HP Z2 Mini G1a Workstation Desktop PC

Mini workstation. Transformative AI performance.

Unlock workflows previously not possible on a mini workstation. Transformative performance is packed into a compact Next Gen AI PC to take on complex AI accelerated projects like never before— simultaneously 3D design and render graphics-intensive projects or work locally with LLMs.

Next-level performance redefining possibilities

Tackle massive, new workflows on a mini workstation with an AMD Ryzen™ AI Max PRO[1] processor. With up to 16 CPU cores, 128GB unified memory and the ability to assign up to 96GB RAM[2] to the GPU, handle graphics-heavy or AI-enhanced projects locally.

Slim and sleek. Fits anywhere.

Create an ideal set-up with the compact Z2 Mini G1a. Set it on a desk, mount it behind a monitor, or attach it under a desk. With an internal power supply, this PC cleanly fits in a rack, and its small size allows for 5 units across a 4U rack.[3]

Next Gen AI PC mini workstation

Hardware AI accelerators deliver power to propel advanced workloads. Offload and run productivity tasks locally with up to 50 TOPS NPU while also tackling new and more demanding AI-enhanced professional workflows.[4]

Designed with the planet in mind.

At HP, we care about the impact our products have on our people, communities, and planet. That's why the Z2 Mini G1a contains 60% recycled plastics, 20% recycled steel, 100% sustainably sourced outer box packaging, and is EPEAT® Gold Climate+.

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Operating System
Support your unique user needs with a choice of Windows 11 Pro, WSL2 or Linux® operating systems.[5]

AMD Ryzen™ AI Max PRO – ultimate performance
Unlock new possibilities with up to an AMD Ryzen™ AI Max+ PRO 395 processor delivering cutting-edge CPU capabilities, unified memory, and powerful ISV-certified graphics to power through demanding AI workflows.[1]

Unified Memory Architecture
Accelerate your workflow with up to 128GB of memory. The unified memory architecture allows you to assign up to 96GB of memory exclusively to the GPU to tackle complex 3D projects with multiple applications running at the same time.[2]

Storage
Get up to 8TB with dual NVMe modules and RAID data storage capabilities for added performance or reliability.[6]

Flexible I/O Modules
Configure to the needs of today with flexibility for the future with up to two flexible I/O ports and 10 I/O options.[7]

HP Smart Sense
HP Smart Sense intelligently optimizes your PC's thermal and power management based on your usage. Select full performance mode when completing demanding tasks to maximize performance.[8]

Multi-Display Support
See all your windows in perfect detail with support for up to 4 displays at 4K resolution.[9]

Fast and efficient Wi-Fi 7
The portability of your PC and the reliability of a fast connection determines where you can work. Get a fast and reliable connection in dense wireless environments with gigabit data rate Wi-Fi 7.[10,11]

Independent Software Vendor Certifications
Work with confidence knowing your workstation is certified by leading software vendors to ensure peak performance even on complex projects.

Protected by HP Wolf Security.
HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense. From the BIOS to the browser, above, in, and below the OS, these constantly evolving solutions help protect your PC from modern threats.[12]

Network Connectivity
Connect and collaborate quickly up to 10Gb Ethernet interface.[13]

Rackable Design
Ideally designed to fit in a rack, you can maximize density with support for 5 Minis in 4U, now with an internal power supply.[3]

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Specifications Table

Available Operating Systems	Windows 11 Pro[1] Windows 11 Home – HP recommends Windows 11 Pro for business[1] Linux® Ready Ubuntu 24.04 LTS[2]
Processor family[3,4]	AMD Ryzen™ AI MAX PRO processor
Available Processors[3,4,5,6]	AMD Ryzen™ AI MAX+ PRO 395 (3.0 GHz base clock, up to 5.1 GHz max boost clock, 64 MB L3 cache, 16 cores, 32 threads) with AMD Radeon™ 8060S Graphics and AMD Ryzen™ AI (50 NPU TOPS) AMD Ryzen™ AI MAX PRO 390 (3.2 GHz base clock, up to 5.0 GHz max boost clock, 64 MB L3 cache, 12 cores, 24 threads) with AMD Radeon™ 8050S Graphics and AMD Ryzen™ AI (50 NPU TOPS) AMD Ryzen™ AI MAX PRO 385 (3.6 GHz base clock, up to 5.0 GHz max boost clock, 32 MB L3 cache, 8 cores, 16 threads) with AMD Radeon™ 8050S Graphics and AMD Ryzen™ AI (50 NPU TOPS) AMD Ryzen™ AI MAX PRO 380 (3.6 GHz base clock, up to 4.9 GHz max boost clock, 16 MB L3 cache, 6 cores, 12 threads) with AMD Radeon™ 8040S Graphics and AMD Ryzen™ AI (50 NPU TOPS)
Product colour	Jet black
Form factor	Mini
Maximum memory	128 GB LPDDR5X-8533 MT/s ECC [7] Transfer rates up to 8000 MT/s.
Internal storage	512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ M.2 SSD 512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ Opal 2 M.2 SSD 256 GB up to 1 TB PCIe® NVMe™ Value M.2 SSD 512 GB up to 2 TB PCIe® NVMe™ FIPS 140-2 SED SSD 512 GB up to 2 TB Citadel PCIe® NVMe™ A-DEV FIPS 140-2
Available Graphics	Integrated: AMD Radeon™ 8060S Graphics AMD Radeon™ 8050S Graphics AMD Radeon™ 8040S Graphics
Audio	1 integrated mono speakerRealtek ALC3205-VA2-CG, 2.0W internal mono speaker
Expansion slots	2 M.2 2280 PCIe 4 x4; 1 M.2 2230 for WLAN
Ports and connectors	Side: 1 USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1); 1 headphone/microphone combo; 1 USB Type-A 10Gbps signaling rate (1 charging) ; Rear: 2 USB Type-A 10Gbps signaling rate; 1 RJ-45; 2 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1); 2 USB Type-A 480Mbps signaling rate; 2 Mini DisplayPort™ 2.1 ; Optional Ports: Flex IO top – choose one of the following options: 1 dual USB Type-A 5Gbps signaling rate, 1 dual USB Type-C® 10Gbps signaling rate, 1 GbE LAN, 2.5 GbE LAN, 10GbE LAN(10GBase-T), USB-based serial port option, 1GbE Fiber LC NIC.; Flex IO bottom – choose one of the following options: 1 GbE LAN, 2.5 GbE LAN, 1GbE Fiber LC NIC, serial port option, external power button, remote manageability kit

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Keyboard	HP USB Business Slim SmartCard CCID Keyboard; HP 125 Black Wired Keyboard; HP 320K Wired Keyboard
Mouse	HP Wired Desktop 128 Laser Mouse; HP Wired 320M Mouse; HP 125 Wired Mouse
Communications	LAN: Realtek RTL8125BPH-CG 2.5 GbE; WLAN: MediaTek Wi-Fi 7 MT7925 (2x2) and Bluetooth® 5.4 wireless card[8];
Software	HP UEFI BIOS Certification level 2.7B; HP PC Hardware Diagnostics Windows; HP Image Assistant; HP Manageability Integration Kit[10]; Performance Advisor 3.0[9]
Security management	HP Secure Erase[11]; HP Sure Click[12]; HP BIOSphere Gen6[13]; HP Sure Admin[14]; Hood Sensor Optional Kit; HP Client Security Manager Gen6[15]; HP Sure Start Gen7[16]; HP Sure Recover Gen4[17]; HP Sure Sense Gen2[18]; HP Sure Run Gen5[22]; Microsoft Pluton
Security Software Licenses	HP Wolf Pro Security Edition[56]
Management features	High performance Mode; Quiet Mode; Rack Mode; Performance Mode
Power	300 W internal power adapter, up to 92% efficiency, active PFC
Dimensions	3.4 x 6.6 x 7.9 in; 8.55 x 16.8 x 20 cm; (Standard desktop orientation.); 19.6 x 7.35 x 11.7 in; 49.9 x 18.5 x 29.8 cm (Package)
Weight	Starting at 5.07 lb; Starting at 2.3 kg; Starting at 9 lb; Starting at 4.1 kg (Package) ; (Exact weights depend upon configuration (System weight only))
Ecolabels	CECP; TCO Certified configurations available; EPEAT® Gold registered in the U.S.[23]
Energy star certified	ENERGY STAR® certified
Sustainable impact specifications	Up to 20% of steel in the system is recycled; Up to 60% of product plastics are recycled post-consumer; 25% ocean-bound plastics in system fans; 100% recycled rare earth elements in speaker magnet; 100% sustainably sourced packaging; 80 Plus Platinum rated power supply[19,20,21]
Compatible displays	(Supports 4 simultaneous displays. Each mDP can drive up to 1 display, each TBT4 can drive up to 2 displays and the Side USB-C can drive up to 1 display. Displays are allocated on a first attached basis. Supports MST up to 4 displays with DSC.)

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Messaging Footnotes

[1] 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. AMD 's numbering is not a measurement of clock speed. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third-party software may have specific configuration or compatibility requirements. Performance varies by use, configuration, and other factors.

[2] Memory is an optional feature that must be configured at purchase.

[3] Rack mounting hardware sold separately.

[4] Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

[5] Applies to HP PCs, Workstations and Displays manufactured after January 2019. Based on most Gold and Silver EPEAT® registrations by meeting all required criteria and achieving 50-74% of the optional points for EPEAT® Silver and 75-100% of the optional points for EPEAT® Gold according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

[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] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB of disk is reserved for system recovery software.

[7] Optional features that must be configured at purchase or are sold separately.

[8] HP Smart Sense requires Windows 10 or higher.

[9] Requires 2 mini display port adapters to the mini display port and 1 USB-C cable.

[10] Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.

[11] Wi-Fi® supporting gigabit data rate is achievable with Wi-Fi 7 (802.11BE) when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.

[12] HP Wolf Security for Business requires Windows 10 or 11 Pro and higher, includes various HP security features and is available on HP Pro, Elite, Workstation, and RPOS products. See product details for included security features.

[13] Internet access required and not included.

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 11 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 .

[2] 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.

[3] 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. AMD's numbering is not a measurement of clock speed.

[4] Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

[5] 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 .

[6] Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.

[7] Memory soldered down. Supports dual channel memory.

[8] Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.

[9] HP Performance Advisor Software - HP Performance Advisor is ready to help you get the most out of your HP Workstation from day one —and every day after. Learn more or download at: http://hp.com/PerformanceAdvisor .

[10] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html .

[11] HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 ""Clear"" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

[12] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.

[13] HP BIOSphere Gen6 features may vary depending on the platform and configuration.

[14] HP Sure Admin requires Windows 11, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.

[15] HP Client Security Manager Gen6 requires Windows and is available on the select HP PCs.

[16] HP Sure Start is available on select HP PCs and requires Windows 10 and higher.

[17] HP Sure Recover is available on select HP PCs and requires Windows 10 or Windows 11 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on select PCs.

[18] HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.

[19] Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.

[20] Recycled plastic is expressed as a percentage of the total weight plastic. Post-consumer recycled is based on the definition set in the EPEAT standard for computers, IEEE 1680.1-2018 standard.

[21] 100% of paper-based packaging made from sustainably sourced, certified, and recycled fibers.

[22] HP Sure Run is available on select HP PCs and requires Windows 10 and higher.

[23] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

[24] Percentage of ocean-bound plastic contained in each component varies by product. Ocean Bound plastic is expressed as a percentage of the total weight plastic. Ocean Bound plastic is based on the definition set by the UL2809 standard.

[56] HP Wolf Security for Business requires Windows 10 or 11 Pro 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.

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