



# HP Z8 G4 Workstation

HP's most powerful desktop workstation <sup>2</sup>

Top-of-the-line power to fuel those who reimagine our world. When you need a workstation with the capability to run complex simulations, handle advanced Machine Learning algorithms and process huge amounts of data, the HP Z8 doesn't disappoint.



\*Product image may differ from actual product

HP recommends Windows 11 Pro for business

#### Extreme power

- Run 3D simulations and edit 8K video in real time with up to 56 processing cores and up to 1.5 TB high-speed memory. Certified for serious software, such as ANSYS or After Effects, you can ideate and iterate more to deliver better work in less time.

#### Industry-leading design and acoustics

- From the inside out, the Z8 is an engineering wonder. The modern exterior provides tool-free access to a clean, modular interior. Strategically placed vents and ducts throughout the system streamline airflow for ultra-quiet performance.

#### HP's most secure workstations

- Advanced security features come standard on every Z8. Rest assured your device, identity and data are safe with security software like HP Client Security Suite Gen3<sup>3</sup> and HP Sure Start Gen3<sup>8</sup>, the industry's first self-healing BIOS with intrusion detection.

#### Featuring

- Support your unique user needs with a choice of Windows 10 Pro 64 or Linux® operating systems.<sup>1</sup>
- Achieve the performance you need with the ability to support two next generation Intel® Xeon® processors for up to 56 total processor cores in one system.<sup>4</sup>
- Give ML developers high-performance GPU-accelerated algorithm development tools with support for the NVIDIA Deep Learning SDK and many widely used deep learning frameworks.
- Easily handle massive data sets with 24 memory slots supporting up to 3 TB of high-speed memory.<sup>7</sup>
- Get ultra-flexible configuration with 7 high-performance PCIe Gen3 slots and get additional expandability supporting up to 4 PCIe storage devices with optional slots.<sup>6</sup>
- Providing a choice of 1125W, 1450W and 1700W 90% efficient power supplies, the Z8 fires up the maximum levels of processing, memory, graphics, storage and I/O configurability.
- Designed with two ports of lightning-quick 10 GbE network connection at a lower cost than standard PCIe add-in cards and with Thunderbolt™ 3 technology for fast data transfers.<sup>5,7</sup>
- The tool-less chassis lets you quickly and easily access the interior for upgrades and maintenance.
- The Z8 workstation's modern, sophisticated look features built-in handles for easy relocation.
- Innovative acoustic design allows full range configurations to run cool and quiet for maximized productivity.
- Future-proof your Z with Intel® Optane™ DC Persistent Memory for the best price/performance with the ability to load large data sets entirely into memory for fast access and application responsiveness.<sup>9</sup>

HP Z8 G4 Workstation Specifications Table



\*Product image may differ from actual product

Available Operating Systems	Windows 11 Pro for Workstations <sup>1,2,22</sup> Windows 10 Pro for Workstations <sup>1,2,22</sup> Windows 11 Pro for Workstations (reinstalled with Windows 10 Pro Downgrade for Workstations) <sup>1</sup> Ubuntu 20.04 LTS <sup>23</sup> HP Installer Kit for Linux <sup>23</sup> Red Hat® Enterprise Linux <sup>23</sup> (Ubuntu® 20.04 LTS, 64 bit version, HP Linux-ready, Red Hat® Enterprise Linux® drop-in-box, 1 year entitlement)
	Intel® Xeon® Scalable processor
Available Processors <sup>2,3</sup>	Intel® Xeon® Silver 4210R (2.4 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 13.75 MB L3 cache, 10 cores); Intel® Xeon® Silver 4214R (2.4 GHz base frequency, up to 3.5 GHz with Intel® Turbo Boost Technology, 16.5 MB L3 cache, 12 cores); Intel® Xeon® Silver 4215R (3.2 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 11 MB L3 cache, 8 cores); Intel® Xeon® Silver 4216 (2.1 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 22 MB L3 cache, 16 cores); Intel® Xeon® Gold 5118 (2.3 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 16.5 MB L3 cache, 12 cores); Intel® Xeon® Gold 5218 (2.3 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 22 MB L3 cache, 16 cores); Intel® Xeon® Gold 5218R (2.1 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 27.5 MB L3 cache, 20 cores); Intel® Xeon® Gold 5220R (2.2 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 24 cores); Intel® Xeon® Gold 5222 (3.8 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 16.5 MB L3 cache, 4 cores); Intel® Xeon® Gold 6128 (3.4 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 19.25 MB L3 cache, 6 cores); Intel® Xeon® Gold 6136 (3.0 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 24.75 MB L3 cache, 12 cores); Intel® Xeon® Gold 6226 (2.7 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 19.25 MB L3 cache, 12 cores); Intel® Xeon® Gold 6226R (2.9 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 22 MB L3 cache, 16 cores); Intel® Xeon® Gold 6230R (2.1 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 26 cores); Intel® Xeon® Gold 6238R (2.2 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 38.5 MB L3 cache, 28 cores); Intel® Xeon® Gold 6240 (2.6 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 24.75 MB L3 cache, 18 cores); Intel® Xeon® Gold 6242 (2.8 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 22 MB L3 cache, 16 cores); Intel® Xeon® Gold 6242R (3.1 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 20 cores); Intel® Xeon® Gold 6244 (3.6 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 24.75 MB L3 cache, 8 cores) Intel® Xeon® Bronze 3104 (1.7 GHz base frequency, 8.25 L3 MB cache, 6 cores); Intel® Xeon® Bronze 3106 (1.7 GHz base frequency, 11 MB L3 cache, 8 cores); Intel® Xeon® Bronze 3106R (1.9 GHz base frequency, 11 MB L3 cache, 8 cores); Intel® Xeon® Bronze 3204 (1.9 GHz base frequency, 8.25 MB L3 cache, 6 cores); Intel® Xeon® Gold 5115 (2.4 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 13.75 L3 MB cache, 10 cores); Intel® Xeon® Gold 5120 (2.2 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 19.25 MB L3 cache, 14 cores); Intel® Xeon® Gold 5122 (3.6 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 16.5 MB L3 cache, 4 cores); Intel® Xeon® Gold 6248 (2.5 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 27.5 MB L3 cache, 20 cores); Intel® Xeon® Gold 6252 (2.1 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 24 cores); Intel® Xeon® Gold 6254 (3.1 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 24.75 MB L3 cache, 18 cores); Intel® Xeon® Platinum 8260 (2.4 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 24 cores); Intel® Xeon® Platinum 8280 (2.7 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 38.5 MB L3 cache, 28 cores); Intel® Xeon® Silver 4108 (1.8 GHz base frequency, up to 3 GHz with Intel® Turbo Boost Technology, 11 MB L3 cache, 8 cores); Intel® Xeon® Silver 4110 (2.1 GHz base frequency, up to 3.0 GHz with Intel® Turbo Boost Technology, 11 MB L3 cache, 8 cores); Intel® Xeon® Silver 4112 (2.6 GHz base frequency, up to 3 GHz with Intel® Turbo Boost Technology, 8.25 MB L3 cache, 4 cores); Intel® Xeon® Silver 4114 (2.2 GHz base frequency, up to 3 GHz with Intel® Turbo Boost Technology, 13.75 MB L3 cache, 10 cores); Intel® Xeon® Silver 4116 (2.1 GHz base frequency, up to 3 GHz with Intel® Turbo Boost Technology, 16.5 MB L3 cache, 12 cores); Intel® Xeon® Silver 4208 (2.1 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 11 MB L3 cache, 8 cores); Intel® Xeon® Silver 4210 (2.2 GHz base frequency, up to 3.2 GHz with Intel® Turbo Boost Technology, 13.75 MB L3 cache, 10 cores); Intel® Xeon® Bronze 3208R (1.9 GHz base frequency, 11 MB L3 cache, 8 cores); Intel® Xeon® Gold 6248R (3.0 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 35.75 MB L3 cache, 24 cores); Intel® Xeon® Gold 6258R (2.7 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 38.5 MB L3 cache, 28 cores); Intel® Xeon® 8260L (2.4 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 35.7 MB L3 cache, 24 cores, 48 threads); Intel® Xeon® 6246R (3.4 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 35.7 MB L3 cache, 16 cores, 32 threads)
Chipset	Intel® C622
Maximum memory	3 TB DDR4-2666 ECC SDRAM; 1.5 TB DDR4-2933 ECC SDRAM <sup>20</sup> Transfer rates up to 2933MT/s.
Memory slots	24 DIMM with 2 processors
Internal storage	up to 300 GB SAS (15000 rpm) <sup>2</sup> 500 GB up to 2 TB SATA (7200 rpm) <sup>4</sup> up to 500 GB SATA SED (7200 rpm) <sup>3</sup> 1 TB up to 6 TB 7200 rpm SATA Enterprise <sup>4</sup> 256 GB up to 2 TB SATA SSD <sup>4</sup> 256 GB up to 512 GB SATA SED Opal 2 SSD <sup>4</sup> 240 GB up to 480 GB SATA Enterprise SSD <sup>4</sup> 256 GB up to 1 TB HP Z Turbo Drive PCIe® NVMe™ SSD <sup>3</sup> 256 GB up to 1 TB HP Z Turbo Drive PCIe® NVMe™ SSD M.2 <sup>4</sup> 256 GB up to 512 GB HP Z Turbo Drive PCIe® NVMe™ SED SSD M.2 <sup>4</sup> 256 GB up to 8 TB HP Z Turbo Drive Quad Pro PCIe® SSD <sup>3</sup> 256 GB up to 4 TB HP Z Turbo Drive Dual Pro PCIe® SSD <sup>3</sup>
	HP SD 4 Media Card Reader (optional)
Optical drive	HP Slim DVD-ROM; HP Slim Blu-ray Writer; HP Slim DVD-Writer <sup>5,6</sup> (##opticaldriveallnote##)
Available Graphics	Entry 3D: NVIDIA® T400 (4 GB GDDR6 dedicated); NVIDIA® Quadro® P620 (2 GB GDDR6 dedicated) Mid-range 3D: NVIDIA® T1000 (8 GB GDDR6 dedicated); NVIDIA® T1000E (8 GB GDDR6 dedicated); AMD Radeon™ Pro WX 3200 (4 GB GDDR5 dedicated); NVIDIA® Quadro® P1000 (4 GB GDDR5 dedicated); NVIDIA® Quadro® T1000 (4 GB GDDR6 dedicated); NVIDIA RTX™ A2000 (6 GB GDDR6 dedicated) High-end 3D: NVIDIA RTX™ A4500 (20 GB GDDR6 dedicated); NVIDIA RTX™ A4000 (16 GB GDDR6 dedicated); AMD Radeon™ Pro W5500 (8 GB GDDR5 dedicated); AMD Radeon™ Pro W5700 (8 GB GDDR5 dedicated) Ultra High-end 3D: NVIDIA® Quadro® GV100 (32 GB GDDR5 dedicated); AMD Radeon™ Pro W6800 (32 GB GDDR6 dedicated); NVIDIA RTX™ A6000 (48 GB GDDR6 dedicated); NVIDIA RTX™ A5000 (24 GB GDDR6 dedicated); NVIDIA® Quadro® SYNC II <sup>17</sup>
	2 PCIe x4; 3 PCIe x8; 4 PCIe x16 (1 PCIe x8 has rear bulkhead access and 2 PCIe x8 are internal access only. Slot 1: Transforms to PCIe x8 when 2nd CPU is installed. Slots 3 and 6: are available only when 2nd processor is installed. PCIe x16 - Available only when 2nd processor is installed.)
Ports and connectors	Front: 1 headset connector; 4 USB 3.1 (1 charging); Rear: 6 USB 3.1 Gen 1; 2 RJ-45 (1 GbE); 1 audio-in; 1 audio-out; 1 PS/2 mouse port; 1 PS/2 keyboard port; 1 serial; (Premium front includes: 1 headset, 2 USB 3.1 Gen 1 (1 charging), 2 USB 3.1 Gen 2 Type-C™)
Input devices	HP Wireless Business Slim Keyboard and mouse combo; HP 320K Wired Keyboard; HP USB Business Slim Keyboard; USB Premium wired keyboard; USB Smart Card CCID keyboard <sup>10</sup> ; 3Dconnexion CADMouse; HP USB Optical Mouse; HP PS/2 Mouse; HP USB Hardened Mouse <sup>10</sup> ;
Communications	LAN: HP dual-port 10GbE+1NIC; Intel® i210-T1 PCIe® GbE; Intel® X550-T2 dual-port GbE NIC; Intel® X710-DA2 dual-port GbE NIC; Integrated Intel® i219-LM PCIe® GbE; NVIDIA® Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC; Allied Telesis AT-2911/T1Z-901 dual-port 1GbE NIC; Intel® I350-T4 dual-port GbE NIC; Intel® 10Gb SFP+ SR transceiver; Allied Telesis AT-2914S/LC PCIe Fiber NIC; Intel® i225-T1 single-port 2.5 GbE NIC; HP 10 GbE SFP+ SR LC Fiber transceiver; HP 25 GbE SFP28 LC Fiber transceiver <sup>19,24,27</sup> ; WLAN: Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ax (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro™; Intel® Dual Band Wireless-AC 9260 802.11ac (2x2) and Bluetooth® 5 M.2, non-vPro™;
Drive Bays	Two 5.25"; Four 2.5" or 3.5" <sup>16</sup>
Software	HP Performance Advisor; HP Remote Graphics Software (RGS);
Security management	HP Sure Start Gen3; Secure authentication; Kensington lock slot; Full volume encryption; HP Keyed Cable Lock Kit; TPM 2.0 certified; HP Secure Erase <sup>14,15,18</sup>
Power	1700 W internal power supply, up to 90% efficiency, active PFC; 1450 W internal power supply, up to 90% efficiency, active PFC; 1125 W internal power supply, up to 90% efficiency, active PFC.
Dimensions	8.5 x 21.7 x 17.5 in; 21.59 x 55.12 x 44.45 cm
Weight	Starting at 49.4 lb; Starting at 22.4 kg. (Exact weight depends on configuration.)
Ecolabels	EPEAT® registered configurations available; TCO Certified configurations available <sup>11,26</sup>
Energy star certified (series fixed)	ENERGY STAR® certified
Sustainable impact specifications	Low halogen <sup>12</sup>
Compatible displays	All HP Z Displays and HP DreamColor Displays are supported.
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. 24/7 operation will not void the HP warranty.

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### Messaging Footnotes

- <sup>1</sup> 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.windows.com>
- <sup>2</sup> Based on desktop workstations as of June 14, 2017 and power based on processor, graphics, memory, and power supply.
- <sup>3</sup> HP Client Security Suite Gen3 requires Windows and Intel® or AMD 7th Gen processors.
- <sup>4</sup> Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- <sup>5</sup> HP dual-port 10GbE-T NIC is sold separately or as an optional feature.
- <sup>6</sup> Sold separately or as an optional feature.
- <sup>7</sup> Available in the first half of 2018.
- <sup>8</sup> HP Sure Start Gen3 is available on HP EliteBook, HP ZBook, and HP Z Workstation products equipped with Intel® 7th generation processors.
- Screen image courtesy of Renault Sport Racing
- Screen image courtesy of Chris McLennan
- <sup>9</sup> Supported only with Xeon B2xx, 62xx, 52xx and 4215 processors. Available as factory configured in Memory Mode or Storage Mode. See Quick Specs for more information.

### Technical Specifications Footnotes

- <sup>1</sup> 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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.
- <sup>2</sup> Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- <sup>3</sup> 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.
- <sup>4</sup> For storage drives, GB = 1 billion bytes, TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB (for Windows) is reserved for system recovery software.
- <sup>5</sup> 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. No support for DVD RAM.
- <sup>6</sup> 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.
- <sup>8</sup> For systems installed with Microsoft Windows 7 (Ultimate, Enterprise or Professional), the maximum accessible system memory is 192 GB. For systems installed with Microsoft Windows 8.x (Enterprise or Pro), the maximum accessible system memory is 512 GB.
- <sup>9</sup> Wireless access point and Internet access required. 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.
- <sup>10</sup> Optional or add-on feature.
- <sup>11</sup> Based on US EPEAT® registration according to IEEE 1680.1 - 2018 EPEAT®. Status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information.
- <sup>12</sup> External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.
- <sup>13</sup> HP Remote Graphics Software requires a Windows, Linux®, or Mac® OS X 10.10 and newer operating system and network access.
- <sup>14</sup> HP Sure Start Gen3 is available on HP EliteBook, HP ZBook, and HP Z Workstation products equipped with Intel® 7th generation processors.
- <sup>15</sup> HP Secure Erase: For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Supported on Elite platforms with BIOS version F.03 or higher.
- <sup>16</sup> Each bay is configurable to 2.5" or 3.5".
- <sup>17</sup> NVIDIA® Quadro® SYNC II sold separately
- <sup>18</sup> HP Keyed Cable Lock Kit is available only as an aftermarket option.
- <sup>19</sup> HP 10GBASE-T Dual NIC Z6/B G4 is sold separately or as an optional feature.
- <sup>20</sup> The 3TB memory configuration requires 128GB DIMMs which are supported but no longer sold by HP.
- <sup>21</sup> Windows 11 Pro and Windows 10 Pro is preinstalled. Windows 7 media is only available upon request from HP Customer Support. 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.
- <sup>22</sup> NOTE: In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>.
- <sup>23</sup> Note: For detailed Linux® OS/hardware support information, see: [http://www.hp.com/support/linux\\_hardware\\_matrix](http://www.hp.com/support/linux_hardware_matrix)
- <sup>24</sup> Intel® I350-T4 dual4-port GbE NIC is sold separately or as an optional feature.
- <sup>25</sup> Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.
- <sup>26</sup> TCO Certified configurations available when ENERGY STAR configurations are selected with a USB Type-C® connector. ENERGY STAR available with a combination of high-performance CPUs, high-performance GPU's and select memory configurations.
- <sup>27</sup> The NVIDIA® Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC requires a transceiver in order to connect to a network. Transceivers sold separately.

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