

SGI® Altix® 450 服务器

革命性的中端服务器使用模块化的刀片设计，提供了新级别的性能、效率和灵活性

功能特色：

- 模块化的刀片设计提供优秀的性能密度和"即插即解决"的灵活性
- 提供业界领先的功耗效率--每瓦特最佳的持续浮点运算性能
- 为未来升级和扩展而设计
- 可扩展的系统尺寸，简化了编程、管理并提供持续的性能
- 基于标准的平台，降低成本的同时，并不降低在Linux上提供的稳定性能

创新的模块化刀片设计，提供了优秀的性能密度和"即插即解决"的灵活性

SGI®Altix®450服务器由可互换的计算、内存、I/O和特殊用途的刀片配置而成，用来提供"即插即解决"的灵活性。创新的刀片-到-NUMAlink™体系结构让用户可以从八个标准化的刀片中选择搭配系统，实现了最优化的系统配置。Altix 450机柜紧凑的刀片封装还提供了优秀的性能密度--每高机架最高达1万亿次浮点运算，同时提供业界领先的功耗效率。

为未来升级、扩展以及与下一代HPC技术的集成而设计

SGI®Altix®450的设计与新一代双核Intel®Itanium®2处理器插座兼容，提供了内存、I/O和其他能力的轻松扩展或升级。这种灵活的增长方式使得客户能够简单有效地调整系统配置以满足当前和不断变化的需求，使风险最小化，生产率最大化。Altix 450还为所有部件提供了对等互连，实现了对SGI大共享内存的高速访问。

可扩展的系统尺寸简化了编程，实现了简易管理并提供持续的性能

SGI®Altix®450采用了共享内存的NUMAflex™体系结构，该结构简化了软件开发、工作量管理和系统管理。它在单一Linux操作系统下可支持高达38个处理器插座（76个核）、456GB的全局可寻址内存。支持这些强大功能的基础是NUMA-link™互连结构，该结构在带宽和延迟上处于业界领先地位，能够为集群应用带来出众的性能。SGI®Altix®450为共享或分布式内存应用提供了多样性的解决方案。

基于标准的平台降低成本的同时在Linux上提供稳定的性能

SGI®Altix®450服务器专为对性能苛求的用户而设计并基于业界标准CPU、内存和I/O。该设施得到了完整的运行于业界标准Linux®操作系统的解决方案支持，可选的操作系统有Novell®SUSE Linux Enterprise Sever 9或Red Hat®Enterprise Linux®Advanced Sever 4。SGI®ProPack™软件包为运行SUSE Linux Enterprise Sever 9操作系统的Altix系统提供了能够使软件性能得到优化的工具。



Compute Blades: Density Configuration

Two processor sockets per blade

- Dual Core Intel Itanium 2 Processor 9000 Series -1.4GHz/12MB, 1.6GHz/8MB, 1.6GHz/18MB cache - upgradeable to code-name Montvale
- 12 DIMMs slots per blade
- 512MB, 1GB, 2GB or 4GB DIMMs
- Up to 38 sockets per short rack
- Up to two 38 cpu socket single system image machines (76 sockets total) per tall rack

Compute Blades: Bandwidth Configuration

One processor socket per blade

- Dual Core Intel Itanium 2 Processor 9000 Series -1.6GHz/18MB, 1.6GHz/24MB cache
- Same features and memory options as above

Memory-only Blade

- Adds to shared memory without cost of cpu and associated software licenses
- Same memory options as compute blade

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 Enterprise Linux Server only

SGI® RC100 RASC™ Blade

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

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

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
- 42U (79.5"H x 25.8"W x 43.5"D)
- Maximum weight: 1450 lbs (668kg)
- Lockable Front and Rear

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 config.

Power requirements

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

Support and Services

SGI offers full support for Altix 450 hardware and system software. SGI also offers services to implement and integrate Linux applications in your environment. For more information, please contact your SGI representative.



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