

# HP Z4 G5 Workstation Desktop PC

HP's best-selling workhorse, now more powerful



**This high-performance desktop workstation does it all. Tackle advanced workflows—from rendering and simulation to advanced video editing and massive dataset preparation. The Z4 G5 accelerates workflows across a wide range of professional apps and provides plenty of room to expand as work evolves.**

## **Professional performance. Whisper quiet acoustics**

Master intense workflows with up to 2 high-end professional GPUs, 24 cores<sup>1</sup> in a next-gen Intel® Xeon® W processor and 512 GB of memory.<sup>2</sup> Now you can render and simulate or analyze advanced datasets faster with unthrottled, whisper quiet performance.<sup>16</sup>

## **Upgrade. Expand. Evolve**

Need to expand your workflow capabilities? Evolve your PC with space for up to 2 high-end GPUs, 512 GB memory, 92 TB storage, 2 front accessible NVMe bays, and even 5 PCIe slots (Gen 4/5).<sup>3</sup> All easily accessible in a tool-less design.

## **Comprehensive security. Reliability you can trust**

Get peace of mind with a PC that's built to endure. The Z4 undergoes 360K hours of rigorous testing, military-standard testing<sup>4</sup> and is certified for pro apps. And with HP Wolf Security for Business<sup>5</sup>, it's protected below, in and above the OS.

## **Maximize your IT lifecycle**

Designed for simpler IT management, the Z4 is built for longevity with a 3 year lifecycle—longer than entry workstations. Plan for the future and avoid re-qualifying devices every year, saving you serious time and money.



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## Operating Systems

Support your unique user needs with a choice of Windows 11 Pro for Workstations, WSL2 or Linux® operating systems.<sup>6</sup>

## Intel® Xeon® W Processors

Power demanding professional workloads with up to 24 cores<sup>1</sup> in a next-gen Intel® Xeon® W CPU, plus Intel vPro®<sup>7</sup> enhanced manageability and security, and ECC Memory<sup>8</sup> for data reliability.

## Professional Grade Graphics

Tackle advanced video editing, machine learning and simulation projects with up to 2 NVIDIA RTX™ 6000 Ada Generation GPUs or 2 AMD Radeon™ Pro W6800 GPUs.<sup>9</sup>

## Ultra Fast Memory Configurations

Accelerate your workflow. Power through memory-intensive workloads with up to 512 GB DDR5 ECC memory<sup>10</sup> for fast rendering, simulation, machine learning and video editing performance.

## Storage

Get up to 92 TB of storage across a variety of device options, including two front-accessible, hot-swappable NVMe devices with external LED.<sup>11</sup>

## Integrated Wi-Fi® Enablement

Untether your device from network cables and enjoy the flexibility to work from almost anywhere with new integrated Wi-Fi 6 without taking up a PCIe slot.<sup>12</sup>

## HP Anyware

Access the power of your Z from any device with HP Anyware<sup>13</sup>—remote access software delivering fast responsiveness and image quality, even in film editing and data visualizations.

## Z by HP Data Science Stack Manager

Z by HP Data Science Stack Manager provides easy access to popular data science tools and updates them automatically, to help you customize your environment on Windows or Ubuntu.<sup>14</sup>

## ISV Certified

Work with confidence knowing your desktop is certified with leading software applications to ensure peak performance even with complex projects.

## Smart Support with HP TechPulse

Get enhanced support and reduce downtime. HP Smart Support<sup>15</sup> provides support agents, secure access to device health insights, and configuration data for faster troubleshooting.

## HP Wolf Pro Security

Get a hardware-enforced, always-on defense. From the BIOS to the browser - above, in, and below the OS - these constantly evolving solutions help protect from modern threats.<sup>5</sup>

## World Class Design & Acoustics

Keep quiet, cool and focused even at peak performance. Smart fan control keeps the system whisper-quiet by tuning fan speeds in real-time using over 20 temperature sensors.



# HP Z4 G5 Workstation Desktop PC

## Specifications Table

<b>Available Operating Systems</b>	Windows 11 Pro for Workstations <sup>2,3</sup> Ubuntu 22.04 LTS Linux® Ready <sup>5</sup> Red Hat® Enterprise Linux®
<b>Processor family</b>	Intel® Xeon® processor
<b>Available Processors<sup>7</sup></b>	Intel® Xeon® W7-2495X (2.5 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 45 MB L3 cache, 24 cores, 48 threads) Intel® Xeon® W7-2475X (2.6 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 37.5 MB L3 cache, 20 cores, 40 threads) Intel® Xeon® W5-2465X (3.1 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, 33.75 MB L3 cache, 16 cores, 32 threads) Intel® Xeon® W5-2455X (3.2 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 12 cores, 24 threads) Intel® Xeon® W5-2445 (3.1GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 26.25 MB L3 cache, 10 cores, 20 threads) Intel® Xeon® W3-2435 (3.1 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 22.5 MB L3 cache, 8 cores, 16 threads) Intel® Xeon® W3-2425 (3.0 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 15 MB L3 cache, 6 cores, 12 threads) Intel® Xeon® W3-2423 (2.1 GHz base frequency, up to 4.0 GHz with Intel® Turbo Boost Technology, 15 MB L3 cache, 6 cores, 12 threads)
<b>Chipset</b>	Intel® W790
<b>Form factor</b>	Tower
<b>Maximum memory</b>	512 GB DDR5-4800 ECC SDRAM <sup>11</sup> Transfer rates up to 4800 MT/s.
<b>Memory slots</b>	8 DIMM
<b>Internal storage</b>	1 TB up to 12 TB 7200 rpm SATA Enterprise HDD <sup>8,40</sup> 512 GB up to 2 TB HP Z Turbo Drive NVMe™ M.2 SSD <sup>8,39</sup> 512 GB up to 4 TB HP Z Turbo Drive PCIe® SSD M.2 <sup>8</sup> 512 GB up to 4 TB HP Z Turbo Drive PCIe® SED Opal 2 M.2 SSD <sup>8</sup> 512 GB up to 4 TB HP Z Turbo Drive Dual Pro PCIe® SSD <sup>8</sup> 512 GB up to 4 TB HP Z Turbo Drive Quad Pro PCIe® SSD <sup>5,41</sup>
<b>Optical drive</b>	HP Slim DVD-ROM; HP Slim Blu-ray Writer; HP Slim DVD-Writer <sup>9,10</sup>
<b>Available Graphics</b>	Ultra High-End: NVIDIA RTX™ A4500 (20 GB GDDR6 dedicated) NVIDIA RTX™ A6000 (48 GB GDDR6 dedicated) NVIDIA RTX™ A5000 (24 GB GDDR6 dedicated) AMD Radeon™ Pro W6800 (32 GB GDDR6 dedicated) NVIDIA RTX™ 6000 Ada Generation (48 GB GDDR6 dedicated) AMD Radeon™ Pro W7900 (48 GB GDDR6 dedicated) NVIDIA RTX™ 5000 Ada Generation (32 GB GDDR6 dedicated) <sup>30</sup> High-End: NVIDIA RTX™ A4000 (16 GB GDDR6 dedicated) NVIDIA® A4000E (16 GB GDDR6 dedicated) NVIDIA RTX™ A2000 (12 GB GDDR6 dedicated) NVIDIA RTX™ A2000E (12 GB GDDR6 dedicated) AMD Radeon™ RX 6700 XT (12 GB GDDR6 dedicated) NVIDIA RTX™ 4000 Ada Generation (20 GB GDDR6 dedicated) NVIDIA RTX™ 2000 Ada Generation (16 GB GDDR6 dedicated) NVIDIA RTX™ 4500 Ada Generation (24 GB GDDR6 dedicated) <sup>30</sup> Mid-Range: NVIDIA® T1000 (8 GB GDDR6 dedicated) NVIDIA® T1000E (8 GB GDDR6 dedicated) AMD Radeon™ Pro W6600 (8 GB GDDR6 dedicated) AMD Radeon™ Pro W7500 (8 GB GDDR6 dedicated) AMD Radeon™ Pro W7600 (8 GB GDDR6 dedicated) NVIDIA RTX™ A1000 (8 GB GDDR6 dedicated) Entry: NVIDIA® T1000 (4 GB GDDR6 dedicated) NVIDIA® T400 (4 GB GDDR6 dedicated) AMD Radeon™ RX 6400 (4 GB GDDR6 dedicated) Intel® Arc™ Pro A40 (6 GB GDDR6 dedicated)
<b>Audio</b>	Realtek ALC3205-CG
<b>Expansion slots</b>	1 PCIe 5 x16; 2 PCIe 4 x16; 2 PCIe 4 x4 (Rear bulkhead access can be achieved through all slots but 2 PCIe 4 x8 are internal access only for M.2.)
<b>Memory card device</b>	1 SD card reader (optional)
<b>Ports and connectors</b>	Front: 4 USB Type-A 5Gbps signaling rate; 1 headphone/microphone combo <sup>29</sup> ; Rear: 1 RJ-45; 1 audio-in/out ; Optional Ports: 2 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4); Front Premium Version: 2 SuperSpeed USB Type-C® 20Gbps signaling rate (USB Power Delivery), 2 SuperSpeed USB Type-A 5Gbps signaling rate, 1 headset/microphone combo



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## Specifications Table

<b>Keyboard</b>	HP 125 Wired Keyboard; HP USB 320K Keyboard; HP USB Business Slim Wired SmartCard CCID Keyboard; HP 125 Black Wired Keyboard <sup>13</sup>
<b>Mouse</b>	HP Wired Desktop 320M mouse; HP wired desktop 128 laser mouse <sup>13</sup>
<b>Communications</b>	LAN: Intel® Ethernet Network Adapter I225-T1; Integrated Intel® I219-LM PCIe® GbE, vPro®; NVIDIA® Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC; Allied Telesis AT-2911T/2-901 dual-port 1GbE NIC; Allied Telesis AT-2914SX/LC PCIe Fiber NIC; Intel® X550-T2 dual-port NIC; HP 1 GbE LC Fiber Flex IO port; HP 10 GBASE-T Flex IO port; HP Flex IO 1 GbE single-port NIC; HP 2.5 GbE Flex IO port; HP 10 GbE SFP+ SR LC Fiber transceiver; HP 25 GbE SFP28 LC Fiber transceiver <sup>32</sup> ; WLAN: Intel® Wi-Fi 6E AX210 (2x2) and Bluetooth® 5.3 wireless card, non-vPro® with external antenna; Intel® Wi-Fi 6 AX210 (2x2) and Bluetooth® 5.3 wireless card, non-vPro® with internal antenna;
<b>Drive Bays</b>	External: Two NVMe™ M.2 SSD; Two 3.5" HDD; Two 9.5 mm ODD; Internal: One 3.5"; Four PCIe® M.2 SSD; Three 3.5" HDD <sup>39</sup>
<b>Software</b>	HP PC Hardware Diagnostics UEFI HP Performance Advisor HP Support Assistant HP PC Hardware Diagnostics Windows HP Image Assistant HP Manageability Integration Kit HP Anyware HP Data Science Stack HP Services Scan <sup>11,17,18,19</sup>
<b>Security management</b>	Full volume encryption; HP Secure Erase; Kensington lock slot; Secure authentication; TPM 2.0 certified; HP BIOSphere; HP Sure Run; HP Sure Click; HP Sure Sense; HP Sure Admin; HP Platform Certificate; HP Sure Start; HP Sure Recover; Self-Encrypted Drives <sup>20,21,22,23,24,25,26,27</sup>
<b>Security Software Licenses</b>	HP Wolf Pro Security Edition <sup>28</sup>
<b>Management features</b>	HP Driver Packs; HP System Software Manager (download); HP BIOS Configuration Utility (download); HP Smart Support
<b>Power</b>	1125 W internal power supply, up to 90% efficiency, active PFC; 775 W internal power supply, up to 90% efficiency, active PFC; 525 W internal power supply, up to 90% efficiency, active PFC; 525 W internal power supply, up to 90% efficiency, active PFC; 1125 W internal power supply, up to 90% efficiency, active PFC; 775 W internal power supply, up to 90% efficiency, active PFC
<b>Dimensions</b>	16.89 x 44.45 x 38.61 cm; 31.4 x 57.2 x 56.3 cm (Package)
<b>Weight</b>	Starting at 10.5 kg; (Exact weights depend upon configuration (System weight only))
<b>Ecolabels</b>	EPEAT® registered configurations available; TCO Certified configurations available <sup>14,15</sup>
<b>Energy star certified</b>	ENERGY STAR® certified (configurations available)
<b>Sustainable impact specifications</b>	Low Halogen; 40% post-consumer recycled plastic; 25% ITE-derived closed loop plastic; Bulk packaging available; External power supply 90% efficiency; Plastic cushion inserts contain 80% recycled content; Ocean-bound plastic in system fan; 10% post-industrial recycled metal; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable <sup>16,35,36,37,38</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">http://www.hp.com/go/zdisplays</a>
<b>Warranty</b>	1 year (1/1/1) limited warranty includes 1 year of parts, labor and on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.



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## Messaging Footnotes

<sup>1</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>2</sup> Optional, configurable features.

<sup>3</sup> Optional, configurable features. Configuration for 92 TB requires separate additional purchase, including a Z Turbo Quad Pro storage carrier planned to be available in the second half of 2023. Two front accessible NVMe SSDs require a 5.25" bay carrier. 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>4</sup> Testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

<sup>5</sup> 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 and Workstation products. See product details for included security features.

<sup>6</sup> Unthrottled in Performance Mode.

<sup>7</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>8</sup> Intel vPro® Enterprise technologies are available only on Intel® Xeon® W-3400 and Intel® Xeon® W-2400 processors. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See <http://intel.com/vpro>.

<sup>9</sup> Error Correction Code (ECC) memory is only available on Intel® Xeon® processor options.

<sup>10</sup> Graphics are sold separately or as an optional feature. Two AMD Radeon™ Pro W6600 GPUs is planned to be available in the first half of 2023.

<sup>11</sup> Error Correction Code (ECC) memory is only available on Intel® Xeon® processor options.

<sup>12</sup> Optional, configurable features. Configuration for 92 TB requires separate additional purchase, including a Z Turbo Quad Pro storage carrier planned to be available in the second half of 2023. Two front accessible NVMe SSDs require a 5.25" bay carrier. 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>13</sup> Enabled through a flex I/O port. 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.

<sup>14</sup> Network access required. HP Anyware software and licensing are available through a 1- or 3-year subscription. Renewal is required after the subscription term. HP Anyware subscriptions are based on the number of concurrent PCoIP connections used (pay for the number of host connections, not the software) with a minimum order quantity of 5. For a limited time, an HP Anyware Professional subscription also includes access and support for ZCentral Remote Boost and ZCentral Connect and is available for purchase through an HP reseller or contact sales at [hp.com/Anyware](http://hp.com/Anyware). ZCentral Remote Boost Sender requires Windows 10 and 11, RHEL/CentOS (7 or 8), or UBUNTU 18.04 or 20.04 LTS operating systems. macOS (10.14 or newer) operating system and ThinPro 7.2 are only supported on the receiver side. ZCentral Connect requires Windows (10 or 11) or Windows Server (2016 or 2019) operating system, Microsoft Active Directory and Intel Active Management Technology for select features. For system requirements and to install HP Anyware and Anyware Manager, refer to the Admin Guides at: <https://docs.teradici.com/find/product/hp-anyware>.

<sup>15</sup> Z by HP Data Science Stack Manager requires Windows 10 version 21H2 (Build 19044) and higher or 64-bit Ubuntu 20.04 and is available on select Z workstations.

<sup>16</sup> HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, or it can be downloaded. For more information about how to enable HP Smart Support or to download, please visit <http://www.hp.com/smart-support>.

<sup>17</sup> Unthrottled in Performance Mode.

## 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> Windows 11 Pro for Workstations and Windows 10 Pro for Workstations can be preinstalled. 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>3</sup> Note: Windows 7 and Windows 8 operating systems are not supported on this product. No Windows 7 or Windows 8 drivers will be provided on <http://www.support.hp.com>.

<sup>4</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>5</sup> Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro®

Essentials and Enterprise vary. See <http://intel.com/vpro>.

<sup>6</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>7</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>8</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>9</sup> HP Services Scan is provided with Windows Update on select products and will check entitlement on each hardware device to determine if an HP TechPulse-enabled service has been purchased, and will download applicable software automatically. HP TechPulse is a telemetry and analytics platform that provides critical data around devices and applications. For full system requirements or to disable this feature, please visit <http://www.hpdaas.com/requirements>. Not applicable in China.

<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> 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>13</sup> External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

<sup>14</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>15</sup> HP Support Assistant requires Windows and Internet access.

<sup>16</sup> HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.

<sup>17</sup> HP Sure Click requires Windows 11 Pro or Enterprise. See [https://bit.ly/2PlLT6A\\_SureClick](https://bit.ly/2PlLT6A_SureClick) for complete details.

<sup>18</sup> HP Sure Start Gen7 is available on select HP PCs and Workstations. See product specifications for availability.

<sup>19</sup> HP Sure Recover Gen4 is available on select HP PCs and Workstations 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>20</sup> 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.

<sup>21</sup> HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

<sup>22</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>23</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™.

<sup>24</sup> HP BIOSphere Gen6 features may vary depending on the platform and configurations.

<sup>25</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.

<sup>26</sup> Front Entry version contains: 1 headset/microphone combo; 4 SuperSpeed USB Type-A 5Gbps signaling rate.

<sup>27</sup> NVIDIA graphics cards denoting a letter "E" refer to long-life variants of the card.

<sup>28</sup> 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.

<sup>29</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.

<sup>30</sup> Wi-Fi 6 is an optional feature that must be configured at the time of purchase. 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.

<sup>31</sup> Percentage of ocean-bound plastic contained in each component varies by product.

<sup>32</sup> Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.

<sup>33</sup> 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.

<sup>34</sup> Fiber cushions made from 100% recycled wood fiber and organic materials.

<sup>35</sup> Starting November 1, 2023, HP PCs with Windows require Windows to be installed on SSD. HDD can only be configured as additional data drives and not as the boot drive.

<sup>36</sup> Available late 2023.

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