HP Z Workstations

Quick reference guide

A family of overachievers

Meet Our HP Workstation Family—Compare Features

All-in-One

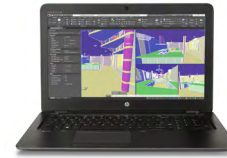|	HP Z1 G2
Overview	Power without the tower.
Operating systems	Windows 8.1 Pro 64-bit[12] Windows 7 Professional 64-bit (available through downgrade rights from Windows 8.1 Pro 64-bit)[13] HP Installer Kit for Linux® (includes drivers for 64-bit OS versions of RHEL 5 & 6 and SUSE Linux® Enterprise Desktop 11)
Processor/chipset	Intel® Xeon® Processor E3-1200 v3 series[2] 4th Generation Intel® Core™ i3, i5, and i7 Processors[2] Intel® C226 Chipset
Slots available/maximum memory/number of memory channels[3]	Up to 32 GB ECC non-ECC unbuffered DDR3L-1600 (Transfer rates up to 1600 MT/s) DIMMS; 4 DIMM slots 2 channels per CPU
Expansion slots[6]	1 MXM 3.1 (dedicated for graphics) 2 miniPCIe/mSATA (full-length) Optional Thunderbolt™ 2[4] via PCIe Card
Graphics	Intel® HD Graphics 4400 and 4600 (Intel® Core™ i3 and i5 Processors)[8] NVIDIA® Quadro® K2100M Intel® HD Graphics P4600 (Intel® Xeon® E3-12x5v3 Processors)[8] NVIDIA® Quadro® K3100M NVIDIA® Quadro® K610M NVIDIA® Quadro® K4100M
Maximum supported displays[7]	One external display via display port
Controllers and HDDs[14,15]	Integrated SATA Controller, RAID 0,1 supported: 3 ports, 6 Gb/s Up to (1) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2, 3 TB Up to (2) 2.5-inch SATA SSD drives: 128, 180, 240, 256, 480, 512 GB, 1 TB (2 TB max) Up to (1) mSATA SSD drives: 256 GB Up to (1) 2.5-inch SATA self-encrypting boot drive (SED): 180 GB Up to (1) 2.5-inch SATA self-encrypting solid state boot drive (SED SSD) drives, 180, 240, 256, 480, 512 GB, 1TB
Optical drives[16,17]	DVD-ROM slim tray load DVD+/-RW DL Super Multi slim tray load HP Blu-ray Writer slim tray load 1 SD 4.0 Media Card Reader
Remote Technology	HP Remote Graphics Software
Communications	Intel I217LM Network Connection (Intel® vPro™ with Intel® AMT 9.0)[18] Integrated Intel dual-band AC 7260 802.11ac Wireless LAN & Bluetooth 4 Combo Card

Desktop Workstations

	HP Z240 SFF	HP Z240 Tower
Overview	Power, price and size.	Powered to manage your challenges.
Operating systems	Windows® 10 Pro 64[12] Windows 7 Professional 64-bit (available through downgrade rights from Windows 10 Pro 64) Windows 7 Professional 64-bit HP Linux®-ready Red Hat® Enterprise Linux® Workstation (1 year paper license available; Preinstall not available)	Windows® 10 Pro 64[12] Windows 7 Professional 64-bit (available through downgrade rights from Windows 10 Pro 64) Windows 7 Professional 64-bit HP Linux®-ready Red Hat® Enterprise Linux® Workstation (1 year paper license available; Preinstall not available)
Processor/chipset	Intel® CoreTM i5-6500[2] Intel® CoreTM i5-6600[2] Intel® CoreTM i7-6700[2] Intel® C236 chipset	Intel® CoreTM i5-6500[2] Intel® CoreTM i5-6600[2] Intel® CoreTM i7-6700[2] Intel® C236 chipset
Slots available/maximum memory/number of memory channels[3]	4 DIMM slots, supporting up to 64GB ECC/non-ECC, DDR4-2133 (Transfer rates up to 2133 MT/s)	4 DIMM slots, supporting up to 64GB ECC/non-ECC, DDR4-2133 (Transfer rates up to 2133 MT/s)
Expansion slots[6]	1 PCIe Gen3 x16 slot 1 PCIe Gen3 x1 slot /x1 connector 1 PCIe Gen3 x1 slot /x1 connector 1 PCIe Gen3 x4 slot /x16 connector	1 PCIe Gen3 x16 slot 1 PCIe Gen3 x4 slot /x16 connector 1 PCIe Gen3 x4 slot/x4 connector 1 PCIe Gen3 x1 slot 1 PCI slot 32-bit (optional)
Graphics	Intel® HD Graphics 530[8] NVIDIA® NVS™ 310 1GB[9] NVIDIA® NVS™ 315 1GB NVIDIA® NVS™ 510 2GB[10] AMD FirePro™ W2100 2GB NVIDIA® Quadro® K420 2GB NVIDIA® Quadro® K620 2GB NVIDIA® Quadro® K1200 4GB Graphics	Intel® HD Graphics P530[8] Intel® HD Graphics 530[8] NVIDIA® NVS™ 310 1GB[9] NVIDIA® NVS™ 315 1GB NVIDIA® NVS™ 510 2GB[10] AMD FirePro™ W5100 4GB Graphics AMD FirePro™ W7100 8GB Graphics AMD FirePro™ W2100 2GB NVIDIA® Quadro® K420 2GB NVIDIA® Quadro® K620 2GB NVIDIA® Quadro® K2200 4GB NVIDIA® Quadro® M4000 8GB[11]
Maximum supported displays[7]	Up to 6 displays	Up to 6 displays
Controllers and HDDs[14,15]	500GB, 1TB, 2TB, 3TB SATA 7200 rpm 6Gb/s 3.5" HDD 500GB SATA 7.2K SED SFF HDD 1TB SATA 7200 rpm 8GB 3.5" SSHD (hybrid) 128GB, 256GB, 512GB, 1TB SATA 6Gb/s SSD 256GB SATA 6Gb/s SED Opal 2 SSD 128GB, 256GB, 512GB PCIe SSD (HP Z Turbo Drive) Integrated SATA Controller, RAID 0,1 supported: 4x 6 Gb/s ports HP Thunderbolt™ 2[4] PCIe 1-port I/O Card	500GB, 1TB, 2TB, 3TB, 4TB SATA 7200 rpm 6Gb/s 3.5" HDD 500GB SATA 7.2K SED SFF HDD 1TB SATA 7200 rpm 8GB 3.5" SSHD (hybrid) 256GB, 512GB, 1TB SATA 6Gb/s SSD 256GB SATA 6Gb/s SED Opal 2 SSD 128GB, 256GB, 512GB PCIe SSD (HP Z Turbo Drive) Integrated SATA Controller, RAID 0,1 supported: 4x 6 Gb/s ports HP Thunderbolt™ 2[4] PCIe 1-port I/O Card
Optical drives[16,17]	HP DVD-ROM Slim-Tray Drive HP DVD RW SuperMulti Slim-Tray Drive HP Blu-ray Writer Slim-Tray Drive HP SD Media Card Reader	HP DVD ROM Slim-Tray Drive HP Slim SuperMulti DVDRW SATA Drive HP Blu-ray Writer Slim-Tray Drive HP SD Media Card Reader
Remote Technology	HP Remote Graphics Software	HP Remote Graphics Software
Communications	Integrated Intel® I219LM PCIe GbE Controller[18,19,21] (Intel® vPro™ with Intel® AMT 11.0) Intel® Ethernet I210-T1 PCIe NIC[20] Intel 8260 802.11 a/b/g/n/ac with Bluetooth® 4.2 PCIe NIC	Integrated Intel® I219LM PCIe GbE Controller[18,19,21] (Intel® vPro™ with Intel® AMT 11.0) Intel® Ethernet I210-T1 PCIe NIC[20] HP X520 10GbE Dual Port Adapter[21] HP 10GbE SFP+ SR Transceiver[21] Intel® 8260 802.11 a/b/g/n/ac with Bluetooth® 4.2 PCIe NIC

Desktop Workstations

	HP Z440	HP Z640	HP Z840
Overview	Expand your power.	Flexible, powerful, ready to work.	More power to you.
Operating systems	Windows 10 Pro 64[12] Windows 10 Home 64[12] Windows 8.1 Pro 64-bit Windows 7 Professional 64-bit (available through downgrade rights from Windows 8.1 Pro 64-bit) Windows 7 Professional 64-bit HP Installer Kit for Linux (includes drivers for 64-bit OS versions of RHEL 6.6, RHEL 7, SUSE Linux Enterprise Desktop 11, SP3, 12, Ubuntu 14.04) Red Hat® Enterprise Linux® Desktop (Paper license with 1 year support; no preinstalled OS) Ubuntu 14.04	Windows 10 Pro 64[12] Windows 10 Home 64[12] Windows 8.1 Pro 64-bit Windows 7 Professional 64-bit (available through downgrade rights from Windows 8.1 Pro 64-bit) Windows 7 Enterprise 64-bit HP Installer Kit for Linux (includes drivers for 64-bit OS versions of RHEL 6.6, RHEL 7, SUSE Linux Enterprise Desktop 11, SP3, 12, Ubuntu 14.04) Red Hat® Enterprise Linux® Desktop (Paper license with 1 year support; no preinstalled OS) Ubuntu 14.04	Windows 10 Pro 64[10] Windows 10 Home 64[10] Windows 8.1 Pro 64-bit Windows 7 Professional 64-bit (available through downgrade rights from Windows 8.1 Pro 64-bit) Windows 7 Professional (MSNA) 64-bit HP Installer Kit for Linux (includes drivers for 64-bit OS versions of RHEL 6.6, RHEL 7, SUSE Linux Enterprise Desktop 11, SP3, 12, Ubuntu 14.04) Red Hat® Enterprise Linux® Desktop (Paper license with 1 year support; no preinstalled OS) Ubuntu 14.04
Processor/chipset	Intel® Xeon® Processor E5-1600v3 series[2] Intel® Xeon® Processor E5-2600v3 series[2] Intel® C612 Chipset	Intel® Xeon® Processor E5-1600v3 series[2] Intel® Xeon® Processor E5-2600v3 series[2] Intel® C612 Chipset	Intel® Xeon® Processor E5-2600v3 series[2] Intel® C612 Chipset
Slots available/maximum memory/number of memory channels[3]	8 DIMM slots; Up to 128 GB DDR4-2133 (Transfer rates up to 2133 MT/s) Registered ECC (w/16 GB DIMMs)	Up to 8 DIMM slots with 2 CPUs, up to 256 DDR4-2133 (Transfer rates up to 2133 MT/s) Registered ECC (w/32 GB DIMMs)	16 DIMM slots, up to 512 GB DDR4-2133 (Transfer rates up to 2133 MT/s) Registered ECC
Expansion slots[6]	2 PCIe Gen3 x16 1 PCIe Gen3 x8 (open-ended connector) 1 PCIe Gen2 x4 (open-ended connector) 1 PCIe Gen2 x1 (open-ended connector) 1 PCI 32-bit/33 MT/s (legacy) Optional Thunderbolt™ 2[4] via PCIe Card	2 PCIe Gen3 x16 1 PCIe Gen3 x8 (open-ended connector) 1 PCIe Gen2 x8 (x4 elec.; open-ended connector) 1 PCIe Gen2 x4 (x1 elec.; open-ended connector) – not available with riser installed 1 Legacy PCI Optional Thunderbolt™ 2[4] via PCIe Card	3 PCIe Gen3 x16 2 PCIe Gen3 x8 (x16 mechanically) 1 PCIe Gen3 x4 (x8 mechanically) 1 PCIe Gen2 x4 (x8 mechanically Optional Thunderbolt™ 2[4] via PCIe Card
Graphics	NVIDIA® NVS™ 310[9] NVIDIA® NVS™ 315 NVIDIA® NVS™ 510[10] NVIDIA® Quadro® K420 NVIDIA® Quadro® K620 AMD FirePro™ W2100 NVIDIA® Quadro® K2200 NVIDIA® Quadro® K4200 AMD FirePro™ W5100 AMD FirePro™ W7100 NVIDIA® Quadro® K5200 NVIDIA® Quadro® K6000 NVIDIA® Tesla® K40	NVIDIA® NVS™ 310[9] NVIDIA® NVS™ 315 NVIDIA® NVS™ 510[10] NVIDIA® Quadro® K420 NVIDIA® Quadro® K620 AMD FirePro™ W2100 NVIDIA® Quadro® K2200 NVIDIA® Quadro® K4200 AMD FirePro™ W5100 AMD FirePro™ W7100 NVIDIA® Quadro® K5200 NVIDIA® Quadro® K6000 NVIDIA® Tesla® K40 NVIDIA® Quadro® M6000	NVIDIA® NVS™ 310[9] NVIDIA® NVS™ 315 NVIDIA® NVS™ 510[10] NVIDIA® Quadro® K420 NVIDIA® Quadro® K620 AMD FirePro™ W2100 NVIDIA® Quadro® K2200 NVIDIA® Quadro® K4200 AMD FirePro™ W5100 AMD FirePro™ W7100 NVIDIA® Quadro® K5200 NVIDIA® Quadro® K6000 NVIDIA® Tesla® K40 NVIDIA® Quadro® M6000
Maximum supported displays[7]	8 displays	8 displays	12 displays
Controllers and HDDs[14,15]	Integrated SATA Controller, RAID 0,1,10 supported: 6 ports, 6 Gb/s Up to (4) 3.5-inch 15K rpm SAS drives: 300, 600 GB, 2.4 TB max Up to (4) 2.5-inch 10K rpm SAS drives: 300, 600 GB, 1.2 TB, 4.8 TB max Up to (4) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2, 3, 4 TB, 16 TB max Up to (4) 2.5-inch 6 Gb/s SATA Solid State Drives: 128, 256, 512 GB, 1 TB, 4 TB max Up to (1) 2.5-inch 6 Gb/s SATA Self-Encrypting Solid State Drive (SED SSD): 256, 512 GB Opal 2 Up to (4) 2.5-inch Samsung Enterprise 6 Gb/s SATA Solid State Drives: 240, 480 GB, 1.9 TB max Up to (2) PCIe SSD HP Z Turbo Drives: 256 GB, 512 GB, 1 TB Up to (4) 2.5-inch 15K rpm SAS drives: 300, 600 GB, 2.4 TB max Fusion ioFX 410 GB PCIe Accelerator Note: Fourth 3.5-inch drive occupies one external 5.25-inch bay.	Integrated SATA Controller, RAID 0,1,10 supported: 6 ports, 6 Gb/s Up to (4) 3.5-inch 15K rpm SAS drives: 300, 600 GB, 2.4 TB max Up to (4) 2.5-inch 10K rpm SAS drives: 300, 600 GB, 1.2 TB, 4.8 TB max Up to (4) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2, 3, 4 TB, 16 TB max Up to (4) 2.5-inch 6 Gb/s SATA Solid State Drives: 128, 256, 512 GB, 1 TB, 4 TB max Up to (1) 2.5-inch 6 Gb/s SATA Self-Encrypting Solid State Drive (SED SSD): 256, 512 GB Opal 2 Up to (4) 2.5-inch Samsung Enterprise 6 Gb/s SATA Solid State Drives: 240, 480 GB, 1.9 TB max Up to (2) PCIe SSD HP Z Turbo Drives: 256 GB, 512 GB, 1 TB Up to (4) 2.5-inch 15K rpm SAS drives: 300, 600 GB, 2.4 TB max Fusion ioFX 410 GB PCIe Accelerator Note: Fourth drive occupies one external 5.25-inch bay	Integrated SATA Controller, RAID 0,1,10 supported: 6 ports, 6 Gb/s Integrated SAS controller, RAID 0,1,10 supported: 8 ports 6 Gb/s Up to (5) 3.5-inch 10k rpm SAS SFF HDD: 300, 600 GB, 1.2 TB max Up to (6) 3.5-inch 6 Gb/s 7200 rpm SATA HDD: 500 GB, 1, 2 TB, 3 TB max Up to (6) 2.5-inch 6 Gb/s SATA SSD: 128, 256, 512 GB, 1 TB max Up to (1) 2.5-inch 6 Gb/s SATA Self-Encrypting Solid State Drive (SED SSD): 512 GB Up to (2) Samsung Enterprise SATA SSD: 240, 480 GB Up to (2) PCIe SSD HP Z Turbo Drives, 256 GB, 512 GB, 1 TB max Fusion ioFX 410 GB PCIe Accelerator
Optical drives[16,17]	HP DX115 Removable HDD Frame/Carrier HP 9.5 mm Slim SuperMulti DVD Writer HP 9.5 mm Slim DVD-ROM Drive HP 9.5 mm Slim BDXL Blu-ray Writer HP 15-in-1 Media Card Reader	HP DX115 Removable HDD Frame/Carrier HP 9.5 mm Slim SuperMulti DVD Writer HP 9.5 mm Slim DVD-ROM Drive HP 9.5 mm Slim BDXL Blu-ray Writer HP 15-in-1 Media Card Reader	HP DX115 Removable HDD Frame/Carrier HP 9.5 mm Slim SuperMulti DVD Writer HP 9.5 mm Slim DVD-ROM Drive HP 9.5 mm Slim BDXL Blu-ray Writer HP 15-in-1 Media Card Reader
Remote Technology	HP Remote Graphics Software 6.0 (RGS)	HP Remote Graphics Software 6.0 (RGS)	HP Remote Graphics Software 6.0 (RGS)
Communications	Integrated Intel I218LM PCIe GbE Controller Intel Ethernet I210-T1 PCIe NIC HP X520 10GbE Dual Port Adapter HP 10GbE SFP+ SR Transceiver HP 361T PCIe Dual Port Gigabit NIC[21] Intel 7260 802.11 a/b/g/n PCIe WLAN NIC	Integrated Intel I218LM PCIe GbE Controller Intel Ethernet I210-T1 PCIe NIC HP X520 10 GbE Dual Port Adapter HP X540-T2 10 GbE Dual Port Adapter HP 10 GbE SFP+ SR Transceiver HP 361T PCIe Dual Port Gigabit NIC[21] Intel 7260 802.11 a/b/g/n PCIe WLAN NIC	HP X520 10 GbE Dual Port Adapter HP 10 GbE SFP+ SR Transceiver Intel Ethernet I210-T1 PCIe NIC Intel 7260 802.11 a/b/g/n PCIe WLAN NIC Integrated Intel I210AT PCIe GbE Controller Integrated Intel I218LM PCIe GbE Controller HP 361T PCIe Dual Port Gigabit NIC[21]

Mobile Workstations

	HP ZBook Studio	HP ZBook 15u G3
Overview	Brilliant inside and out.	Thin, powerful, affordable.
Operating systems	Windows® 10 Pro 64[12] Windows® 10 Home 64[12] Windows® 7 Professional 64[13] Windows® 7 Professional 64 (available through downgrade rights from Windows® 10 Pro)[13] FreeDOS 2.0	Windows® 10 Pro 64[12] Windows® 10 Home 64[12] Windows® 7 Professional 64[13] Windows® 7 Professional 64 (available through downgrade rights from Windows 10 Pro)[13] FreeDOS 2.0
Processor/chipset	Intel® Xeon®E3-1545M v5[2] Intel® Xeon® E3-1505M v5[2] Intel® Core™ i7-6820HQ[2] Intel® Core™ i7-6700HQ[2] Mobile Intel® CM236	Intel® Core™ i7 6600U[2] Intel® Core™ i7 6500U[2] Intel® Core™ i5 6300U[2] Intel® Core™ i5 6200U[2]
Slots available/maximum memory/number of memory channels[3]	Two SODIMM slots supporting up to 32GB DDR4 1.35V ECC or Non-ECC SDRAM (Transfer rates up to 2133MT/s) 4 GB, 8GB and 16 GB SODIMMs (for Intel® Core™ Processors) 8GB and 16 GB ECC SODIMMs (for Intel® XEON® Processors)	Two SODIMM slots supporting dual-channel memory up to 32 GB DDR4 1.35V Non ECC SDRAM (Transfer rates up to 2133MT/s) 4 GB, 8GB and 16 GB SODIMMs
Expansion slots	SD UHS-II Flash Media slot – Supports next generation SD (Secure Digital), backward compatible to SDHC, SDXC Thunderbolt™ 3[5] (supporting DP 1.2, USB 3.1 Gen2, PCIe Gen 3 devices)	1 SD UHS-II Flash Media slot – Supports next generation SD (Secure Digital), backward compatible to SDHC, SDXC 1 Integrated Smart Card Reader (Compatible with ISO 7816 compliant Smart Cards PC/SC interface support)
Graphics	Intel® HD graphics 530[8] Intel® HD graphics P530[8] Intel® Iris Pro Graphics P580 (available 1H16) NVIDIA® Quadro® M1000M with 2 GB dedicated GDDR5 video memory Microsoft DirectX 12 (Shader Model 5.0) and OpenGL 4.4 capable	Intel® HD 5500 Graphics[8] AMD® FirePro® W4190M (2 GB dedicated GDDR5) Microsoft DirectX 12 (Shader Model 5.0) and OpenGL 4.4 capable AMD® Enduro™ Technology supported
Maximum supported displays[7]	Supports up to 3 displays with Intel Integrated graphics. Up to 5 displays using the optional HP Zbook Dock with Thunderbolt 3 and hybrid graphics. Also up to 5 displays using DP1.2 MST and hybrid graphics.	Supports up to 3 displays using MST with DisplayPort 1.2
Controllers and HDDs[14,15]	256GB, 512GB, 1TB (Available 1H16), HP Z Turbo Drives (NVMe PCIe SSD) 128GB SATA 6 Gb/sec M.2 SATA SSD (Available 1H16)[1] 256GB, 512GB (Available 1H16), M.2 SATA SED SSD RAID 0,1 supported	1 TB 5400 rpm SATA, 2.5" Hard Drive 500GB 7200 rpm SATA, 2.5" Hard Drive 500GB 7200 rpm Self Encrypting Drive (Opal2) 500GB 7200 rpm Self Encrypting Drive FIPS 140-2 compliant 500GB 5400 rpm Hybrid Drive (8 GB cache) 128GB M.2 SATA-3 TLC Solid State Drive (Available in 1H16)[1] 256GB M.2 SATA-3 Self-Encrypting (Opal 2) MLC Solid State Drive 256GB,512GB PCIe NVMe Solid State Drive
Remote Technology	HP Remote Graphics Software	HP Remote Graphics Software
Communications	Integrated Intel® I219-LM Gigabit[21] Network Connection Intel® Dual Band Wireless-AC 8260 802.11 AC/a/b/g/n (2x2) WiFi + Bluetooth® 4.0 Combo Adaptor[23] (vPro)[18,19] Intel® Dual Band Wireless-AC 8260 802.11 AC/a/b/g/n (2x2) WiFi + Bluetooth® 4.0 Combo Adaptor[23] (non-vPro)	Integrated Intel® I219-LM Gigabit[21] Network Connection (vPro configurations)[18,19] Intel® WGI219V 10/100/1000 Ethernet (non-vPro configurations) Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi + Bluetooth 4.2 Combo Adaptor[23] (vPro)[18,19] Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi + Bluetooth 4.2 Combo Adaptor[23] (non-vPro) Intel® Dual Band Wireless-AC 3165 802.11 ac (1x1) WiFi and Bluetooth 4.0 Combo Adapter (non-vPro)[23] HP lt4120 Qualcomm® Snapdragon™ X5 LTE Mobile Broadband Module[23] HP hs3110 HSPA+ Intel® Mobile Broadband Module[23]

Mobile Workstations

	HP ZBook 15 G3	HP ZBook 17 G3
Overview	Portable powerhouse.	Ultimate mobile performance.
Operating systems	Windows® 10 Pro 64[12] Windows® 10 Home 64[12] Windows® 7 Professional 64[13] Windows® 7 Professional 64 (available through downgrade rights from Windows 10 Pro)[13] FreeDOS 2.0	Windows 10 Pro 64[12] Windows 10 Home 64[12] Windows® 7 Professional 64[13] Windows 7 Professional 64 (available through downgrade rights from Windows 10 Pro)[13] FreeDOS 2.0
Processor/chipset	Intel® Xeon® E3-1545M v5 with Intel® iris Pro Graphics P580[2] (Available 1H16)[1] Intel® Xeon® E3-1505M v5 with Intel® HD graphics P530[2] Intel® Core™ i7-6820HQ with Intel® HD graphics 530[2] Intel® Core™ i7-6700HQ with Intel® HD graphics 530[2] Intel® Core™ i5-6440HQ with Intel® HD graphics 530[2] Mobile Intel® CM236	Intel® Xeon® E3-1575M v5 with Intel® Iris Pro Graphics P580[2] Intel® XEON® E3-1535M v5[2] Intel® Core™ i7-6820HQ[2] Intel® Core™ i7-6700HQ[2] Intel® Core™ i5-6440HQ[2] Mobile Intel® CM236
Slots available/maximum memory/ number of memory channels[3]	64 GB DDR4 1.35V ECC or Non-ECC SDRAM (With transfer rates up to 2133MT/s) Four SODIMM slots supporting dual-channel memory 4 GB, 8GB and 16 GB SODIMMs (for Intel® Core™ Processors) 8GB and 16 GB ECC SODIMMs (for Intel® XEON® Processors)	64 GB DDR4 1.35V ECC or Non-ECC SDRAM (Transfer rates up to 2133MT/s) Four SODIMM slots supporting dual-channel memory 4 GB, 8GB and 16 GB SODIMMs (for Intel® Core™ Processors) 8GB and 16 GB ECC SODIMMs (for Intel® XEON® Processors)
Expansion slots	2 Thunderbolt 3[5] (Supporting DisplayPort 1.2, USB 3.1 Gen2, PCIe Gen 3 devices) 1 SD UHS-II Flash Media slot (Supports next generation SD (Secure Digital), backward compatible to SDHC, SDXC, 1 Integrated Smart Card Reader (Compatible with ISO 7816 compliant Smart Cards PC/SC interface support)	2 Thunderbolt 3[5] (Supporting DisplayPort 1.2, USB 3.1 Gen2, PCIe Gen 3 devices) 1 SD UHS-II Flash Media slot (Supports next generation SD (Secure Digital), backward compatible to SDHC, SDXC, 1 Integrated Smart Card Reader (Compatible with ISO 7816 compliant Smart Cards PC/SC interface support)
Graphics	Intel® HD[6] graphics 530[8] Intel® HD[6] graphics P530[8] Intel® Iris Pro Graphics P580 (Available in 1H16)[1] AMD FirePro™ W5170M NVIDIA® Quadro® M1000M NVIDIA® Quadro® M2000M	Intel® HD graphics 530[8] Intel® HD graphics P530[8] Intel® Iris Pro Graphics P580 (Available in 1H16)[1] AMD FirePro™ W6150M NVIDIA® Quadro® M1000M NVIDIA® Quadro® M2000M NVIDIA® Quadro® M3000M NVIDIA® Quadro® M4000M NVIDIA® Quadro® M5000M
Maximum supported displays[7]	Up to 3 independent displays with Intel Integrated graphics, using the system panel , VGA port, and two of the three following ports: HDMI, Thunderbolt 3, Thunderbolt 3. Up to 4 independent displays with hybrid graphics, using the system panel, VGA port and 2 out of the three following ports: HDMI, Thunderbolt 3, Thunderbolt 3 Up to 6 independent displays with hybrid graphics, when using the optional ZBook Dock with Thunderbolt 3.	Up to 3 independent displays with Intel Integrated graphics, using the system panel , VGA port, and two of the three following ports: HDMI, Thunderbolt 3, Thunderbolt 3. Up to 4 independent displays with hybrid graphics, using the system panel, VGA port and 2 out of the three following ports: HDMI, Thunderbolt 3, Thunderbolt 3 Up to 6 independent displays with hybrid graphics, when using the optional ZBook Dock with Thunderbolt 3.
Controllers and HDDs[14,15]	1TB 5400 rpm SATA, 2.5" Hard Drive 500GB 7200 rpm SATA, 2.5" Hard Drive 500GB 5400 rpm Hybrid Drive (8 GB cache) 500GB 7200 rpm Self Encrypting Drive (Opal2) 500GB 5400 rpm Self Encrypting Drive FIPS 140-2 compliant 256GB M.2 SATA Self Encrypting Drive(SED) 512GB M.2 SATA Self Encrypting Drive(SED) (Available in 1H16)[1] 256GB,512GB, 1TB PCIe NVMe Solid State Drive	1 TB 7200 rpm SATA 2.5" Hard Drive 500GB 7200 rpm SATA 2.5" Hard Drive 500GB SATA SSHD (Hybrid Drive) (8 GB cache) 500GB 7200 rpm SATA SED (Self Encrypting Drive) 500GB 7200 rpm SATA Self Encrypting Drive FIPS 140-2 compliant 256GB M.2 SATA Self Encrypting Drive(SED) 512GB M.2 SATA Self Encrypting Drive(SED) (Available in 1H16)[1] 256GB, 512GB, 1TB (Available in 1H16)[1] PCIe NVMe Solid State Drive
Remote Technology	Remote Graphics Software	Remote Graphics Software
Communications	Integrated Intel® I219-LM Gigabit[21] Network Connection (vPro configurations)[18,19] Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 combo (vPro)[18,19,23] Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 combo (non-vPro)[23] HP lt4120 Qualcomm® Snapdragon™ X5 LTE Mobile Broadband Module (optional)[23] HP hs3110 HSPA+ Intel® Mobile Broadband Module (optional)[23]	Integrated Intel® I219-LM Gigabit[21] Network Connection (vPro configurations)[18,19] Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 combo (vPro)[18,19,23] Intel® Dual Band Wireless-AC 8260 802.11 a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 combo (non-vPro)[23] HP lt4120 Qualcomm® Snapdragon™ X5 LTE Mobile Broadband Module[23] HP hs3110 HSPA+ Intel® Mobile Broadband Module[23]

1. Available first half 2016

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

3. Each processor supports up to 2 channels (HP Z240 Tower/HP Z240 SFF) of DDR4 memory or 4 channels (HP Z440/HP Z640/HP Z840) of DDR4 memory. To realize full performance at least 1 DIMM must be inserted into each channel. To get full 8 channel support, 2 processors MUST be installed. Actual memory speeds dependent on processor capability.

4. Thunderbolt™ 2 is available via an optional add-in card on HP Z1 G2, HP Z240 SFF, HP Z240 Tower, HP Z440, HP Z640 and HP Z840 Workstations. It is standard on all HP ZBook G3 Mobile Workstations. 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.

5. Thunderbolt™ 3 is standard on all HP ZBook G3 Mobile Workstations.

6. In the PCIe Gen3 x16 slot, if it is not being used for a graphics card, only cards certified as After Market Options for this platform are supported.

7. Number of supported displays varies by configuration.

8. HD content required to view HD images.

9. Can be mixed with one NVS™ 510.

10. Can be mixed with one NVS™ 310.

11. Requires 400W PSU. Not supported with 280W PSU.

12. 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.

13. 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

14. 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 30 GB (For Windows 8.1 and 10) of hard drive (or system disk) is reserved for the system recovery software.

15. 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 h20000.www2.hp.com/bc/docs/support/SupportManual/c00060684/c00060684.pdf for RAID capabilities with Linux®.

16. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players The DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided – Version 1.0 media.

17. 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.

18. The integrated network connection is required to support Intel vPro™ Technology.

19. If AMT is provisioned, then network teaming with the integrated LAN port is not possible.

20. The Intel Ethernet I210-T1 PCIe NIC is supported on the following operating systems: Windows 7 and Windows 8 32-bit and 64-bit versions, Red Hat® Enterprise Linux® (RHEL), SLED 11.

21. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

22. 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. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

23. WWAN use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, and in all regions.

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