Making the move to 3D

The advent of CAD applications revolutionized engineering, architecture and drafting. Since the computer now handled all the calculations with accuracy and speed, engineers and draftsmen could perform the same work in a fraction of the time. With the emergence of 3D CAD applications, mechanical design automation moved to the next level.

The key advantage of 3D CAD applications is parametrics, which ties together each element of a design so that a change made to one component in one file is automatically implemented in all other views and related assemblies and models. In 2D CAD applications, engineers must make changes manually in each view of each affected component—a time consuming and error-prone operation.

By contrast, 3D engineering and design applications offer so much detail about individual parts, assemblies and how they interrelate, that electronic models are very good visual representations of the product and fulfill early prototyping needs. And when physical prototypes are needed, the model data can be used in a variety of rapid prototyping software and equipment to create them very quickly.

However, challenges do exist. Because of their capabilities and functionality, 3D applications are complex and compute intensive. They soak up prodigious amounts of memory, especially as file sizes approach the multi-gigabyte range. To get better performance and efficiency out of 3D design and engineering applications, users need a workstation-class computer.

Tackling the most demanding 3D models

All HP personal workstations—from the entry-level HP xw4300 Workstation to the powerhouse HP xw8200 and HP xw9300 Workstations to the HP Compaq nw8240 Mobile Workstation—offer the computing power, memory and graphics needed to tackle the most demanding 3D models. In addition, all workstations are ISV certified and optimized for the latest and best in 3D CAD and design applications.

HP workstations offer a wide variety of options to suit individual design needs. Processor options include dual- and single-core Intel® Pentium® D, Intel Xeon®, and AMD Opteron™ and Dual-Core[ii] AMD Opteron processors. Operating system options include Microsoft® Windows® XP 32-bit Edition SP2, Microsoft Windows XP Professional x64 Edition and Red Hat Enterprise Linux® WS 3. HP delivers optimal graphics performance through the strongest line up of fully certified PCIe x16 graphics solutions from ATI and NVIDIA. Tying everything together are the industry's best chipsets from Intel and NVIDIA.

But optimal performance requires more than just the best components and most stable operating systems. HP enables users to optimize their workstation for their particular applications through the exclusive HP Performance Tuning Framework. This free utility offers a variety of tools to keep drivers and registries updated and to keep workstation running at their best.

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