

# Dell Precision™ 690 Workstation

Introducing the Dell Precision™ 690 workstation, a powerhouse of productivity where lightning-fast Dual-Core Intel® Xeon® processors, outstanding graphics technology, and exceptional memory capacity unite in an innovative new chassis to deliver ultimate performance, scalability and reliability.

It's not designed to meet your needs—it's designed to exceed your expectations.

## Better. Faster. Stronger. The Workstation Superhero

It's here. A workstation that delivers the multi-core processing punch you've been waiting for—with levels of performance you've only dreamed about. Developed in close collaboration with hardware and software partners, the next-generation Dell Precision 690 workstation lets you create, design, render, and analyze, without compromise. Designed to deliver groundbreaking performance, blistering speed and scalability for compute and graphics intensive environments, the Dell Precision 690 helps you power through complex tasks and complete projects faster than the previous generation.

- New Dual-Core Intel Xeon processors deliver performance gains over the previous generation of up to 45% in single-threaded applications\* and up to 155% on multithreaded applications\*
- Up to 5X more memory bandwidth over dual-channel memory with new quad channel memory
- Memory scalability up to 64GB<sup>1</sup> with new DDR2 fully buffered ECC DIMMs
- Dual graphics capabilities that support quad monitors or NVIDIA® SLI technology for enhanced graphics performance available via an optional graphics riser card in a specially designed 1KW 690 chassis
- New SAS (Serial-attached SCSI) hard disk storage delivers up to 50% higher performance than SATA 10K
- Innovative new chassis designed for increased security, ease of access and exceptional expandability with support for up to five hard disk drives

## Graphics Capabilities You Need

Dell understands that exceptional graphics performance and high-end visualization capabilities are a requirement for some complex applications. The Dell Precision 690 offers an optional dual graphics solution that enables quad monitor support to view separate images across four monitor screens or stretch a single image across all four screens; or delivers NVIDIA's SLI technology. This allows you to connect two high-end graphics cards which will work together for 3D graphics performance that's as exceptional as your ideas.

## New Heights of Scalability

With additional DIMM slots to expand memory capacity up to 64GB<sup>1</sup>, and an innovative new chassis designed for expandability, the Dell Precision 690 provides a highly scalable architecture that enables you to manage massive datasets with outstanding performance and reliability. Imagine having the freedom to work the way you've always wanted. Now you can. If you're ready to optimize efficiency and power usage with a platform that will scale to higher performing, lower wattage multi-core processors of the future, the Dell Precision 690 is the ultimate choice. And with ISV application certification, you can be sure your applications will run efficiently on Dell Precision workstations, today and tomorrow.

## Peace of Mind Through ISV Application Certification

Dell partners with leading Independent Software Vendors (ISVs) to certify system and application compatibility to ensure optimized performance in demanding workstation environments. And, to assure access to the latest productivity enhancing technology solutions, Dell invests in the workstation ISV community by providing the hardware platforms needed to further multi-threaded and 64-bit application development. By maintaining strong relationships with ISV application developers, Dell engineers can provide ongoing optimization and support, should you need it.



GET MORE PERFORMANCE AND SCALABILITY. GET MORE OUT OF NOW.



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## SYSTEM

<b>Processors</b>	Up to two Dual-Core Intel® Xeon® 64-bit processors with up to 1066MHz front side bus and 2MB L2 cache per core, with XD, HT, VT and EIST; All Intel® Xeon® processors support 64-bit computing with Intel EM64T
<b>Operating systems</b>	Dell recommends Microsoft® Windows® XP Professional for Business Genuine Windows XP Professional; Genuine Windows XP Professional x64 Edition; Windows Vista™ Capable (visit <a href="http://www.dell.com/vista">www.dell.com/vista</a> for details); Red Hat Enterprise Linux WS v.4 (Intel EM64T)
<b>Chipset</b>	Intel® 5000X chipset
<b>Memory</b>	Up to 64GB <sup>1</sup> quad-channel <sup>2</sup> DDR2 Fully Buffered DIMM 533MHz ECC memory; Up to 16 DIMM slots; 1KW chassis required for memory expansion greater than 32GB (greater than 8 DIMM slots)
<b>Flash BIOS</b>	BIOS 8MB flash memory for system BIOS; SMBIOS 2.3.4 support
<b>Graphics</b>	Support for PCI Express x16 graphics cards up to 150 watts and with up to 512MB graphics memory including: nVIDIA® Quadro® FX 4500; nVIDIA Quadro FX 3500; ATI FireGL 7200; nVIDIA Quadro FX550; ATI™ FireGL™ V3400; nVIDIA Quadro NVS 285; All graphics cards support dual monitor configurations; SLI (Scalable Link Interface) and Quad Monitor options available via optional dual graphics riser card available in the 1KW chassis at the time of system purchase. SLI and Quad Monitor configurations available with select graphics cards.
<b>Hard drives</b>	SATA 3.0Gb/s 7200RPM with 8MB DataBurst Cache™ up to 250GB <sup>3</sup> ; SATA 3.0Gb/s 10K RPM with 16MB DataBurst Cache™ up to 500GB <sup>3</sup> ; SATA 10K RPM with 8MB DataBurst Cache™ up to 160GB <sup>3</sup> ; SAS 10K RPM up to 300GB <sup>3</sup> ; SAS 15K RPM up to 146GB <sup>3</sup> ; Chassis supports up to five internal drives (2 TB <sup>3</sup> maximum storage capacity)
<b>Hard drive controller</b>	Integrated LSI 1068 SAS/SATA 3.0Gb/s controller supports RAID 0, 1 Optional PERC 5/i PCI-e RAID card supports RAID 0, 1, 5, 10
<b>Network controller</b>	Integrated Broadcom® 5752 Gigabit <sup>4</sup> Ethernet controller
<b>Audio controller</b>	Integrated High Definition Audio (Rev 1.0 Specification) with Sigmatel STAC9200 High Definition Audio CODEC and Intel ESB2's AC97/ High Definition digital controller
<b>Standard I/O ports</b>	Eight USB 2.0: two on front panel, five on back panel, one internal on motherboard; Two IEEE 1394a: one front, one rear; Two serial; One parallel; Two PS/2; One RJ-45; Stereo line-in and headphone line-out on back panel; Microphone and headphone connector on front panel

## CHASSIS

<b>Tower</b>	(WxHxD) 8.5" x 22.26" x 22.3", 21.59cm x 56.54cm x 56.6cm without stand, includes feet; 12.8" x 22.26" x 22.3", 32.5cm x 56.54cm x 56.6cm with stand and feet Four internal 3.5" hard disk drive bays; Three external 5.25" optical bays, one of which can accommodate a fifth HDD; One external 3.5" flex bay for floppy or media card reader; Slots: Three PCI-e x8 slot wired as x4; One PCI-e x16 graphics slot; Two PCI-e x16 slots with optional graphics card riser on 690 1KW chassis (must be ordered at system purchase); Two PCI-X 64bit/100MHz slots with support for 3.3v or universal cards, One PCI 32bit/33Mhz slot; 750 or 1000 watt Power Factor Correcting (PFC) power supply
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## PERIPHERALS

<b>Monitors</b>	Performance flat panel displays, Dell UltraSharp™ widescreen and standard flat panel displays from 17" viewable to 24" viewable; Analog flat panel displays and CRT monitors also available
<b>Keyboard</b>	Dell Enhanced QuietKey USB; Enhanced Multimedia USB; Smart Card keyboard USB
<b>Mouse</b>	Dell USB two-button mouse and Dell USB optical two-button scroll mouse
<b>Optional Speakers</b>	Internal chassis speaker; Dell two and three piece stereo system; Dell sound bar for all flat panel displays

## STORAGE DEVICES

<b>Optional Removable Storage</b>	USB Floppy Drive; CD-ROM, CDRW <sup>5</sup> ; CD-RW/DVD Combo; DVD-ROM <sup>5</sup> ; DVD+/-RW <sup>5</sup> ; and USB media card reader and Dell USB Memory Key up to 512MB <sup>6</sup>
<b>Optional Modem</b>	Dell 56K <sup>7</sup> v.92 Data/Fax PCI modem

## SECURITY

<b>Software</b>	Trusted Platform Module 1.2 (TPM 1.2); Chassis intrusion switch; Setup/BIOS Password; I/O Interface Security
<b>Hardware</b>	Kensington Lock, Padlock

## ENVIRONMENTAL & REGULATORY

<b>Standards</b>	TC099, Blue Angel, Green PC, Energy Star, BSMI, C-TICK, CE, FCC, IRAM, NEMKO, NFPA 99, SABBS, SASO, TCO, TUV, UL, VCCI, USB 2.0, WEEE
<b>Lead Free</b>	Environmentally conscious design is RoHS Compliant <sup>10</sup> /Lead Free <sup>11</sup>

## SERVICE & SUPPORT

<b>Base</b>	3-Year Limited Warranty <sup>8</sup> with 3 years standard Next Business Day (NBD) onsite <sup>9</sup> parts replacement and 3 years NBD onsite <sup>9</sup> labor (US Only)
<b>Recommended</b>	3-Year Same Business Day 4 hour On-site Service <sup>9</sup> – 5 days a week, M-F 10 hours a day (8-6PM) 3-Year Same Business Day 4 hour On-site Service <sup>9</sup> – 7 days a week, 24 hours a day 3 & 4-year Gold Technical Support, expert support via phone, e-mail and online chat - 7 days a week, 24 hours a day

NOTE: Some applications and peripherals are not compatible with a 64-bit operating system environment. Be sure to verify with all of your current application vendors that your full application suite is compatible before purchasing a Dell Precision workstation with a 64-bit operating system.

Dell PCs use genuine Microsoft Windows. [www.microsoft.com/piracy/howtotell](http://www.microsoft.com/piracy/howtotell). Dell's Terms and Conditions of Sales and Service apply and are available upon request. Dell cannot be held responsible for errors in typography or photography. 1 The total amount of usable memory available will be less, depending on the actual system configuration. To utilize more than 4GB of memory requires a 64-bit OS. To expand memory to more than 32GB requires a Dell Precision 690 1KW system with memory risers. 2 Quad-channel memory requires 4 each of the same capacity memory DIMMs. 3 For hard drives, one GB means 1 billion bytes and one TB equals one trillion bytes; actual capacity varies with preloaded material and operating environment and will be less. 4 This term does not connote an actual operating speed of 1 GB/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required. 5 Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility. 6 For writable storage devices, MB means 1 million bytes; total accessible capacity varies depending on operating environment. 7 Download speeds are limited to 53Kbps. Upload speeds are less (about 30Kbps). Speeds can vary by line condition and modem manufacturer. Analog phone line and service required. 8 For a complete copy of our guarantees and limited warranties, please write Dell U.S.A. L.P., Attention: Warranties, One Dell Way, Round Rock, TX 78682. For more information, visit [http://www.dell.com/us/en/gen/misc/policy\\_010\\_policy.htm](http://www.dell.com/us/en/gen/misc/policy_010_policy.htm). 9 Service may be provided by third-party. Technician will be dispatched if necessary following phone-based troubleshooting. Subject to parts availability, geographical restrictions and terms of service contract. Service timing dependent upon time of day call placed to Dell. U.S. only. 10 Meets the requirements of the EU Directive on the Restriction of the use of certain Hazardous Substances dated January 27, 2003. 11 Per the EU Directive on the Restriction of the use of certain Hazardous Substances directive, this system (chassis and factory installed components) or configuration contains less than 0.1% lead by weight. Dell, the Dell logo, Dell Precision, OpenManage, and UltraSharp are trademarks of Dell Inc. Intel and Xeon are registered trademarks of Intel Corporation. Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the U.S. and other countries. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own. © Copyright 2006 Dell Inc. All rights reserved. Legal ad# 69971812

\*Dual-core performance gains (Woodcrest): 45% performance gain based on the SPEC CPU2000 (integer-speed base) benchmark test performed by Dell Labs in January 2006 on the Dell Precision 690 with two Intel Xeon 5150 2.66GHz processors with dual-core, 4MB L2 cache and 1333MHz FSB (No HT available), 8GB DDR2 533 ECC FBD memory, 160GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2 as compared to the Dell Precision 670 with two Intel Xeon 3.8GHz processors with 2x 2MB L2 cache & 800MHz FSB (HT off), 2GB DDR2 ECC memory, 160GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2. Actual performance will vary based on configuration, usage and manufacturing variability. 155% performance gain based on the SPEC CPU2000 (integer-rate base) benchmark test performed by Dell Labs in January 2006 on the Dell Precision 690 with two Intel Xeon 5150 2.66GHz processors with dual-core, 4MB L2 cache and 1333MHz FSB (No HT available), 8GB DDR2 533 ECC FBD memory, 160GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2 as compared to the Dell Precision 670 with two Intel Xeon 3.8GHz processors with 2x 2MB L2 cache and 800MHz FSB (HT off), 2GB DDR2 ECC memory, 160GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2. Actual performance will vary based on configuration, usage and manufacturing variability