

# Dell Precision™ 690 Workstation

The Dell Precision™ 690 workstation, a powerhouse of productivity where lightning-fast 64-bit multi-core Intel® Xeon® processors, outstanding graphics technology, and exceptional memory capacity unite in an innovative 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 its predecessor.

- New 64-bit quad-core Intel Xeon processors can deliver big performance gains over the current dual-core processors when running multiple single-threaded applications simultaneously (multi-tasking) and for individual applications which can take advantage of up to eight cores (multi-threaded)<sup>1</sup>.
- Up to 5x more memory bandwidth over dual-channel memory with quad channel<sup>2</sup> memory architecture<sup>3</sup>
- Memory scalability up to 64GB<sup>4</sup> with 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 chassis
- Cutting edge SAS (Serial-attached SCSI) hard disk storage delivers up to 50% higher performance than SATA 10K drives<sup>5</sup>
- Innovative chassis designed for increased security, ease of access and exceptional expandability with support for up to five hard disk drives

## Amazing Dual Graphics Performance

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>4</sup>, and a 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, low wattage multi-core processors available today and into the future, the Dell Precision 690 is the ultimate choice. And with Independent Software Vendor (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 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.



Dell Precision™ 690 Workstation  
Image courtesy of Schlumberger®

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[www.dell.com/workstations](http://www.dell.com/workstations)



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## FEATURES Dell Precision™ 690 Workstation

### SYSTEM

<b>Processors</b>	Dual-core Intel® Xeon® 5100 series processors with up to 1333MHz front side bus and 4MB shared cache; Quad-core Intel Xeon 5300 series processors with up to 1333MHz front side bus and 2 x 4MB shared cache; All processors are 64-bit, XD and VT capable
<b>Operating Systems</b>	Genuine Windows® XP Pro SP2 Genuine Windows® XP Professional x64 Edition Windows Vista™ capable <sup>6</sup> Red Hat Enterprise Linux WS v.4 (Intel EM64T)
<b>Chipset</b>	Intel® 5000X chipset
<b>Memory</b>	Up to 64GB <sup>4</sup> quad-channel <sup>2</sup> architecture DDR2 Fully Buffered DIMM 533 and 667MHz 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® FX 3450; 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 7200 RPM with 16MB DataBurst Cache up to 750 GB <sup>7</sup> ; SATA 3.0Gb/s 7200RPM with 8MB DataBurst Cache™ up to 250GB <sup>7</sup> ; SATA 10K RPM with 16MB DataBurst Cache up to 160GB <sup>7</sup> ; SAS 10K RPM up to 300GB <sup>7</sup> ; SAS 15K RPM up to 146GB <sup>7</sup> ; Chassis supports up to five internal drives in a SATA boot plus four SAS drive configuration (2.5 TB <sup>7</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>8</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>Dimensions</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
<b>Tower</b>	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

### PERIPHERALS

<b>Monitors</b>	Performance flat panel displays, Dell UltraSharp™ widescreen and standard flat panel displays from 17" viewable to 30" 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>	CD-ROM, CD-RW, CD-RW/DVD Combo, DVD-ROM <sup>9</sup> , DVD+/-RW <sup>10</sup> , USB Floppy Drive, USB media card reader
<b>Optional Modem</b>	Dell 56K <sup>12</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>13</sup> /Lead Free <sup>14</sup>

### SERVICE & SUPPORT

<b>Base</b>	3-Year Limited Warranty <sup>15</sup> with 3 years standard Next Business Day (NBD) onsite <sup>16</sup> parts replacement and 3 years NBD onsite <sup>16</sup> labor (US Only)
<b>Recommended</b>	3-Year Same Business Day 4 hour On-site Service <sup>16</sup> – 5 days a week, M-F 10 hours a day (8-6PM) 3-Year Same Business Day 4 hour On-site Service <sup>16</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 Quad-core performance gains over dual-core based on the SPEC CPU2000 rate 8p int and fp benchmark tests performed by Dell Labs in October 2006 on the Dell Precision 690 with two Intel Xeon 5300 sequence quad-core processors with 2 x 4MB shared L2 cache and 1066MHz FSB, 4GB DDR2 533 ECC FBD memory, NVIDIA Quadro® FX3500 graphics, 80GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2 as compared to the Dell Precision 690 with two Intel Xeon 5000 and 5100 sequence dual-core processors with 4MB L2 cache and 1066MHz FSB, 4GB DDR2 533 ECC FBD memory, 80GB SATA 7200RPM HDD, Microsoft Windows XP Pro SP2. Actual performance will vary based on configuration, usage and manufacturing variability.

2 Quad-channel memory requires 4 each of the same capacity memory DIMMs.

3 Based on a comparison of the Dell Precision 670 memory bandwidth of 6.4GB/sec, versus the Dell Precision 690 memory bandwidth of 32GB/sec.

4 The total amount of available memory will be less than 4GB. The amount less depends on the actual system configuration. To fully utilize 4GB or more of memory requires a 64-bit enabled processor and 64-bit operating system. To expand memory to more than 32GB requires a Dell Precision 690 1KW system with memory risers.

5 Based on the PCMark hard drive benchmark tests 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, Microsoft Windows XP Pro SP2. Tests were performed comparing the performance of a 73GB 15K SAS drive vs. the 80GB SATA 10K drive and the 73GB SCSI 15K drive. Actual performance will vary based on configuration, usage and manufacturing variability.

6 Based on currently available information from Microsoft. Requirements subject to change. Windows Vista has not been tested on all user configurations, and may not be compatible with some hardware devices and other software. Dell systems must be configured with a minimum of 512MB system memory (RAM) for "Windows Vista Capable" designation. Systems which meet only minimum requirements for the "Windows Vista Capable" designation will not provide the full benefits of "Premium Ready," including the Aero interface. Some Dell systems may not meet the requirements for "Premium Ready," no matter the configuration. Aero and other premium benefits not available with Windows Vista Home Basic. Please visit [www.windowsvista.com/getready](http://www.windowsvista.com/getready) for more information.

7 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.

8 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.

9 DVD-ROM drives may have write-capable hardware that has been disabled via firmware modifications.

10 Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

12 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.

13 Meets the requirements of the EU Directive on the Restriction of the use of certain Hazardous Substances dated January 27, 2003.

14 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.

15 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 [www.dell.com/warranty](http://www.dell.com/warranty).

16 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.

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