



HPE PROLIANT WITH AMD EPYC

HPE ProLiant DL325 Gen10 Plus Server and
HPE ProLiant DL385 Gen10 Plus Server



Frequently asked questions

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HPE PROLIANT DL3X5 WITH 2ND GENERATION AMD EPYC PROCESSORS LAUNCH

1. What is Rome?

Rome is the code name for the 2nd Generation AMD EPYC™ processors. The HPE ProLiant DL325 Gen10 Plus and HPE ProLiant DL385 Gen10 Plus servers will take advantage of the 2nd Generation AMD EPYC processor architecture features with 64 processor cores, 9% memory speed improvement with 3200 MT/s memory, PCIe 4 offering 2X greater I/O bandwidth, and 2.4X greater storage capacity over previous generations.

Rome Naming Convention

EPYC 7702P

- Product Segment:** 7XXX for high performance server SOC/APU. Naples and Rome are both 7XXX series.
- Model Number:** Indicates performance. Higher number indicates higher level of performance. No direct tie to core count, power or frequency.
- Generation:** 2 = Rome, 1 = Naples.
- Modifier:** 1P only (DL325 only). 1P cannot be used on the DL385.

2. When will the HPE ProLiant DL325 Gen10 Plus and HPE ProLiant DL385 Gen10 Plus featuring the 2nd Generation AMD EPYC be introduced, orderable, and shipping?

HPE ProLiant DL325 Gen10 Plus and the HPE ProLiant DL385 Gen10 Plus servers new product introduction (NPI) date is December 2nd. The servers will be available for ordering worldwide on December 16th. The Clear-to-Ramp (CTR) will be staggered by geo beginning with the Americas on December 20th. CTR in APeJ is December 30th and for EMEA and Japan, February 24th. On December 20th the servers will ship worldwide.

3. Where can I find training on the launch of the HPE ProLiant DL325 Gen10 Plus and HPE ProLiant DL385 Gen10 Plus featuring the 2nd Generation AMD EPYC processors?

Please refer to the [sales briefcase](#) or hpe.com/partners/amd.

4. Why would I buy the HPE ProLiant DL325 Gen10 Plus or HPE ProLiant DL385 Gen10 Plus server featuring the 2nd Generation AMD EPYC processor as compared to the HPE ProLiant DL325 Gen10 or HPE ProLiant DL385 Gen10 equipped with the 2nd Generation AMD EPYC processors that launched in August?

While both the HPE ProLiant DL325 and DL385 Gen10 and HPE ProLiant DL325 and DL385 Gen10 Plus servers feature the 2nd Generation AMD EPYC processors, HPE ProLiant DL3x5 Gen10 Plus take advantage of additional features of the 2nd Generation AMD EPYC processor architecture and offer greater storage expandability.

HPE ProLiant DL325 and DL385 Gen10 Plus feature

Feature	Rome Gen10 Drop-In (EPYC Zen 2)	Rome Gen10 Plus (EPYC Zen 2)	Benefit
Processor	Up to 64 cores, 200W	Up to 64 cores, 225W	No generational comparison. 2X more cores than Intel®
Memory	DDR4-2933 MT/s	DDR4-3200 MT/s	9% greater performance over previous gen
PCIe	Gen3 8 Gb/s	Gen4 16 Gb/s	2X more I/O throughput with PCIe 4 vs. PCIe 3
Storage		2.4X greater storage capacity compared to HPE ProLiant Gen10	

Additional features

- Improved NUMA optimization eliminates memory performance reductions when multiple processors simultaneously attempt to access memory
- Enhanced security with Secure Encrypted Virtualization now supporting up to 509 encrypted VMs per server up from 11
- Additionally, being based on the 7 nm processes the AMD EPYC processor offers improved energy efficiency



5. Are you still going to sell and support the 1st Generation AMD EPYC processors? How long? When will we have 2nd Generation AMD EPYC processor specs and availability?

Yes, HPE will continue to support the 1st Generation AMD EPYC processors. There isn't a plan for "end of support" (EOS) at this time.

[HPE ProLiant DL325 Gen10 Plus](#) and [HPE ProLiant DL385 Gen10 Plus QuickSpecs](#) for more details.

6. How long is the current lifecycle for 1st Generation AMD EPYC processor for the HPE ProLiant DL325 and HPE ProLiant DL385?

HPE will continue to offer 1st Generation AMD EPYC processors for the DL325 and DL385 through the first half of 2020. There isn't a plan for end of support.

COMPATIBILITY

7. Can AMD and Intel co-exist in the same environment?

Yes. However, there may be limitations for any applications or data that would be shared between Intel and AMD based servers.

8. Is there a VMware® endorsed sizing document available for AMD?

Yes. There are two documents that can be referenced: VMware vSAN™ and vSAN sizing document [here](#).

9. What GPUs will be certified on the HPE ProLiant DL385 Gen10 Plus?

We will support NVIDIA® and AMD GPUs beginning Q1 2020. Please see the [QuickSpecs](#) for more details.

COMPETITION

10. Is there a comparison matrix between AMD and Intel CPUs?

Yes. The HPE CPU comparison brief is located [here](#). The processor selector tool is located [here](#).

TECHNOLOGY

11. How do the HPE ProLiant DL300 Series server compare?

Please review the [HPE ProLiant 300 Series Gen10 rack servers](#) quick reference card.

12. What advantages do the new network interface controllers offer for customers interested in managing a homogeneous data center infrastructure?

The new network interface controllers offer PCIe standup and OCP3 form factors that can be managed by IPMI compliant tools.

13. Will HPE 256 GB SmartMemory be available on HPE ProLiant Gen10 Plus servers?

HPE 256 GB SmartMemory featuring an eight-channel memory controller with 16 DIMM slots per CPU, supporting up to 3200 MT/s memory speeds will be available in 1H 2020. When fully populated, with the new HPE 256 LRDIMM, each CPU can support an unprecedented 4 TB of memory per CPU.

14. If you put a dual socket capable AMD EPYC processor (e.g., an AMD EPYC 7601) in a single socket system, will I have access to only 64 PCIe 3.0 lanes?

No. You will have access to all 128 PCIe lanes.

15. If you put a single socket capable AMD EPYC processor (e.g., an AMD EPYC 7351P) in a dual socket system, will I have access to all 128 PCIe 3.0 lanes?

No. AMD EPYC single socket compatible processor are only compatible with single socket servers.

16. What is the performance impact of using a "P" part versus a standard dual socket capable part?

There is no difference when using either a "P" part or a standard part in a single socket implementation.

17. What is the power consumption impact of using a "P" part versus a standard dual socket capable part?

TDP is the same on both the single socket processors and the dual socket processors.

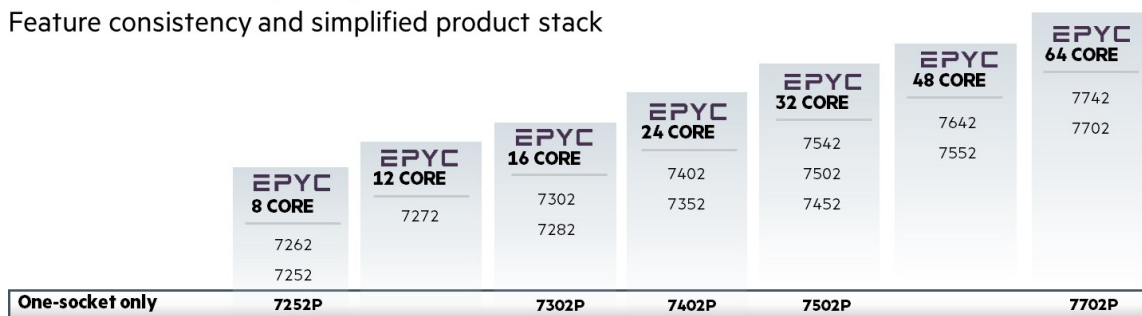
18. When should I get a single socket "P" part or a standard part?

The first consideration for processor is how many cores you want to run. See the chart on page 5 as a guide, which is based on the core count required. The "P" option is only supported on the ProLiant DL325.



The Power of Simplicity

Feature consistency and simplified product stack



- DDR4-3200
- *4 TB memory capacity
- 128 lanes PCIe 4
- Turbo boost
- SMT

* Note: 4 TB memory capacity can be supported only on 2P system with 32 DIMMs at 128 GB

WORKLOADS

19. Is there a use case for AI/Deep Learning?

We don't currently have a use case/workload for AI specifically, however we are aligning to the following workloads—Virtualization, Software-Defined Storage/Hyperconverged Infrastructure, High Performance Computing (HPC), Big Data, and Telecom. HPE will continue to build out our HPC portfolio and support Rome in 2020 to support AI, Deep Learning, and Machine Learning workloads.

20. What are the specific workloads HPE is targeting with AMD EPYC based HPE ProLiant servers?

The workloads are Virtualization, Software-Defined Storage (SDS)/Hyperconverged Infrastructure (HCI), High Performance Computing (HPC), Big Data, and Telecom. You can find the presentation [here](#).

21. Where can I find more information on the workloads?

There are briefs located [here](#) and on Seismic.

22. Where can I find more information on benchmarks?

You can find performance briefs located [here](#) and on Seismic.

23. Why is the HPE ProLiant DL325 and HPE ProLiant DL385 with the 2nd Generation AMD EPYC processor good for the targeted workloads?

Virtualization	Increased core count with up to 64 cores and increased memory capacity of up to 4 TB operating at 3200 MT/s, provide great VM, container and application density while increasing processor utilization for virtualized workloads of all types.
Software-defined storage	Increased memory capacity with up to 4 TB operating at 3200 MT/s and greater I/O bandwidth with PCIe 4 as well as the ability to scale quickly and cost-effectively as data volumes expand with added storage expandability provide increased performance. Support for up to xx terabytes of NVMe SSDs and four PCIe lanes to each SSD, provides faster access to large datastores.
Big Data	High core count with up to 64 cores, high memory capacity with up to 4 TB operating at 3200 MT/s and high bandwidth/low latency access to PCIe 4 provide a performance increase that significantly accelerates processing output in a number of key compute-intensive areas like scientific research, data modeling, and trend analysis.
High Performance Computing (HPE ProLiant DL385 only)	High core count with up to 64 cores, high memory capacity of 4 TB operating at 3200 MT/s, high I/O capacity and support for GPU accelerators speeding compute intensive applications like computation fluid dynamics and finite element analysis.
Telecommunication	Dense compute coupled with PCIe 4 bandwidth for storage and data plan acceleration in a small footprint makes it best fit for telco use cases such as 5G and Multi-Access Computing (MEC).



SECURITY

24. Why are the HPE ProLiant DL325 and HPE ProLiant DL385 based on the 2nd Generation AMD EPYC Processors more secure than competitive AMD EPYC-based servers?

The HPE ProLiant DL325 and HPE ProLiant DL385 featuring the 2nd Generation AMD EPYC Processors deliver unmatched security via the Silicon Root of Trust, a unique link between iLO silicon and the iLO firmware to ensure servers do not execute compromised firmware code. HPE ProLiant offers a full range of intelligent security features.

- The Silicon Root of Trust is connected to the AMD Secure Processor in the AMD EPYC SoC. Once the iLO firmware is validated by the fingerprint in the iLO silicon, the iLO firmware validates the AMD Secure Processor. The AMD Secure Processor does a complementary validation the UEFI BIOS firmware before the server is allowed to boot.
- The AMD Secure Processor also manages Secure Encrypted Virtualization which encrypts virtual machines (VMs) isolating them from one another and even the hypervisor itself, and Secure Memory Encryption which protects against cold boot, DRAM interface snooping and similar attacks.
- Automated recovery from a security event, including restoration of validated firmware, and facilitating recovery of operating system, application and data connections, are enabled by Server System Restore, providing the fastest path to bring a server back online and into normal operations.
- One Button Secure Erase offers a simple, safeguarded removal of passwords, configuration settings, and data from a server being repurposed or retired.
- HPE Asset Recovery prevents inadvertent access to previously secured information.

VM MIGRATION

25. Can I migrate VMs from an Intel® Xeon® based server to an AMD EPYC based server and vice versa?

Yes, VMs can be easily migrated between Intel and AMD based servers. You cannot live migrate VMs, it does require a “cold migration” which will reboot the VM; but it does not take any special tools or software and requires a very short reboot. You can easily migrate VMs between AMD and Intel-based servers using the same tools you currently use today.

26. Does VMware vMotion work between Intel and AMD based servers?

No. An EVC-enabled cluster only allows CPUs from a single vendor in the cluster. VirtualCenter and VMware vCenter Server® do not allow you to add a host from a different CPU vendor into a VMware Enhanced vMotion Compatibility enabled cluster. More details can be found [here](#).

27. Can I migrate VMs between the 1st and 2nd Generation AMD EPYC 7000 series processors?

Yes. Both live and cold migration are supported on AMD EPYC 7000 series processors.

28. Can I migrate VMs from previous generations of Intel Xeon to Intel Xeon Scalable processor based servers?

Live migration: VMs can be migrated across different generations of processors, but they must all be defeatured to the lowest common feature set—essentially removing new features enabled in the newer processors that are not supported on previous generations. This can be done by using VMware Enhanced vMotion Compatibility feature.

Cold migration: VMs can be migrated across different generations of processors. Requires a re-boot of the VM.

29. What is EVC?

Enhanced vMotion Compatibility (EVC) is a VMware feature that allows VMs that are running on processors from the same manufacturer to be live migrated within a cluster. It accomplishes this by reducing the features of all processors in the cluster to the lowest common denominator. Actual features lost depends on which generation of processors are running in the cluster. For example, if you were running a cluster with Intel Haswell and Intel Skylake processors—all the processors would only utilize the features sets available on the Haswell processors. New features introduced in following generations such as SMAP, MPX, and AXV512 would not be available to VMs in the cluster. More details can be found here: kb.vmware.com/s/article/1003212



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DOCUMENT REVISION HISTORY

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