



A Workstation or a PC— Which is the Right Choice?

Comparison Brief

For many applications, an entry-level workstation will provide mind-blowing performance in comparison with a desktop PC. Still, not everyone needs a workstation. A typical office worker running standard office applications will get all the performance they need from a standard business PC. Anyone running more demanding applications, however, can expect to be more productive, creative and satisfied using a workstation. Designers, engineers, financial analysts, researchers, and even office “power users” will most likely find that the benefits of an entry-level workstation far exceed the small additional cost.

How much is that additional cost? According to the JPR Workstation October '08 Semiannual Report, “the premium to step up to a workstation isn’t what it used to be.” The report goes on to indicate the price differential between a workstation and a desktop is just over \$100. Based on this slight cost difference and the significant increases in performance, capacity and reliability, a workstation can be an excellent investment in many scenarios.

The Workstation Advantage

Workstations are purpose built for high performance and heavy workloads. They are also designed so you can tailor the system, and the price, to match your application requirements in four key ways:

- **Faster Rendering for Complex Graphics**—A workstation is designed to support one or more professional-grade graphics cards, while a PC typically supports only consumer-grade cards. Anyone working with detailed 2D or 3D graphics can expect to see dramatic improvements in system responsiveness using a workstation, even if the two systems are otherwise identical.
- **Processing Power for Compute-intensive Applications**—A workstation can be configured with more processors than a PC, and with more powerful processors. Demanding applications, such as computer aided design, animation and digital content creation, will respond more quickly, and multiple applications can be run simultaneously without performance loss. This can make the creative process more fluid and provide designers, engineers, analysts and scientists with faster access to needed information.
- **Memory for Large Tasks**—An entry-level workstation can typically be configured with about twice the memory of a desktop PC (or with the same amount of memory using smaller, lower cost DIMMs). Artists and designers can create on larger canvases and engineers can work on larger assemblies. This can improve workflows in fundamental ways. It can also allow designers to identify interferences and other design flaws earlier in the process, when they are far easier and less costly to fix.
- **Large Hard Drives for Massive Jobs**—Workstations are designed to support up to terabytes of internal storage, so jobs of almost any size can be stored on the system.

Match the System to the Job

Computing System	Business Desktop	Entry Professional Workstation	Mobile Professional Workstation	Digital Workbench
Processor Options	Intel® Core™2 Duo processor	Intel® Xeon® processor W3570 or Intel® Core™2 processor family	Intel® Centrino® 2 or Intel® Core™2 processor family	Two Intel® Xeon® processors W5580
Graphics Adapter	Optimized for Business Applications	Optimized for Design	Optimized for Design on the Go	Optimized for Intensive Design Requirements
Memory Capacity	Up to 8 GB	Up to 24 GB	Up to 8 GB	Up to 192 GB ¹
Application				
Business Applications (typical user)	Ideal System	Performance Headroom for Growth and Innovation		
Business Applications (power user)	Not Recommended	Ideal System		Performance Headroom for Growth and Innovation
2D Design				
3D Design				
Model Generation				
Large Assemblies				
Analysis-driven Design		Not Recommended	Ideal System	
Rapid Prototyping			Ideal System	

Choosing the Right System

Ideally, you should always choose the most affordable computing system that will fully meet your needs. If you choose an overly powerful system, you will pay more than you should. If you choose a system that is not powerful enough, you will limit the productivity, efficiency, creativity and satisfaction of you or your employees.

Which system is right for you? See the table, "Match the System to the Job." If you're still not sure, test drive an Intel® processor-based workstation and compare performance and price with that of a business desktop. You'll most likely be amazed at just how much extra performance you can get for a small additional cost.

For more information on Intel processor-based workstations, visit www.intel.com/go/workstation

A Digital Workbench for the Most Demanding Tasks

If you're looking for the ultimate in performance and capacity, consider a workstation with two Intel® Xeon® processors and up to 192 GB of memory.¹ These systems provide a powerful digital workbench that can handle large jobs and the most compute-intensive applications. Designers and engineers can model massive 3D assemblies. They can also perform complex simulations, analyses and photo-realistic renderings in the background, without slowing down their primary interactive tools.

Productivity on the Go

The latest mobile systems are nearly as powerful as their desktop counterparts, and can free designers and engineers to be fully creative, productive and responsive wherever they go, from a local conference room to a client facility to a home office. For many professionals, this can substantially improve the value they deliver to their business and to their customers.

¹ With 16GB DIMMS. Supports up to 96GB with 8GB DIMMS under current design.

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