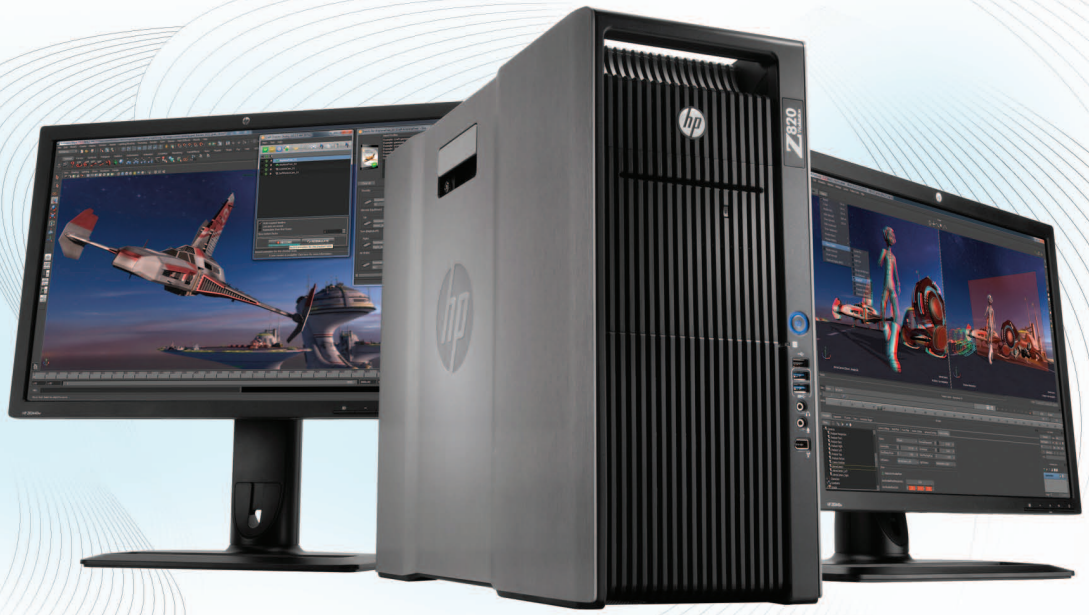
HP recommends Windows® 7.

Z820 Workstation



Ultimate performance for ultimate projects.

Built for high-end computing and visualization.

The dual-processor HP Z820 Workstation delivers outstanding performance, award-winning industrial design, and tool-free serviceability in the industry's most expandable chassis. With next generation Intel® Xeon® processors, support for up to 16 processing cores, and the latest professional graphics, you'll tackle even the most demanding projects like never before.

Unmatched Design. Inside and Out.

With its expandable design, the HP Z820 Workstation gives you the confidence to produce your best work. Designed for a wide-range of needs, the HP Z820 offers enhanced tool-free access and unbelievable power at whisper-quiet levels. The result is unparalleled design power in a system that is sleek and uncluttered, inside and out.

Multitasking Made Easy.

The HP Z820 Workstation employs a variety of Intel® Xeon® E5-2600 processors[1,2,3] that enable next generation PCI Express technology.

With support for 2 processors, the HP Z820 can operate with up to 16 processing cores, delivering ultimate performance to help you accomplish more every minute. Featuring the Xeon® C600 series chipset, LSI SAS 2308 controller, and dual Quick Path Interconnects between the processors, the two work together to help you work more effectively than ever before.

Ultra-Powerful Visuals and High Performance Computing.

Built to support next generation PCIe Gen3 graphics from AMD and NVIDIA, the HP Z820 Workstation currently offers a wide range of cards from Pro 2D to ultra high-end 3D graphics to get the job done. With dual graphics processor support, the HP Z820 can drive up to 8 displays, giving you the power and space you need to multitask like a pro. Plus, get the highest performing GPU computing solutions available in the Z family, like NVIDIA's Maximus, on the HP Z820.

HP Z820 Workstation

HP recommends Windows® 7.

www.hp.com/zworkstations

Form Factor	Rackable minitower
Available Operating Systems	Genuine Windows® 7 Professional 32-bit Genuine Windows® 7 Professional 64-bit Genuine Windows® 7 Ultimate 64-bit HP Linux Installer Kit* Red Hat Enterprise Linux Desktop/Workstation* (1 year paper license; no preinstalled OS)

Available Processors[1,2,3]

Processor	GHz	Cache	Memory	Cores	Hyper-Threading	Featuring Intel® vPro™ Technology	Intel® Turbo Boost Technology[4]
Intel® Xeon® Processor E5-2687	3.1	20 MB	1600 MHz	8	Y	Y	3, 7
Intel® Xeon® Processor E5-2690	2.9	20 MB	1600 MHz	8	Y	Y	4, 9
Intel® Xeon® Processor E5-2680	2.7	20 MB	1600 MHz	8	Y	Y	4, 8
Intel® Xeon® Processor E5-2670	2.6	20 MB	1600 MHz	8	Y	Y	4, 7
Intel® Xeon® Processor E5-2667	2.9	15 MB	1600 MHz	6	Y	Y	3, 6
Intel® Xeon® Processor E5-2665	2.4	20 MB	1600 MHz	8	Y	Y	4, 7
Intel® Xeon® Processor E5-2660	2.2	20 MB	1600 MHz	8	Y	Y	5, 8
Intel® Xeon® Processor E5-2650	2	20 MB	1600 MHz	8	Y	Y	4, 8
Intel® Xeon® Processor E5-2643	3.3	10 MB	1600 MHz	4	Y	Y	1, 2
Intel® Xeon® Processor E5-2640	2.5	15 MB	1333 MHz	6	Y	Y	3, 5
Intel® Xeon® Processor E5-2630	2.3	15 MB	1333 MHz	6	Y	Y	3, 5
Intel® Xeon® Processor E5-2620	2	15 MB	1333 MHz	6	Y	Y	3, 5
Intel® Xeon® Processor E5-2609	2.4	10 MB	1066 MHz	4	N	Y	N/A
Intel® Xeon® Processor E5-2603	1.8	10 MB	1066 MHz	4	N	Y	N/A

Chipset	Intel® C602 Chipset
Memory[5]	16 DIMM slots, up to 512 GB, 8-channel ECC DDR3 1600 MHz, 4 channels per CPU
Drive Controllers	Integrated 2-channel SATA 6 Gb/s controller, RAID 0, 1 capable; Integrated 4-channel SATA 3 Gb/s controller, RAID 0, 1, 5, 10 capable; Integrated 8-channel SAS 6 Gb/s controller, RAID 0, 1, 10 capable; Optional LSI 9260-8i 8-port 6 Gb/s SAS HW RAID 0, 1, 5, 10 capable
Storage[6,7]	Up to (5) 3.5-inch 7200 rpm SATA drives: 250, 500 GB, 1, 2 TB, up to (4) 3 TB, 14 TB max; Up to (6) 2.5-inch 10K rpm SAS drives: 300, 600 GB SFF, 3.6 TB max; Up to (5) 3.5-inch 15K rpm SAS drives: 300, 450, 600 GB, 3 TB max; Up to (6) 2.5-inch SATA solid state drives: 128, 160, 256, 300 GB, 1.8 TB max
Optical Storage[8,9]	DVD-ROM, DVD+/-RW Super-Multi and Slot-Load, Blu-ray Writer
Drive Bays	3 external 5.25-inch bays, 4 internal 3.5-inch bays
Expansion Slots	3 PCI Express Gen3 x16; 1 PCI Express Gen3 x16 mechanical/x8 electrical; 1 PCI Express Gen3 x8 mechanical/x4 electrical; 1 PCI Express Gen2 x8 mechanical/x4 electrical; 1 Legacy PCI
Available Graphics	Professional 2D: NVIDIA NVS 300, NVIDIA NVS 310,** AMD FirePro™ 2270 Entry 3D: NVIDIA Quadro 410,** AMD FirePro™ V3900, NVIDIA Quadro 600, AMD FirePro™ V4900 Mid-range 3D: NVIDIA Quadro 2000, AMD FirePro™ V5900 High-end 3D: NVIDIA Quadro 4000, AMD FirePro™ V7900, NVIDIA Quadro 5000, NVIDIA Quadro 6000, NVIDIA Tesla C2075[10]
Audio	Integrated Intel/Realtek HD ALC262 Audio, optional HP Thin USB Powered Speakers
Network	Dual integrated Intel GbE LAN; Infineon TPM 1.2 Controller; Optional Broadcom NIC; Optional Intel NIC
Ports	Front: 2 USB 3.0, 1 USB 2.0, 1 IEEE 1394a standard, 1 microphone in, 1 headphone out, HP 22-in-1 Media Card Reader (optional) Rear: 2 USB 3.0, 4 USB 2.0, 1 IEEE 1394a, 1 audio in, 1 audio out, 1 microphone in, 2 PS/2, 2 RJ-45 to integrated Gigabit LAN, 1 serial Internal: 6 USB 2.0 ports available by three 2x5 headers
Input Devices	PS/2 standard keyboard, USB standard keyboard, USB Smart Card Keyboard, PS/2 optical scroll mouse, USB 2-button optical scroll mouse, USB 3-button optical mouse, USB SpaceExplorer, USB SpacePilot, USB Laser Scroll Mouse
Dimensions (H x W x D)	17.5 x 8.0 x 20.7 in (44.4 x 20.3 x 52.5 cm)
Power Supply	850W 88% Efficient wide-ranging, active Power Factor Correction or 1125W 90% Efficient wide-ranging, active Power Factor Correction
Compatible Displays (screen size diagonally measured)	HP DreamColor LP2480zx Professional Display (24-inch diagonal widescreen), HP ZR30w 30-inch S-IPS LCD Monitor, HP ZR2740w 27-inch LED Backlit IPS Monitor, HP ZR2440w 24-inch LED Backlit IPS Monitor, HP ZR24w 24-inch S-IPS LCD Monitor, HP LP2475w 24-inch Widescreen LCD Monitor, HP ZR2240w 21.5-inch LED Backlit IPS Monitor, HP ZR22w 21.5-inch S-IPS LCD Monitor, HP ZR2040w 20-inch LED Backlit IPS Monitor
Warranty[11]	Limited three-year Mon-Fri 8-5 next business day, parts, labor and 24x7 phone support, terms and conditions may vary.

* Linux available 2nd calendar quarter 2012 (CQ2'12)

** Available June/July 2012

1 Dual-, Quad-, Six- and Eight-Core technologies are designed to improve performance of multithreaded software products and hardware-aware multitasking operating systems and may require appropriate operating system software for full benefits; Not all customers or software applications will necessarily benefit from use of these technologies.

2 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. See http://www.intel.com/info/em64t for more information.

3 Intel's numbering is not a measurement of higher performance.

4 The specifications shown in this column represent the following: (all core maximum turbo steps, one core maximum turbo steps). Turbo boost stepping occurs in 100MHz increments. Processors that do not have turbo functionality are denoted as N/A. Intel® Turbo Boost technology requires a PC with a processor with Intel® Turbo Boost capability. Intel® Turbo Boost performance varies depending on hardware, software, and overall system configuration. Please visit http://www.intel.com/technology/turboboost for more information.

5 Each processor supports up to 4 channels of DDR3 memory. To realize full performance at least 1 DIMM must be inserted into each channel.

6 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

7 For hard drives, 1 GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 8 GB of hard drive (or system disk) is reserved for the system recovery software for Windows® XP and XP Pro, up to 12 GB for Windows® Vista®, and up to 20 GB for Windows® 7.

8 Actual speeds may vary. Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Note that DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided – Version 1.0 media.

9 As Blu-ray is a new format containing new technologies, 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 workstation.

10 NVIDIA Tesla C2075 requires the 1125W power supply.

11 HP Care Pack Services extend service contracts beyond the standard warranties. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at http://www.hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at http://www.hp.com/go/carepack. Service levels and response times for HP Care Packs may vary depending on your geographic location.

4AA4-0130ENW, March 2012