Product Brief

Essential Workstation

Intel® Xeon® processor 3600 Series

Accomplish More with High-Performance Multitasking

with Intel® Xeon® Processor 3600 Series-based Workstations

Unleash creativity with the capacity and performance to work with large-scale designs and perform multiple tasks simultaneously.

Many businesses limit productivity without knowing it by supplying designers, engineers and analysts with entry-level workstations or even standard desktop PCs that simply can't keep pace with their demanding workloads. Intel's most powerful single-processor workstations deliver much higher capacity and performance, along with enhanced reliability to help power users:

- Turn their ideas into reality faster and more efficiently with highly responsive applications for model generation, CAD, mechanical and electrical design, financial analysis and more.
- Work on large-scale 3D designs instead of smaller subassemblies to simplify work and immediately see how changes impact the bigger picture.
- Perform multiple tasks simultaneously, such as running analytics, modeling and simulations while simultaneously using interactive design and productivity applications.

With up to six processing cores and 12 execution threads, the latest Intel® Xeon® processor 3600 series-based workstations deliver up to 44 percent better performance than previous-generation single-processor workstations for digital content creation.[1] They also adapt intelligently to workloads so you get better performance across a wider range of applications and tasks.

- **Intel® Hyper-Threading Technology**[Φ] doubles the number of execution threads to increase performance for complex workloads (simulation-based design, ray tracing, rendering, etc.).
- **Intel® Turbo Boost Technology**[§] increases core frequencies for peak workloads to provide more performance when you need it most for every application.
- **Intel® Smart Cache** dynamically allocates cache resources based on the demands of each processing core so data is managed more efficiently to optimize multi-core performance.

Transform the way you work with an Intel® Essential Workstation

The capacity and performance to work with large-scale designs

- Up to 44 percent better performance than previous-generation single-processor workstations for digital content creation.[1]
- High-performance multitasking with up to 6 cores, 12 execution threads and support for up to 24 GB of memory
- Supports the most demanding workflow and graphics requirements

The flexibility to support all your application requirements on a single workstation

- Near-native performance with Intel® Virtualization Technology
- Run 32-bit, 64-bit Linux* and Windows* applications concurrently and securely in virtual machines

Enhanced Reliability, Predictability and Security

Intel® processor-based workstations 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. The Intel Xeon processor 3600 series takes reliability and security to new heights.

- **Superior data integrity and enhanced workstation reliability.** As engineering models continue to get larger, more complex and more time-consuming, memory footprints and the probability of memory errors increase proportionally. Since a single error can crash a system or corrupt results, it is essential to mitigate this risk. Intel Xeon processor-based workstations support Error-Correcting Code Memory (ECC Memory), which automatically detects and corrects up to 99.9998 percent of memory errors. With this protection, you can have full confidence in your data, even as you build massive 64-bit models and designs to visualize trends and identify interferences more effectively.
- **Stronger security for your systems and data.** Intel® Trusted Execution Technology† (Intel® TXT) prevents rootkits and other malware from being inserted at boot up to protect your workstations and your valuable intellectual property more effectively against today's increasingly sophisticated attacks.

Breakthrough Flexibility with High-Performance Virtualization

The Intel Xeon processor 3600 series includes Intel® Virtualization Technology△ (Intel® VT), which gives you tremendous flexibility in deploying and using diverse applications by enabling near-native compute and graphics performance in virtual machines. Add virtualization software and a 64-bit host OS and you can access all your 64-bit and 32-bit Windows* and Linux* applications from a single workstation, run multiple applications concurrently and switch instantly among environments without rebooting. Users benefit from a more productive work environment. IT benefits by being able to standardize on a single operating system, while isolating other applications and OSs in virtual machines to avoid potential software conflicts that can cause system slow-downs or even crashes.

Intel® Essential Workstation Overview

Features	Benefits
Performance and Capacity for Large-Scale Designs and Performing Multiple Simultaneous Tasks	▪ Intel® Xeon® processors 3600 series; up to 6 processing cores with12 execution threads, 12 MB L3 cache, and support for up to 24 GB memory.
Intel® Hyper-Threading Technology℗	▪ Two execution threads per core for higher throughput and reduced latency.
Intel® Turbo Boost Technology§	▪ Increases performance when you need it most, by increasing core frequencies beyond rated values for peak workloads.
Intel® Smart Cache Technology	▪ Accelerates data access by dynamically optimizing cache allocations across all 12 cores.
Intel® Virtualization Technology△ (Intel® VT)	▪ Enables near-native performance for compute-intensive applications in virtual machines.
Intel® Virtualization Technology for Directed I/O	▪ Enables full graphics acceleration through direct assignment of graphics cards to virtual machines.
Intel® Trusted Execution Technology† (Intel® TXT)	▪ Ensures host OSs and hypervisors boot into "known good states" to prevent insertion of rootkits and other malware.
Error-Correcting Code (ECC) Memory	▪ Protects data and provides increased uptime by self correcting 99.9998% of memory errors.
Tested and Validated with Workstation-Class Applications and Third-Party Professional Add-on Adapters	▪ Ensures optimized performance and reliability.

For more information, visit www.intel.com/go/workstation

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

℗ Hyper-Threading Technology requires a computer system with a processor supporting Hyper-Threading Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/info/hyperthreading/ for more information including details on which processors support HT Technology.

§ Intel® Turbo Boost Technology requires a platform with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software and overall system configuration. Check with your platform manufacturer on whether your system delivers Intel Turbo Boost Technology. For more information, see http://www.intel.com/technology/turboboost.

† 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.

△ 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.

1 **Source: Intel internal testing as of January 2010. Benchmark:** DCC MegaTasking v 3.0. Baseline Configuration and Score on Benchmark: Intel® D3CA2 SDP with one Intel® Xeon® processor W3580 (3.33 GHz, 8 MB L3 Cache,6.4GT/s QPI,D0 stepping, 130W TDP, HT enabled, Turbo enabled, EIST enabled, C1E enabled), BIOS version SOX5810J.86A.4849.2010.0112.0827, 12 GB (3x4 GB DDR3-1333 ECC UDIMM) Memory, one nVidia Quadro* FX5800, nVidia graphic driver version 191.78 (using 3D APP-Default Global Settings, vertical sync off), one 21" LCD Display (1280x1024, 32 bit color quality, 75Hz), one 74 GB 10000RPM SATA 3.0 Gb/s Hard Disk, Microsoft Windows XP* Professional x64 Edition SP2 OS. **New Configuration and Score on Benchmark:** Intel® D3CA2 SDP with one Intel® Xeon® processor W3680 (3.33 GHz, 12 MB L3 Cache, 6.4GT/s QPI, B0 stepping, 130W TDP, HT enabled, Turbo enabled, EIST enabled, C1E enabled), BIOS version SOX5810J.86A.4849.2010.0112.0827, 12 GB (3x4GB DDR3-1333 ECC UDIMM) Memory, one nVidia Quadro* FX5800, nVidia* graphic driver version 191.87 (using 3D APP-Default Global Settings, vertical sync off), one 21" LCD Display (1280x1024, 32 bit color quality, 75Hz), one 74 GB 10000RPM SATA 3.0 Gb/s Hard Disk, Microsoft Windows XP* Professional x64 Edition SP2 OS.

Printed in USA 0310/SL/OCG/XX/PDF Please Recycle 323536-001US