Services and Secure Array Services, Intel MPI Library, Platform MPI, OpenMP included w/Intel compilers, OpenMPI, Intel Cluster OpenMP, Intel Trace Analyzer and Collector, TotalView Technologies TotalView Debugger, Allinea DDT, Interactive Supercomputing Star-P • Performance Analysis: Intel VTune Performance Analyzer, Intel Trace Analyzer & Collector		
Support	SGI provides support for hardware and systems software. SGI also offers services to implement and integrate Linux applications in your environment. For more information, please see www.sgi.com/support.		

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