SGI® Altix® XE Servers and Clusters

Clusters that Work:
Fast, Efficient, Cost Effective

System Highlights
- Top performance with Dual-Core and Quad-Core 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

DELIVERING BREAKTHROUGH CLUSTER FLEXIBILITY, PERFORMANCE AND VALUE

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® Dual-Core and Quad-Core Xeon® Processor-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 a super-fast 1600 MHz front-side bus, up to 64GB of memory per compute node, and an ultra-dense architecture that packs up to sixteen cores in a slim 1U form factor. Add to this support for DDR InfiniBand, quad-core processors, fully-buffered DDR2 memory, and an option to drive clusters with an Altix XE250 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 XE310 and SGI Altix XE320 compute nodes deliver ultimate cluster density, packing 16 processor cores into a slim 1U form factor. The powerful Altix XE250 is 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® Compute Cluster Server 2003. In addition, the SGI® ProPack™ 5 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 delivers low 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.

Custom-Configured, Factory Integrated Clusters Simplify Deployment
SGI Altix XE clusters can be custom-configured 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

	SGI® Altix® XE250	SGI® Altix® XE310	SGI® Altix® XE320
Node Type	Head or compute	Compute (2 nodes per XE310)	Compute (2 nodes per XE320)
Processors	Up to two Dual or Quad-Core Intel® Xeon® Processors, 5200 or 5400 Series • Front Side Bus: 1600 or 1333 MHz • L2 Cache: 6MB for 5200 series, 12MB for 5400 series	Up to four Quad-Core Intel® Xeon® Processors, 5400 Series (2 per node) • Front Side Bus: 1333 MHz • L2 Cache: 12MB	Up to four Dual or Quad-Core Intel® Xeon® Processors, 5100, 5200, 5300 or 5400 series (2 per node) • Front Side Bus: 1600 or 1333 MHz • L2 Cache: 6MB for 5200 series, 12MB for 5400 series
Memory	64 GB DDR2 800 or 667 MHz FBDIMM memory Supports memory sparing and mirroring	64 GB DDR2 800 or 667 MHz FBDIMM memory (32GB per node) Supports memory sparing and mirroring	
PCI Slots	2 x PCIe x8 gen 2 1 x PCIe x8 gen 1 1 x PCIe x4 gen 1 1 x PCI-x 133/100	2 x PCIe x8 (1 per node)	2 x PCIe x16 (1 per node)
Integrated I/O	• 2 x Gigabit Ethernet • 2 x COM port • 2 x VGA ports • 4 x USB ports • 2 x PS/2 ports	• 2 x InfiniBand port (1 per node), optional • 2 x COM port (1 per node) • 2 x VGA (1 per node) • 4 x Gigabit Ethernet (2 per node) • 4 x USB ports (2 per node) • 2 x 4 mini SAS ports (1 per node) with SAS/RAID option	
Internal Storage	Eight SATA/SAS drive bays • 3.5" SATA drive - 250GB, 500GB, 750GB • 3.5" SAS drive - 73GB, 143GB, 300GB • 1 x DVD-RW drive RAID 0, 1, 5, or 10	Four SATA drive bays (2 per node) • 3.5" SATA drive – 250GB, 500GB, 750GB Four SAS drives available via optional PCIe card (2 per node) • 3.5" SAS drive – 73GB, 143GB, 300GB Optional RAID 0, 1	
System Software	• Red Hat® Enterprise Linux® 4.5 and 5.0 • SUSE® Linux® Enterprise Server 10 • Microsoft® Windows® Compute Cluster Server 2003 • SGI ProPack™ 5 for Linux®		
Software Solution Stack	• Cluster Management Software: Scali Manage • Job Scheduling/ Workload Management: Altair® PBS Professional™ • Fabric Management: SGI InfiniBand Fabric Management (based on OFED) or Voltaire GridStack (on SLES 9 systems) • Filesystem: XFS™ 64-bit journaled filesystem (avail. on SUSE Linux OS), CXFS™ shared filesystem for SANs • Network File System: Samba, NFS		
Development Tools	• Programming Languages: Intel C++ Compiler, GNU GCC, Intel Fortran Compiler (Fortran95), GNU GNAT, AdaCore GNAT Pro, Java2 1.4.2, BEA JRockit • Debuggers: Intel Debugger (idb) included w/Intel compilers, GNU gdb, Etnus TotalView, Allinea DDT, Intel Thread Checker • Libraries: Intel Math Kernel Library, Intel Math Kernel Library Cluster Edition, Intel Integrated Performance Primitives, Intel Threading Building Blocks • Parallel Programming: Intel MPI, Voltaire MPI in Voltaire IBHost and Voltaire GridStack, OpenMP included w/Intel compilers, Intel Cluster OpenMP, Intel Trace Analyzer and Collector, Allinea DDT • Performance Analysis: Intel VTune Performance Analyzer, Intel Trace Analyzer & Collector		
Support and Services	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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intel® Cluster Ready

intel® Xeon® inside™ Powerful. Efficient.