



Revolutionary Mid-range Server Delivers New Levels of Performance, Efficiency and Flexibility with a Modular Blade Design

INNOVATIVE MODULAR BLADE DESIGN FOR EXCELLENT PERFORMANCE DENSITY AND 'PLUG AND SOLVE' FLEXIBILITY

SGI® Altix® 450 servers are configured from interchangeable compute, memory, I/O and special purpose blades for 'plug and solve' configuration flexibility. The innovative blade-to-NUMALink™ architecture enables users to mix and match nine standardized blade choices, for perfect system right-sizing. The compact blade packaging of the Altix 450 rack also provides excellent performance density—up to half a teraflop per half rack—as well as industry-leading power efficiency.

DESIGNED FOR FUTURE UPGRADE, EXPANSION AND INTEGRATION OF NEXT-GENERATION TECHNOLOGIES

SGI Altix 450 supports Dual-Core Intel® Itanium® Processors, and offers easy upgrade or expansion of memory, I/O or other capabilities. This flexible growth path makes it possible for customers to adjust system configurations to meet current and changing requirements easily and cost-effectively—minimum risk for maximum productivity. Altix 450 also features peer-connectivity for all components which enables high-speed access to SGI's large shared memory.

SCALABLE SYSTEM SIZE FOR SIMPLIFIED PROGRAMMING, EASY ADMINISTRATION AND SUSTAINED PERFORMANCE

SGI Altix 450 incorporates the shared-memory NUMAflex™ architecture, which simplifies software development, workload management and system

administration. It supports up to 38 sockets* (76 cores) under one instance of Linux and up to 864 GB of globally addressable memory. Supporting these powerful capabilities is the NUMALink™ interconnect, which leads the industry in bandwidth and latency for superior performance on cluster applications. The SGI Altix 450 represents a versatile solution for shared or distributed memory applications.

STANDARDS-BASED PLATFORM REDUCES COST WHILE DELIVERING UNCOMPROMISED PERFORMANCE ON LINUX

SGI Altix 450 servers have been designed specifically for demanding users based on industry standard cpu's, memory and I/O. This infrastructure is supported by a complete solution stack running on industry standard Linux® operating systems with the choice of Novell® SUSE Linux Enterprise Server or Red Hat® Enterprise Linux® Advanced Server 4 operating systems. SGI® ProPack™ software provides the tools and enabling software to optimize performance for Altix systems.

SGI® Altix® 450 Servers

SYSTEM HIGHLIGHTS

SCALABLE BLADE DESIGN FOR EXCELLENT PERFORMANCE DENSITY AND 'PLUG AND SOLVE' FLEXIBILITY.

DELIVERS INDUSTRY-LEADING POWER EFFICIENCY-BEST SUSTAINED FLOPS PER WATT.

DESIGNED FOR FUTURE UPGRADE AND EXPANSION.

SCALABLE SYSTEM SIZE FOR SIMPLIFIED PROGRAMMING, ADMINISTRATION AND SUSTAINED PERFORMANCE.

STANDARDS-BASED PLATFORM REDUCES COST WHILE DELIVERING UNCOMPROMISED PERFORMANCE ON LINUX.



ISO 9001:2000 EMPRESA CERTIFICADA

SGI, el logotipo SGI son marcas comerciales de SGI en Estados Unidos de Norteamérica y otros países.



SGI® Altix® 450 Servers

CONFIGURATION SPECIFICATIONS

COMPUTE BLADES: DENSITY CONFIGURATION

Two processor sockets per blade

- Dual-Core Intel® Itanium® Series 9000 1.67GHz, 8, 18 or 24MB/667MHz FSB
- 8 DIMM slots per blade: 1GB, 2GB or 4GB DIMMs
- Up to 38 sockets per short rack
- Up to two 38 socket

MEMORY-ONLY BLADE

- Adds to shared memory without cost of cpu and associated software licenses
- 12 DIMM slots per

I/O BLADES

Base I/O Blade

- Minimum of One Base I/O blade required for every SSI/partition
- Up to two hard drives - mix or match 300GB SAS or 500GB SATA2 hard drives
- Two low profile PCI-X slots
- Supports 2D graphics card (details below)
- Supports HW RAID 0,1
- One 4X SAS port, one DVD R/W, two Gigabit Ethernet, and four USB connectors
- Double blade width - for use in blade slot 1 only PCI-X Expansion Blade - 3 slot
- Three full 64-bit/133 MHz 3.3V PCI-X slot, hot plug capable
- Double blade width, for use in blade slots 1 only PCI-X Expansion Blade - 2 slot
- Two full 64-bit/133 MHz 3.3V PCI-X slot (100MHz if both slots populated), hot plug capable
- Single blade width PCI-Express I/O Blade - 2 slot
- Two full PCI-Express slots
- Supports 2 standard height PCIe cards at 16X speeds
- Supports 3D graphics card options (details below)
- Single blade width PCI-X + PCI-Express I/O Blade - 4 slot
- Two 64-bit/133 MHz 3.3V PCI-X slots
- Two full 16x PCI-Express Slots
- Double blade width - for use in blade slot 1 only

GRAPHICS CARDS

- 2D Card: ATI™ FireMV 2200 PCI Low Profile, Max analog resolution 2048 x 1536, 64MB memory
- 3D Card: ATI FireGL V7350 PCI-E, Max digital resolution 3840 x 2400, 1GB memory
- SUSE Linux Enterprise Server

SGI® RC100 RASC™ BLADE

- Two high performance Xilinx Virtex 4 LX200 FPGA chips with 160K logic cells
- 10 QDR SRAM DIMMs per blade
- SUSE Linux Enterprise Server

ALTIX 450 INDIVIDUAL RACK UNIT (IRU)

- IRU Chassis supports up to 5 blade slots including 1 double-width
- 2 Power Supplies, hot plug redundant
- 4 NUMA ports
- Product available as IRU-only (no rack) option
- 4 IRUs per short rack, 8 IRUs per tall rack

INTERFACES FOR NETWORKING AND EXTERNAL STORAGE

- 4Gbit Fibre Channel, single- and dual-port optical HBAs
- Ultra320 SCSI, dual port HBA
- Gig-e dual-port adapters
- 10Gigabit Ethernet, optical adapter

EXTERNAL STORAGE OPTIONS

JBOD

- SGI® InfiniteStorage 120 RAID
- SGI® InfiniteStorage 4000, 4500, 6700, 10000 NAS and SAN Solutions
- SGI® InfiniteStorage 2000, 3000 Tape and Libraries - Many Options Available

SOFTWARE

Operating System

- SUSE Linux Enterprise Server
- Red Hat Enterprise Linux Advanced Server
- Optional SGI® ProPack™ on SUSE® Linux Enterprise Server

Optional Host Storage Software

- XVM, XVM Ple, XVM Snapshot, XFS®, CXFS™, DMF, InfiniteStorage Resource Manager Networking
- TCP/IP, NFS V2/V3, DHCP, SNMP management, SNMP MIB, NIS/ONC+

SOFTWARE DEVELOPMENT TOOLS

Compilers

- Intel C++ and Fortran Compilers for Linux
- GNU Compiler for C and Fortran 77

Libraries

- SGI Message Passing Toolkit (MPT)
- Intel MPI and Math Kernel Libraries
- SGI Flexible File Input/Output (FFIO)
- Intel Integrated Performance Primitives (Intel IPP)

Debuggers

- Intel Debugger
- TotalView®
- GNU GDB
- Allinea Software Distributed Debugging Tool (DDT)

Analysis Tools

- Intel VTune™ Performance Analyzer
- Intel Trace Analyzer and Intel Trace Collector
- SGI Performance Co-Pilot™

Parallelization Tools

- MPI: SGI MPT, Intel MPI Library
- OpenMP: OpenMP included w/Intel compilers
- Parallel Software Products ParaWise

SOFTWARE DEVELOPMENT TOOLS (CONT)

Open Source Development Tools

- Linuxapps, Freshmeat
- FPGA Software Development Tool
- SGI's FPGA-aware gdb
- HLL tools: Mitronics MitronC, Celoxica Handel-C and DK Design Suite

Threading Tools

- Intel Thread Checker
- Intel Threading Building Blocks

DIMENSIONS AND WEIGHT

Altix 450 Individual Rack Unit (IRU)

- 5U (8.75"H x 17.5"W x 32.5"D)
 - Maximum weight 115 lbs (53kg)
- Standard Tall Rack
- Eight A450 IRU per rack
- Standard Short Rack
- Four A450 IRU per rack
 - 20U (41.8"H x 25.8"W x 40.9"D)
 - Maximum weight: 750 lbs (346kg)

ENVIRONMENTAL (NON-OPERATING)

Temperature

- -40C to +60C (-40F to +140F)

Humidity

- 8% to 95%, non-condensing
- Other
- Complies with the EU ROHS regulation

ENVIRONMENTAL (OPERATING)

Temperature

- 5C to +35C (41F to 95F), 0-5000ft (0-1524m)

MSL

- 5C to +30C (41F to 86F), 5000-10000ft (1524-3048m) MSL

Humidity

- 10% to 90%, non-condensing
- Maximum humidity gradient 10% per hour

ELECTRICAL AND POWER

Power supply

- Hot plug, redundant power

Voltage

- 200 to 240 VAC, 50/60 Hz, Single Phase
- Up to four 30 amp circuits per rack
- 110V available in IRU-only confi g.

Power requirements

- 21.02 kVA/20.60kW peak/max confi gured tall rack
- 10.5kVA/10.3KW peak/max confi gured short rack

