HP Z1 G3 Workstation

What is the HP Z1 G3 Workstation?

The HP Z1 G3 Workstation once again pushes the innovation bar higher for HP Workstations, introducing dramatic, stylish updates in this third generation HP Z1. This powerful and innovative fully featured All-in-One workstation comes equipped with Window 10, dual Thunderbolt™ 3, and USB 3.1 capabilities. And it features a space-optimized, uncompromised design at a budget conscience price point.

What are the enhancements of the HP Z1 G3 Workstation as compared to the previous generations of the HP Z1 Workstation?

HP has designed the Z1 G3 to build upon the customer base of the Z1 G2 and continue to drive the product forward with innovation and the latest generation technologies. Some of the latest innovations in the Z1 G3 include:

- Smaller, thinner, lighter than the HP Z1 G2

- Dramatic price reductions—over 20% on starting configurations—as compared to the HP Z1 G2[1]

- 47% smaller and 51% lighter than the HP Z1 G2

- 23.6" diagonal UHD, 4K resolution display as compared to the 27" diagonal 2560x1440 display on the HP Z1 G2

- Intel® Skylake generation Xeon® and Core™ i3/5/7 processors as compared to the Intel® Haswell generation on the HP Z1 G2

- Latest Maxwell generation professional NVIDIA® Quadro® graphics as compared to the NVIDIA® Keplar generation on the HP Z1 G2

- ECC Memory—up to 64 GB supported as compared to the 32 GB supported on the HP Z1 G2

- Dual, side-access Thunderbolt™ 3 ports providing up to 40 Gbps performance and USB 3.1 as compared to the Thunderbolt™ 2 providing up to 20 Gbps performance and USB 3.0 on the HP Z1 G2

- Support for two HP Z Turbo Drives and two SSDs or HDDs as compared to support for only two SSDs or HDDs on the HP Z1 G2

- Precision pen and multi-touch option (planned for future availability) as compared to multi-touch options only on the HP Z1 G2

- Display Port out only as compared to Display Port in and out on the HP Z1 G2

Which industries is the Z1 G3 designed for?

We see the Z1 G3 fitting well with CAD for product design, digital-media and entertainment, and higher education markets, specifically, jobs such as civil/structural engineers, architects, videographers, and photographers. In higher education, it's a great tool and space-saving option for colleges teaching those types of courses.

How will the HP Z1 G3 Workstation be sold and distributed?

The HP Z1 G3 Workstation will be sold on the web, via distributor/VARs (indirect/direct channels), and HP sales force.

Does the end-user have to recompile the applications to see the performance advantages of the new Intel® Xeon® and Core™ processors?

No, both HP and Intel® data indicate that technical applications show immediate performance increases due to the new processor and memory architecture.

What are the benefits of multi-core processors[2]?

Intel® multi-core processors provide greater processing resources. Multi-core processors are ideal for usage models requiring multi-tasking (running many applications or simulations at once). Professional applications in engineering that perform simulations can take advantage of multiple processor cores as can applications in Media and Entertainment that require image rendering and encoding and decoding of video streams.

What do these terms (Multi-core, Dual-socket, Dual-core, and Quad-core) mean[2]?

• Dual socket: Two physical CPU sockets

• Dual-core: Each CPU package has exactly two processor cores

• Quad-core: Each CPU package has exactly four processor cores

• Multi-core: Each CPU package has multiple (like 2, 4, 6…) processors cores

• Hyperthreading[3]: If supported on the processor, Hyperthreading utilizes unused resources in the processor core to effectively split each core into two cores, presenting the effect of doubling the number of processor cores available. These additional cores provided by Hyperthreading are sometimes referred to as 'virtual cores' as they are not 'true' processor cores. Performance of this will vary by application and by workload.

What is Intel® Turbo Boost technology[4]?

Intel® Turbo Boost Technology is a way to automatically run the processor core faster than the marked frequency to temporarily boost the processor core if the part is operating under power, temperature, and current specifications limits of the Thermal Design Power (TDP). This results in increased performance of both single and multi-threaded applications.

How much faster will the processor run with Intel® Turbo Boost technology[4]?

The maximum frequency of Intel® Turbo Boost is dependent on the number of active cores. The amount of time the processor spends in the Intel® Turbo Boost state depends on the workload and operating environment. Any of the following can set the upper limit of Intel® Turbo Boost on a given workload:

• Number of active cores

• Estimated current consumption

• Estimated power consumption

• Processor temperature

When the processor is operating below these limits and the user's workload demands additional performance, the processor frequency will dynamically increase until the upper limit of frequency is reached. Intel® Turbo Boost has multiple algorithms operating in parallel to manage current, power, and temperature to maximize performance and energy efficiency.

NOTE: Intel® Turbo Boost allows the processor to operate at a power level that is higher than its rated upper power limit (TDP) for short durations to maximize performance.

What is special about the new HP Z1 G3 chassis?

The HP Z1 G3 Workstation's sleek industrial design, tool-less access chassis, and visually cable-less engineering creates new standards for ease of service, lowered acoustics, and energy efficiency. Workspaces are getting smaller—there is less space for each worker to operate. Additionally, cost efficiency is being driven as a top priority. Enter the HP Z1 G3. This product combines all the capability of an entry workstation with a 23.6" diagonal UHD (4K) resolution display in one, single package. Combining the workstation into the display frees up workspace area while still providing the user with the necessary workstation capability. System cost reduction was a primary objective for the HP Z1 G3 and, as such, the cost of the system has been driven downward and compares to that of a similarly configured HP Z240 SFF + 4K display.

What graphics cards are available on the HP Z1 G3?

• Intel® HD Graphics 530 (Core™ i3/i5/i7 processors)

• Intel® HD Graphics P530 (Xeon® processors)

• NVIDIA® Quadro® M1000M 2 GB Graphics

• NVIDIA® Quadro® M2000M 4 GB Graphics

Does the HP Z1 G3 Workstation support Serial ATA (SATA) and serial attached SCSI (SAS) RAID?
The HP Z1 G3 Workstation has an integrated SATA controller with RAID support for RAID 0 (striped), RAID 1 (mirrored). The user can choose to have a high performance RAID 0 array of two drives where data is striped across two drives (this RAID method greatly improves data access times and system performance). The user can choose to have a highly reliable RAID 1 array of two hard drives, where data is duplicated to two hard drives at once (this RAID method creates a backup copy of all data in real time).

SAS storage is not supported on the HP Z1 G3 Workstation.

What operating systems are available on the new HP Z1 G3 Workstation?
A variety of operating systems (OSs) are available, including the following. Please note that the exact OSs carried by each workstation vary by product.

• Genuine Windows 7 Professional 64-bit (via downgrade from Windows 10 Professional 64-bit)[5]

• Genuine Windows 10 Professional 64-bit[6]

• Genuine Windows 10 Home 64-bit High-End[6]

• Red Hat® Enterprise Linux® Desktop (1-year paper license drop-in-the-box)

Is dual Operating System (OS) preload an option?
Dual Operating System (OS) preload will not be offered due to restrictions of licensing agreements.

Will the HP Z1 G3 Workstation support Linux®?
Yes, Red Hat® Enterprise Linux® Desktop/Workstation is available as a drop-in-the-box with 1-year paper license. Drivers for SUSE and Ubuntu Linux® are included in the workstation driver package (formally known as the HP Installer Kit for Linux®—HPIKL).

Is the HP Installer Kit for Linux® offered on the HP Z1 G3?
What was formally known as the HP Installer Kit for Linux® (HPIKL) is no longer offered. However, the capability provided by the HPIKL is still available by selecting the following item and downloading the driver package from the web:

• Linux®-ready (T0K20AV)

  – Provides the Free DOS OS load

The workstation driver package (formally the HPIKL) for the available Linux® products is available via web download. The user must still obtain the Red Hat® software bits from Red Hat®.

What manageability features are available on HP Personal Workstations?
HP Workstations meet the industry standard specifications for DASH and support Intel® Active Management Technology (AMT) and Intel® vPro™ Technology[7]. Through these programs, IT administrators can remotely control features such as: power management, hardware inventory/alerting (including BIOS and firmware revisions), system defense filters, remote scheduled maintenance, and much more. HP Workstations also support optional software such as LANDesk Management Suite, Microsoft System Center Configurations Manager, and HP Client Automation Enterprise.

How can a user remotely access the full performance of the HP Z1 G3 Workstation?
HP Remote Graphics Software (RGS) is the remote desktop solution for serious workstation users and their most demanding applications. Best of all, it comes standard with every new HP Z Workstation. This advanced tool allows users to access and share the desktop of a remote workstation over a standard network. All applications run natively on the remote workstation and take full advantage of the compute and graphics resources of the sending system. HP RGS also allows professionals to collaborate in real time with colleagues across the hall or across the continent using graphic intensive applications.

What display panel technology is used for the HP Z1 G3 Workstation?

The Z1 G3 incorporates a 23.6" diagonal LED Backlit LCD panel at a native resolution of 3840 x 2160. Below is a details list of the features provided by the LCD panel incorporated in the HP Z1 G3 Workstation:

- Type: IPS (in-plane switching) LED Backlit LCD

- Viewable Image Area: 60 cm (23.6") widescreen; diagonally measured

- Screen Opening (W x H): 52.1 x 32.1 cm (20.5 x 11.5")

- Optimal Resolution: 3840 x 2160 @ 60 Hz; 8.3MP

- Aspect Ratio: 16:9 Widescreen

- Viewing Angle (typical): Up to 178° horizontal / 178° vertical

- Maximum Brightness (typical)[8]: 300 nits cd/m2

- Minimum Brightness (typical)[8]: 50 nits cd/m2

- Contrast Ratio (typical)[8]: 1000:1

- Response Time (typical)[8]: 14 ms (gray to gray)

- Pixel Pitch: 0.04525 mm x 0.13575 mm

- Backlight LED Life Time: 30,000 hours minimum

- Color Gamut Coverage of sRGB: 100% (CIE 1976)

- Color Support: Up to 16.7 Million colors

What options are available for the new HP Z1 G3 Workstation?

For a complete list of all options for the HP Z1 G3 Workstation, please visit HP Workstations website.

[1] Comparing similarly configured systems.
[2] 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.
[3] The hyper-threading feature is designed to improve performance of multi-threaded software products; please contact your software provider to determine software compatibility. Not all customers or software applications will benefit from the use of hyper-threading. Go to intel.com/info/ hyperthreading/ for more information including which processors support HT Technology.
[4] 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 intel.com/technology/turboboost for more information.
[5] This system is preinstalled with Windows® 7 Pro software and also comes with a license and media for Windows 10 Pro 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.
[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 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See microsoft.com.
[7] Some vPro functionality, 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. Microsoft Windows required.
[8] All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

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