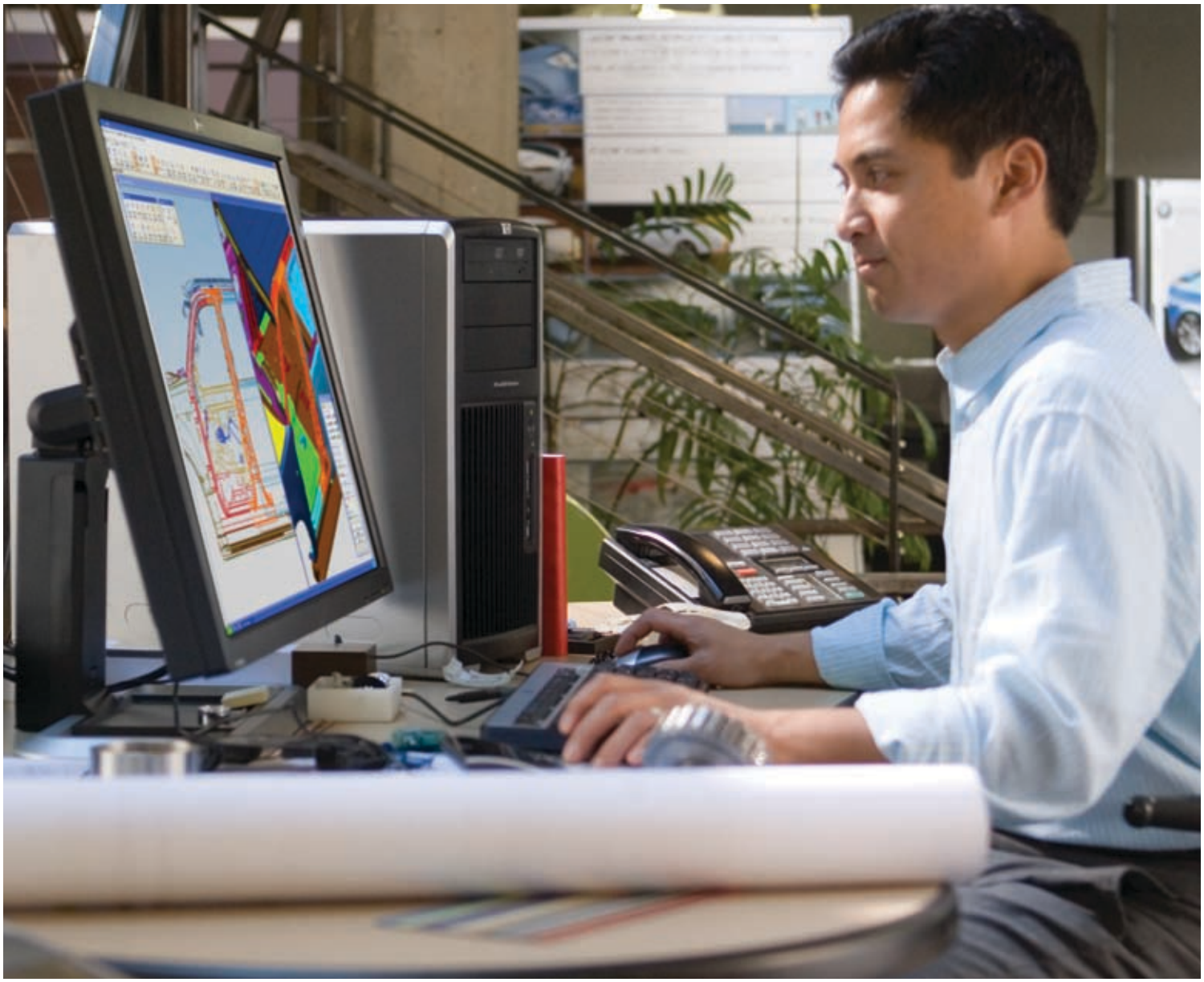
HP and Siemens PLM Software

Give yourself an engineering edge



The HP commitment to innovation and solutions excellence, combined with HP's relationship with Siemens PLM Software, provide you with an engineering edge. HP Personal Workstations are built with the latest technology, including processors from Intel® or AMD; professional graphics cards from NVIDIA or AMD ATI; Microsoft® Windows® operating systems; high-speed storage; and fast, reliable memory that is designed, tested, and built for both high performance and extreme stability when running professional applications.

Software like the HP Performance Tuning Framework, shipped with every HP workstation, makes it easy to configure and update HP Workstations, improving their stability and performance. Optional HP Remote Graphics Software enables access to your design data any time, from anywhere. With HP application experience and expertise, you get world-class design and unique, HP features that provide you with an engineering edge to maximize your design productivity.

HP innovation

HP innovation is most evident in our first-to-market features. Innovation keeps you ahead of your competition by helping to improve productivity and shorten design cycles. HP Workstations led the way with 64-bit[2] architecture, quad-core[1] processing, 80 PLUS efficient power supplies, tool-less chassis, state-of-the art acoustics, and liquid cooling.

HP engineering helps you

HP engineers focus their technical expertise on the complete solution—Siemens PLM Software applications running on HP hardware. Siemens PLM Software applications are thoroughly tested and certified on HP Workstations to help ensure that your solution works with minimal adjustments. We leverage this application knowledge in the HP Performance Tuning Framework, which enables you to adjust settings so your applications reach peak performance and stability. And if the need arises, our application experts are available to help resolve issues. Together with Siemens PLM Software, we help you achieve your goals.

Siemens PLM Software

Over 51,000 customers worldwide with 4.6M seats use Siemens PLM Software solutions to accelerate product innovation. Siemens PLM Software looks at the lifecycle of the entire product from conception to end of life and works with HP to provide everything from hardware to technical and business consulting services.

Siemens PLM Software's NX

With a comprehensive range of computer-aided design (CAD) applications, NX is unmatched in power and flexibility when it comes to mechanical design and engineering. NX offers a broad set of CAD solutions for the design of complex mechanical products that deliver higher efficiency and shorter design cycles at lower costs. NX enables design professionals of any skill level to consider more alternatives, evaluate them more thoroughly, and get to market with innovative designs of superior quality.

Siemens PLM Software's NX Nastran

NX Nastran is a premium computer-aided engineering (CAE) tool. Major manufacturers worldwide rely on NX Nastran for their critical engineering computing needs to produce safe, reliable, and optimized designs within increasingly shorter design cycle times. For over 30 years, NX Nastran has been the analysis solution of choice in almost every major industry including aerospace, defense, automotive, shipbuilding, heavy machinery, medical, and consumer products—an industry standard for the computer-aided analysis of stress, vibration, structural failure/durability, heat transfer, noise/acoustics, and flutter/aeroelasticity. HP tests NX Nastran across different architectures to ensure that we recommend the right solution for you.

HP provides more to Siemens PLM Software customers

The HP and Siemens PLM Software alliance provides:

- Solutions that optimize reliability and manageability, thanks to the HP Performance Tuning Framework, which bundles HP's Siemens PLM Software NX and I-deas NX Series expertise into easy-to-use system administration tools
- Workstations with great out-of-the-box performance requiring minimal IT support, due to HP's onsite lab staff working with Siemens PLM Software engineers on QA testing and certification for all HP workstations
- Better system stability from thoroughly tested drivers and system monitoring tools
- Innovative technology such as the HP Blade Workstation Solution and personal productivity tools like HP Remote Graphic Software

Siemens PLM Software's Teamcenter

Teamcenter powers innovation and productivity by connecting people and processes with a single source of product and process knowledge. Teamcenter's comprehensive portfolio of proven digital lifecycle management solutions is built on an open product lifecycle management (PLM) foundation to power end-to-end PLM.

Teamcenter allows organizations to create and communicate the correct set of requirements to downstream decision-makers. By empowering all individuals and functional teams with visibility to each requirement and the knowledge behind it throughout the lifecycle, Teamcenter ensures the delivery of purpose-driven products—that is, products that achieve their strategic intent.

HP and Siemens PLM Software together

System failure costs money and time. With the HP and Siemens PLM Software alliance, you don't need to spend time determining who to call because HP is your single point of contact. We have the expertise to optimize system reliability and minimize the time to resolution.

Because we value our customers, HP and Siemens PLM Software share a unique strategic alliance going back to 1988. Our Application Competency Center places HP engineers permanently onsite at Siemens PLM Software. They conduct extensive testing and certify entire systems optimized to run NX, NX Nastran, and other Siemens PLM Software solutions. This unmatched collaboration provides you with reliable, easy-to-own solutions and breakthrough technologies that increase productivity.

HP Remote Graphics Software

HP Remote Graphics Software (RGS) is an advanced utility that allows you to remotely access and share your workstation, including its 3D graphics power and all of its applications. Using patented HP compression technology, RGS minimizes network usage (subject to network speed) and enables remote access to NX solutions without compromising performance or image quality. The technology enables real-time sharing of high-resolution imagery, allowing creative teams from multiple remote sites to collaborate in 3D as if they are all in the same room. Engineers and designers find immense value in the technology because communication is instantaneous. More people can participate, and it speeds the design process.

HP Performance Tuning Framework

This exclusive HP tool—pre-installed on all HP Personal Workstations—makes it a snap to configure and update HP Workstations, improving their stability and performance. HP Performance Tuning Framework (PTF) has many features to help you work faster and more productively, while reducing hassles. HP PTF can:

- Provide a detailed configuration report so you can easily see what's on your system.
- Organize graphics driver certification information across multiple applications to help you make informed decisions when loading the latest drivers.
- Track memory use—a major potential for performance slowdowns—across physical and virtual memory to provide proactive information on the limitations of your system.
- Alleviate support issues—just send your PTF configuration file to the Global Technical Access Center (GTAC) when there is a problem—it's as simple as that. Best of all, HP PTF is free.

HP Two-handed CAD

Two-handed CAD provides substantial personal productivity boosts for most users. HP's 3D motion controller complements a traditional mouse to deliver the advantages of two-handed CAD to Siemens PLM Software. You can easily rotate, pan, and zoom with one hand while selecting features with the other. Special program keys allow the instantaneous selection of complex steps or features. HP's 3D motion controller allows you to work faster with less movement and significantly fewer mouse clicks.

Working differently on quad-core

Using single or dual quad-core[1] processors with HP Workstations provides better performance for critical processing, reducing the overall design cycle. Threaded applications such as NX Nastran get immediate and significant time reductions when processing data. At the same time, you can run complex NX Nastran jobs, multitask loading new files in the background, and work on your designs—without any performance slowdown. With HP Workstations, you benefit from faster analysis completion, quicker integration of results into the design, and the ability to perform multiple tasks simultaneously. HP Workstations running quad-core technology can help you:

- Reduce your overall design time
- Significantly speed up analysis and animation
- Quickly create better and more analyzed designs

For more information

HP maintains a dedicated website for all users of Siemens PLM Software applications at www.hp.com/go/SPLMS. The website helps with your systems selection, providing the latest in recommended configurations for Siemens PLM Software, as well as certification and other useful information.

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For more information about HP and Siemens PLM,
please visit www.hp.com/go/SPLMS.

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Designing your engineering edge

The HP Workstation Configuration Guide for Siemens PLM Software applications

HP recommends Windows Vista® Business

Engineers, design professionals, and visualization experts benefit from the leading-edge technology of HP and the unique relationship between HP and Siemens PLM Software. All HP systems are available in configurations that can be customized to meet your specific needs. Choose from:

- Intel® or AMD processors
- Professional 2D and 3D graphics cards
- Microsoft® Windows®, HP-UX, or Linux operating systems
- High-speed storage
- Fast and reliable memory

HP innovations and world-class design along with first-to-market technologies like 64-bit[1] architecture, Quad-Core[2] processors, 80 PLUS efficient power supplies, state-of-the-art acoustics, and liquid cooling help you stay a step ahead of your competition. HP Workstations have also been designated Electronic Product Environmental Assessment Tool (EPEAT™) Gold for meeting 23 required and at least 21 optional voluntary environmental performance criteria established by the IEEE 1680 American National Standard for the Environmental Assessment of Personal Computer Products.

HP is one of Siemens PLM Software's top hardware partners. We share technology road maps to assure our products work well together. Together, Siemens PLM Software and HP offer a comprehensive portfolio of innovative hardware and software solutions—tuned and integrated to meet the needs of manufacturing and engineering markets so you can meet your goals today and tomorrow.

HP xw4600 Workstation

The HP xw4600 Workstation combines next-generation performance technology with expandability, reliability, and affordability. It is based on the new Intel® X38 Express performance chipset and the latest workstation-class Dual- and Quad-Core[2] Intel processors. The HP xw4600 supports up to 8 GB of memory and comes with your choice of 2D or 3D professional graphics cards. It's powerful enough to meet the demanding requirements of data-intensive applications like computer-aided design. Optional HP Remote Graphics Software allows you to access and share the desktop of a remote computer over a standard network, making your busy life a bit easier. HP Performance Tuning Framework lets you optimize your system to improve stability and performance. With an 80 PLUS efficiency power supply standard and ENERGY STAR® qualified configurations, the HP xw4600 is designed to optimize energy use.

HP xw6600 Workstation

The HP xw6600 Workstation is a high-performance machine engineered for environments where space is at a premium and noise must be minimized. Its Dual- or Quad-Core[2] Intel® Xeon® Processor with the new 45nm technology provides ample power for your team members to create, design, and analyze more in less time. Its dual Gen2 PCI-e interfaces leverage an architecture that can deliver up to twice the graphics performance of previous systems. The HP xw6600 is designed for expandability in anticipation of your future needs. It achieves quiet operation by paying close attention to airflows, and by using quiet fan technology. Its system design is energy wise, using 80-watt processors and an 80 PLUS efficiency power supply.

HP recommends Windows Vista® Business

HP xw8600 Workstation

The HP xw8600 Workstation is designed for extreme performance and limitless possibilities. It provides power, versatility, and reliability for massive compute and visual capacity—to give your business a decided edge over the competition. The HP xw8600 meets the most demanding engineering, Computer-Aided Design challenges with the latest Intel Dual- and Quad-Core[2] processors with the new 45nm technology. It integrates the Intel 5400 chipset to deliver four times the graphics-processing throughput of previous generation systems. The HP xw8600 features the greatest expandability and range of options available in the HP Workstation family. Its 80 PLUS efficiency power supply makes the most of every watt of power, and its tool-less chassis means it's easy to service.

HP xw9400 Workstation

The HP xw9400 Workstation delivers uncompromised graphics performance and maximum expandability. It supports up to four 3D graphics displays, dual PCIe x16 graphics with NVIDIA SLI technology linking them together, Dual-Core[2] AMD Opteron™ processors, and up to 128 GB of memory to meet the combined needs for computational power, visualization power, and I/O performance, while helping to lower your total cost of ownership. It's an excellent choice for high-performance graphics. Tests with the Siemens PLM Software Teamcenter Visualization application using dual graphics and SLI showed over a 30% improvement in frame rate over the best single graphics performance.

HP xw460c Blade Workstation

The HP xw460c Blade Workstation provides the perfect solution for those who are looking to leverage HP remote technologies to support remote sites, protect Intellectual Property, eliminate loading large files over the network, centralize databases, or minimize total cost of ownership. The HP Blade Workstation is a high performance machine that uses one or two Dual- or Quad-Core[2] Intel® Xeon® Processors, powerful 3D NVIDIA graphics, and up to 32 GB of ECC DDR-2 667 MHz memory. It is an excellent choice for those looking for serious innovation in their design process.

HP Compaq 8710w Mobile Workstation

The HP Compaq 8710w Mobile Workstation redefines power on the move by combining the best in visualization and computational power into a sleek design with a 17-inch diagonal display to form HP's highest performing mobile workstation. You can run demanding applications from Siemens PLM Software on this machine thanks to true 64-bit[1] computing, NVIDIA graphics, and support for up to 4 GB of memory. It features Intel Core 2 Duo[3] Processor technology with built-in remote manageability and proactive security.

HP xw4600 Workstation performs better

HP xw4300 Workstation
Intel® Pentium® 4[3] Processor / 3.8 GHz[4]
Genuine Windows® XP Professional
NVIDIA Quadro FX 4500

HP xw4600 Workstation
Intel® Core™2[3] Duo Processor / 3.0 GHz[4]
Genuine Windows® XP Professional
NVIDIA Quadro FX 1700

Source: HP Workstation Technical Consulting Lab

HP recommends Windows Vista® Business

HP Recommended Configurations for Siemens PLM Software
(ALL APPLICATIONS CERTIFIED)

2D to Entry 3D

HP xw4600 Workstation

- Genuine Windows Vista® Business 64-bit with downgrade to Windows® XP Professional x64 custom installed[5]
- Intel® Core™2 Duo[3] processor E6550[5] /2.33 GHz[4], 4 MB L2,1333 MHz FSB[6]
- 1 GB (2 x 512) DDR2-667 ECC memory[7,8]
- 160 GB[10] SATA 3 Gb/s NCQ 7200 rpm
- NVIDIA Quadro FX370 PCIe
- 16X DVD+/-RW DL SuperMulti[11]
- 80 PLUS Base Unit
- HP LP2475w 24-inch Widescreen LCD Monitor
- HP SpacePilot

Mainstream 3D CAD

HP xw4600 Workstation

- Genuine Windows Vista® Business 64-bit with downgrade to Windows® XP Professional x64 custom installed[5]
- Intel Core 2 Duo[3] processor E6750[5] / 2.66 GHz[4], 4 MB L2,1333 MHz FSB[6]
- 2 GB (2 x 1 GB) DDR2-800 ECC memory[7,8]
- 250 GB[10] SATA 3 Gb/s NCQ 7200 rpm
- NVIDIA Quadro FX1700 PCIe
- 16X DVD+/-RW DL SuperMulti[11]
- 80 PLUS Base Unit
- HP LP3065 30-inch Widescreen LCD Monitor
- HP SpacePilot

Power 3D CAD (Intel)

HP xw8600 Workstation

- Genuine Windows Vista® Business 64-bit with downgrade to Windows® XP Professional x64 custom installed[5]
- Quad-Core[2] Intel Xeon®[1] processor 5450[3]/3.00 GHz, 12 MB L2, 1333 MHz FSB[6]
- 4 GB (4 x 1 GB) DDR2-667 ECC FBD memory[7,9]
- 250 GB[10] SATA 3 Gb/s NCQ 7200 rpm
- NVIDIA Quadro FX1700 PCIe
- 16X DVD+/-RW DL SuperMulti[11]
- 800W 80 PLUS Energy Efficient Chassis
- Two HP LP3065 30-inch Widescreen LCD Monitors
- HP SpacePilot

HP Recommended Configurations for Siemens PLM Software
(ALL APPLICATIONS CERTIFIED)

Power 3D CAD (AMD)

HP xw9400 Workstation

- Genuine Windows Vista® Business 64-bit with downgrade to Windows® XP Professional x64 custom installed[5]
- Two Dual-Core[2] AMD Opteron™ processor 2224SE[13]/3.2 GHz
- AMD64 Technology[14]
- 1 GHz AMD HyperTransport™ technology
- 8 GB DDR2-667 ECC memory[7,9]
- Two 300 GB[10] 10k rpm SAS drives
- DVD+/-RW Double Layer SuperMulti with Lightscribe (SATA)[11]
- NVIDIA Quadro FX5500
- Two HP LP3065 30-inch Widescreen LCD Monitors
- HP SpacePilot

Mobility

HP Compaq 8710w Mobile Workstation

- Genuine Windows Vista® Business 32-bit with downgrade to Windows® XP Professional 32-bit custom installed[5]
- Intel Core 2[2] Duo Processor T9500[3]/2.6 GHz[4], 6 MB L2 cache, 800 MHz FSB[6]
- 17-inch diagonal WUXGA display
- NVIDIA Quadro FX 3600m with 512 MB memory
- 200 GB[10] 7200 rpm SATA hard drive
- 4 GB DDR2-667 GHz SDRAM memory[7,8]
- DVD/CD-RW Combo[11]
- 7.5 pounds[15]

Remote engineering

HP xw460c Blade Workstation

- Genuine Windows Vista® Business 64-bit with downgrade to Windows® XP Professional x64 custom installed[5]
- Quad-Core[2] Intel Xeon processor E5430[3]/2.66 GHz[4]
- 2 GB DDR2-667 Fully Buffered DIMM memory[7,9]
- 72 GB[10] 10K SAS drive
- NVIDIA Quadro FX1600M
- Blade enclosure: HP BLc3000 Tower (4 AC/6 Fan)
- Optional HP BL c3000 1200 W AC Power Supply

HP recommends Windows Vista® Business

For more information about HP and Siemens PLM solutions, **please visit www.hp.com/go/SPLMS.**

1. 64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. See www.intel.com/info/em64t for more information.

2. Dual-core and quad-core are new technologies designed to improve performance of multithreaded software products and hardware-aware multitasking operating systems and may require appropriate operating system software for full benefit. Not all customers or software applications will necessarily benefit from use of this technology.

3.Intel's numbering is not a measurement of higher performance.

4. GHz refers to internal clock speed of the processor. Other factors beside clock speed may impact system and application performance.

5. Certain Windows Vista product features require advanced or additional hardware. See www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit www.windowsvista.com/upgradeadvisor. Windows Vista Business disk also included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order at least 25 customer systems with the same custom image.

6. Actual bus speed is less. Listed bus speed represents the equivalent effective data transfer rate.

7. Dual Channel is only supported when the system is configured with DDR2 symmetric memory (i.e. 2 x 256).

8. Up to 1 GB may not be available with 32-bit operating systems due to system resource requirements.

9. Maximum memory capacities assume 64-bit operating systems. Microsoft® Windows® XP (32-bit) supports 4 GB (with Microsoft 32-bit, the amount of usable memory will be dependent upon your system configuration. It may be less than 4 GB); 32-bit Linux can support up to 8 GB.

10. 1 GB equals 1 billion bytes. Actual formatted capacity is less. Up to 8 GB of hard drive (or system disk) is reserved for the system recovery software.

11. Actual speeds may vary. Does not permit copying of commercially available DVD movies or other copy-right protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. Double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

12. Hardware RAID is not supported on Linux systems. The Linux kernel, with built-in software RAID, provides excellent functionality and performance. It is a good alternative to hardware-based RAID. Please visit http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00060684/c00060684.pdf for RAID capabilities with Linux.

13. AMD's numbering is not a measurement of clock speed.

14. This system requires a separately purchased 64-bit operating system and 64-bit software products to take advantage of the 64-bit processing capabilities of the AMD Opteron 64 processor. Given the wide range of software applications available, performance of a system including a 64-bit operating system will vary.

15. Weight will vary by configuration.

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