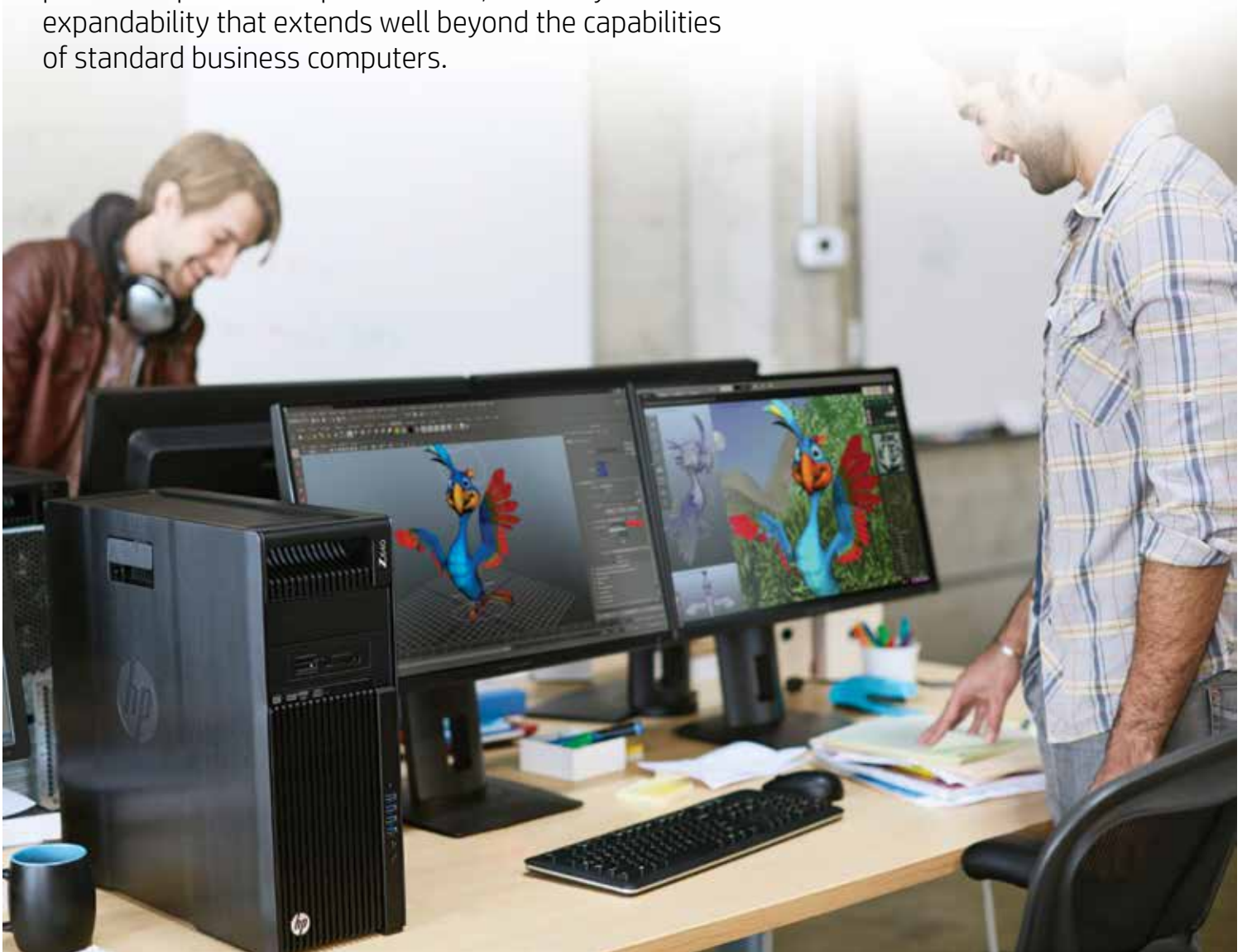


# Why choose a workstation?



When it comes to personal computing systems, desktop workstations are in a class of their own. Despite entry price points that can rival those of desktop PCs, workstations provide a spectrum of performance, reliability and expandability that extends well beyond the capabilities of standard business computers.



# Table of contents

HP Business PCs provide.....	3
HP Z Workstations also deliver.....	3
PC and workstation application segments.....	3
Take performance to new extremes.....	4
Mission-critical reliability .....	5
Expandable by design.....	6
Memory, storage and graphics that grow with your needs.....	6
Why HP Z Workstations? .....	7



HP Z Workstations are designed for the demands of users who work with professional and technical applications, large and complex datasets or intricate 3D models.

While business PCs can provide you with excellent value, desktop workstations deliver superb performance, outstanding reliability and wide-ranging scalability.

**HP Business PCs provide**

**Performance suitable for business tasks**

- PC-grade Intel and AMD processors
- Windows 10 Pro 64-bit<sup>5</sup>
- Consumer-grade graphics cards
- Standard SATA HDDs
- Thunderbolt™ 2<sup>4</sup>

**Solid reliability**

- Over 115,000 hours of testing through the HP Total Test Process
- Non-ECC memory

**Security features**

- Built-in software security measures
- External hardware locking devices

**HP Z Workstations also deliver\***

**Improved performance**

- Intel® Xeon® processors with a choice of more cores, greater memory bandwidth, larger cache and higher frequencies
- Dual Intel® Xeon® processors options\*
- Professional-class graphics from integrated graphics to multiple 2D and 3D solutions
- HP Z Turbo Drive G2 PCIe SSD for up to 4x the performance of SATA SSDs and up to 14x faster sequential read performance over a SATA HDD

**Mission-critical reliability**

- Tested beyond industry standards for always-on operations
- HP Z Desktop Workstations are tested to a minimum of 368,000 total test hours
- ECC memory as well as storage options that use server-class technology

**Professional ISV application certification**

Out-of-the-box compatibility between HP Z Workstations and professional applications

**Tool-less chassis with intuitive touch points**

Easy end-user upgrades

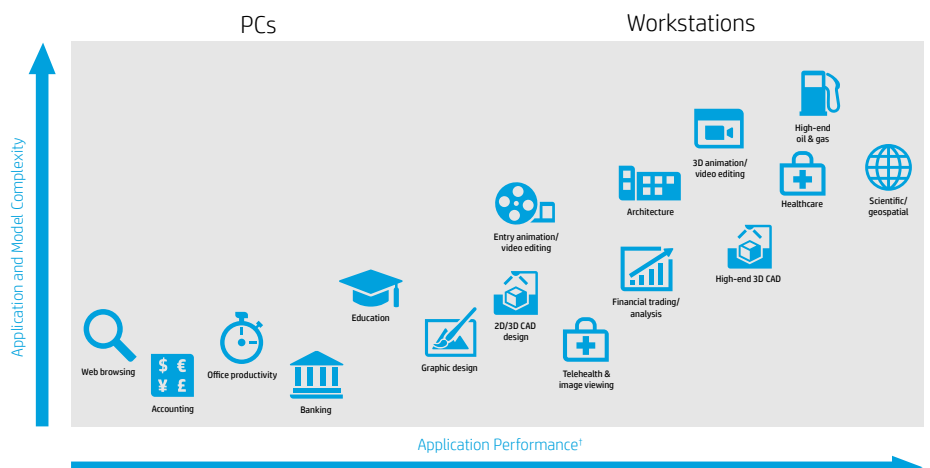
**Maximum expandability**

- Up to 1 TB<sup>1</sup> of memory
- Up to 20 TB<sup>2</sup> of storage

**Additional features**

- Preloaded productivity-boosting software tools such as HP Performance Advisor and HP Remote Graphics Software
- Longer lifecycles than HP Business PCs
- Support for Linux® Operating Systems

**PC and workstation application segments**



\*Many workstation technologies are selectable options. Specifications can vary by workstation platform.

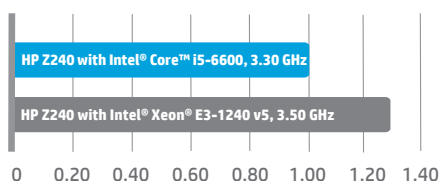
<sup>1</sup>Multi-threaded/multi-tasking



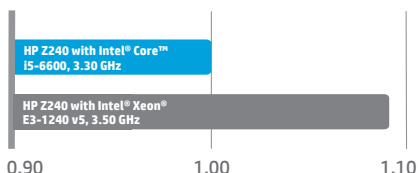
HP Z Workstations help you spend less time waiting and more time creating with industry-leading processing, graphics and innovative technologies.

Up to 29% performance gains<sup>3</sup>

**Cinebench CPU Results**



**Dassault Systems SOLIDWORKS 2015 SPECapc CPU composite**



Relative performance (higher is better)

Performance comparison: 5th Gen Intel® Xeon® E3-1240 v5 compared to 6th Gen Intel® Core™ i5

## Take performance to new extremes

Leave the performance bottleneck behind with HP Z Workstations. With industry-leading processing, storage, graphics and system management components, HP has engineered a total system approach to define new levels of overall performance.

**Intel® Xeon® processor technology**

A wide choice of high-performance Intel® Xeon® processors are validated and tested by Intel and HP for demanding workstation applications. Besides supporting greater reliability with ECC memory, Intel® Xeon® processors offer up to 29% performance gains<sup>3</sup> over equivalent Intel® Core™ processors on the HP Entry Workstations (see performance comparison charts on left). Other benefits include a higher processor frequency bin on HP Entry Workstations, greater memory bandwidth, and choice of more than four cores and dual processor options on the higher-end HP Workstation platforms.

**High-performing storage**

Business PCs usually have 7200 rpm SATA drives, while HP Z Workstations offer an additional choice of 10K rpm SATA as well as 10K and 15K SAS hard drives which provide better reliability and better performance than standard 7200 rpm SATA drives.

The HP Z Turbo Drive G2 is a remarkably affordable and innovative PCIe-based SSD storage solution. It revolutionises how your HP Z Workstation handles large files—significantly reducing boot up, calculation and graphics response times (even with 4K video). Experience up to 200% performance improvements over SATA SSDs and up to 14 times faster sequential read performance over a SATA HDD. To learn more, see [hp.com/go/zturbo](http://hp.com/go/zturbo).

**Leading-edge professional graphics**

Extensive HP testing over a wide-range of graphics cards, simulating real-world customer workloads and stress tests that far exceed typical usage, translate into higher quality drivers that customers trust. Strong relationships with NVIDIA®, AMD and Intel help us quickly resolve any issues. That's how we give your HP Z Workstations graphics cards that feature optimised thermal and power design, wide-ranging application certification, and a three-year limited warranty.

**HP Performance Advisor**

Further enhancing application performance on your workstation, this exclusive HP software wizard helps you configure, customise and optimise your system for each new application and driver you install. To learn more, see [hp.com/go/performanceadvisor](http://hp.com/go/performanceadvisor).

**HP Remote Graphics Software**

Feel the freedom of working remotely while still accessing the high-performance 3D or media-rich applications you count on. With HP Remote Graphics Software (RGS)<sup>®</sup> standard on every HP Z Workstation and an HP RGS receiver that can be downloaded for any PC or Mac<sup>®</sup>, you can take your graphics-intensive workstation applications wherever you go. From the remote worker to the road warrior, get complete access to the power of your workstation from any computer in any location. Collaborate with colleagues around the office or around the world. With advanced touch recognition features on HP RGS 7 you can easily do real work with workstation-class applications on your tablet. To learn more, see [hp.com/go/rgs](http://hp.com/go/rgs).

**Performance on display**

Expand your productivity with a multiple display workspace with HP Z Displays—the perfect companions to your HP Z Workstation. HP Z Displays deliver top-tier graphics resolution and colour accuracy to bring ultra-high definition (UHD) videos, images, and technical drawings to life. Get high-resolution images with outstanding colour accuracy even at wide angles. Take on demanding projects with multiple ports designed to handle the latest digital video and audio content. Stay comfortable and productive with height, tilt, swivel, and pivot adjustability for proper ergonomics.

Immerse yourself in your projects with HP's specialty displays. HP's curved display, the HP Z34c, brings 34 diagonal inches (83.36 cm) of an immersive, curved visual and audio experience in a thin, ultra-high resolution display that boasts a 21:9 aspect ratio to enhance your visual perception.

HP's virtual reality display delivers a virtual-holographic 3D image<sup>6</sup> that allows you to enjoy real-time, natural interaction with your 3D<sup>6</sup> objects. The display's full-motion parallax sensors track the movement of your head and respond to exactly where you look. The stylus manipulates objects in the 3D atmosphere providing haptic feedback so you know exactly where you are interacting.

**HP DreamColor technology**

Take colour accuracy to the next level and achieve maximum impact with HP DreamColor. Designed by colour professionals and digital content creators, HP DreamColor is the power tool they use to produce trusted results. Featuring a palette of over one billion colours, you'll get precise colour accuracy and predictable colour across your entire digital workflow.



Ultimately, our intense focus on reliability gives you greater peace of mind when running professional applications on an HP Z Workstation. You know that you have a system that is designed, tested and proven for the work you do.

**368,000**  
minimum total  
test hours

## Mission-critical reliability

HP Z Workstations are designed and engineered to optimise the way the processor, memory, graphics, operating systems, and application software components work together in all configurations. This whole-system focus, combined with efficient power and cooling solutions, helps you accomplish more with each minute of your time. And the ultra-quiet performance of HP Z Workstations is perfectly suited for use in quiet office environments.

### Tested beyond industry standards

Our customers put their workstations through the toughest trials, so we do too—before they can. Our HP Z Workstation engineers conduct a minimum of 368,000 total test hours to ensure world-class reliability. We subject components to rigorous testing to verify their performance under extreme conditions. In brutal three-axis testing—where frequency, voltage, and temperature are varied—our engineers push the limits of processors, memory, and other system parts. This three-axis testing uses proprietary tools and techniques, and stresses components in ways that help detect potential design or component weaknesses that would otherwise go unnoticed. In some cases, rigorous qualification enables us to find issues that have been previously overlooked by our component vendors. Our strong relationships and influence with these partners enable us to obtain and integrate improved components into our systems, many of which are unique to HP Z Workstations.

### Carefully chosen components

We design our systems based on professional application demands, a full-time customer use model, and a five-year design life. This strenuous design standard drives the types of components we use and how we design our machines. Our engineers physically deconstruct workstation components to study the materials and the chemicals used in them. Even the smallest and most common electronic components, like resistors and capacitors, are carefully chosen based on quality, reliability, and top performance.

### Engineered BIOS

HP BIOS helps hardware compatibility and increases workstation reliability by reducing power consumption through preset sleep states, adjustable fan speeds that maximise operating efficiency, and power management features.

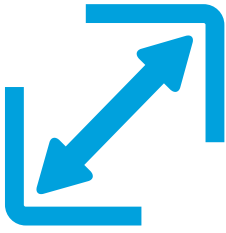
### ECC memory for data integrity

Memory errors can happen anywhere, anytime—with consequences as disastrous as a system crash in the middle of a critical operation.

Error Correction Code (ECC) memory detects and corrects soft errors in the memory system on the fly, preserving the integrity of your data. HP offers ECC memory on our workstations so your mission-critical applications can run smoothly with minimised memory errors.

### Independent Software Vendor (ISV) certification

HP supports an extensive list of application partners and works closely with many software vendors to ensure that these applications work smoothly and flawlessly on HP Z Workstations in all possible configurations. HP also provides a test suite to graphics vendors to help increase the reliability and stability of industry-standard graphics products. [Learn more about how our relationships power you.](#)



HP Z Workstations offer a range of configurable features so that you can quickly and easily grow your workstation at your own pace.

## Expandable by design

More memory and faster I/O channels are critical for workstation applications and the large files they generate. HP Z Workstations are designed to provide more memory, storage, and I/O expandability by supporting a range of PCI Express slots, hard drives, solid state drives, optical drives, RAID configurations, and flexible storage bays.

### Upgrade with ease

Work isn't static. Expand your system capabilities with ease as your workflow demands grow over time. HP Z Workstations featuring smart tool-less chassis, easy open access doors, and easy rack accessibility makes swapping parts and upgrading a breeze.

### Push the processing limit

On dual socket workstations a second processor can be added when you need it, delivering up to 44 discrete processor cores of computing and visualisation power.

### More memory, less waiting

The high-performance models of HP Z Workstations employ a scalable memory subsystem that provides more bandwidth, reduces latency, and helps reduce power consumption so workstations can be configured with more memory without substantially increasing power and cooling requirements. And now you can benefit from larger, faster, and more efficient memory with DDR4 technology.

### Storage even a server would envy

HP Z Workstations offer impressive storage options that balance performance, endurance, capacity, and data security. Select HP Z Workstations come with up to 10 internal storage bay slots to satisfy your storage demands. And, with configurations ranging all the way up to 20 TB,<sup>2</sup> you can say goodbye to your external drives.

### Linux® workstation solutions

Linux® offers fast, flexible, and reliable operating systems for HP Z Workstations. Designed for organisations requiring security, compatibility, stability and unlimited scalability, Linux® powers millions of computers with enterprise-proven technologies. HP was the first workstation vendor to deliver a desktop Linux® platform offering advanced 3D graphics capabilities. That commitment continues today with world-class proven solutions and a dedication to high-touch service for our Linux® customers. HP Z Workstation customers directly benefit from HP's strategic relationships with Red Hat®, Canonical, and SUSE.

## Memory, storage and graphics that grow with your needs

20 TB storage

	Available operating systems <sup>5</sup>	Maximum memory <sup>1</sup>	Maximum storage <sup>2</sup>	Maximum graphics
<b>HP Z1 G3</b>	Windows 10 Pro 64 Windows 7 Professional Red Hat® Enterprise Linux® Desktop	64 GB	4 TB	NVIDIA® Quadro® M2000M
<b>HP Z240 SFF<sup>7</sup></b>	Windows 10 Pro 64 Windows 7 Professional HP Linux® Ready	64 GB	8 TB	NVIDIA® Quadro® K1200 or NVIDIA® NVS™ 510 + NVS 310; AMD FirePro™ W4300
<b>HP Z240 Tower<sup>7</sup></b>	Windows 10 Pro 64 Windows 7 Professional HP Linux® Ready	64 GB	12 TB	NVIDIA® Quadro® M4000 or NVIDIA® NVS™ 510 + NVS 310; AMD FirePro™ W7100 (AMO only)
<b>HP Z440</b>	Windows 10 Pro 64 Windows 7 Professional Red Hat® Enterprise Linux® Desktop	128 GB	16 TB	NVIDIA® Quadro® M5000 or dual NVIDIA® Quadro® M4000; AMD FirePro™ W7100
<b>HP Z640</b>	Windows 10 Pro 64 Windows 7 Professional Red Hat® Enterprise Linux® Desktop	256 GB	16 TB	NVIDIA® Quadro® M6000 or dual NVIDIA® Quadro® M5000; Dual AMD FirePro™ W7100
<b>HP Z840</b>	Windows 10 Pro 64 Windows 7 Professional Red Hat® Enterprise Linux® Desktop	1 TB	20 TB	Dual NVIDIA® Quadro® M6000 or Triple NVIDIA® Quadro® M5000; Dual AMD FirePro™ W7100

**30+**  
years in the industry

## Why HP Z Workstations?

HP Z Workstations have been on the market for over 30 years. Designed from the inside out to fulfill the needs of our customers, HP Z Workstations deliver high performance and reliability with the latest innovation and industry-leading technologies.



Why HP Z Workstations?

### HP Z1 Workstation

Create brilliant projects with plenty of room to work on the elegant and innovative HP Z1 All-in-One Workstation featuring a stunning 23.6-inch (59.94 cm) diagonal UHD 4K display. The intuitive design of the HP Z1 All-in-One Workstation allows for simple expansion, customisation, and connectivity. A complete suite of ISV certifications, professional graphics, and powerful processors provide everything you expect from a workstation in an elegantly designed package.

### HP Z240 SFF and Tower Workstations

The world's best selling workstation\* just got better. HP's most affordable workstation allows you to customise your experience while still balancing your IT budget. The essential features of the HP Z240 Tower easily support your workload with slots and ports to spare. And at 57 percent smaller than the tower, the HP Z240 SFF conserves space and maintains workstation performance.

### HP Z440 Workstation

Take your business to the next level of performance, expandability, and no compromise reliability in one complete package. Featuring a perfect mix of HP Z DNA in a performance workstation package with up to 8 discrete processor cores, up to 128 GB of RAM, and multiple storage and PCIe configuration options.

### HP Z640 Workstation

Redefine versatility and flexibility. Expand your capabilities with the HP Z640 Workstation offering powerful performance, whisper-quiet computing, and tool-less access in a compact design.

### HP Z840 Workstation

Push your computing boundaries with the HP Z840 Workstation that helps you keep up with your biggest projects. Built for high-end computing and visualisation, it delivers outstanding performance in one of the industry's most expandable chassis.

Source: IDC WW WS Historical Tracker 2015Q1 – 05.06.15.



For more information about HP Z Workstations, please visit [hp.com/zworkstations](http://hp.com/zworkstations)

1. Maximum memory capacities assume Windows 64-bit operating systems or Linux. With Windows 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.
2. For hard drives, 1 GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 20 GB (for Windows 7) and up to 36 GB (For Windows 10) of hard drive (or system disk) is reserved for the system recovery software.
3. Results based on the SPECcapc benchmarks for DS SolidWorks 2015 CPU Composite and the Cinebench CPU benchmark test; comparing an HP Z240 Tower Workstation with an Intel® Core™ i5-6600 processor to an HP Z240 Tower Workstation with an Intel® Xeon® E3-1240 v5 Processor. All other system configurations were selected to be as equal as possible.
4. Thunderbolt™ 2 is available via an optional add-in card on the Z1 G2, Z230 SFF, Z230 Tower, Z440, Z640, and Z840. Thunderbolt cable and Thunderbolt device (sold separately) must be compatible with Windows. To determine whether your device is Thunderbolt Certified for Windows, see [thunderbolttechnology.net/products](http://thunderbolttechnology.net/products).
5. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See [microsoft.com](http://microsoft.com).
6. 3D content is required for 3D performance.
7. The following applies to HP systems with Intel Skylake or next-generation silicon chip-based system shipping with Windows 7, Windows 8, Windows 8.1 or Windows 10 Pro systems downgraded to Windows 7 Professional, Windows 8 Pro, or Windows 8.1: This version of Windows running with the processor or chipsets used in this system has limited support from Microsoft. For more information about Microsoft's support, please see Microsoft's Support Lifecycle FAQ at [support.microsoft.com/lifecycle](http://support.microsoft.com/lifecycle).
8. HP RGS requires a Windows, Linux®, or Mac OS X 10.10 and newer operating system and network access.

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