



Solution Brief
Intel® Xeon® Processor 5600
Parallels Workstation Extreme*

Improve Productivity and Cut IT Costs with High-Performance Workstation Virtualization

Run concurrent, multi-OS workloads more securely and with unprecedented performance

It's not just the 1.6x¹ performance increase versus previous-generation workstations that makes new Intel® Xeon® processor 5600⁴ series-based systems such a valuable resource for you and your business. It's the way you can easily harness that performance to run all your applications on the same machine that provides truly game-changing value. With up to 12 computational cores, 24 execution threads and new platform features, these workstations provide an expert digital workbench that lets users move beyond CAD to digital prototyping, so they can create, test and modify products before building costly physical prototypes.

Combine a powerful Intel-based workstation with Parallels Workstation Extreme* virtualization software and a 64-bit host OS and you can take full advantage of the vast compute, memory, storage and networking resources these systems bring to the desktop. Imagine running Microsoft Windows*-based design tools and complex Linux-based simulation applications simultaneously, more securely and at full speed on the same workstation. With this flexibility, designers and engineers can:

- Bring their innovations to life faster than ever before by running complex simulations right on the desktop, without slowing interactive design tasks. They can test more "what-if" scenarios and uncover design flaws earlier, even as they free up capacity on centralized HPC resources.
- Respond instantly to high-demand, time-critical issues by using clustered workstation resources, while users still enjoy full performance for their demanding interactive tasks.
- Accelerate new application deployment to respond faster to business requests.

Greater IT Flexibility and Lower TCO

With high-performance virtualization, even the most demanding users no longer need multiple workstations or a separate desktop PC. With fewer devices, offices are less cluttered, energy consumption and noise are reduced, and IT maintenance costs per user are lower. IT operations are also enhanced. For example, support teams can push updates to workstations without creating drag on system resources. IT can also standardize on a single operating system, while hosting legacy 64-bit and 32-bit applications and operating environments securely in virtual machines. This can greatly simplify IT security and support, including migrations to Microsoft Windows* 7.

Enhanced Reliability

Intel® Xeon® processors are the most widely deployed 64-bit workstation platforms in the world. You can count on them to deliver the stability and scalability you need to move your business forward. Now, with the additional capabilities of virtualization, you can also isolate old or unstable applications and operating environments in virtual machines and achieve peak performance without putting other workloads at risk.

Powerful Performance in a Virtualized Workstation

Until recently, virtualization was not practical on engineering workstations, especially for graphically intensive applications. The combination of next-generation Intel® Virtualization Technology® (Intel® VT) and Parallels Workstation Extreme eliminates that roadblock by delivering near-native compute performance in virtual machines (95 to 100 percent of a dedicated workstation). For the first time, complex graphics can be rendered at full speed, since Intel® Virtualization Technology for Directed I/O (Intel® VT-d) enables direct assignment of graphics cards for fully accelerated performance.

With up to 160 percent better performance than the previous-generation Intel Xeon processor 5500 series and up to 340 percent¹ versus widely deployed dual-core processors, the Intel Xeon processor 5600 series provides blazing performance for workstation virtualization. A single two-socket workstation also provides up to 12 processing cores and up to 192 GB of memory (12x16 GB DIMMs), so you have ample resources for running multiple simultaneous workloads.

Parallels Workstation Extreme lets you allocate these resources with ease and flexibility. This innovative virtualization software leverages the Parallels FastLane* Architecture, Intel VT (including the latest processor and chipset hardware assists), and dynamic resource allocation to enable near-native 3D performance in virtual machines. Parallels SmartX* technology provides a fast and simple multi-OS user experience with easy data access.

Better Security for Valuable Engineering Data

The Intel Xeon processor 5600 series supports two new Intel® security technologies: Intel® Trusted Execution Technology[†] (Intel® TXT) and Advanced Encryption Standard New Instructions (Intel® AES-NI). Intel TXT ensures that your workstations and hyper-visors launch only into “known good states,” so you can detect and block rootkits and other malware that tries to launch during system boot. Intel AES-NI speeds encryption algorithms, so you can protect data in transit and on the hard drive without sacrificing performance. With emerging software support, these technologies will help to fundamentally improve workstation security so you can protect valuable intellectual property more effectively.

A Full Range of Workstations

A wide range of Intel-based workstations are available, from entry-level systems for business power users to two-socket workstations for demanding engineering simulations. The two leading suppliers of workstation graphics adapters both support Parallels' Workstation Extreme on the new Intel Xeon processor 5600 series-based systems. With a broad selection of graphics cards now available, you can readily match each system to your specific requirements. For currently supported configurations, visit www.parallels.com/products/extreme

Intel Xeon processor 5600 series-based workstations offer a more powerful and efficient working environment with greater IT flexibility, lower costs and enhanced security. They can help you get more value from every workstation your purchase.

Learn More

www.intel.com/products/workstation/processors

www.parallels.com/products/extreme

¹ Based on Intel internal measurements.

[‡] Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/products/processor_number for details.

[†] Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM) and, for some uses, certain platform software enabled for it. Functionality, performance or other benefits will vary depending on hardware and software configurations and may require a BIOS update. Software applications may not be compatible with all operating systems. Please check with your application vendor.

^{††} No computer system can provide absolute security under all conditions. Intel® Trusted Execution Technology is a security technology under development by Intel and requires for operation a computer system with Intel® Virtualization Technology, an Intel Trusted Execution Technology-enabled processor, chipset, BIOS, Authenticated Code Modules, and an Intel or other compatible measured virtual machine monitor. In addition, Intel Trusted Execution Technology requires the system to contain a TPMv1.2 as defined by the Trusted Computing Group and specific software for some uses. See <http://www.intel.com/technology/security/> for more information.

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