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.

- 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 Thunderbolt™ 2 technology.[4]
- A tool-free chassis boasts low acoustics, single integrated Gb Ethernet, a front and rear 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 LANDesk[9] to deploy, manage, and secure your PC.

HP Z640 Workstation Specifications Table

Form Factor	Tower
Operating System	Windows 10 Pro 64 [1] Windows 10 Home 64 [1] Windows 8.1 Pro 64 [2] Windows 7 Professional 64 [2] Windows 7 Professional 64 (available through downgrade rights from Windows 10 Pro 64) [3] Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro 64) [4] HP Installer Kit for Linux® (HP Linux Installer Kit includes drivers for 64-bit versions of Red Hat® Enterprise Linux 6.7 and 7, SUSE Linux Enterprise Desktop 11 and Ubuntu 14.04. Red Hat Enterprise Linux (1-year paper license only) is available as a second operating system.)
Processor Family	Intel® Xeon® E5 1600 v3 processor; Intel® Xeon® E5 2600 v3 processor; Intel® Xeon® E5 2600 v4 processor
Processors[5,6]	Intel® Xeon® E5-2697 v4 (2.3 GHz, 45 MB cache, 18 cores, Intel® vPro™) Intel® Xeon® E5-2695 v4 (2.1 GHz, 45 MB cache, 18 cores, Intel® vPro™) Intel® Xeon® E5-2690 v4 (2.6 GHz, 35 MB cache, 14 cores, Intel® vPro™) Intel® Xeon® E5-2683 v4 (2.1 GHz, 40 MB cache, 16 cores, Intel® vPro™) Intel® Xeon® E5-2680 v4 (2.4 GHz, 35 MB cache, 14 cores, Intel® vPro™) Intel® Xeon® E5-2667 v4 (3.2 GHz, 25 MB cache, 8 cores, Intel® vPro™) Intel® Xeon® E5-2660 v4 (2 GHz, 35 MB cache, 14 cores, Intel® vPro™) Intel® Xeon® E5-2650 v4 (2.2 GHz, 30 MB cache, 12 cores, Intel® vPro™) Intel® Xeon® E5-2643 v4 (3.4 GHz, 20 MB cache, 6 cores, Intel® vPro™) Intel® Xeon® E5-2640 v4 (2.4 GHz, 25 MB cache, 10 cores, Intel® vPro™) Intel® Xeon® E5-2637 v4 (3.5 GHz, 15 MB cache, 4 cores, Intel® vPro™) Intel® Xeon® E5-2630 v4 (2.2 GHz, 25 MB cache, 10 cores, Intel® vPro™) Intel® Xeon® E5-2623 v4 (2.6 GHz, 10 MB cache, 4 cores, Intel® vPro™) Intel® Xeon® E5-2620 v4 (2.1 GHz, 20 MB cache, 8 cores, Intel® vPro™) Intel® Xeon® E5-2609 v4 (1.7 GHz, 20 MB cache, 8 cores, Intel® vPro™) Intel® Xeon® E5-2603 v4 (1.7 GHz, 15 MB cache, 6 cores, Intel® vPro™) 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 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 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 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
Maximum Memory	128 GB DDR4-2400 ECC registered SDRAM DDR4-2133 ECC Registered RAM [10] 32 GB DDR4-2133 ECC Load-reduced RAM (Transfer rates up to 2400 MT/s. Only registered and load-reduced memory is supported.)
Memory Slots	4 DIMM (with 1 processor) and 8 DIMM (with 2 processors)

Drive Controllers	Integrated SATA 6.0 Gb/s; LSI 9217-4i4e 8-port SAS 6.0 Gb/s RAID (optional); LSI MegaRAID® 9270-8i SAS 6.0 Gb/s ROC RAID Card and iBBU09 Battery Backup Unit (optional); Factory integrated RAID available for SATA/SAS drives (RAID 0, 0 Data, 1, 5, and 10); Factory integrated RAID available for PCIe SSDs (RAID 0 Data)
Internal Storage	300 GB up to 600 GB SAS (15000 rpm) [7] 300 GB up to 1.2 TB SAS (10000 rpm) [7] 500 GB up to 4 TB SATA (7200 rpm) [7] 500 GB SATA SED (7200 rpm) [7] 128 GB up to 1 TB SATA SSD [7] 256 GB up to 512 GB SATA SED SSD [7] 1 TB (8 GB cache) SATA SSHD [7] 256 GB up to 512 GB HP Z Turbo Drive (PCIe SSD) [7] 256 GB up to 1 TB HP Z Turbo Drive G2 (PCIe SSD) [7] 512 GB (2x256 GB) up to 2 TB (4x512 GB) HP Z Turbo Drive Quad Pro (PCIe SSD) [7]
Optical Storage	Slim SATA DVD-ROM; Slim SATA SuperMulti DVD writer; Slim SATA BDXL Blu-ray writer [8,9]
Additional Storage	15-in-1 media card reader (optional); HP DX115 Removable HDD Frame/Carrier (optional)
Available Graphics	Professional 2D: NVIDIA® NVS™ 310 (1 GB); NVIDIA® NVS™ 315 (1 GB); NVIDIA® NVS™ 510 (2 GB) Entry 3D: NVIDIA® Quadro® K420 (2 GB); NVIDIA® Quadro® K620 (2 GB); AMD FirePro™ W2100 (2 GB) Mid-range 3D: NVIDIA® Quadro® K2200 (4 GB); NVIDIA® Quadro® K1200 (4 GB); AMD FirePro™ W4300 (4 GB); AMD FirePro™ W5100 (4 GB) High-end 3D: NVIDIA® Quadro® M5000 (8 GB); NVIDIA® Quadro® M4000 (8 GB); NVIDIA® Quadro® K4200 (4 GB); NVIDIA® Quadro® K5200 (8 GB); NVIDIA® Quadro® K6000 (12 GB); NVIDIA® Quadro® M6000 (12 GB); AMD FirePro™ W7100 (8 GB) High Performance GPU Computing: NVIDIA® Tesla® K40
Audio	Integrated Realtek HD ALC221
Networking	Integrated Intel® I218LM PCIe GbE; Intel® I210-T1 PCIe GbE (optional); HP X540-T2 10 GbE Dual Port Adapter (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); Intel® 8260 802.11 a/b/g/n/ac with Bluetooth® 4.2 PCIe NIC (optional)[11]
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
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; HP PS/2 Business Slim Keyboard; HP USB Business Slim Keyboard; HP Wireless Business Slim Keyboard[12] HP PS/2 Mouse; HP USB Optical Mouse; HP USB 1000 dpi Laser Mouse; HP USB Optical 3-Button Mouse; HP SpacePilot Pro 3D USB Intelligent Controller; 3Dconnexion CADMouse[12]
Software	HP Performance Advisor; HP Remote Graphics Software (RGS) 7.2; CyberLink PowerDVD/Power2Go; Foxit PhantomPDF Express; Buy Office [15]
Security	HP Solenoid Hood Lock & Hood Sensor; HP Business PC Security Lock Kit; TPM 1.2 certified [11]
Power	925 W 90% efficient, active PFC
Dimensions (W x D x H)	6.75 x 18.3 x 17.5 in 17.5 x 46.48 x 44.45 cm
Weight	33.1 lb 15 kg (Exact weight depends upon configuration.)
Energy Efficiency Compliance	ENERGY STAR® certified and EPEAT® registered configurations available [13]
Environmental Certification	Low halogen[14]
Compatible Displays	All HP Z Displays and HP DreamColor Displays are supported. For more information see www.hp.com/go/zdisplays.
Warranty	Protected by HP Services, including a 3 years parts, 3 years labor, and 3 years onsite service (3/3/3) standard limited warranty. Certain restrictions

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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 with this 1-port I/O Card driven by Thunderbolt™ 2 technology. 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, a remarkably affordable and innovative PCIe-based SSD 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, a remarkably affordable and innovative PCIe-based SSD storage solution. **Product number: G3G89AA**
HP Z Display Z24i 24-inch IPS LED Backlit Monitor		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**

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] LANDesk software is sold separately. Managed devices must be connected to the management server. Requires active LANdesk maintenance service. Wipe functionality performs a "Windows 8 Reset" and requires Windows 8. Lock performs a Windows "Lock Computer."

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, 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 http://www.microsoft.com.
[2] 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. See http://www.microsoft.com.
[3] This system is preinstalled with Windows 7 Professional software and also comes with a license and media for Windows 10 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.
[4] 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.
[5] 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.
[6] 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.
[7] For hard drives and solid state drives, 1 GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB of system disk is reserved for system recovery software.
[8] 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.
[9] 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.
[10] 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.
[11] 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.
[12] Optional or add-on feature
[13] EPEAT® registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.
[14] External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.
[15] HP Performance Advisor and HP Remote Graphics Software requires Windows and an internet connection.

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