Data sheet

HP Z2 Mini G9 Workstation Desktop PC

Powers large workflows. Fits a tiny space.

Get incredibly high performance packed into an insanely petite PC. It easily fits on your desk or behind your monitor so you can tackle 3D projects without losing valuable office space. And, with a sleek new look, it's the perfect choice for the modern workplace —at home or the office.



*Product image may differ from actual product

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Unprecedented Z mini power[2]

- Tackle workflows you never thought possible on such a sleek, tiny PC. Now, get standard low-profile NVIDIA® RTX graphics in a Z2 Mini, combined with Intel® Core™ processors, including K-Series, for seamless design, rendering and simulation.

Fits anywhere

- Create your ideal workspace whether you're working in an office or your home. With a versatile, contemporary design, proudly set it on your desk, mount it behind your monitor, attach it under your desk or rackmount it in your datacenter[3]—even take it to and from the office.

Engineered to evolve

- The Z2 Mini is ready to evolve with your workflow. A new slide-out design provides tool-free interior access to standard-sized components so you can easily swap graphics and memory. Easily connect to essential peripherals with plenty of built-in I/O.

Industry leading security. Reliability you can trust

- Get peace of mind with a PC that's built to endure. The Z2 Mini undergoes 360K hours of rigorous testing, military-standard testing[5] and is certified for pro apps. And with HP Wolf Security for Business[4], it's protected below, in and above the OS.
- Support your unique user needs with a choice of Windows 11 Pro, WSL2 or Linux® operating systems.[6]
- Bring your ideas to life quickly and run multiple apps simultaneously with the latest Intel® Core™ vPro®[7] processors. For added performance, choose the K-Series.[8]
- Design, render and simulate seamlessly with up to NVIDIA RTX A2000 graphics with PCIe G5 high speed bandwidth.[9]
- Experience fast performance when working on complex design tasks with 2 DIMMS for up to 64GB DDR5 memory at an increased memory speed of up to 4800MHz.[10]
- Get up to 8TB with dual M.2 storage slots and RAID data storage capabilites for added performance or reliability.[11]
- Configure to the needs of today with flexibility for the future with up to two flexible I/O ports and 13 I/O options to fill them with, including DP 1.4, VGA, HDMI, Dual USB Type-A, USB Type-C® with Alt-DP or 2nd Serial and more.[12]
- See all your windows in perfect detail with support for up to 8 displays at 4K resolution[13]
- Experience higher Wi-Fi® bandwidth and more reliable connections on congested networks with full performance Wi-Fi 6E[14] with the Z2 Mini internal antenna.
- Work with confidence knowing your desktop is certified with leading software applications to ensure peak performance.[15]
- HP Wolf Security for Business[16] 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.
- Evolve your work. Evolve your rig. With a tool-less sliding access cover, you can easily get into the the interior, and customize your Z to fit your needs.
- Connect and collaborate quickly with 10Gb Ethernet interface.

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HP Z2 Mini G9 Workstation Desktop PC 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)[1,3] Linux® Ready Ubuntu 20.04 LTS[25]
Processor family	13th Generation Intel® Core™ i9 processor; 13th Generation Intel® Core™ i7 processor; 13th Generation Intel® Core™ i5 processor; 12th Generation Intel® Core™ i9 processor; 12th Generation Intel® Core™ i7 processor; 12th Generation Intel® Core™ i5 processor; 12th Generation Intel® Core™ i3 processor
Available Processors	Intel® Core™ i5-12400 with Intel® UHD Graphics (2.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads); Intel® Core™ i3-12300 with Intel® UHD Graphics (3.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads); Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.3 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads); Intel® Core™ i5-12600K with Intel® UHD Graphics (2.8 GHz E-core base frequency, 3.7 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.9 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads); Intel® Core™ i5-12600 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.8 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads); Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz P-core base frequency, up to 4.6 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads); Intel® Core™ i9-12900 with Intel® UHD Graphics (1.8 GHz E-core base frequency, 2.4 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads); Intel® Core™ i9-12900K with Intel® UHD Graphics (2.4 GHz E-core base frequency, 3.2 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-core, 24 threads); Intel® Core™ i7-12700K with Intel® UHD Graphics (2.7 GHz E-core base frequency, 3.6 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 25 MB L3 cache, 8 P-cores and 4 E-core, 20 threads); Intel® Core™ i7-12700 with Intel® UHD Graphics (1.6 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 8 P-cores and 4 E-cores, 20 threads); Intel® Core™ i5-13400 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.3 GHz E-core Max Turbo frequency, up to 4.6 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads); Intel® Core™ i5-13500 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads); Intel® Core™ i5-13600 (2.0 GHz E-core base frequency, 2.7 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads); Intel® Core™ i5-13600K (2.6 GHz E-core base frequency, 3.5 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads); Intel® Core™ i7-13700 (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.1 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads); Intel® Core™ i7-13700K (2.5 GHz E-core base frequency, 3.4 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads); Intel® Core™ i9-13900 (1.5 GHz E-core base frequency, 2.0 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads); Intel® Core™ i9-13900K (2.2 GHz E-core base frequency, 3.0 GHz P-core base frequency, up to 4.3 GHz E-core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)
Form factor	Mini
Maximum memory	64 GB DDR5-4800 ECC SDRAM; 64 GB DDR5-4800 non-ECC SDRAM; 64 GB DDR5-5600 ECC SDRAM; 64 GB DDR5 5600 non-ECC SDRAM [18] Transfer rates up to 5600 MT/s.
Memory slots	2 SODIMM
Internal storage	512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ M.2 SSD[8] 512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ Opal 2 M.2 SSD[8] 256 GB up to 1 TB PCIe® NVMe™ Value M.2 SSD
Available Graphics	Discrete: NVIDIA® T400 (4 GB GDDR6 dedicated); NVIDIA® T1000 (4 GB GDDR6 dedicated); NVIDIA RTX™ A2000 (6 GB GDDR6 dedicated); NVIDIA® T1000 8 GB; NVIDIA RTX™ A2000 12GB; NVIDIA® T600 4 GB[7]
Audio	Realtek ALC3205-VA2-CG, 2.0W internal mono speaker
Expansion slots	2 M.2 2280 PCIe 4 x4; 1 M.2 2230 for WLAN; 1 PCIe® 4 x8 (PCIe Low Profile connector)
Ports and Connectors	Side: 1 headphone/microphone combo; 1 SuperSpeed USB Type-A 10Gbps signaling rate (1 charging); 2 SuperSpeed USB Type-C® 20Gbps signaling rate ; Rear: 1 RJ-45; 2 DisplayPort™ 1.4; 3 SuperSpeed USB Type-A 10Gbps signaling rate[14] ; Optional Ports: Flex IO left side – choose one of the following options: 1 DisplayPort™ 1.4 HBR3, 1 HDMI 2.0b, 1 VGA, 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate, 1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, Alt Mode DisplayPort™), 1 GbE LAN, 1 Thunderbolt™ 3 (40Gbps signaling rate) with SuperSpeed USB Type-C® 10Gbps signaling rate, 2.5 GbE LAN. 10GbE LAN(10GBase-T), USB-based Serial port option, 1GbE Fiber LC NIC; Flex IO left side – choose one of the following options: 1 DisplayPort™ 1.4 HBR3, 1 HDMI 2.0b, 1 VGA, 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate, 1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, Alt Mode DisplayPort™), 1 GbE LAN, 1 Thunderbolt™ 3 (40Gbps signaling rate) with SuperSpeed USB Type-C® 10Gbps signaling rate, 2.5 GbE LAN. 10GbE LAN(10GBase-T), USB-based Serial port option, 1GbE Fiber LC NIC, Optional cards with PCIe bracket[24]
Input devices	HP Wired Desktop 320K keyboard; HP Wired Desktop 320MK Mouse and Keyboard; HP 125 Wired Keyboard; HP 655 Wireless Keyboard and mouse combo; HP 975 Wireless Keyboard; HP 455 Programmable Wireless Keyboard[9]; HP Wired Desktop 320M mouse; HP wired desktop 128 laser mouse; HP 125 Wired Mouse; HP Creator 935 Black Wireless Mouse[9];
Communications	LAN: Integrated Intel® I219-LM PCIe® GbE; Allied Telesis AT-2911T/2-901 dual-port 1GbE NIC ; WLAN: Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card [26];
Software	HP PC Hardware Diagnostics UEFI; HP Support Assistant; HP PC Hardware Diagnostics Windows; ZCentral Remote Boost; HP Image Assistant; HP Manageability Integration Kit; Performance Advisor 3.0; [11,16,19,27]
Security management	HP Secure Erase; HP Sure Click; HP BIOSphere Gen6; HP Sure Admin; Hood Sensor Optional Kit; HP Client Security Manager Gen6; HP Sure Start Gen7; HP Sure Recover Gen4; HP Sure Sense Gen2; HP Sure Run Gen5;[4,10,12,13,15,20,21,22,23]
Security Software Licenses	HP Wolf Pro Security Edition[56]
Power	180 W external power adapter, up to 89% average efficiency, active PFC; 280 W external power adapter, up to 89% average efficiency, active PFC
Dimensions	21.1 x 21.8 x 6.9 cm; (Standard desktop orientation.)
Weight	Starting at 2.4 kg; (Exact weight depends on configuration.)
Ecolabels	IT ECO Declaration; TCO Certified configurations available; EPEAT® Gold registered in the U.S.[17]
Energy star certified (series fixed)	ENERGY STAR® certified
Sustainable impact specifications	45% post-consumer recycled plastic; 25% ITE-derived closed loop plastic; Bulk packaging available; 80 Plus® Gold 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[33]
Compatible displays	HP Z34C, Z40C, Z27Q G3, Z27K, and Z27XS G3 4k. All HP Z Displays and HP DreamColor Displays are supported. For more information see http://www.hp.com/go/zdisplays (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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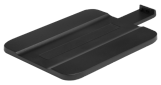
Accessories and services (not included)

HP 935 Creator Wireless Mouse



Experience seamless and uninterrupted creativity with a mouse that is crafted to create. Be at your creative best with programmable buttons, ergonomic design, and battery life that lasts up to 12 weeks[1]. Enhance your creative process by pairing with up to 3 devices and enjoy the freedom to work on any surface with track-on-glass sensor.
Product number: 1D0K8AA
[1] Actual battery life will vary with use and environmental conditions, and will naturally decrease with time and usage.
[2] Enabled by HP Accessory Center Software. HP Accessory Center software available for free download in Microsoft Store or Apple Store.

HP Z2 Mini Vertical Stand



Maximize your workspace with the HP Z2 Mini Vertical Stand that positions your HP Z2 Workstation Mini in a stable vertical orientation for use in space-constrained environments and standing desks.
Product number: 4N006AA

NVIDIA T1000 8 GB 4mDP Graphics



Product number: 5Z7D8AA

HP Z2 Mini G9 Rail Rack Kit



Product number: 6C1U0AA

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Messaging Footnotes

[1] 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 is not a measurement of higher performance.
[2] Power based on HP Z mini max processor, graphics, and memory.
[3] Mounting hardware sold seperately.
[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] 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.
[6] 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.
[7] For full Intel® vPro® functionality, Windows 11 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
[8] 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.
[9] Sold separately or as an optional feature.
[10] Gen over gen.
[11] 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.
[12] Optional features that must be configured at purchase or are sold separately.
[13] Support for up to 8 displays requires Intel® HD graphics and a discrete graphics card.
[14] Wi-Fi 6E is an optional feature that must be configured at purchase. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
[15] Third party software sold separately.
[16] 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.

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] 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.
[3] 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.
[4] HP Client Security Manager Gen6 requires Windows and is available on the select HP PCs.
[5] For full Intel® vPro™ functionality, Windows 11 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
[6] Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.
[7] NVIDIA® T400 (2 GB GDDR6 dedicated) may go End of Life in late 2022.
[8] 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.
[9] Keyboard and Mouse are optional or add on features.
[10] HP BIOSphere Gen6 features may vary depending on the platform and configurations.
[11] HP Support Assistant requires Windows and Internet access.
[12] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
[13] HP Sure Start Gen 6 is available on select HP PCs and workstations. See product specifications for availability.
[14] 3 DisplayPort 1.4 in Performance model with discrete graphics.
[15] HP Sure Run Gen3 is available on select Windows 11 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors
[16] 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
[17] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Visit www.epeat.net for more information.
[18] Non-ECC memory is supported on all processors. ECC is only enabled on the following: Intel® Core™ i9-12900K Intel® Core™ i9-12900 Intel® Core™ i7-12700K Intel® Core™ i7-12700 Intel® Core™ i5-12600K Intel® Core™ i5-12600 Intel® Core™ i5-12x00
[19] HP ZCentral Remote Boost does not come preinstalled on Z Workstations but can be downloaded and run on all Z desktop and laptops without license purchase. With non-Z sender devices, purchase of perpetual individual license or perpetual floating license per simultaneously executing versions and purchase of ZCentral Remote Boost Software Support is required. RGS requires Windows, RHEL (7 or 8), UBUNTU 18.04 LTS, or HP ThinPro 7operating systems. MacOS (10.13 or newer) operating system is only supported on the receiver side. Requires network access. The software is available for download at hp.com/ZCentralRemoteBoost.
[20] HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 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 PCs with Intel Wi-Fi Module
[21] 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
[22] 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.
[23] 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.
[24] Actual flex I/O choice depends on configuration selected.
[25] 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.
[26] Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
[27] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html
[33] External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
[56] HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support.

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