SGI® Altix® 450 Mid-Range Server

Top Performance, Flexibility and Investment Protection

The High-Performance Computational Chemistry Development System for Gaussian

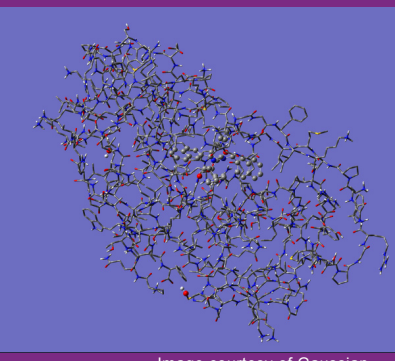
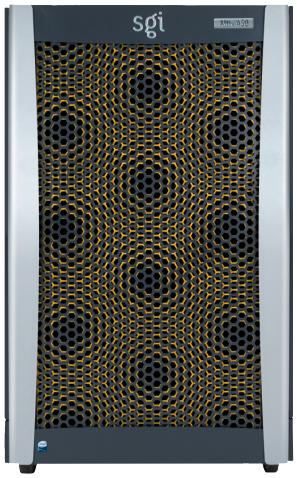


Image courtesy of Gaussian

The SGI® Altix® 450 mid-range server is the ideal high-performance development system for Gaussian, which is optimized for performance and scalability on the Altix platform. With industry leading performance on your most demanding Computational Chemistry applications, this compact yet powerful computer uses an innovative modular blade design that allows you to pack up to half a teraflop in a short rack, and NUMAlink™ interconnect technology which leads the industry in bandwidth and latency.



Drive your development results faster with your own 16-core SGI Altix 450 server based on Dual-Core Intel® Itanium® 2 processors (1.6GHz/18M), 2 x 300GB SAS HDD, and 32GB of global shared memory for the very special price only for Gaussian Developers of…

$47,956* (USD)

Or opt for an Altix 450 configured with 32 cores, 64GB memory: $96,928 (USD)

And you get…

- The powerful combination of Intel Itanium 2 processors and the Linux® OS (Novell® SUSE® LINUX Enterprise Server or Red Hat® Enterprise Linux®)
- Turbo-charged Computational Chemistry application performance with SGI® ProPack™ for Novell SUSE Linux Enterprise Server
- 1 Year of SGI warranty support
- 'Plug and solve' configuration flexibility with interchangeable compute, memory, I/O and special purpose blades for perfect system right-sizing
- A system that can keep up with your needs: support for up to 38 sockets (76 cores) under one instance of Linux and up to 456GB of global shared memory

Don't miss out on this special pricing… Please call 1-800-800-SGI1 (7441), e-mail at eleads@sgi.com, or contact your authorized SGI channel partner.

SGI® Altix® 450 Servers

Compute Blades

Two processor sockets per blade

- Dual Core Intel Itanium 2 Processor 9000 Series
  - 1.6GHz/24MB cache/533MHz FSB
  - 1.6GHz/18MB cache/533MHz FSB
  - 1.6GHz/8MB cache/533MHz FSB
  - 1.4GHz/12MB cache/533MHz FSB
  - Socket upgradeable to code-name Montvale
- 4.3GB/s memory bandwidth per socket
- Four to 12GB DDR-2 memory DIMMs per blade
- Plugs directly into Altix 450 Individual Rack Unit (IRU)
- Memory capacity:
  - 2GB – 24GB per blade
  - 2GB – 456GB per system
- Up to two 38 socket single system image machines (76 sockets total) per tall rack
- Up to 38 sockets per short rack

Memory-only Blade

- Up to 24GB DDR-2 memory per blade
- Adds to shared memory without cost of cpu and associated software licenses
- Memory sets

Kits	DIMMs
2GB	4 x 512MB
4GB	4 x 1GB
8GB	4 x 2GB

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 SAS or SATA2 hard drives
- Two low profile PCI-X slots
- One SAS port, two Gigabit Ethernet, and four USB connectors
- Double blade width – for use in blade slots 1 only

PCI-X Expansion Blade

- One full 64-bit/133MHz 3.3V PCI-X slot, hot plug capable
- Two full 64-bit/133MHz 3.3V PCI-X slots (100MHz bus if both populated), hot plug capable
- Double blade width – for use in blade slots 1 only

PCI-Express I/O Blade

- Two full PCI-Express slots
- One PCI-Express slot per channel with 16X PCI-Express connector
- Supports up to 90W per card
- One blade width

PCI-X + PCI-Express I/O Blade

- Two 64-bit/133MHz 3.3V PCI-X slots
- Two full 16X PCI-Express slots
- Supports up to 150W per card
- Double blade width – for use in blade slots 1 only

SGI® RC100 RASC™ Blade

- Two high performance Xilinx Virtex 4 LX200 FPGA chips with 160K logic cells
- 10 QDR SRAM or SDRAM DIMMs per blade

Interfaces for Networking and External Storage

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

Software

Operating System

- SUSE Linux Enterprise Server
- SGI® ProPackTM on SUSE® Linux Enterprise Server
- Red Hat® Enterprise Linux®

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, Libraries, Debuggers, Analysis Tools, Automated Parallelization Tools, Open Source Development Tools, FPGA Software Development Tools
- For more details, see the SGI® Altix® 450 Datasheet

Dimensions and Weight

Altix 450 Individual Rack Unit (A450 IRU)

- Supports up to 5 blade slots including one double-wide
- 5U (8.75"H x 17.5"W x 17.0"D)
- Max. shipping weight 262 lbs (119kg)

Standard Tall Rack

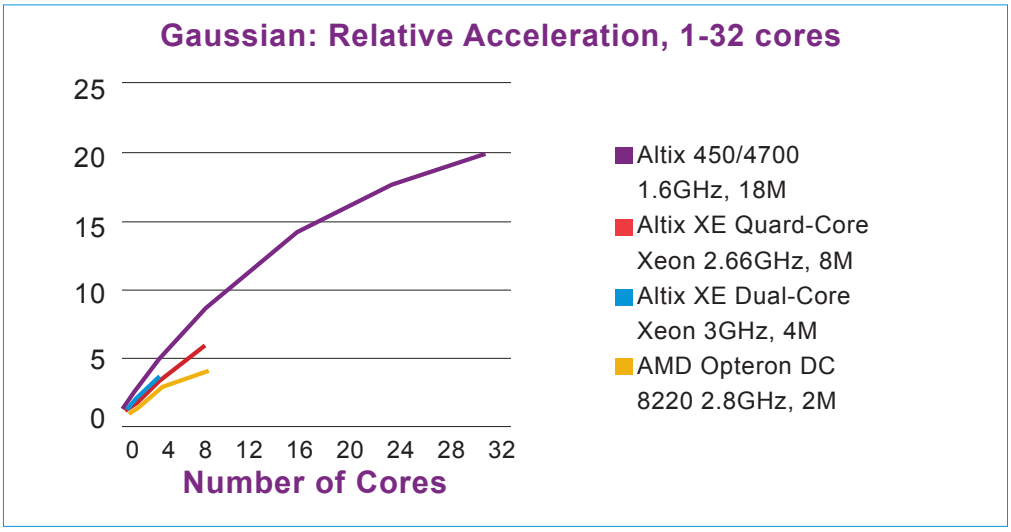
- Eight A450 IRU per rack
- 42U (79.5"H x 25.8"W x 43.5"D)
- Max. shipping weight 1500lbs (680kg)

Standard Short Rack

- Four A450 IRU per rack
- 20U (41.8"H x 25.8"W x 40.9"D)
- Max. shipping weight 847lbs (384kg)

Support and Services

SGI offers full support for Altix 450 hardware and system software. SGI offers services to implement and integrate Linux applications in your environment. SGI also offers SGI ESP (Embedded Support Partner), a set of tools and facilities that provides an effective, reliable, proactive, and automated environment for achieving levels of high availability. For more information, please contact your SGI representative.



Notes:
All performance results reported as the geometric means relative to Single-Core Results for Altix XE Quad-Core Xeon 2.66GHz as described below. All testing done by SGI. SGI Altix 450 system tested: dual-core Intel Itanium 2 9000 (1.6GHz/18MB L3 cache per socket), 8 blades, 16 sockets, 32 cores, 64GB mem (2GB mem/core). SGI Altix XE Quad-Core system tested: quad-core Intel Xeon 5300 (2.66GHz/8MB cache per socket), 2 sockets, 8 cores, 16GB mem. SGI Altix XE Dual-Core system tested: dual-core Intel Xeon 5160 (3.0GHz/4MB cache per socket), 2 sockets, 4 cores, 8GB mem. Colfax DC 8220 system tested: dual-core AMD Opteron 8220 (2.8GHz/2MB L2 cache per socket), 4 sockets, 8 cores, 32GB mem.

Gaussian 03 rev D.01. Testing based on apinenefreq (C10H16, 182 basis functions, RB3LYP/6-31G, Frequency calculation), apinenehf (C10H16, HF/6-311g(df,p), 346 basis functions), test397 (RB3LYP/3-21G Force calculation of C54H90N6O18, C1 symmetry, 882 basis functions.). Detailed performance results are available upon request.

Corporate Office
SGI
1140 East Arques Avenue
Sunnyvale, CA 94085-4602
650.960.1980

North America +1 800.800.7441
Latin America +55 11.5185.2860
Europe +44 118.912.7500
Japan +81 3.5488.1811
Asia Pacific +1 650.933.3000

4046 [10.2007]

J15329