Datasheet

HP Z640 Workstation

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

HP recommends Windows.

Windows 8.1[1]
Intel® Xeon™ processors[2]

Power up

- Experience massive workstation power with support for 145W processors powering up to 36 cores in a dual Intel® Xeon® processor configuration.[3] The HP Z640 Workstation uses Z DNA to provide a high-end workstation experience.

Versatility redefined

- Build the perfect workstation for your needs. The HP Z640 Workstation featuring Windows 8.1[1] provides incredible expansion in a small footprint. With up to 8 memory DIMMs, up to 4 internal hard drives, optional Thunderbolt™ 2,[4] and the HP Z Turbo Drive, you get storage, performance, and the freedom to create.

Experience the quiet

- Concentrate on your work using a workstation that is whisper quiet. When every inch, watt, and decibel makes a difference, count on the HP Z640 Workstation.

Featuring:

- Achieve the performance you need with the ability to support two next generation Intel® Xeon® processors for up to 36 total processor cores in one system.[2]
- Take productivity up a notch with the ability to do more thanks to NVIDIA professional graphics cards in 2D or 3D.[5]
- Get serious about graphics and reach peak productivity with access to a breadth of AMD professional graphics from entry to high-end 3D.[5]
- Maximize your time and increase your capabilities with USB and SATA ports, plus lightning-fast data transfers using optional ThunderboltTM 2 technology.[4]
- A tool-free chassis boasts low acoustics, single integrated Gb Ethernet, a front handle, rear ledge and is 4U rack mountable—all in a compact design.
- Reduce boot up, calculation, and graphics response and revolutionize how your HP Z640 handles large files with the HP Z Turbo Drive, a remarkably fast and innovative storage solution.
- Take multitasking to a new level with the ability to easily connect and work on up to eight displays.[6]
- Optimize this HP Z640 for peak performance. HP Performance Advisor[7] configures your system with updated settings and drivers to help maximize performance.
- Each HP Z640 Workstation works with HP Client Management Solutions,[8] and optional Microsoft® Systems Center Configuration Manager[9] to deploy, manage, and secure your PC.

HP recommends Windows.

HP Z640 Workstation Specifications Table

Form Factor	Rackable minitower
Operating System	Windows 8.1 Pro 64 [1] Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro 64) [2] Windows 7 Professional 64 (National Academic) [1] HP Installer Kit for Linux (HP Linux Installer Kit includes drivers for 64-bit versions of Red Hat® Enterprise Linux 5 and 6 and SUSE Linux Enterprise Desktop 11. Download Red Hat Enterprise Linux (1-year paper license only) which is available as a second operating system.)
Processor Family	Intel® Xeon® E5 v3 processor
Processors [3,4]	Intel® Xeon® E5-2699 v3 (2.3 GHz, 45 MB cache, 18 cores, Intel® vPro™); Intel® Xeon® E5-2697 v3 (2.6 GHz, 35 MB cache, 14 cores, Intel® vPro™); Intel® Xeon® E5-2695 v3 (2.3 GHz, 35 MB cache, 14 cores, Intel® vPro™); Intel® Xeon® E5-2690 v3 (2.6 GHz, 30 MB cache, 12 cores, Intel® vPro™); Intel® Xeon® E5-2683 v3 (2.0 GHz, 35 MB cache, 14 cores, Intel® vPro™); Intel® Xeon® E5-2680 v3 (2.5 GHz, 30 MB cache, 12 cores, Intel® vPro™); Intel® Xeon® E5-2670 v3 (2.3 GHz, 30 MB cache, 12 cores, Intel® vPro™); Intel® Xeon® E5-2667 v3 (3.2 GHz, 20 MB cache, 8 cores, Intel® vPro™); Intel® Xeon® E5-2660 v3 (2.6 GHz, 25 MB cache, 10 cores, Intel® vPro™); Intel® Xeon® E5-2650 v3 (2.3 GHz, 25 MB cache, 10 cores, Intel® vPro™); Intel® Xeon® E5-2643 v3 (3.4 GHz, 20 MB cache, 6 cores, Intel® vPro™); Intel® Xeon® E5-2640 v3 (2.6 GHz, 20 MB cache, 8 cores, Intel® vPro™); Intel® Xeon® E5-2637 v3 (3.5 GHz, 15 MB cache, 4 cores, Intel® vPro™); Intel® Xeon® E5-2630 v3 (2.4 GHz, 20 MB cache, 8 cores, Intel® vPro™); Intel® Xeon® E5-2623 v3 (3.0 GHz, 10 MB cache, 4 cores, Intel® vPro™); Intel® Xeon® E5-2620 v3 (2.4 GHz, 15 MB cache, 6 cores, Intel® vPro™); Intel® Xeon® E5-2609 v3 (1.9 GHz, 15 MB cache, 6 cores, Intel® vPro™); Intel® Xeon® E5-2603 v3 (1.6 GHz, 15 MB cache, 6 cores, Intel® vPro™); Intel® Xeon® E5-1680 v3 (3.2 GHz, 20 MB cache, 8 cores, Intel® vPro™); Intel® Xeon® E5-1660 v3 (3.0 GHz, 20 MB cache, 8 cores, Intel® vPro™); Intel® Xeon® E5-1650 v3 (3.5 GHz, 15 MB cache, 6 cores, Intel® vPro™); Intel® Xeon® E5-1630 v3 (3.7 GHz, 10 MB cache, 4 cores, Intel® vPro™); Intel® Xeon® E5-1620 v3 (3.5 GHz, 10 MB cache, 4 cores, Intel® vPro™); Intel® Xeon® E5-1607 v3 (3.1 GHz, 10 MB cache, 4 cores, Intel® vPro™); Intel® Xeon® E5-1603 v3 (2.8 GHz, 10 MB cache, 4 cores, Intel® vPro™)
Chipset	Intel® C612
Memory	256 GB DDR4-2133 ECC Registered RAM [8] 32 GB DDR4-2133 ECC Load-reduced RAM Actual memory speed dependent on processor. Only Registered and Load-reduced ECC DIMMs are supported. 4 DIMM (with 1 processor) and 8 DIMM (with 2 processors)
Internal Storage	300 GB up to 600 GB SAS (15000 rpm) [5] 300 GB up to 1.2 TB SAS (10000 rpm) [5] 500 GB up to 3 TB SATA (7200 rpm) [5] 500 GB SATA SED [5] 128 GB up to 1 TB SATA SSD [5] 256 GB SATA SE SSD [5] 256 GB up to 512 GB HP Z Turbo Drive (PCIe SSD) [5]
Optical Storage	Slim SATA DVD-ROM; Slim SATA SuperMulti DVD writer; Slim SATA Blu-ray writer [6,7]
Additional Storage	1 15-in-1 media card reader (optional)
Available Graphics	Professional 2D: NVIDIA NVS 310 (512 MB); NVIDIA NVS 315 (1 GB); NVIDIA NVS 510 (2 GB) Entry 3D: NVIDIA Quadro K420 (1 GB); NVIDIA Quadro K620 (2 GB) Mid-range 3D: NVIDIA Quadro K2200 (4 GB); AMD FirePro W2100 (2 GB); AMD FirePro W5100 (4 GB) High-end 3D: NVIDIA Quadro K4200 (4 GB); NVIDIA Quadro K5200 (8 GB); NVIDIA Quadro K6000 (12 GB)
Audio	Integrated Realtek HD ALC221
Communications	Integrated Intel I218LM PCIe GbE; Intel I210-T1 PCIe GbE (optional); HP X520 10 GbE Dual Port Adapter (optional); HP 10 GbE SFP+SR Transceiver (optional); HP 361T PCIe dual-port gigabit (optional); Intel 7260 802.11a/b/g/n PCIe WLAN (optional) [9]
Expansion Slots	2 PCIe Gen3 x16; 1 PCIe Gen3 x8 (open-ended); 1 PCIe Gen2 x4 (open-ended); 1 PCIe Gen2 x1 (open-ended); 1 PCI Open-ended connector allows a greater bandwidth card to be installed physically into a lower bandwidth connector/slot.
Ports and Connectors	Front: 4 USB 3.0; 1 headset; 1 microphone Back: 4 USB 3.0; 2 USB 2.0; 2 PS/2; 1 RJ-45; 1 audio line in; 1 audio line out Internal: 1 USB 2.0; 1 USB 3.0 Internal USB 2.0 available by the 2x5 header. Internal USB 3.0 available by the 2x10 header.
Drive Bays(Internal)	Two 3.5"
Drive Bays (External)	Two 5.25"; One slim ODD
Input Device	HP PS/2 Keyboard; HP USB Keyboard; HP USB SmartCard Keyboard; HP Wireless Keyboard and Mouse; [10]; HP PS/2 Mouse; HP USB Optical Mouse; HP USB 1000 dpi Laser Mouse; HP USB Optical 3-Button Mouse; HP SpaceMouse Pro USB 3D Controller; HP SpacePilot Pro 3D USB Intelligent Controller; [10]
Software	HP Performance Advisor; HP Remote Graphics Software (RGS) 6.0; Cyberlink Media Suite & PowerDVD; Foxit PhantomPDF Express; Buy Office
Security	HP Solenoid Hood Lock & Hood Sensor; HP Business PC Security Lock Kit [9]
Power	925 W 90% efficient, active PFC
Dimensions	6.75 x 18.3 x 17.5 in 17.5 x 46.48 x 44.45 cm

HP recommends Windows.

Weight	33.1 lb 15 kg (Exact weight depends upon configuration.)
Energy Efficiency Compliance	ENERGY STAR® qualified and EPEAT® registered configurations available [11]
Environmental Certification	Low halogen[12]
Compatible Displays	HP Z Display Z30i 30-inch IPS LED Backlit Monitor; HP Z Display Z27i 27-inch IPS LED Backlit Monitor; HP Z Display Z24i 24-inch IPS LED Backlit Monitor; HP Z Display Z23i 23-inch IPS LED Backlit Monitor; HP Z Display Z22i 21.5-inch IPS LED Backlit Monitor; HP DreamColor Z27x Professional Display; HP DreamColor Z24x Professional Display
Warranty	Protected by HP Services, including a standard limited 3 years parts, 3 years labor, and 3 years onsite service (3/3/3) warranty. Certain restrictions and exclusions apply.

HP recommends Windows.

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Accessories and services (not included)

HP Thunderbolt-2 PCIe 1-port I/O Card

Ultra-fast backup, editing, and file sharing, and reduce the time on tasks on select HP Z Workstations[1] with this 1-port I/O Card driven by Thunderbolt™ 2 technology.[2] Power through projects with data transfer speeds nearly 4x that of USB 3.0.
Product number: F3F43AA

HP Z Turbo Drive 256GB PCIe Solid State Drive

Reduce boot up, calculation, and graphics response times (even with 4K video) and revolutionize how your HP Z Workstation handles large files with the HP Z Turbo Drive PCIe Solid State Drive, a remarkably affordable and innovative storage solution.
Product number: G3G88AA

HP Z Turbo Drive 512GB PCIe Solid State Drive

Reduce boot up, calculation, and graphics response times (even with 4K video) and revolutionize how your HP Z Workstation handles large files with the HP Z Turbo Drive PCIe Solid State Drive, a remarkably affordable and innovative storage solution.
Product number: G3G89AA

HP Z Display Z24i 24-inch IPS LED Backlit Monitor (ENERGY STAR)

Get outstanding image accuracy, exceptional adjustability, and mission-critical reliability optimized for commercial environments. Built with IPS Gen 2 panels, the HP Z24i 24-inch IPS Display delivers power savings over first-generation IPS technology and extra-wide viewing angles that foster collaboration.
Product number: D7P53A4

HP recommends Windows.

Messaging Footnotes

[1] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. See http://www.microsoft.com.
[2] Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing system required. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
[3] Available with 128GB DIMMs.
[4] Thunderbolt is an optional or add-on feature. Thunderbolt cable and Thunderbolt device (sold separately) must be compatible with Windows. To determine whether your device is Thunderbolt Certified for Windows, see https://thunderbolttechnology.net/products.
[5] Sold separately or as an optional feature.
[6] Support for up to eight displays requires purchase of two graphics cards that support up to 4 displays simultaneously. Displays sold separately.
[7] HP Performance Advisor requires Windows and Internet access.
[8] Requires Windows operating system.
[9] Third party management software sold separately.

Technical Specifications Footnotes

[1] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. See http://www.microsoft.com.
[2] This system is preinstalled with Windows 7 Professional software and also comes with a license and media for Windows 8.1 Pro software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.
[3] Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing system required. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
[4] Some vPro functionality of this technology, such as Intel® Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependent on 3rd party software providers. Microsoft Windows required.
[5] For hard drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 20 GB of system disk is reserved for Windows 7 and higher system recovery software.
[6] Duplication of copyrighted material is strictly prohibited. Actual speeds may vary. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 Double Sided-Version 1.0 Media.
[7] With Blu-Ray, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this Desktop PC.
[8] Only Registered and LR ECC DIMMs are supported. Do not install memory modules into memory slots if corresponding processor is not installed. Dual processor configurations with memory modules installed for only one processor is not supported. RDIMM (Registered) and LRDIMM (Load Reduced) memory cannot be mixed. All memory installed in the system must be either RDIMM or LRDIMM.
[9] Wireless cards are optional or add-on features and requires separately purchased wireless access point and internet service. Availability of public wireless access points limited.
[10] Optional or add-on feature
[11] EPEAT® registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.
[12] External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

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