HPE ProLiant MicroServer Gen10 Plus Review This is Super

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March 11, 2020
64

HPE ProLiant MicroServer Gen10 Plus Hero
In our HPE MicroServer Gen10 Plus Review we are going to cover a lot of ground, so get ready. This compact server is designed to be smaller and higher performing than the previous generation. What we have found over a few weeks of working with the system in various configurations is that this is an excellent platform.

Taking a moment to see the roadmap, upon announcement of the new server, we dissected the spec sheet of the HPE ProLiant MicroServer Gen10 Plus. We then did a piece on the MicroServer Gen10 Plus (or Gen10+) versus the older Gen10 revision. We are going to discuss that briefly below, but we wanted to show what this mid-generation change offers in terms of differences. Some have called that piece a review, which is something we disagree with. This piece will be our formal review of the MicroServer Gen10 Plus including common HPE options. Next in this series will be a more expansive view of what is possible. We have just shy of 20 CPUs we are testing in our MicroServer Gen10 Plus and that simply takes time. We also have various options to give you ideas regarding how you can take the server's base and turn it into something truly unique to fit your, or your client's needs.

In this review, we are going to focus on what HPE delivers to its customers with the ProLiant MicroServer Gen10 Plus so you know what you can expect. We are going to go into the hardware that makes this server on an in-depth basis. We are going to look at the system topology and management. After that, we are going to test 10 different OSes and the out-of-box experience including popular Linux, Windows, and even FreeBSD distributions. Next, we will delve into the performance of both CPU SKU options, the Intel Xeon E-2224 and Pentium Gold G5420 and compare them to the previous generation's performance. Finally, we will end with power consumption, noise, the STH Server Spider, and our final thoughts. This will be an extremely thorough piece on the new HPE ProLiant MSG10+.

HPE ProLiant MicroServer Gen10 Plus v. Gen10

The first hands-on piece in this series is our HPE ProLiant MicroServer Gen10 Plus v Gen10 Hardware Overview. You can read the piece at that link, and also check out the short video summary.

Key changes in this generation are moving to a smaller physical footprint with an external power supply. Internally, changes were made to remove the optical drive bay, add iLO 5 management, and alter the PCIe slot configuration. We also witnessed a move from the AMD Opteron X3400 series to the newest generation's LGA1151 Intel Xeon E-2224 and Pentium Gold G5420 processors that offer new features and more performance. There is a lot to cover, so if you were thinking about the HPE MicroServer Gen10 Plus and are familiar with the Gen10, that piece is worth going through.

In the rest of this piece, we are going to go in-depth into what you can expect from the new MicroServer including the hardware, software, performance, management, and operational aspects.

HPE ProLiant MicroServer Gen10 Plus Hardware Overview

We are going into a lot of depth here. As a result, we are going to split this section into an external hardware overview which is what one will see if they do not care about how the system works. We will then go into detail around the internal components and features before moving on to other sections of this review.

HPE ProLiant MicroServer Gen10 Plus External Hardware Overview

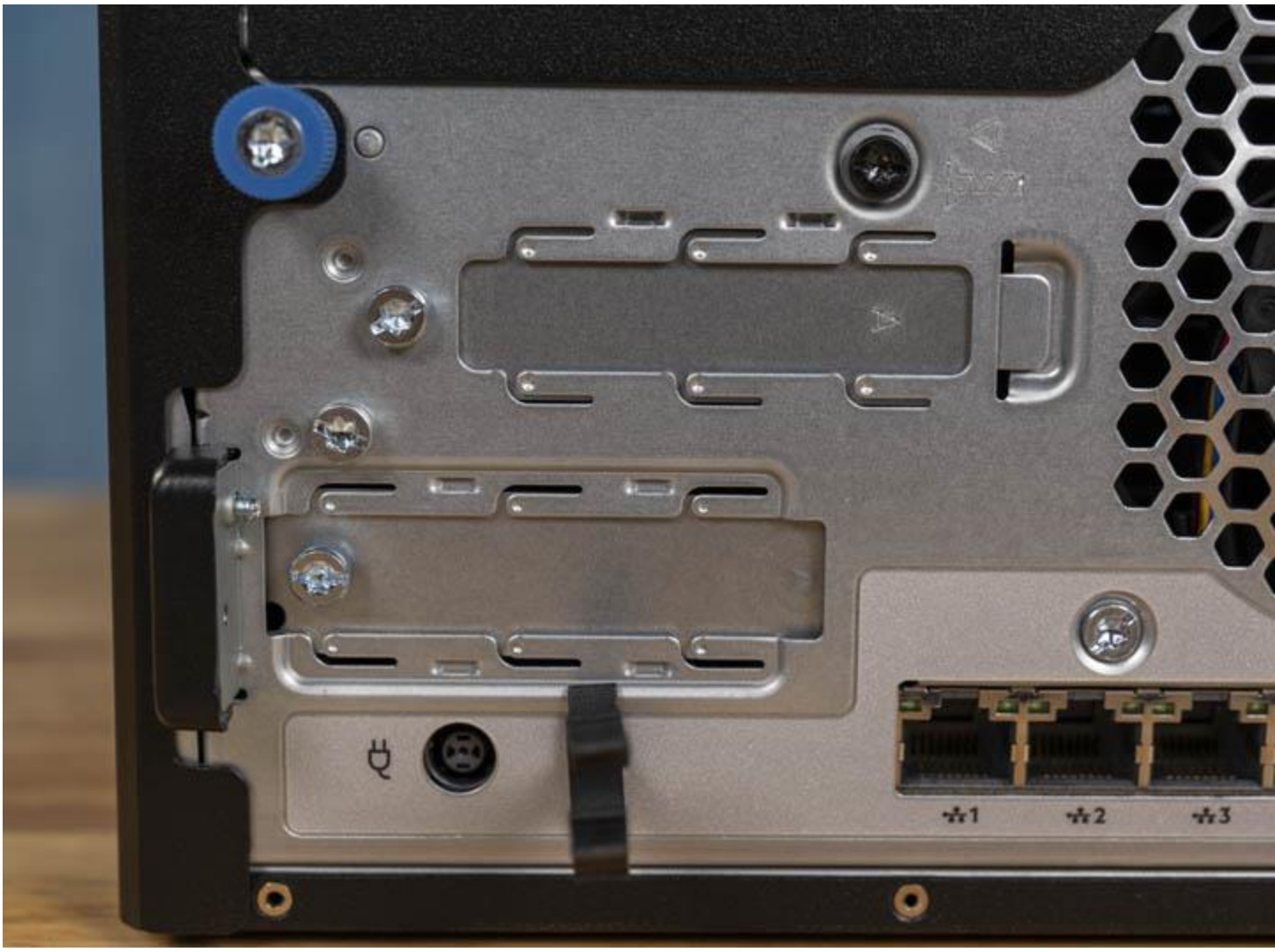
The HPE ProLiant MicroServer Gen10 Plus is small. It measures 4.68” x 9.65” x 9.65” (11.89 x 24.5 x 24.5cm.) it is also one attractive box to have around especially if you have excellent lighting to make the HPE logo pop. One can see a power button as well as status activity lights. The two USB ports are USB 3.2 Gen2 ports with means they are capable of 10Gbps operation.

HPE ProLiant MicroServer Gen10 Plus Front

On the rear of the unit, we can see all of the ports and I/O surrounding a central fan. The fan is the only moving part in this generation. It is, therefore, non-redundant but half as likely to experience a fan failure as a two fan unit.

HPE ProLiant MicroServer Gen10 Plus Rear

To the left of the fan, we have two low-profile slots for expansion. We will discuss those later in this hardware overview. Below them, one can find the DC input. With this generation, we have an external power supply so there is a power input on the rear of the unit.



HPE ProLiant MicroServer Gen10 Plus Rear Expansion ILO And DC In

External DC power supplies can be pulled out of the chassis accidentally so HPE included a retention clip for the DC plug. You can actually see that in the packaging, HPE had to make a cutout for this clip.

HPE ProLiant MicroServer Gen10 Plus In The Box

The power supply is a 180W LiteOn unit which looks like it could power an enormous laptop.

HPE ProLiant MicroServer Gen10 Plus LiteOn External Power Supply

On the right rear of the unit, we find the primary system I/O. This includes four 1GbE NICs, a VGA and DisplayPort (for management) and four USB 3.2 Gen1 ports.

HPE ProLiant MicroServer Gen10 Plus Rear IO View

We wish HPE had found some way to provide SFP+ 10GbE networking here. The cost of SFP+ to 10Gbase-T and Nbase-T has fallen in just a few years from thousands of dollars per module to $35 to $60 per module. Adding 10GbE would have made this server immensely more interesting and freed the expansion slot for other duties.

Removing the top cover is required to access the internals. It also allows one to access the latching mechanisms that keep the front cover locked. Having these locks is important to keep hard drives safe especially in edge locations.

HPE ProLiant MicroServer Gen10 Plus Rear Top Removed

The two black screws on the system's rear hold the motherboard tray in place. Once these are removed, one can simply slide the tray out, detach a few cables and get access to the internal components.

Hard drives are installed in a 2×2 matrix. 3.5" drives utilize four pegs that are screwed into the standard hard drive mounting holes. HPE goes the extra step here and places these pegs in lines below drives so one can keep them safe and easily access them when needed. This is technically a tray-less but not tool-less design and is carried over from the original Gen10 latching mechanism.

HPE ProLiant MicroServer Gen10 Plus Hard Drive In Bay

For 2.5” drives, you will need a 2.5” to 3.5” adapter to mount 2.5” drives, such as SSDs, into the MSG10+. This is not a huge deal, but it does add cost to the system. It would have been extremely cool if HPE could have found a way to add two 2.5” SATA bays just below the 3.5” bays even if they were for 7mm SATA only.

3.5” drives are supremely important in this market. They offer high-capacity and low-cost for local backups, surveillance video storage, as well as content sharing. While we received a lot of feedback on our earlier Gen10+ v. Gen10 content that an 8x 2.5” chassis would be welcome for all-flash, and we agree to some extent, there is more to play here. HPE is using the Intel C242 PCH which means it only has 6x SATA III ports onboard. In order to support 8x 2.5” bays, HPE would need to move up to the C246 PCH. While this is doable, it also adds cost. A good compromise is simply exposing two more SATA ports and bays if possible.

Continuing to add features such as a higher-end PCH and doubling bays may sound great, but then feature creep starts to bring it into HPE ProLiant ML30 Gen10 positioning. When we reviewed the ProLiant ML30 Gen10 we used an 8x 2.5” model and that is based on a Xeon E platform as well. Our thought is that HPE is trying to service a specific market with the MSG10+ in the context of the company’s broader portfolio. HPE has an option for all-flash, it is simply a different server.

Next, we are going to look inside the system at what makes the package so effective.