Data sheet

HP Z1 G9 Tower Desktop

The most affordable Z desktop workstation

Workstation performance is now within reach with a desktop built for designing, editing and even gaming. From 2D and 3D CAD to entry VR content creation, gain speed and efficiency across your workflows. Go beyond a commercial PC with a workstation desktop certified for select pro apps.

*Product image may differ from actual product

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Upgrade to workstation performance

- Easily multitask with an Intel® Core™ vPro®[1] processor paired with the ideal graphics for your work. Designing in CAD? Accelerate 3D workflows with professional NVIDIA®. Creating in VR? Go for NVIDIA® GeForce®.[2]

Certified for your workflow

- Work confidently knowing your Z1 is tested and certified for select professional apps. We've worked closely with software providers on apps like AutoCAD®, SOLIDWORKS® and Revit® so you get seamless workstation performance across your workflow.[3]

Industy leading security

- HP Wolf for Business security[4] features come standard on every Z1 Tower, for an always-on, always-acting, resilient defense. From the BIOS to the browser, above and below the OS, these constantly evolving solutions help protect your PC from threats.
- Support your unique user needs with a choice of Windows 11 Pro, WSL2 or Linux® operating systems.[5]
- Create 3D models with optional NVIDIA RTX® T600.[6] Creating in VR? Amp up your experience with optional NVIDIA GeForce RTX 3070 graphics.[7]
- Experience fast performance when working on complex design tasks with 4 DIMMs for up to 128GB DDR5 memory at an increased memory speed of up to 4400MHz.[8]
- Make storage simple with up to 8TB[9] with 2 M.2 storage slots and RAID for added performance and reliability.
- Configure to the needs today and adapt to the future. Options include DP 1.4, VGA, HDMI, Dual USB Type-A, USB Type-C® with Alt-DP or 2nd Serial and more.
- Experience a future-proof device that's optimized for VR with NVIDIA GeForce graphics and an Intel® Core™ processor.
- Evolve your work. Evolve your rig. With tool-less access to the interior, you can customize your Z to fit your needs.
- Improve connectivity in crowded wireless environments while on Wi-Fi® with HP Extended Range Wireless LAN that allows greater distance from transmission point and fast data throughput at shorter ranges."
- We know you need performance you can rely on. That's why our products endure rigorous military standard testing[10] and software certifications.
- Sustainably built, this product contains recycled plastics, utilizes 92% power supply efficiency, and meets GreenScreen® for Safer Chemicals' methodology standards.[11]
- Multiple PSU options, including the 550W PSU, enable increasing need for GPU, even with the highest power CPUs and rich configurations.[12]
- Help keep your system clean while sitting on the factory floor or machining environment with the front-access dust filter.[13]

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HP Z1 G9 Tower Desktop Specifications Table

*Product image may differ from actual product

Available Operating Systems	Windows 11 Pro[1] Windows 11 Home – HP recommends Windows 11 Pro for business[1] Windows 10 Pro (available through downgrade rights from Windows 11 Pro)[1,2] Windows 10 Pro (available through downgrade rights from Windows 11 Pro)[1] FreeDOS (Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).)
Processor family	12th Generation Intel® Core™ i7 processor; 12th Generation Intel® Core™ i9 processor; 12th Generation Intel® Core™ i3 processor; 12th Generation Intel® Core™ i5 processor
Available Processors	Intel® Core™ i9-12900 with Intel® UHD Graphics (2.4 GHz base frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 16 cores, 24 threads), supports Intel® vPro® Technology; Intel® Core™ i7-12700 with Intel® UHD Graphics (2.1 GHz base frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 12 cores, 20 threads), supports Intel® vPro® Technology; Intel® Core™ i5-12600 with Intel® UHD Graphics (3.3 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 18 MB L3 cache, 6 cores, 12 threads), supports Intel® vPro® Technology; Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 18 MB L3 cache, 6 cores, 12 threads), supports Intel® vPro® Technology; Intel® Core™ i5-12400 with Intel® UHD Graphics (2.5 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 18 MB L3 cache, 6 cores, 12 threads); Intel® Core™ i3-12300 with Intel® UHD Graphics (3.5 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores, 8 threads); Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores, 8 threads)
Maximum memory	128 GB DDR5-4400 non-ECC SDRAM Transfer rates up to 4400 MT/s. Transfer rates up to 4400 MT/s.
Memory slots	4 DIMM
Internal storage	500 GB up to 2 TB 7200 rpm SATA HDD[9] 512 GB up to 1 TB PCIe® NVMe™ Value M.2 SSD[9] 256 GB PCIe® NVMe™ M.2 SSD[9] 256 GB up to 2 TB PCIe® NVMe™ TLC M.2 SSD[9] 256 GB up to 512 GB PCIe® NVMe™ SED Opal 2 TLC M.2 SSD[9]
Optical drive	HP 9.5 mm Slim DVD-Writer; HP 9.5 mm Slim DVD-ROM [11] (##opticaldriveavailnote##)
Available Graphics	Integrated: Intel® UHD Graphics 770 Discrete: NVIDIA® GeForce RTX™ 3060 (12 GB GDDR6 dedicated); NVIDIA® GeForce RTX™ 3070 (8 GB GDDR6 dedicated); NVIDIA® T400 4 GB; NVIDIA® T600 4 GB[16,17,39,40]
Audio	Realtek ALC3205 codec, universal audio jack with CTIA and OMTP headset support
Expansion slots	1 M.2 2230; 2 PCIe 3 x1; 1 PCIe 3 x16 (wired as x4); 2 M.2 2280; 1 PCIe 4 x16 (1 M.2 2230 slot for WLAN and 2 M.2 2280 slots for storage)
Memory card device	5-in-1 SD card reader (optional)
Ports and Connectors	Front: 1 SuperSpeed USB Type-C® 20Gbps signaling rate (1 charging); 4 SuperSpeed USB Type-A 10Gbps signaling rate (1 charging); 1 universal audio jack ; Rear: 1 audio-out; 1 HDMI 1.4; 1 power connector; 2 DisplayPort™ 1.4; 3 USB Type-A 480Mbps signaling rate; 3 SuperSpeed USB Type-A 10Gbps signaling rate; 1 RJ-45 ; Optional Ports: Flex IO – choose one of the following options: 1 DisplayPort™ 1.4, 1 HDMI 2.0, 1 VGA, 2 SuperSpeed USB Type-A 5Gbps signaling rate, 1 SuperSpeed USB Type-C® 10Gbps signaling rate (15W output, DisplayPort™ 1.4), 1 Thunderbolt™ 3 with SuperSpeed USB4 Type-C® 40Gbps signaling rate (cabled to PCIe® AIC), 1 serial and PS/2 ports combination, 1 parallel port[37,38]
Input devices	HP Wireless Business Slim Keyboard and mouse combo; HP Wired Desktop 320K keyboard; HP USB Business Slim SmartCard CCID Keyboard; HP Wired Desktop 320MK Mouse and Keyboard; HP 125 Wired Keyboard; HP 655 Wireless Keyboard and mouse combo; HP 455 Programmable Wireless Keyboard; HP 225 Wired Keyboard and mouse combo; HP 225 Antimicrobial Wired Keyboard and mouse combo[36]; HP Wireless Premium Mouse; HP wired desktop 128 laser mouse; HP 125 Wired Mouse; HP Wired 320K mouse;
Communications	LAN: Intel® Ethernet Network Adapter I225-T1 [12]; WLAN: Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, vPro®; Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, non-vPro®; Realtek RTL8852AE 802.11a/b/g/n/ax (2x2) Wi-Fi® and Bluetooth® 5.2 wireless card [13,15];
Software	HP Jumpstart; HP Noise Cancellation Software; HP Support Assistant; Buy Office (sold separately); HP Privacy Settings; HP Desktop Support Utilities; HP Setup Integrated OOBE; [21]
Security management	HP Power On Authentication; Power-on password (via BIOS); SATA port disablement (via BIOS); Setup password (via BIOS); Support for chassis padlocks and cable lock devices; USB enable/disable (via BIOS); Serial enable/disable (via BIOS); HP Sure Click; Windows Defender; HP Sure Sense; HP Client Security Manager Gen7; HP Sure Start Gen7; HP Sure Run Gen4; HP Sure Recover Gen4; HP Tamper Lock; TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified);[25,26,27,28,29,30,31]
Management features	HP Client Catalog (download); HP Cloud Recovery; HP Driver Packs; HP Management Integration Kit for Microsoft System Center Configuration Management Gen4; HP System Software Manager (download); HP BIOS Configuration Utility (download); HP Image Assistant (download); Ivanti Management Suite (download); HP Client Management Script Library (download)[18,22,23,24]
Power	260 W 92% efficient, wide-ranging, active PFC; 400 W 92% efficient, wide-ranging, active PFC; 550 W 92% efficient, wide-ranging, active PFC
Dimensions	33.7 x 30.8 x 15.5 cm
Weight	5.7 kg; (Exact weight depends on configuration.)
Ecolabels	IT ECO Declaration; TCO Certified configurations available; EPEAT® Gold registered[34]
Energy star certified (series fixed)	ENERGY STAR® certified
Sustainable impact specifications	45% post-consumer recycled plastic; 5% ITE-derived closed loop plastic; Bulk packaging available; 80 Plus® Platinum power supplies available; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable; Ocean-bound plastic in speaker enclosure and system fan; Contains recycled metal
Compatible displays	(Supports 8 displays, driving 8 displays requires the use of integrated and discrete graphics ports. Each source can drive a total of 4 displays. At least one of the integrated graphics ports need to drive two displays in a daisy chain configuration.)

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Accessories and services (not included)

HP 5-year Next Business Day Onsite Workstation Only Hardware Support	HP Care Pack	Receive 5 years of next business day onsite repair from an HP-qualified technician for your computing device, if the issue cannot be solved remotely. For more information on Care Pack services, please visit www.hp.com/go/cpc. **Product number: U7944E**

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Messaging Footnotes

[1] For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See http://intel.com/vpro. vPro® is available on Intel® Core™ i5-11500 and above processors.
[2] NVIDIA® GeForce® graphics are an add-on feature that must be configured at the time of purchase.
[3] Third party software sold separately.
[4] HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features and OS requirement.
[5] 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 11 Pro 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.
[6] Sold separately or as an optional feature.
[7] NVIDIA® GeForce® graphics are an add-on feature that must be configured at the time of purchase.
[8] Memory speed increase is compared gen/gen.
[9] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows 11) is reserved for system recovery software.
[10] MIL STD testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental Damage or damage under these test conditions requires an optional HP Accidental Damage Protection Care Pack.
[11] Based on IEEE 1680.1-2018 standards.
[12] Optional feature that must be configured at purchase.
[13] Sold separately or as an optional feature.

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 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 .
[2] This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery 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. 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 configuration measurement of higher performance.
[4] Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system.
[5] 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. See www.intel.com/technology/turboboost for more information.
[6] Some functionality of vPro 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. Compatibility with future "virtual appliances" is yet to be determined.
[7] For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system. Memory modules support data transfer rates up to 2933 MT/s or 3200 MT/s as depending on processor config; with 1 DIMM per channel. Additional DIMM loading on any channel may impact maximum memory speed. Actual data rate is determined by the system's configured ; See processor specifications for supported memory data rate.
[8] All memory slots are customer accessible / upgradeable.
[9] For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 11) of system disk is reserved for the system recovery software.
[11] HD-DVD disks cannot be played on this drive. No support for DVD-RAM. Actual speeds may vary. Don't copy copyright-protected materials. 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.
[12] Intel® I225-LM 2.5 GbE LOM: Sold separately or as an optional feature.
[13] Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
[15] For full Intel® vPro® functionality, Windows, a vPro supported processor, vPro enabled Q570 chipset or higher and vPro enabled WLAN card are required.
[16] The Tower can support a single discrete graphics card up to 300 W with a 550 W power supply.
[17] NVIDIA® GeForce® RTX 3070 Graphics Card require 550 W chassis.
[18] HP Cloud Recovery is available for HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/document/c05115630 .
[19] Antimicrobial USB Mouse, HP USB Hardened Optical Wired Mouse: are not available in all regions.
[21] HP Support Assistant, requires Windows and Internet access.
[22] HP Driver Packs: Not preinstalled, however available for download at http://www.hp.com/go/clientmanagement .
[23] HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement .
[24] Ivanti Management Suite subscription required.
[25] HP Client Security Manager Gen6 requires Windows and is available on select HP Pro and Elite PCs.
[26] Windows Defender Opt in Windows 11 and internet connection required for updates.
[27] HP Sure Start Gen7 is available on select HP PCs and workstations. See product specifications for availability.
[28] HP Sure Sense requires Windows 11 Pro or Enterprise and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.
[29] HP Sure Run Gen4 is available on select HP PCs and requires Windows 10 and higher.
[30] HP Sure Recover Gen4 is available on select HP PCs and requires an open network connection. Not available on platforms with multiple internal storage drives. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data.
[31] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
[34] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.
[36] HP USB Business Slim Antimicrobial Keyboard is not available in all regions.
[37] Of the following, only one option can be configured at a time: DisplayPort™ 1.4; HDMI 2.0b; Dual Type A SuperSpeed USB 5Gbps signaling rate port; Serial; Thunderbolt™ 3.0; USB-C® SuperSpeed USB 10Gbps signaling rate port (USB-C® option has alt mode DisplayPort™ 1.4 and 15W output); VGA
[38] Thunderbolt™ 3.0 , Serial/PS/2 combo ,Parallel port occupies a PCIe slot.
[39] Not all Graphic Cards may be available in all countries.
[40] A second 3.5" HDD can't be used with the GeForce RTX™ 3060 installed.

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