Accelerate product development with HP Workstations.

In product-development, you need to make the most of every design cycle. HP innovation helps you get there with high-performance desktop and mobile workstations built for the challenges of product design—from basic computer-aided design to complex simulation and analysis. You'll work with confidence knowing your HP Workstation is designed to deliver extreme reliability and is certified for many applications, including popular products for concept design, mechanical computer-aided design, computer-aided engineering, and computer-aided manufacturing. To help you stay productive, HP tests large numbers of applications and proactively resolves many software and hardware issues. And to keep your workspace uncluttered, HP offers the new HP Z1 Workstation in a space-saving all-in-one format.

When only the best will do.

HP Workstations are built for the unyielding demands of today’s professional and technical workplaces. They are engineered to help your team work faster, work smarter, and gain a competitive edge. With bold designs, world-class engineering, robust management tools, and leading-edge visual collaboration solutions, HP Workstations take innovation, performance, and reliability to a new level.
HP recommends Windows.

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**HP Advantages for SolidWorks Customers**

- Use What 3DS SolidWorks Uses
  - 3DS SolidWorks uses HP Workstations and Mobile Workstations to develop, test, and demonstrate their applications.
  - HP tests and submits HP Workstations to 3DS SolidWorks for certification and our equipment stays onsite for support. This protects your solution investment.

- Protect Your Investment with HP Certification
  - HP application experts support customer issues, develop recommended configurations, run performance testing, and application performance analysis.
  - HP Performance Advisor provides specific performance settings for individual applications.
  - Learn more with HP Tech Tips and see how you can benefit from specific HP and partner technologies.

- Use HP Expert Knowledge
  - HP Remote Graphics Software is specifically designed to remotely access your SolidWorks applications.

- Use HP Collaboration Tools
  - 3DS SolidWorks uses HP Workstations and Mobile Workstations to develop, test, and demonstrate their applications.

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**Dassault Systèmes 3DS SolidWorks Corp**

DS SolidWorks focuses on all aspects of mechanical design by creating easy to use CAD, simulation, PDM, and documentation software. The company helps organizations reduce time to market, design better quality products faster, and maintain a competitive advantage by delivering powerful yet affordable and easy-to-use design solutions.

**SolidWorks 3D CAD Software**

The company’s flagship product is SolidWorks, the world’s leading 3D CAD software. With a history of innovation, SolidWorks software offers excellent performance and time-saving capabilities that allow engineers and designers to complete more work with greater accuracy. Its features include:

- Specialized, built-in design tools
- Unique productivity enhancements for designers of machinery, consumer products and molds
- 3D models from existing 2D data with the best available 3D adoption tools
- Functionality to design and detail large assemblies
- An easy-to-use interface, with intuitive display and control functions
- Tools to create 3D geometry in real-time

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**Design communication**

DS SolidWorks provides SolidWorks Enterprise PDM, which allows distributed design teams to organize, share and manage product data.

**RealView™**

RealView is the most realistic, real-time rendering capability available within a 3D mechanical design system.

**Surfacing**

Generate complex surfaces using lofts and sweeps with guide curves, fill-in holes and drag-handles for easy tangency control.

“Because of our strong partnership with HP, our customers will be well served by selecting HP as their professional computing platform. HP Workstations are thoroughly tested and SolidWorks-certified to provide the utmost in performance and reliability for SolidWorks 3D CAD software.”

—Nick Iwaskow, Senior Alliances & Partnership Manager, Dassault Systèmes SolidWorks Corp.

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**Factory Five video**

Watch the video

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**Performance selection takes careful planning**

**HP Workstations—SolidWorks 2012 Performance Benchmark**

Relative Performance (Higher is Better)

<table>
<thead>
<tr>
<th>System Description</th>
<th>Relative Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Z220: Windows 7 Professional 64-bit, (Quad-core) Intel® Xeon® E3-1245v2 3.4/3.8tb GHz, Quadro 4000, Intel® Flash Cache SSD</td>
<td>171%</td>
</tr>
<tr>
<td>HP Z1: Windows 7 Professional 64-bit, (Quad-Core) Intel® Xeon® E3-1245 3.3/3.7tb GHz, Quadro 4000M</td>
<td>162%</td>
</tr>
<tr>
<td>HP Z210: Windows 7 Professional 64-bit, (Quad-Core) Intel® Xeon® E3-1245, 3.3/3.7tb GHz, Quadro 4000, Intel® SSD 160 GB</td>
<td>156%</td>
</tr>
<tr>
<td>HP Z1: Windows 7 Professional 64-bit, (Quad-Core) Intel® Xeon® E3-1245 3.3/3.7tb GHz P3000</td>
<td>100%</td>
</tr>
</tbody>
</table>

This chart compares the HP Z1 Workstation to a similarly configured HP Z210 and HP Z220 Workstation and shows the HP Z1 Workstation with Intel HD Graphics P3000 integrated graphics as a baseline. This is intended to provide performance guidance for these products. All systems were tested with Windows 7 Professional 64-bit*, by HP Technical Marketing in May 2012. ts = Turbo Boost® rating.
Built to perform like no other.
The HP Z Workstation family meets the full range of your workstation needs—from performance-driven computing and design work in space-constrained environments to extreme visualization and analysis with complex datasets.

HP Z1 Workstation.
Get all the power without the tower. >>
When you work in product development, space on your desk is at a premium. The all-in-one HP Z1 Workstation helps you simplify your desktop, save space, and eliminate wires. It puts the performance and reliability of a complete HP Z Workstation expertly designed into the back of a 27-inch diagonal greater than HD display. Add a wireless keyboard and mouse, the only cord you need is for power. Better still, a tool-less chassis design makes it a snap to upgrade and maintain.

HP Z220 Workstations
Our most affordable workstations. >>
Available in an expandable minitower or a compact small form factor, the HP Z220 Workstations deliver workstation performance and reliability at starting prices that rival desktop PCs. Ideal for SolidWorks users.

HP Z420 Workstation
Performance you want. Value you need. >>
The HP Z420 Workstation provides high levels of performance and expandability in an accessible tool-free mini-tower form factor—all at a great price. Ideal for SolidWorks users handling large assemblies and very complex parts.

HP Z620 Workstation
Our most versatile workstation ever. >>
With up to 16 discrete processor cores, the HP Z620 Workstation packs tons of computing and visualization power into a quiet, compact footprint. Ideal for rendering on a low budget.

HP Z820 Workstation
Our ultimate workstation. >>
The dual-socket HP Z820 Workstation delivers exceptional performance, award-winning industrial design, and tool-free serviceability in the industry’s most expandable chassis. Ideal for SolidWorks users who do analysis and simulation.

HP Mobile Workstations
Mobility for Business. >>
Make no compromises on performance or durability with the HP EliteBook Mobile Workstations. Offering high performance with exceptional battery life. Inspired by aerospace craftsmanship and materials, they feature a wear and smudge-resistant DuraFinish and an optional backlit keyboard for use in low-light environments. With HP rigorous design testing, 26 drops and still running smooth.

DE
Editor’s Pick of the Week:
Desktop Engineering
Editor’s Pick of the Week: HP Z1 Workstation >>
HP Innovation helps customers do more, and get more.

HP Workstation Innovation Highlights
HP award-winning Workstations are rich with customer-driven innovations. Servicing is easy with a tool-less access chassis and modular, direct-connect drives and power supplies on select models.

HP Performance Series Displays
Stunning at every angle. >>
HP Performance Displays are engineered to outperform, so you can create with striking visual results. These displays deliver maximum image performance and accuracy, thanks to vivid IPS panels, 178-degree viewing angles, and up to 10x the contrast ratio of mainstream displays, with top end resolutions. They also offer 30-bit panels (over 1 billion colors) for outstanding visualization.

HP Performance Advisor
The built-in workstation guru. >>
HP Performance Advisor delivers a simple, effective way to keep your HP Workstation operating at its peak potential. Like having an IT pro always on hand, this helpful software wizard can take you from initial configuration and customization through the optimization of your system for each new application and driver you install.

Remote Graphics Software
Remote access with a “just like local” feel. >>
HP Remote Graphics Software gives you high-performance remote desktop access to your 2D, 3D, video, and media-rich applications—when and where you need them, on-site or from a remote location through a standard Internet connection. This HP innovation allows you to collaborate with colleagues across geographies, in real-time, using content-rich interactive applications.

HP recommends Windows.
HP Workstations for SolidWorks Products

<table>
<thead>
<tr>
<th>Model</th>
<th>HP Z220 CMT &amp; HP Z220 SFF for affordable high performance</th>
<th>HP Z1 for simplicity, all-in-one, and great performance</th>
<th>HP Z420 for mainstream users needing memory expansion</th>
<th>HP Z620 for affordable multi-core machines</th>
<th>HP Z820 for the best performance and expandability</th>
<th>HP EliteBook 8470w/8570w/8770w Mobile Workstations for power on the go</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7 Ultimate 64-bit</td>
<td>Windows 7 Ultimate 64-bit</td>
<td>Windows 7 Ultimate 64-bit</td>
<td>Windows 7 Ultimate 64-bit</td>
<td>Windows 7 Ultimate 64-bit</td>
<td>Windows 7 Ultimate 64-bit</td>
</tr>
<tr>
<td>SolidWorks Solution</td>
<td>SolidWorks standard user</td>
<td>SolidWorks elite user</td>
<td>SolidWorks performance users with some visualization</td>
<td>SolidWorks users with significant visualization and analysis</td>
<td>SolidWorks extreme users</td>
<td>All SolidWorks applications</td>
</tr>
<tr>
<td>Recommended Min Processors</td>
<td>Intel® Xeon® Processor E3-1230v2, 3.30 GHz, 3.74 GTl, 8 MB cache, 69 W, Quad-Core, 1600 MHz memory</td>
<td>Intel® Xeon® Processor E3-1245, 3.3 GHz, 95 W, 8 MB cache, 1333 MHz memory, Quad-Core, HT</td>
<td>Intel® Xeon® Processor E5-1620, 3.6 GHz, 10 MB cache, 1600 MHz, Quad-Core</td>
<td>Intel® Xeon® Processor E5-2667, 2.9 GHz, 15 MB cache, 1600 MHz memory, Six-Core, HT</td>
<td>Intel® Xeon® Processor E5-2667, 2.9 GHz, 15 MB cache, 1600 MHz memory, Six-Core, HT</td>
<td>Intel® Core™ i7-3720QM, 2.6 GHz (up to 3.9 GHz), 1600 MHz, 6 MB L3 cache, 45W</td>
</tr>
<tr>
<td>Recommended Min Graphic Card</td>
<td>NVIDIA Quadro 600, AMD FirePro V4900, AMD FirePro V7900 (SFF)</td>
<td>NVIDIA Quadro 1000M</td>
<td>NVIDIA Quadro 2000 or AMD FirePro V5900</td>
<td>NVIDIA Quadro 2000 or AMD FirePro V5900</td>
<td>NVIDIA Quadro 4000 or AMD FirePro V7900</td>
<td>AMD FirePro M2000 (14”), AMD FirePro M4000 (15” or 17”), NVIDIA Quadro K1000M (15”), NVIDIA Quadro K3000M (17”)</td>
</tr>
<tr>
<td>Memory Guidance</td>
<td>8 GB</td>
<td>8 GB</td>
<td>16 GB</td>
<td>16 GB</td>
<td>32 GB</td>
<td>16 GB, 8 GB (14”)</td>
</tr>
<tr>
<td>Disk Drive Guidance</td>
<td>256 GB SATA SSD 500 GB 7200 RPM SATA HDD</td>
<td>(2) 160 GB SATA SSD or (1) 500 GB 7200 RPM SATA HDD</td>
<td>256 GB SATA SSD 500 GB 7200 RPM SATA HDD</td>
<td>(2) 256 GB SATA SSD (RAID 0)</td>
<td>(2) 500 GB 7200 RPM SATA HDD</td>
<td>256 GB SATA III or 500 GB 7200 RPM SATA (17” use both)</td>
</tr>
</tbody>
</table>

Learn more | hp.com/go/solidworks and hp.com/zworkstations |

Screen images courtesy of Local Motors and Spracher Engineering.

1. Windows 7 systems may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See msdn.microsoft.com/windows/windows-7 for details.
2. All specifications represent the typical specifications provided by HP’s component manufacturers; actual performance may vary either higher or lower.
3. 1.07B colors through A-FRC technology
4. Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware and software configurations. See intel.com/technology/turbo/boost for more information.
5. Intel HT Technology (HT) is designed to improve performance of multi-threaded software products and requires a computer system with a processor supporting HT and an HT-enabled chipset, BIOS and operating system. Please contact your software provider to determine compatibility. Not all customers or software applications will benefit from the use of HT. See intel.com/info/hyperthreading for more information.
6. Multi-core is designed to improve performance of multithreaded software products and hardware-aware multitasking operating systems and may require appropriate operating system software for full benefits; check with software provider to determine suitability. Not all customers or software applications will necessarily benefit from use of these technologies.
7. Intel’s numbering is not a measurement of higher performance.
8. In the HP Z820 Workstation, the Intel® Xeon® Processors E5-2667 require the 1125W chassis.
9. Each processor supports up to 2 channels (HP Z220/HP Z220 SFF) or 4 channels (HP Z420/HP Z620/HP Z820) of DDR3 memory. To realize full performance, at least 1 DIMM must be inserted into each channel. To get full 8 channel support on the HP Z620 & HP Z820, two processors MUST be installed.
10. For hard drives, 1 GB = 1 billion bytes. 1 TB = 1 trillion bytes. Actual formatted capacity is less. Up to 20 GB of hard drive (or system disk) is reserved for the system recovery software for Windows 7.
11. SATA hardware RAID is not supported on Linux systems. The Linux kernel, with built-in software RAID, provides excellent functionality and performance. It is a good alternative to hardware-based RAID. Please visit http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00060684/c00060684.pdf for RAID capabilities with Linux.

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