

# CPUS FOR HIGH-PERFORMANCE, EASY-TO-USE, LOW-COST SERVERS FOR GROWING BUSINESSES

## AMD EPYC™ 4004 SERIES: A TRUSTED CHOICE

*The x86-architecture server processors designed for small businesses and dedicated hosting providers*

For low system acquisition costs, AMD EPYC™ 4004 Series processors provide foundational server solutions for growing businesses and dedicated hosting facilities. It's a fast and practical series of processors that provide the full range of performance, scalability, and efficiency that servers need for everyday and all-day processing needs. Dependable and easy to use, the series is compatible with server solutions from key business technology providers and is tested and validated with the leading x86 server operating systems. Also, by upgrading to our 16-core CPU you can fully realize the capabilities of your 16-core Microsoft® Windows Server® 2022 license.

### GENERAL PURPOSE PERFORMANCE

- **CORE FOR CORE, BETTER PERFORMANCE AND ECONOMY** based on the geometric mean of all 453 Phoronix test suite applications on 1P systems with an 8-core AMD EPYC 4364P compared to a 8-core Intel® Xeon® E-2488 processor. <sup>E4K-013</sup>

AMD EPYC 4364P

CPU cost 34% lower

Performance/core 15% more

Performance 20% more

Intel Xeon E E-2488 1.0

### DOUBLE YOUR CORES AND GET MORE

- **STEP UP FROM 8 XEON TO 16 EPYC CORES FOR ONLY \$93** and see better performance and efficiency, comparing 1P systems with a 16-core EPYC 4584PX to an 8-core Xeon E-2488, measured using SPECrate®2017\_int\_base. <sup>E4K-003A</sup>

AMD EPYC 4584PX

Performance 73% better

Performance/est. system W 52% better

Performance/est.system \$ 67% better

Intel Xeon E E-2488 1.0

### ENCODE VIDEO FASTER AND CHEAPER

- **GAIN UP TO 1.7X THE AVERAGE PERFORMANCE PER CPU DOLLAR** while speeding your per-core video-encoding performance as measured by the video encoding suite of the Phoronix test suite, comparing 1P systems with an 8-core AMD EPYC 4364P compared to a 8-core Intel Xeon E-2488 processor. <sup>E4K-007</sup>

~1.7x



Performance per CPU \$

~1.1x



Performance per core

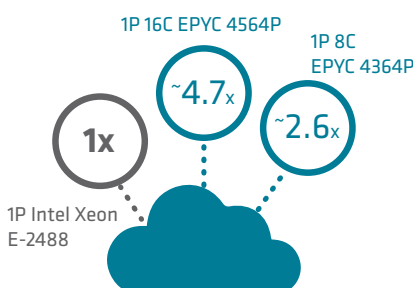
~34%



Lower CPU cost

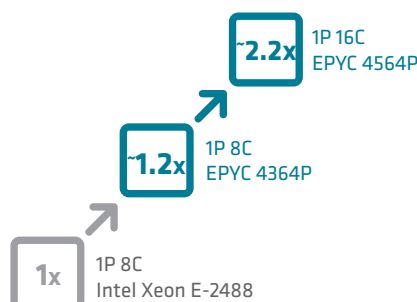
### ACCELERATE WEB SERVICES

- **CHOOSE ~4.7X OR ~2.6X THE OPENSLL THROUGHPUT** using 1P servers with a 16-core EPYC 4564P or an 8-core EPYC 4364P compared to a 8-core Intel Xeon E-2488 running the OPENSLL 3.3 RSA4096 Phoronix test. <sup>E4K-011</sup>



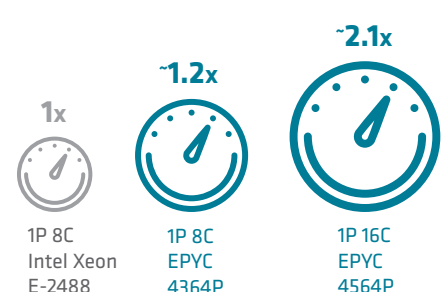
### SPEED GRAPHICS RENDERING

- **CHOOSE 2.2X OR 1.2X THE AVG. RAY TRACING AND RENDERING THROUGHPUT** using 1P servers with a 16-core EPYC 4564P or an 8-core EPYC 4364P compared to a 8-core Intel Xeon E-2488 comparing the geometric mean of the 7 Phoronix raytracing/rendering tests. <sup>E4K-008</sup>



### POWER SOFTWARE DEVELOPERS

- **CHOOSE ~2.1X OR ~1.2X THE COMPILATION SPEEDS** using 1P servers with a 16-core EPYC 4564P or an 8-core EPYC 4364P compared to an 8-core Intel Xeon E-2488 performing the Phoronix timed node.js compilation test. <sup>E4K-010</sup>



## PROCESSORS DESIGNED TO POWER GROWING BUSINESSES

Many businesses aspire to having AMD EPYC processors power their servers. They need high performance, economy, and validation with enterprise applications and operating systems—but they don't need the high core counts of mainline EPYC processors. Now these businesses need to look no further than AMD EPYC 4004 Series processors.

With from four to sixteen cores per CPU, AMD EPYC 4004 processors complement the broad 4th Gen EPYC processor family, extending the established high-performance, efficient 'Zen 4' core architecture into an expanded range of new entry-level system designs. The EPYC 4004 Series is designed to power attractively priced servers to help drive low system acquisition cost by enabling fast and practical solutions. Most importantly, they are dependable and easy to use, having been validated with leading server operating systems.

### Small and medium businesses



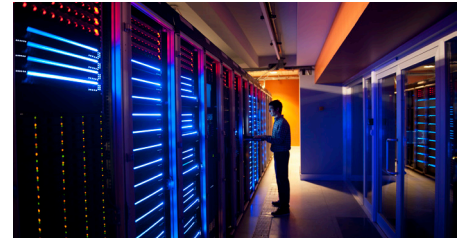
- Support growing needs for general-purpose business processing workloads
- Office-based rack or standalone infrastructure

### Retail and branch offices



- Standalone or small racks in back rooms of retail and branch-office locations
- Support retail transactions, point-of-sale software, video and security analytics, credit validation, employee time records, and inventory management

### Hosted IT services



- Enable high-performance, low-cost dedicated hosting services including cloud storage
- Ideal for small and medium-sized business customers in regional markets

## 4TH GEN AMD EPYC TECHNOLOGY

To make it easy for small and growing businesses to use AMD EPYC processors, we start with the same hybrid, multi-die architecture used in all 4th Gen EPYC processors, and scale it appropriately for the workload. Built on 4th Gen EPYC processor 'Zen 4' cores, it supports the same instruction-set architecture as the rest of the generation.

### DESIGNED FOR SINGLE-SOCKET SERVERS

Designed for single-socket servers with 4 to 16 cores, the processor's I/O die supports two DDR5-5200 memory controllers and 28 lanes of PCIe® Gen 5 connectivity plus one 20 Gb/s and three 10 Gb/s-capable USB 3.2 Type C interfaces. It includes an AMD Secure Processor to implement select AMD Infinity Guard features.<sup>GD-183A</sup> It also includes integrated graphics which can be used to support server management consoles. Acknowledging the wide range of I/O needs for small systems, the series can use four of its PCIe lanes to connect to one of several chipsets available from AMD to provide connectivity to additional network interfaces, disk drives, and USB 2.0 connections. Designed to support fewer cores, the I/O die's smaller footprint contributes to the processor's exceptional efficiency.

The I/O die connects to up to two CPU dies, each with up to eight 'Zen 4' cores per die and up to 64 MB of Level 3 cache per processor. Processors with AMD 3-D V-Cache™ technology have an additional 64 MB of Level 3 cache for up to 128 MB per processor."

### A COMPELLING CHOICE

The AMD EPYC 4004 Series presents an obvious choice for small and medium businesses, retail and branch offices, and hosted IT services. As detailed on the previous page, servers with our 8-core CPU can deliver higher performance and efficiency than servers with the Intel Xeon 8-core CPU. <sup>E4K-013</sup> Plus for only \$93 more you can double the cores from 8 to 16 and achieve up to 73% more integer performance with 52% higher performance per estimated system watt than the 8-core Intel Xeon E-2388. <sup>E4K-003A</sup> Now when you choose AMD EPYC 4004 Series processors you can prepare your business with exceptional performance headroom and deploy high-value, essential server solutions for your growing business.

## FOOTNOTES

**GD-183A** AMD Infinity Guard features vary by EPYC™ Processor generations and/or series. Infinity Guard security features must be enabled by server OEMs and/or cloud service providers to operate. Check with your OEM or provider to confirm support of these features. Learn more about Infinity Guard at <https://www.amd.com/en/technologies/infinity-guard>.

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