sgi®

An Inside Look at What's Driving Innovation with SGI® Altix® Software Offerings

More Innovation

More Advancements

More Breakthroughs

It's All About The Advantage

SGI designs its Linux® operating system (OS) software offerings specifically for demanding, high-performance computing. These industry-standard, fully supported software solutions leverage SGI's extensive experience in scaling, data handling, and large-system management. SGI brings you the flexibility of the Linux OS backed by 20 years of high-performance computing research and development to solve your toughest problems quickly and effectively.

Working closely with the open source community, SGI has developed enhancements to Linux OS scalability, memory usage, I/O, and other features to drive optimal performance on demanding applications. These and other SGI innovations have helped maximize computing productivity on the Linux OS, and will expand your choice of operating systems, applications, and configurations.

SGI® Altix® Servers and Linux OS: Optimized for HPC

It's All About Choice

Linux® OS Options From SGI Features

Required Features	SGI Advanced Linux™ Environment with SGI ProPack™ 3	SUSE® LINUX Enterprise Server 9	SUSE® LINUX Enterprise Server 9 with SGI ProPack™ 4	Red Hat® Enterprise Linux® 4
Standards	LSB 1.3	LSB 1.3 LSB 2.0 planned	LSB 1.3 LSB 2.0 planned	LSB 1.3 LSB 3 in progress
≤ 64p	Yes	Yes	Yes	Yes
> 64p	Yes	Yes	Yes	No
Support	SGI L1-3 through end of 2005	SGI L1-3 with Novell Web-based updates and upgrades including major releases	SUSE LINUX Enterprise Server 9: SGI L1-3 support with Novell Web-based updates and upgrades SGI ProPack software feature for Linux OS: SGI L1-3	Red Hat—all levels
Compatibility	Red Hat™ Enterprise Linux Advanced Server 3 2.4.21 kernel	2.6.5+ kernel	2.6.5+ kernel	2.6.9+ kernel*
Security	No plans for CAPP certification	PAM, LDAP, Kerberos, LaUS	CAPP@ EAL/3+ planned by SGI LSPP available after 6/06	SELinux support including SSL, IpSec, MAC
CXFS™ Needs to run with SGI ProPack software feature for Linux OS	Yes	No, but supports XFS®	Client Planned 07/05	No
Graphics	Silicon Graphics Prism™ visualization system Support in SP5-12 pipe		SUSE LINUX Enterprise Server 9, SP2 planned for 8/05 (16 pipe)	No
Real-time	No		2-32p support now ULI, FRS planned for 8/2005	No

* Compatible with Red Hat™ Enterprise Linux Advanced Server 3 when using core C++ and C libraries (compat-libstdc++ and compat-gcc)

Linux OS for HPC

Linux OS

SGI delivers scalable shared memory systems and clusters to let you take full advantage of this high-performance operating system.

The power of the Linux OS delivers a competitive advantage to developers with cost-effective, multi-platform support for easy-to-deploy programming and implementation.

The Linux OS allows access to a broad availability of open-source applications for data-intensive commercial workloads and end-users alike.

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Intel® software network

It's All About Having The Right Tools

SGI innovations on the Linux OS include enhancements to scalability, scheduling, memory usage, I/O, and other attributes critical to high-demand application performance. The advanced Linux OS development environment for the SGI Altix family of servers maximizes these capabilities. It delivers access to global shared memory across cluster nodes, the powerful SGI NUMAflex™ architecture, industry-standard compliance, and high-performance I/O capabilities for commercial, open-source, and development software.

The SGI development environment features the powerful Intel Software Development Products, which allow users to achieve optimal application performance on their Intel® Itanium® 2 processor-based SGI Altix systems. Intel software tools work with a variety of development environments, operating systems, and industry standard development tools.

Tools To Get The Job Done

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

Libraries:
- SGI Message Passing Toolkit (MPT)
- SGI Scientific Computing Software Library (SCSL)
- SGI Flexible File Input/Output (FFIO)
- Intel Math Kernel Library (Intel MKL)
- Intel Integrated Performance Primitives (Intel IPP)
- NAG C, Parallel, Fortran, Fortran SMP, Fortran 90 Libraries

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

Performance and Application Analysis Tools:
- Intel VTune™ Performance Analyzer
- Intel Trace Analyzer and Intel Trace Collector
- SGI Performance Co-Pilot™
- SGI pfmon and profile.pl
- SGI Histx

Automated Parallelization Tools:
- Parallel Software Products ParaWise

Open Source Development Tools:
- Linuxlinks.org, Freshmeat.net, SourceForge®.net

It's All About Performance

Linux™ OS Options—SGI Performance Enhancements

Additional Features	SGI Advanced Linux™ Environment with SGI ProPack™ 3	SUSE® LINUX Enterprise Server 9	SUSE® LINUX Enterprise Server 9 with SGI ProPack™ 4	Red Hat® Enterprise Linux® 4
Max. Memory	Up to 32 TB per system	Max. RAM for SUSE LINUX Enterprise Server 9: Theoretical—1 petabyte Practical—4 terabytes	Up to 32 TB per system	128 GB for Itanium 2 processor (tested limit) 32 TB claims are theoretical
Hardware Extensions	Voltaire IB support	USB 2.0 with bandwidth for up to 480 megabytes per second IB support* (via Voltaire)	USB 2.0 with bandwidth for up to 480 megabytes per second IB support* (via Voltaire)	USB-supported for Flash media, CD-ROM and DVD Emulex LightPulse Fibre Channel driver included (unsupported) IB support (via Topspin)
Intel Compilers and Tools	Performance enhancing C/C++ and Fortran compilers, debugger, MKL libraries, Intel VTune™ performance tuning	Performance enhancing C/C++ and Fortran compilers, debugger, Intel VTune™ performance tuning	Performance enhancing C/C++ and Fortran compilers, debugger, Intel VTune™ performance tuning	No support at this time
GCC Compiler and Tools	GCC 3.2.3	GCC 3.2.3 includes tools for C/C++/Fortran77/ Java/Ada/objective-C	GCC 3.2.3 includes tools for C/C++/Fortran77/ Java/Ada/objective-C	GCC 3.4 includes tools for C/C++/Fortran77/ Java/Ada/objective-C GCC 4 includes support for C++/Fortran/Java (unsupported)
ProPack Performance Package	MPT, SCSL, Cpuset, SGI Performance Co-Pilot™, CSA, FFIO, ESP	No	MPT, SCSL, Cpuset, SGI Performance Co-Pilot™ CSA FFIO, ESP	No
File Systems	XFS, CXFS	Ext2 & 3; Reiser, XFS, Lustre (unsupported), JFS	Ext2 & 3; Reiser, XFS, Lustre (unsupported), JFS	Ext2 & 3, CIFS, FAT, SMBFS, UDF, JFS2, LVM, NFS

SGI ProPack™ Software Feature for Linux OS

The SGI ProPack software feature for the Linux OS includes capabilities and performance improvements ideal for enabling technical and creative users to solve their big compute and data problems by using the Linux operating system and Intel® Itanium® processors.

SGI ProPack 4 software is the first version of SGI ProPack 4 to be certified by SGI and fully supported on SUSE LINUX Enterprise Server OS. SGI ProPack 4 software feature for Linux OS includes scientific libraries, NUMAflex technology tools, and other improvements intended to augment a Linux OS base distribution. Users can expect to obtain application performance advantages similar to those obtained when running the SGI Advanced Linux Environment OS with SGI ProPack 3.

Applications Optimized For Every Industry
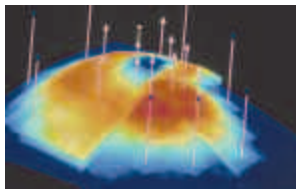
Energy

Solutions for optimizing exploration and production decisions

Horizontal Software

Solutions for application development, database management, and more
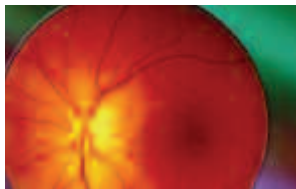
Sciences

Solutions ranging from weather forecasting to drug design, and everything in between
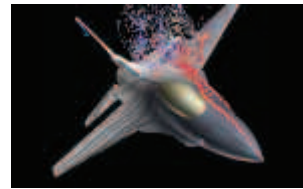
Government

Solutions for government agency and defense decision-makers

Manufacturing

Solutions for aerospace, automotive, consumer products manufacturing, and more

Media

Solutions for creating and managing digital content for film and broadcast

SGI for Solid Support

After more than 20 years in the high-performance and technical computing fields, we've developed the best support organization in the business. We specify, configure, and fine-tune the ideal solution for your business, and support an extensive catalog of Linux applications and middleware.

Put the Power of SGI and the Linux OS to Work for You

Find out more about SGI's Linux OS offerings at: http://www.sgi.com/products/software/linux/ or call 800.800.7441

Learn more about Linux OS technology from SGI at: www.sgi.com/products/servers/res_ctr/

Create world-class software applications by using the extensive suite of software development tools from Intel.

Learn more about Intel software development products at: www.intel.com/software/products

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