Every workload is different, and advanced software needs additional support in hardware. AMD EPYC processors deliver more flexibility, performance, and security features for your Red Hat Enterprise Linux and Red Hat Enterprise Virtualization environments.

A BETTER BALANCE OF RESOURCES

For years, the x86-architecture processor market has stagnated with only incremental advances in performance and features. Meanwhile, software has evolved rapidly without the support it needs from underlying silicon.

AMD EPYC processors are changing that. AMD is back in the server processor market with a fully compatible x86-architecture CPU family designed to deliver a better balance of resources that help your software to perform better. Compared to the best Intel Xeon Scalable processor, AMD EPYC delivers more cores, more I/O, more memory, more memory bandwidth, and more performance.

BEYOND X86

Perhaps even more important are innovations that take AMD EPYC processors beyond x86 with features that directly support Red Hat customers. A system-on-chip (SoC) design supports features that enable more performance, flexibility, and security.

- **Built-in Disk Controllers** can support up to 32 directly connected disk drives. This provides a better level of support for systems such as Red Hat Gluster Storage and Ceph, which need large numbers of disk drives and massive parallelism.
- **Built-in Platform Controller Hub** eliminates the cost and engineering time of having to incorporate a chip set as part of server designs.
- **A Built-in Security Processor** helps keep data safe with full memory encryption. This repels numerous memory-based attacks with encryption keys that never leave the CPU.
- **Secure Root-of-Trust** technology provides the capability to boot only trusted firmware images, depending on server vendors’ implementations.
- **Secure Virtualization** features provide the foundational capability to have different virtual machines run with different encryption keys than the hypervisor, and...
AMD EPYC PROCESSORS BRING REAL INNOVATION TO RED HAT ENTERPRISE LINUX

even to move from server to server without software or data ever being exposed. Virtual machines can be securely booted, with proof given to their owners that their software has booted on a system of their choosing with no modifications.

INNOVATION REQUIRES EXCELLENT PARTNERSHIPS

Bringing true innovation to market requires close partnerships. We have been collaborating with Red Hat to make current Red Hat Enterprise Linux and Red Hat Enterprise Virtualization products ready to run on new server products as soon as they are available. Larger numbers of cores have been enabled, higher memory capacity tested, performance has been optimized for the processor’s internal non-uniform memory access (NUMA) design, secure memory encryption has been enabled, and drivers for the SoC’s internal SATA controllers have been prepared.

INCREASING SERVER VENDOR MOMENTUM

Making Red Hat products ready for market has been matched with equal enthusiasm from server vendors incorporating AMD EPYC processors into their designs. As of the date of this publication, 15 server models from Dell EMC, HPE, Sugon, and SuperMicro have all been certified for use with Red Hat Enterprise Linux and Red Hat Enterprise Virtualization.

NOW YOU HAVE A CHOICE

With a system on chip that delivers more performance, flexibility, and security features through a better balance of resources, you have a choice in how you match resources to your workloads. With AMD EPYC processors you can choose to unleash the power of Red Hat software with the support in silicon that it needs: more cores, more memory and memory bandwidth, more I/O, and the industry’s first embedded, dedicated security processor on an x86-architecture server chip.

LEARN MORE at amd.com/epyc.

FOOTNOTES

1. The AMD EPYC 7601 processor supports 32 cores compared to the Intel Xeon Platinum 8180 with 28 cores.
2. AMD EPYC processor supports up to 128 PCIe® Gen 3 I/O lanes (in both 1 and 2-socket configuration), versus the Intel Xeon SP Series processor supporting a maximum of 48 lanes PCIe® Gen 3 per CPU, plus 20 lanes in the chipset (max of 68 lanes on 1 socket and 116 lanes on 2 socket). NAP-56
3. A single AMD EPYC 7601 processor offers up to 2TB/processor (x 2 = 4TB), versus a single Xeon Platinum 8180 processor at 768GB/processor (x 2 = 1.54TB). NAP-44
4. AMD EPYC 7601 processor supports up to 8 channels of DDR4-2667, versus the Xeon Platinum 8180 processor at 6 channels of DDR4-2667. NAP-42
6. These capabilities depend on future software support that is not guaranteed.