

# HP Z2 Tower G9 Workstation Desktop PC

**Pro-power. Today and tomorrow**



**Experience a whole new level of performance for your professional workflow. The Z2 Tower is engineered to seamlessly run multi-threaded apps for fast rendering, simulation, and now real-time ray tracing. And when your demands change, you have impressive expandability to upgrade.**

## **Your new benchmark for entry workstation power**

Unleash the power of professional graphics and an Intel® Core™ processor, including K-Series, on intensive multi-threaded apps. Designed for zero throttling so you can render, simulate, and even real-time ray trace without overheating or slow downs. Prioritize your workflow by increasing performance up to 34%<sup>11</sup> with just the flip of a BIOS setting using HP's High Performance Mode.

## **Built to expand. Power to grow**

Need to upgrade graphics? Increase memory or storage? Add specialized PCIe cards? Go for it. With room to expand and tool-less access, you can easily upgrade and add components as your needs evolve. This is an investment that will last for years.

## **Industry-leading security. Reliability you can trust**

Get peace of mind with a PC that's built to endure. The Z2 Tower undergoes 360K hours of rigorous testing, military-standard testing<sup>2</sup> and is certified for pro apps. And with HP Wolf Security for Business<sup>1</sup>, it's protected below, in and above the OS.



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## Operating Systems

Support your unique user needs with a choice of Windows 11 Pro, WSL2 or Linux® operating systems.<sup>4</sup>

## Intel® Core™ Processors<sup>5</sup>

Bring your ideas to life quickly and run multiple apps simultaneously with the latest Intel® Core™ vPro®<sup>6</sup> processors. For added performance, choose the K-Series.

## Professional Graphics

Design, render, ray-trace and even work on large datasets seamlessly with up to NVIDIA RTX A5000 and AMD Radeon Pro X with PCIe G5 high speed bandwidth.<sup>7</sup>

## Memory

Experience fast performance when working on complex design tasks with 4 DIMMs for up to 192GB DDR5 memory at an increased memory speed of up to 4400MHz.<sup>8</sup>

## Storage

Storage fit for a pro. Get up to 48TB with 3x M.2 storage slots and RAID for added performance and reliability.<sup>9</sup>

## Flexible I/O Module

Configure to the needs today and adapt to the future with multiple flex I/O options. Choose from DP 1.4, VGA, HDMI, Dual USB Type-A, USB Type-C® with Alt-DP or 2nd Serial and more.<sup>10</sup>

## 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.<sup>1</sup>

## Tool-less Access

Evolve your work. Evolve your rig. With tool-less access to the interior, you can customize your Z to fit your needs.

## Network Connectivity

Connect at a clip with fast network connectivity with 10Gb Ethernet interface.

## ISV Certified

Work with confidence knowing your desktop is certified with leading software applications to ensure peak performance.<sup>3</sup>

## Thermal Management

Innovatively designed to keep hardware components cool and quiet no matter how hard you push it. Have confidence to run your system at max load 24/7.

## Custom Performance Modes

Take on the toughest workflows with High Performance Mode set as the default and experience up to 34% performance improvement for multi-threaded workflows.<sup>12</sup> Easily change to Quiet Mode with a BIOS setting.



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## Specifications Table

Available Operating Systems	Windows 11 Pro <sup>1</sup> Windows 11 Home – HP recommends Windows 11 Pro for Business <sup>1</sup> Linux® Ready <sup>3</sup> Ubuntu 22.04 LTS <sup>27</sup>
Processor family <sup>4</sup>	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; Intel® Core™ i5 14th generation processor; Intel® Core™ i7 14th generation processor; Intel® Core™ i9 14th generation processor
Available Processors	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™ 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™ i5-13600 (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™ i7-13700K (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™ i9-13900K (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) Intel® Core™ i7-14700 with Intel UHD Graphics (1.5 GHz E-core base frequency, 2.1 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, 33 MB L3 cache, 8 P-cores and 12 E-cores, 28 threads) Intel® Core™ i5-14600 with Intel UHD Graphics (2.0 GHz E-core base frequency, 2.7 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, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads) Intel® Core™ i5-14500 with Intel UHD Graphics (1.9 GHz E-core base frequency, 2.6 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™ i5-14400 with Intel UHD Graphics (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 4.7 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads) Intel® Core™ i5-14600K with Intel UHD Graphics (2.6 GHz E-core base frequency, 3.5 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, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)
Chipset	Intel® W680
Maximum memory	192 GB DDR5-4800 MT/s non-ECC; 128 GB DDR5-4800 MT/s ECC <sup>29</sup> Transfer rates up to 4400 MT/s.
Memory slots	4 DIMM
Internal storage	1 TB up to 12 TB 7200 rpm SATA Enterprise HDD <sup>7</sup> 512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ TLC M.2 SSD <sup>7</sup> 512 GB up to 4 TB HP Z Turbo Drive PCIe® NVMe™ SED Opal 2 TLC M.2 SSD <sup>7</sup> 256 GB up to 1 TB PCIe® NVMe™ Value M.2 SSD <sup>7</sup> 512 GB up to 2 TB CRU SHIPS Removable NVMe™ Module <sup>7</sup>
Optical drive	HP Slim DVD-ROM; HP Slim DVD-Writer
Available Graphics	Integrated: Intel® UHD Graphics 770 Entry 3D: NVIDIA® T400 (4 GB GDDR6 dedicated) AMD Radeon™ Pro WX 3200 (4 GB GDDR5 dedicated) NVIDIA RTX™ 2000 Ada Generation (16 GB GDDR6 dedicated) NVIDIA RTX™ 4000 SFF Ada Generation (20 GB GDDR6 dedicated) <sup>32</sup> Mid-range 3D: NVIDIA® T1000 (8 GB GDDR6 dedicated) NVIDIA® T1000E (8 GB GDDR6 dedicated) AMD Radeon™ Pro W6600 (8 GB GDDR6 dedicated) NVIDIA® T1000 (4 GB GDDR6 dedicated) NVIDIA RTX™ A2000 (6 GB GDDR6 dedicated) AMD Radeon™ RX 6400 Graphics (4 GB GDDR6 dedicated) NVIDIA RTX™ 4000 Ada Generation (20 GB GDDR6 dedicated) NVIDIA RTX™ A4000 (16 GB GDDR6 dedicated) NVIDIA® A4000E (16 GB GDDR6 dedicated) NVIDIA RTX™ 2000 Ada Generation (16 GB GDDR6 dedicated) NVIDIA RTX™ A2000 (12 GB GDDR6 dedicated) NVIDIA RTX™ A2000E (12 GB GDDR6 dedicated) NVIDIA RTX™ A1000 (8 GB GDDR6 dedicated) NVIDIA RTX™ A400 (4 GB GDDR6 dedicated) High-end 3D: AMD Radeon™ RX 6700 XT Graphics (12 GB GDDR6 dedicated) NVIDIA RTX™ 4500 Ada Generation (24 GB GDDR6 dedicated) AMD Radeon™ Pro W7500 (8 GB GDDR6 dedicated) AMD Radeon™ Pro W7600 (8 GB GDDR6 dedicated) NVIDIA RTX™ 5000 Ada Generation (32 GB GDDR6 dedicated) NVIDIA RTX™ A5000 (24 GB GDDR6 dedicated) AMD Radeon™ Pro W7900 (48 GB GDDR6 dedicated) AMD Radeon™ Pro W6800 (32 GB GDDR6 dedicated) (Other 3rd Party graphics cards available. Please inquire with your sales specialist or channel partner.)
Audio	Realtek ALC3205-VA2-CG, 2.0W internal mono speaker
Expansion slots	1 PCIe 3 x4 (x16 connector); 1 PCIe 3 x4 (x4 connector); 1 PCIe 3 x1 (x4 connector); 1 PCIe 5 x16 (x16 connector); 1 M.2 2230 PCIe 3 X1 for WLAN (1 M.2 2230 slot for WLAN and 3 M.2 2280 slots for storage)
Ports and connectors	Front: 4 SuperSpeed USB Type-A 10Gbps signaling rate (1 charging); 1 universal audio jack ; Rear: 1 audio-in; 1 audio-out; 1 RJ-45; 2 DisplayPort™ 1.4; 2 SuperSpeed USB Type-A 10Gbps signaling rate; 1 SuperSpeed USB Type-A 5Gbps signaling rate; 3 USB Type-A 480Mbps signaling rate ; Optional Ports: Flex IO Front – choose one of the following options: 1 SuperSpeed USB Type-C® 20Gbps signaling rate (1 charging), 1 SD 4.0 card reader. Flex IO – choose one of the following options: 1 DisplayPort™ 1.4, 1 HDMI 2.0b, 1 VGA, 1 2nd 1GbE LAN, 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate, 1 SuperSpeed USB Type-C® 10Gbps signaling rate (15W USB Power Delivery, Alt Mode DisplayPort™), 1 Thunderbolt™ 3 with SuperSpeed USB4 Type-C® 40Gbps signaling rate (cabled to PCIe® AIC). Front: 1 SuperSpeed USB Type-C® 20Gbps signaling rate (charging), 1 SD card



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## Specifications Table

<b>Keyboard</b>	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 <sup>9</sup>
<b>Mouse</b>	HP Wired Desktop 320M mouse; HP wired desktop 128 laser mouse; HP 125 Wired Mouse; HP Creator 935 Black Wireless Mouse <sup>9</sup>
<b>Communications</b>	LAN: Intel® Ethernet Network Adapter I225-T1; Integrated Intel® I219LM GbE LOM; Intel® I350-T2 dual-port GbE NIC; Intel® I350-T4 4-port GbE NIC; Intel® X550-T2 dual-port 10GbE NIC; Allied Telesis AT-2911T/2-901 dual-port 1GbE NIC; Intel® i225-T1 single-port 2.5 GbE NIC; HP Flex IO 1 GbE single-port NIC; HP 1GbE LAN Flex Port 2020; HP 10GbE SFP+ SR/SW LC Fiber Optic Transceiver; HP 25GbE SFP28 LC Fiber Optic Transceiver <sup>30</sup> ; WLAN: Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card with external antenna; Intel® Wi-Fi 6 AX211 (2x2) and Bluetooth® 5.3 wireless card with internal antenna; Intel® Wi-Fi 7 BE200 (2x2) and Bluetooth® 5.4 wireless card, non-vPro®;
<b>Drive Bays</b>	External: One slim ODD; One 5.25" ODD; Internal: One 2.5" HDD; Two 3.5" HDD; Three M.2 NVME 2280 SSD
<b>Software</b>	HP Support Assistant HP PC Hardware Diagnostics Windows HP Image Assistant HP Manageability Integration Kit Performance Advisor 3.0 <sup>15,16,17</sup> HP Notifications; HP Desktop Support Utilities; HP Documentation; myHP; WPS Office; HP Privacy Settings; Touchpoint Customizer for Commercial; HP UEFI BIOS Certification Level 2.7B
<b>Security management</b>	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 <sup>19,20,21,22,23,24,25,26,33</sup> ; HP Tamper Lock
<b>Security Software Licenses</b>	HP Wolf Pro Security Edition <sup>56</sup>
<b>Management features</b>	HP Driver Packs; HP Management Integration Kit for Microsoft System Center Configuration Management Gen4; HP System Software Manager (download); HP BIOS Configuration Utility (download) <sup>18</sup> ; HP Client Catalog (download); HP Image Assistant (download); HP Cloud Recovery; HP Client Management Script Library (download)
<b>Power</b>	350 W 92% efficient, wide-ranging, active PFC; 700 W 92% efficient, wide-ranging, active PFC; 500 W 90% efficient, wide-ranging, active PFC; 450 W 90% efficient, wide-ranging, active PFC
<b>Dimensions</b>	35.6 x 16.9 x 38.5 cm; (Standard tower orientation.); 51.8 x 29.5 x 49 cm (Package)
<b>Weight</b>	Starting at 6.2 kg; Starting at 9.83 kg (Package) ; (Exact weight depends on configuration.)
<b>Ecolabels</b>	IT ECO Declaration; TCO Certified configurations available; EPEAT® Gold registered in the U.S. <sup>13,31</sup>
<b>Energy star certified</b>	ENERGY STAR® certified
<b>Sustainable impact specifications</b>	80 Plus® Gold power supplies available; Bulk packaging available; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable; 45% post-consumer recycled plastic; 10% ITE-derived closed loop plastic; Low halogen PCAs; Product Carbon Footprint; Ocean-bound plastic in system fan, processor fan and speaker <sup>34,35,36,37,38</sup>
<b>Compatible displays</b>	All HP Z Displays and HP DreamColor Displays are supported. For more information see <a href="http://www.hp.com/go/zdisplays">www.hp.com/go/zdisplays</a>

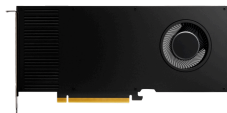


# HP Z2 Tower G9 Workstation Desktop PC

## Accessories and services (not included)

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### NVIDIA RTX A4000 16 GB 4DP Graphics



Improve your graphical processing power with a installable Graphics Card.  
**Product number: 20X24AA**

### NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC



**Product number: 436M8AA**

### HP CRU QX328 5.25 in Front Removable Frame/Carrier



**Product number: 4N011AA**

### HP Business Slim Smartcard Keyboard



Boost your productivity, make a stylish IT choice, and get integrated security features with the HP USB Slim Smartcard Keyboard, which has a built-in smart card reader and is designed to complement the latest HP Business PCs.  
**Product number: Z9H48AA**

# HP Z2 Tower G9 Workstation Desktop PC

## Messaging Footnotes

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Third party software sold separately.

<sup>4</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 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>.

<sup>5</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>6</sup> 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>

<sup>7</sup> Sold separately or as an optional feature.

<sup>8</sup> Gen over gen.

<sup>9</sup> 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.

<sup>10</sup> Optional features that must be configured at purchase or are sold separately.

<sup>11</sup> Compared to Performance Mode. Performance increase based on Z2 Tower G9 with 64GB of memory, 1TB NVMe, Windows 11 22H2 OS, RTX A4000, i9-13900 CPU using SPECworkstation 3.1.

<sup>12</sup> Compared to Performance Mode. Performance improvement based on Z2 Tower G9 with 64GB of memory, 1TB NVMe, Windows 11 22H2 OS, RTX A4000, i7-14700 CPU using Blender OpenData CPU Render and Arnold 2023 CPU multi-core benchmarking.

## 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>3</sup> For detailed OS/hardware support information for Linux, see: [http://www.hp.com/support/linux\\_hardware\\_matrix](http://www.hp.com/support/linux_hardware_matrix).

<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> 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>.

<sup>6</sup> Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.

<sup>7</sup> 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.

<sup>8</sup> Flex IO port and one PCIe slot will be occupied when Thunderbolt is installed. About Thunderbolt compatibility, please refer to the FAQ of Thunderbolt community. <https://www.thunderbolttechnology.net/tech/faq>.

<sup>9</sup> Keyboard and Mouse are optional or add on features.

<sup>10</sup> Specific chassis required for 550 W 92% efficient, wide-ranging, active PFC power supply.

<sup>13</sup> Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information.

<sup>16</sup> HP Performance Advisor Software - HP Performance Advisor is ready and waiting to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at:

<https://www8.hp.com/us/en/workstations/performance-advisor.html>

<sup>17</sup> HP Support Assistant requires Windows and Internet access.

<sup>18</sup> HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>

<sup>19</sup> HP Client Security Manager Gen7 requires Windows and is available on the select HP PCs.

<sup>20</sup> HP BIOSphere Gen6 features may vary depending on the platform and configurations.

<sup>21</sup> HP Sure Click requires Windows 11 Pro or Enterprise. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.

<sup>22</sup> HP Sure Start Gen7 is available on select HP PCs and workstations. See product specifications for availability.

<sup>23</sup> HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

<sup>24</sup> HP Sure Recover Gen4 is available on select HP PCs and requires an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data.

<sup>25</sup> 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™, and when Microsoft Office or Adobe Acrobat are installed.

<sup>27</sup> A certified preloaded version of Ubuntu® 20.04 LTS is available from HP for this platform.

<sup>28</sup> 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. Wi-Fi 7 not available with 12th Gen Intel ADL processors; Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

<sup>29</sup> Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

<sup>30</sup> Intel I350-T4 4-port GbE NIC is an AMO only.

<sup>31</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 CPU's, high-performance GPU's and select memory configurations.

<sup>32</sup> NVIDIA® T400 (2 GB GDDR6 dedicated) may go End of Life in late 2022.

<sup>33</sup> HP Sure Admin requires Windows 10 or higher, 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.

<sup>34</sup> 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.

<sup>35</sup> 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.

<sup>36</sup> 100% of paper-based packaging made from sustainably sourced, certified, and recycled fibers.

<sup>37</sup> External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Low Halogen.

<sup>38</sup> For more information about Product Carbon Footprint visit: [https://h20195.www2.hp.com/v2/library.aspx?doctype=95&footer=95&filter\\_doctype=no&showregionfacet=yes&filter\\_country=no&cc=us&lc=en&filter\\_oid=no&filter\\_prodtype=no&95&sortorder-popular&teasers-off&isRetired-false&isRHParentNode-false&titleCheck-false#doctype=95&sortorder-popular&teasers-off&isRetired-false&isRHParentNode-false&titleCheck-false](https://h20195.www2.hp.com/v2/library.aspx?doctype=95&footer=95&filter_doctype=no&showregionfacet=yes&filter_country=no&cc=us&lc=en&filter_oid=no&filter_prodtype=no&95&sortorder-popular&teasers-off&isRetired-false&isRHParentNode-false&titleCheck-false#doctype=95&sortorder-popular&teasers-off&isRetired-false&isRHParentNode-false&titleCheck-false).

<sup>56</sup> HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. 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](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 is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email ("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. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.

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