

# 5 REASONS 3RD GENERATION AMD EPYC™ PROCESSORS MATTER IN THE DATA CENTER AND CLOUD

## AT A GLANCE

What could you accomplish with 28 hours in a day? New capabilities in AI, HPC and analytics—and even virtualization and cloud—can drive your progress in a rapidly changing world. But how do you simultaneously improve performance, manage costs for the long haul, and minimize

the trade-offs of flexibility, efficiency and security while achieving more, faster? Boost performance and agility to empower innovation confidently, and accelerate to better business outcomes, with the latest advancement in compute platforms. Nothing Stacks Up to EPYC™ Processors.

1

### ACHIEVE MORE, FASTER

Leverage faster processing and higher throughput across much of your infrastructure and application footprint with the World's Highest Performance Server CPU, AMD EPYC 7763.<sup>1</sup> Pursue IT and business goals effectively, quickly and efficiently with **exceptional workload performance**.

2

### YOUR DATA, YOUR WAY—ON-PREMISES OR IN THE CLOUD

With 3rd Gen AMD EPYC™ Processor-based servers available both in your data center and in the cloud, take advantage of their simple power, scalability, flexibility and enduring efficiency and security features to get more out of **data your way**.

3

### ADDRESS FUNDAMENTAL DATA AND PRIVACY RISKS SIMPLY

Help reduce the burden of transforming IT and your business with AMD **security by design**.

4

### MAXIMIZE YOUR IT INVESTMENTS

Better manage the unknowns of cost and risk while simultaneously increasing agility and efficiency. Help squeeze out **more production and innovation** per dollar, per person, per day.

5

### ENABLE NEW CAPABILITIES FOR YOUR BUSINESS

Configure your platform just how your workloads demand, without burdensome tradeoffs. Apply the advantages of the AMD EPYC™ Family of Processors to more CPU configurations and use cases, thanks to 3rd Gen AMD EPYC™ Processors' **architecture leadership**.

*Continue reading for more technical detail*

## TECHNICAL DEEP DIVE

### #1 ACHIEVE MORE, FASTER

- Industry-leading performance with 200+ world records<sup>2</sup>
- 2.8X the VMmark<sup>®</sup> 3.1 performance for both SAN<sup>3</sup> and vSAN<sup>™4</sup>
- Better database performance with ~19% more HammerDB OLTP per minute<sup>5</sup>
- Outperforms the competition by up to 2X faster in HPC<sup>6</sup> and Cloud workloads<sup>7</sup>

### #2 YOUR DATA, YOUR WAY—ON PREMISES OR IN THE CLOUD

- Compatible out of the box with major x86 application vendors whether on premises or hosted by one of the major cloud providers
- Broader range of use cases than ever before, from virtualization, SDI and containerization to AI, ML, HPC and advanced data analytics
- Fast time to value and compelling economics

### #3 ADDRESS FUNDAMENTAL DATA AND PRIVACY RISKS SIMPLY

- AMD Infinity Guard - an industry-leading modern security feature-set - can help decrease potential attack surfaces as software boots, executes, and processes your critical data<sup>8</sup>
- The dedicated AMD Secure Processor is integrated on die which enables Hardware Root of Trust and a foundation for platform security, with no x86 software changes required
- All-new Secure Nested Paging (SEV-SNP) feature addition to AMD Secure Encrypted Virtualization, helps prevent malicious hypervisor-based attacks like data replay, memory re-mapping, and more in order to create an isolated execution environment
- Reliable execution of a multi-year AMD EPYC processor security roadmap

### #4 MAXIMIZE YOUR IT INVESTMENT

- A 2P AMD EPYC Processor-based server stack can deliver 25K of integer performance with ~49% fewer servers and an estimated 35% lower 4 year TCO than a comparable competitive solution<sup>9</sup>
- Support 320 VMs with 17% less servers, for ~31% lower hardware acquisition cost and 12% lower 3-yr TCO<sup>10</sup>
- A powerful, capable platform designed to deliver more value from upgrade, facility and licensing investments. Help realize CAPEX *and* OPEX savings by specifying AMD on premises *and* in the cloud

### #5 ENABLE NEW CAPABILITIES FOR YOUR BUSINESS

- Full features and functionality for single- *and* dual-socket server options
- Industry-leading I/O<sup>11</sup> helps accelerate data access and processing<sup>12</sup>
- From 8 to 64 cores per socket, supporting up to 4TB of memory over 8 double-data-rate channels
- Provide efficient memory balance and help reduce overall memory cost with 4-channel and 6-channel memory interleaving support
- Up to 32MB of L3 cache plus synchronized clocks between fabric and memory all driving better, faster time to results
- Now with more granular core counts than previous generations of AMD EPYC™ Processors

READY TO CONNECT? VISIT [EXPLORE.AMD.COM/SERVER-NEWSLETTER/SIGNUP](https://www.amd.com/server-newsletter/signup)

## NOTHING STACKS UP TO EPYC™ PROCESSORS

### THE NEW STANDARD FOR THE MODERN DATA CENTER

#### ***A platform you can rely on—built for solutions, not just specs***

Take advantage of the latest processors in AMD's consistent execution of its multi-year server CPU roadmap, with expanded applicability thanks to predictable performance scaling and memory flexibility. Upgrade to 3rd Gen AMD EPYC™ Processor-based servers and enable new capabilities in HCI, AI, ML, HPC, advanced data analytics and more.

#### ***Easily adopt a newly flexible and efficient foundation***

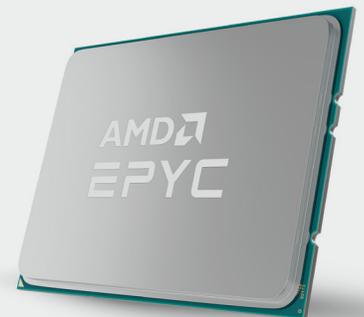
Drive advanced virtualization, hyperconverged infrastructure, containerization and superior database performance—whether on premises or in the cloud. Extract optimal value from upgrade, facility and licensing costs, thanks to a platform that's powerful and capable while being compatible out of the box with your existing x86 applications.

#### ***Help reduce risk effortlessly—and confidently***

3rd Gen AMD EPYC™ Processors have enhanced their advanced security features, called AMD Infinity Guard, by adding strong memory integrity protection capabilities. With no x86 application software changes required, AMD Infinity Guard helps your organization take control of security and decrease risks to your most important assets.

#### ***Designed for performance that redefines your potential***

Turn to 3rd Gen AMD EPYC™ Processor-based servers for the simple power, flexibility and enduring efficiency and security features you need when every stakeholder relies on technology to move forward. Transform efficiently, reach goals faster, gain a competitive advantage—and maybe even change the world.



## FIVE REASONS 3RD GENERATION AMD EPYC™ PROCESSORS MATTER IN THE DATA CENTER AND CLOUD

---

### FOOTNOTES

- <sup>1</sup> See [amd.com/en/claims/epyc#faq-MLN-016](http://amd.com/en/claims/epyc#faq-MLN-016)
- <sup>2</sup> For a complete list of world records see <http://amd.com/worldrecords>
- <sup>3</sup> See [amd.com/en/claims/epyc#faq-MLN-063](http://amd.com/en/claims/epyc#faq-MLN-063)
- <sup>4</sup> See [amd.com/en/claims/epyc#faq-MLN-064](http://amd.com/en/claims/epyc#faq-MLN-064)
- <sup>5</sup> See [amd.com/en/claims/epyc#faq-MLN-006](http://amd.com/en/claims/epyc#faq-MLN-006)
- <sup>6</sup> See [amd.com/en/claims/epyc#faq-MLN-041K](http://amd.com/en/claims/epyc#faq-MLN-041K)
- <sup>7</sup> See [amd.com/en/claims/epyc#faq-MLN-040K](http://amd.com/en/claims/epyc#faq-MLN-040K)
- <sup>8</sup> AMD Infinity Guard features vary by EPYC™ Processor generations. 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>. GD-183
- <sup>9</sup> SPECrate®2017\_int\_base (est). See [amd.com/en/claims/epyc#faq-MLNTCO-001](http://amd.com/en/claims/epyc#faq-MLNTCO-001)
- <sup>10</sup> See [amd.com/en/claims/epyc#faq-MLNTCO-002](http://amd.com/en/claims/epyc#faq-MLNTCO-002)
- <sup>11</sup> See [amd.com/en/claims/epyc#faq-MLN-055](http://amd.com/en/claims/epyc#faq-MLN-055)
- <sup>12</sup> See [amd.com/en/claims/epyc#faq-MLN-057K](http://amd.com/en/claims/epyc#faq-MLN-057K)