Dell Precision™ Workstations
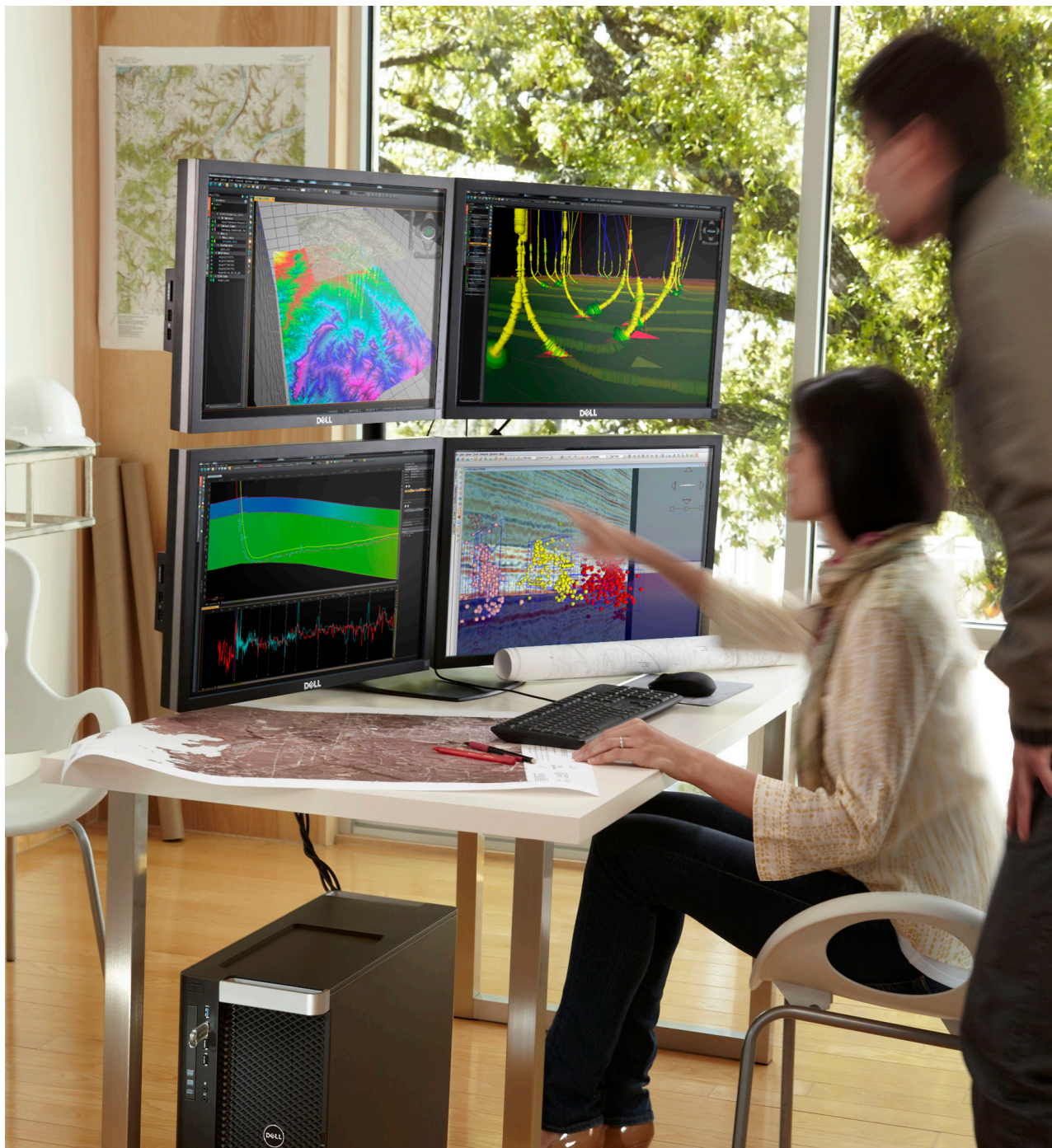
Work at the speed of thought

Tower: T7600 | T5600 | T3600 | T1700
Mobile: M6700 | M4700
Rack: R7610

Screen images courtesy of Landmark Software and Services

From office computing to mobile and remote solutions,
Dell's broad workstation line-up is equipped to meet your needs.

Dell.com/precision
June 2013

The Essence of Dell Precision

Dell Precision is designed for professionals with the most mission critical and demanding needs. Our workstation-class products offer superb performance, innovative smart design and ISV certified dependability to maximize your productivity and reliability.

Performance

Power through resource-exhausting and graphics-intensive engineering and analysis workloads with superb performance precisely tuned to demanding user needs.

- Dell Precision offers the world's most powerful mobile workstations and the world's most powerful rack workstation
- Massive memory with up to 512GB[1,7] for desktops and up to 32GB[1,7] for mobiles
- Cutting-edge, workstation-class graphics with the latest NVIDIA Quadro® and AMD FirePro™ technologies including the only mobile workstation to offer the AMD FirePro M6000 with PCIe x16 Gen 3 support
- Dell Precision Performance Optimizer is the world's first automated workstation performance tool

Smart Design

Delivering innovative and award-winning workstation design that allows professionals to work smarter.

- Award winning, best in class tower chassis design offers a straightforward, clutter-free interior providing easy access to components for superior serviceability
- The only mainstream tower workstations with externally accessible, tool-free power supply
- Dell Precision T7600 is the only globally available tower workstation with tool-free front accessible hard drives
- Dell Precision T1700 offers the smallest and lightest workstation chassis in its class
- Mobile workstations that are 100% BFR/PVC free[8], ENERGY STAR 5.2 qualified and EPEAT registered[9] to offer you our most environmentally responsible mobile Dell Precision products yet
- Mobile workstations with flexible storage options including an easy eject drive, minicard and SSD storage devices and RAID 0/1/5 on both the M4700 & M6700.

Dependability

Reliable workstations tested, certified and supported for maximum dependability and uptime.

- ISV certified for professional-grade software
- Secure, manageable and serviceable workstations that seamlessly integrate into your environment
- Dell Data Protection | Encryption provides robust endpoint encryption
- Confidently plan future product roll-outs with long lifecycles, transitions and ImageWatch™ for an advanced look at software and hardware changes
- Three-year Limited Hardware Warranty[3] standard on all Dell Precision workstations except the Dell Precision T1700 which offers a one year Limited Hardware Warranty[3] standard

Service and support

Exceptional work requires exceptional hardware. While your Dell Precision workstation is designed for peak performance from day one, Dell's advanced service and support options can help you get up and running quickly and reduce downtime in the event of an unexpected issue.

- **Dell Configuration Services**[4] incorporates hardware, images, applications, peripherals and documents with your system as it's being built to help simplify and speed up deployment while improving hardware consistency and compatibility.
- **Choose Dell's premium support service, ProSupport,**[4] for 24/7 direct telephone access to advanced-level technicians based in your region to end downtime and resolve problems quickly.
- **ProSupport's Collaborative Support**[4] **feature** provides assistance if you have a problem with non-Dell hardware or software. We act as a single point of contact to help resolve issues by leveraging our relationships with select third-party vendors.

Technology

Dell Precision—the continuous evolution of technology

Boost your productivity by integrating the latest industry-standard technologies into a highly reliable platform.

Processors

The central processing unit, or CPU, initiates the critical tasks that make your Dell Precision perform. You should choose a processor with enough performance to meet your long-term business needs. Bandwidth, clock speed and the number of cores in the processor all help determine processor performance. Dell Precision workstations support a wide array of processor options including 3rd generation Intel® Core™ processors and Intel® Xeon® processors featuring Intel® Turbo Boost Technology; a processing technology that delivers optimal performance where it is needed most, when you need it most.

Memory

Random Access Memory (RAM) temporarily stores information from your operating system, applications and data in current use. This gives your processor easy access to the critical information that make your programs run.

The amount of RAM you have helps determine how many programs can be executed at one time and how much data can be readily available to a program. It also helps determine how quickly your applications perform and how many applications you can easily toggle between.

Many Dell Precision workstations can use ECC memory. ECC (Error Correcting Code) memory is a feature for high-end systems that detects and reports memory errors that can cause system crashes or error faults. This is important for highly detailed tasks where accuracy and stability are of the utmost importance. Non-ECC memory does not detect and report memory errors.

RDIMM memory is the type of memory available on our dual processor workstations and, similar to ECC memory, can provide additional data protection and reliability. RDIMM memory, or registered memory, has a register used as a pass-through for address and command signals. This allows workstations to support more RDIMMs per channel. RDIMMs consume more power but are available in larger capacities and higher ranks allowing for extremely large memory configurations up to 512GB[1,7] on select Dell Precision workstations.

Select Dell Precision tower workstations also offer Dell Reliable Memory Technology. A Dell exclusive, patented technology that maximizes uptime by eliminating virtually all memory errors so Dell workstations can get more reliable over time, providing a stable and reliable platform you can trust.

Storage

Dell Precision workstations support a wide range of performance options including solid state drives, SATA drives, SAS drives and RAID configurations. Solid state drives provide increased performance and reliability in mobile and desktop systems. SAS drives are an excellent option for increased performance over SATA drives for larger workstation storage needs. Dell Precision is designed to be expandable to adapt to your needs.

For improved data protection and performance, our workstations offer a variety of RAID levels; from striping to mirroring to parity, Dell offers a RAID solution to meet your specific storage needs.

Graphics

Dell Precision workstations offer a wide selection of graphics cards, many of which are Independent Software Vendor (ISV) certified. Solutions from AMD, Intel® and NVIDIA can satisfy requirements ranging from breakneck 3D performance and OpenGL to affordable 2D performance. Dell continually evaluates the newest graphics technologies to help ensure the most relevant graphics cards are selected for qualification, certification and factory installation in Dell Precision workstations.

Dell Precision Tower Workstations

Dell Precision **T7600 / T5600 / T3600 / T1700**

Exceptional performance, unwavering dependability, extraordinary execution and outstanding scalability

Enjoy blazing fast, energy-efficient performance even as you tackle the largest data sets and the most complex multi-threaded applications:
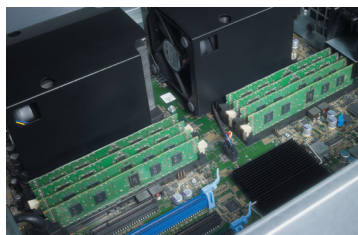
- Up to two powerful Intel® processors for a maximum of twelve cores of computing power
- Up to 512GB[1, 7] of advanced error correcting memory
- Blazing fast SATA or SAS storage
- A myriad of RAID choices
- Support for up to three double-wide or four single-wide professional-grade graphics cards
- Select tower workstations support NVIDIA Tesla GPGPU compute solutions for high-performance computing

Rock solid dependability

Dell understands that downtime is costly. That is why we strive to provide a workstation you can depend on day-in and day-out. Should a problem arise, Dell has the expertise and services to minimize your downtime and get you back up and running quickly.

ISV Certification

Dell partners with leading independent software vendors (ISVs) and technology partners to certify system compatibility. This means hundreds of engineering man-hours and rigorous testing that have been poured into Dell Precision workstations to optimize performance and reliability with leading industry applications. The result is a fine-tuned machine, running at peak performance, bringing you a level of confidence you trust and value.

Dell Reliable Memory Technology Pro (RMT)

Dell patented code programmed at the BIOS level that eliminates virtually all memory errors. RMT extends the capability of ECC memory by detecting the location of the corrected memory error and prevents the system from writing to that spot again following a reboot. Available on the T7600, T5600 and T3600 (when equipped with ECC memory), RMT increases the reliability of the workstations and eliminates the need for extensive full memory tests, IT support calls and memory DIMM replacement.

Multiple monitor support

Expand your productivity with multi-monitor capability. Every Dell Precision tower supports a minimum of two monitors and a maximum of eight monitors (excludes T1700), which can provide additional screen real estate for additional work content.

Smart design

Award winning, best in class chassis design offers a straightforward, clutter-free interior providing easy access to components for superior serviceability. The Dell Precision T7600, T5600 and T3600 are the only mainstream tower workstations to offer an externally accessible, tool-less power supply. Plus, our Dell Precision T1700, now available in two sizes, is the smallest and lightest entry level workstation in its class.

Dell Precision Tower Workstations
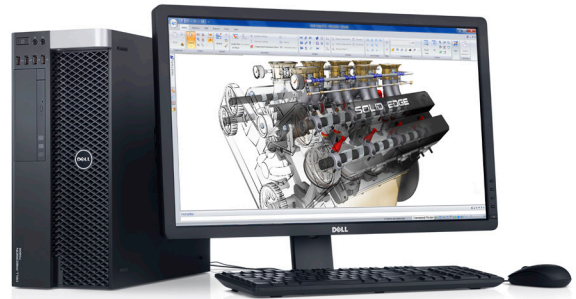
Dell Precision **T7600 / T5600 / T3600 / T1700**

Dell Precision T7600

Our most powerful and expandable tower workstation in a completely redesigned tool-free chassis.

One or two Intel® Xeon® processor E5-2600 Product Family
Up to 512GB[1,7] ECC memory
Four 3.5" or eight 2.5" SATA or SAS drives
RAID 0/1/5/10 - integrated 3Gb/s SATA or 6Gb/s SATA/SAS options
Complete range of NVIDIA® and AMD graphics options
One or two NVIDIA® Tesla® GPUs optional

Great for: Work environments that demand the utmost in computational power such as financial / scientific analysis of massive data sets and advanced engineering / simulation workloads.
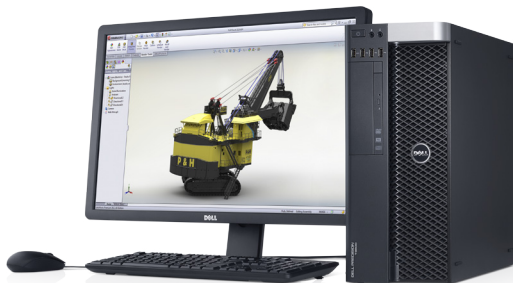
Screen image courtesy of Autodesk, Inc.

Dell Precision T5600

Powerful and reliable dual socket tower workstation in a completely redesigned compact, tool-free chassis.

One or two Intel® Xeon® processor E5-2600 Product Family
Up to 128GB[1,7] ECC memory
Two 3.5" or four 2.5" SATA or SAS drives
RAID 0/1/5/10 - integrated 3Gb/s SATA or 6Gb/s SATA/SAS options
Complete range of NVIDIA® and AMD graphics options
Optional NVIDIA Tesla GPU

Great for: Space-constrained environments that need substantial compute capability including financial and scientific analysis, professional engineering and complex 3D modeling.

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Dell Precision T3600

Mid-range tower workstation with an excellent balance of performance and scalability in a new tool-free chassis.

One Intel® Xeon® processor E5-1600 series or Intel® Xeon® processor E5-2600 Product Family
Up to 64GB[1,7] of ECC or Non-ECC memory
Two 3.5" of four 2.5" SATA or SAS hard drives
RAID 0/1/5/10 - integrated 3Gb/s SATA or 6Gb/s SATA/SAS options
Complete range of NVIDIA® and AMD graphics options
Optional NVIDIA Tesla GPU

Great for: Powerful performance for exacting workstation workloads such as mainstream 3D, advanced engineering, digital content creation, CAD/CAM, and design environments.

Screen image Courtesy of P&H Mining Equipment

Dell Precision T1700

Our entry-level tower offers two chassis sizes both with certified performance for superb productivity without breaking your budget.

One Intel® Xeon® processor E3-1200v Family or 4th generation Intel® Core™ i7 processor or Intel® Core™ i5 processor; 4th generation Intel Core i3 processor coming soon
Up to 32GB[1,7] of ECC or 16GB[1,7] of Non-ECC memory
Two 3.5" of four 2.5" SATA hard drives
SATA RAID 0/1/5/10 standard
AMD, NVIDIA or integrated Intel® graphics[2]

Great for: Demanding workstation tasks such as professional grade 2D and entry-level 3D applications that push beyond the capabilities of a standard desktop.

Mobile Workstations

Dell Precision M6700 and M4700

The world's most powerful mobile workstations

Whether you're at your desk, in a meeting or consulting with a client, Dell mobile workstations have what it takes to power you through a whole range of business settings.

Superb Performance

Sacrifice nothing. The Dell Precision M4700 and M6700 combine laptop mobility and workstation-class performance into a dependable, highly agile system that brings your projects to life with:

- Processor options from 3rd Generation Intel® Core™ i5 processor up to Intel® Core™ i7 Processor Extreme Edition
- AMD FirePro and NVIDIA Quadro graphics options enable you to run high-end graphics for all of your professional needs, from rendering to modeling complex simulations.
- Expansive DDR3 memory with four DIMM slots for up to 32GB[1,7] of 1600MHz memory or up to 16GB[1,7] of 1866MHz memory for blistering performance
- Big jobs require big storage, and the Dell Precision M6700 and M4700 offer hard drive space to spare, with large drive options, Mini Card and RAID options, plus the flexibility to add even more storage with an optional optical bay module.
- Keep it cool and make it last. Quiet-running dual fans can help increase component longevity and extend battery life.

Innovative Smart Design

Work smarter with state-of-the-art design and intuitive purpose driven features. No matter where your work takes you the Dell Precision M4700 and M6700 provide superb mobility and functionality

- Docking is easy and convenient; the M4700 and M6700 are compatible with existing E-family docking solutions which support a broad array of Dell laptops and mobile workstations
- 100% BFR/PVC free8, ENERGY STAR 5.2 qualified and EPEAT registered[9] to offer you our most environmentally responsible mobile workstation product yet
- Bring your content to life with the optional NVIDIA 3D Vision® Pro solution that provides true to life 3D visualization available on the M6700
- Astonishing display options provide accurate color reproduction and brilliant images. The Dell UltraSharp™ IPS RGBLED display with PremierColor technology offers 100% Adobe RGB color gamut for the utmost in color precision
- Stand out from the crowd with the M6700 Covet Edition featuring edge-to-edge Corning® Gorilla® Glass 2 display and brilliant Phoenix Red signature color

Certified Dependability

Designed for professionals who demand strength and reliability, the M4700 and M6700 is built for a long life of dependable service with:

- Get all day battery life and beyond with optional secondary slice battery and optional NVIDIA® Optimus™ technology which intelligently provides graphics performance when you need it and can help extend battery life when you don't
- ISV certification to help ensure reliability for demanding applications
- Designed durable with a light yet strong magnesium alloy structure clad in sleek, rigid, annodized aluminum and MIL-STD-810G tested for extreme temperatures, humidity, vibration, dust, altitude and shock
- When security is key Dell has you covered with FIPS certified fingerprint readers, FIPS certified self encrypting drives and Dell Data Protection | Encryption
- Quickly remove your primary hard drive with the tool free easy eject drive bay

Dell Precision Workstations

Dell Precision **M6700 / M6700 Covet Edition / M4700 / R7610**

Mobile

Dell Precision M6700 & M6700 Covet Edition

The Dell Precision M6700 is the world's most powerful 17" mobile workstation, with the performance, battery life and storage for demanding work environments.

From 3rd generation Intel® Core™ i5 processor up to Intel® Core™ i7 processor Extreme Edition	Up to 32GB[1,7] 1600MHz memory or up to 16GB[1,7] 1866MHz memory Four DIMM slots
Up to four storage devices: one 2.5" drive in easy eject drive bay, one 2.5" drive in internal bay, one 2.5" in optical bay caddy[6], one solid state minicard	RAID 0/1/5 support
AMD and NVIDIA discrete graphics options	17.3" display options include: IPS RGBLED display, NVIDIA 3D Vision Pro and 10 finger multi-touch

Great for: specialists who need workstation performance for demanding professional-grade applications in a desktop-replacement mobile platform.

Dell Precision M4700

Dell Precision M4700 is the world's most powerful 15" mobile workstation, with the performance, battery life and storage for demanding work environments.

From 3rd generation Intel® Core™ i5 processor up to Intel® Core™ i7 processor Extreme Edition	Up to 32GB[1,7] 1600MHz memory or up to 16GB[1,7] 1866MHz memory Four DIMM slots
Up to three storage devices: one 2.5" drive in easy eject drive bay; one 2.5" drive in optical bay caddy[6]; one solid state minicard	RAID 0/1/5 support
AMD and NVIDIA discrete graphics options	15.6" display options include Dell UltraSharp™ full HD display with Premium Panel Guarantee[10]

Great for: professionals in need of processing power and graphics performance for demanding jobs, plus dependability and long battery life for mobility.

Rack

Dell Precision R7610

Superb, world-class rack workstation for 1:1 or virtualized environments with uncompromised performance, ISV certification and responsive remote access.

One or two Intel® Xeon® processor E5-2600 series	Up to 256GB[1,7] 1600MHz ECC memory (512GB coming soon) 16 DIMM slots
Up to four AMD or NVIDIA discrete graphics cards optional	Up to two NVIDIA Tesla GPGPUs optional
Up to six 2.5" SATA or SAS drives	Optional RAID 0/1/5/10

Great for: users who need ISV-certified workstation performance in a 2U rack chassis; businesses that need to centralize data in a clean, secure environment; organizations who want to utilize workstation virtualization for up to four users.
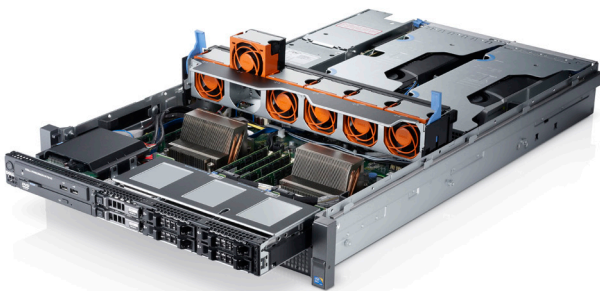
Rack Workstation

Dell Precision R7610

The world's most powerful rack workstation offers uncompromising performance for 1:1 or virtualized environments

Why a rack? Because your work demands it.

When the job calls for more security and flexibility than a standard tower or mobile workstation can provide, the Dell Precision R7610 rack workstation delivers.

- For organizations where security is top priority, you need more than a lock and key. The Dell Precision R7610 can help safely house your intellectual property by keeping it contained in the data center.

- Does your work involve inhospitable, hazardous or extremely remote environments? The Dell Precision R7610 can provide workstation-class performance remotely while your employees stay productive and comfortable at their own workspaces.

- For end-users who work in space-constrained areas or temperature- or noise-sensitive environments, the P25 zero client is small and runs cool and quiet.

- Boost productivity and help improve ROI among offsite contractors, rotating workforces and geographically diverse employees.

- Extend ROI with workstation virtualization for up to four users via GPU pass-through.

Flexible deployment for 1:1 or virtualized environments

You'll discover a great deal of deployment flexibility in the rack-based Dell Precision R7610:

- For maximum performance, deploy it as a one-to-one workstation solution using the optional Wyse P25 zero client device. This solution uses Teradici™ Tera2 hardware-based compression and the PCoIP

protocol for remote connectivity providing a superb, responsive workstation experience.

- For virtualized Citrix environments, you can extend your productivity and security benefits to multiple users by deploying this workstation as a one-to-three or one-to-four GPU pass-through solution.

- Later this year, you can expect even greater scalability and return on investment with one-to-many virtualized deployment capability.

Peak performance & Smart Design

The Dell Precision R7610 offers the same power and scalability found in our highest-performing tower workstations with the convenience of a slim 2U design:

- Take on the toughest jobs with up to two 8-core Intel® Xeon® E5-2600-series processors.

- Achieve amazing graphics performance via 3 PCIe x16 Gen 3 225W double-wide slots supporting up to ultra-high-end workstation-class NVIDIA® Quadro, AMD FirePro™ or NVIDIA Tesla GPGPU cards.

- Multitask with up to 256GB[7] (up to 512GB[7] coming soon) of RAM in 16DIMM slots

- Maintain uptime with optional redundant power supplies.

- The integrated LSI SATA/SAS controller supports up to six 2.5" hard drives for maximum storage capability

- Maximize uptime with Dell's exclusive, patented Reliable Memory Technology Pro which eliminates virtually all memory errors.

Dell Precision Performance Optimizer

Optimize performance, update software and analyze usage all from one easy to use application

Workstation Optimization

Imagine if your Dell Precision workstation could automatically adjust system settings to provide the maximum performance for a specific application. Dell Precision Performance Optimizer (DPPO), the world's first automated workstation performance tool, can do all that and more.

In the past getting great performance required extensive knowledge of both your system and your applications in order to wring the most out of your workstation. DPPO does this for you by providing:

- A software application that optimizes system settings
- Easy operation - includes pre-defined application profiles
- Automatically adjusts system settings such as CPU, memory, graphics, operating system, BIOS and drivers to help boost system performance

System Maintenance

In addition to system optimization Dell Precision Performance Optimizer helps keep your Dell workstation up-to-date with the System Maintenance tool. The System Maintenance tool provides:

- Notification when system updates are available
- Includes driver, BIOS, application and firmware updates
- Sorts available updates into three categories: critical, recommended and optional
- Helps download and install the updates you select

Track & Analyze

DPPO offers a third feature called Track & Analyze. This feature provides in-depth tools to track system utilization to help you understand how your system resources are being used. Features include:

- Track only the resources you want
- Track any or all of the following: battery, processor, storage, memory, thermals, network and fan usage
- User adjustable duration and frequency; allows you to track data only when your system is heavily used
- Chart data for easy readability
- Print or export data for further analysis

Not sure what you need?

Dell's easy-to-use Workstation Advisor can recommend a Dell Precision workstation based on your needs and the applications you use: **www.dell.com/wsadvisor**