

Breakthrough Hyperconverged Solutions with AMD EPYC™ and Nutanix™ Enterprise Cloud



Standards-Based

AMD is committed to industry standards, offering you a choice in x86 architecture. x86 compatibility means you can run x86 based applications on AMD EPYC instances seamlessly.

AMD EPYC for HCI

AMD has teamed with Nutanix to create fully tested solutions demonstrating excellent performance, while helping to lower risk and reduce implementation costs for customers.

High Density, Low Cost

Users get the benefit of AMD's high core density with full access to all features, and Nutanix' software resulting in optimized hyperconverged solutions for the datacenter.

Nutanix Acropolis

Nutanix Acropolis software converges compute and storage to provide cloud-like infrastructure that can run applications at scale.

This AMD and Nutanix solution offer a choice in x86 processors and support a wide range of memory and storage configurations.

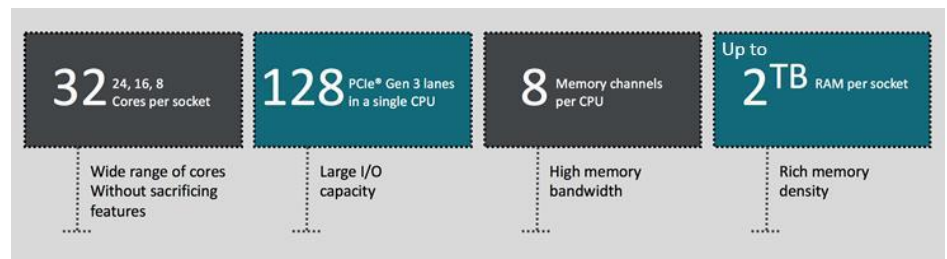
No Compromise Single Socket

In addition to the TCO savings that customers can get with Nutanix hyperconvergence software, AMD and Nutanix are optimizing on AMD EPYC processor-powered single socket servers to enable even further TCO savings to datacenter customers.

Nutanix Enterprise Cloud Solutions Powered by AMD-EPYC Processors Offer Unmatched Flexibility and Scalability at Low Cost

The AMD EPYC™ processor is ideally suited for hyperconvergence providing high performance computing with high core counts per socket coupled with an impressive number of I/O channels for native connectivity to storage. EPYC System-on-Chip (SoC) performance scales well across cores helping minimize application performance variation.

Designed from the ground up for a new generation of solutions, AMD EPYC implements a philosophy of choice without restriction. Choose the number of cores and sockets that meet your needs without sacrificing key features like memory and I/O.



Each EPYC SoC can have from 8 to 32 cores with access to incredible amounts of I/O and memory regardless of the number of cores in use, including 128 PCIe® lanes, and support for up to 2 TB of high-speed memory per socket.

AMD EPYC for Hyperconvergence Infrastructure

Traditional data center infrastructure involves separate pools of compute capacity and storage capacity connected through a networking fabric. Each component is managed individually, and a typical data center has a mix of vendors providing compute, storage, and networking equipment.

Hyperconvergence enables a powerful software-defined virtualized pool of storage, networking, and compute resources, avoiding having to manually stitch together separate discrete solutions.



Software-defined storage is a key element of hyperconvergence. It eliminates the need for dedicated storage hardware, like storage area networks (SANs), by virtualizing the storage layer in software, enabling the provisioning and management of data storage independent of the underlying hardware. To be effective it requires that the server is capable of high-

speed I/O, have high memory bandwidth, and a large amount of memory capacity. The AMD EPYC SoC's architecture meets these needs by providing 128 native-connect PCIe® lanes, 8 memory channels, and support for up to 2TB of memory per socket.

The EPYC Advantage: Performance - The AMD EPYC SoC brings new balance to the datacenter. The highest core count yet in an AMD x86-architecture server processor, large memory capacity, bandwidth and I/O density are all brought together with the right ratios to help performance reach new heights.

EPYC's innovative architecture translates to terrific performance at a low cost. Storage-intensive workloads can utilize the plentiful I/O bandwidth with the right number of cores (avoiding overpaying for unneeded power), while compute-intensive workloads can make use of fully loaded core counts, dual sockets and plenty of memory.

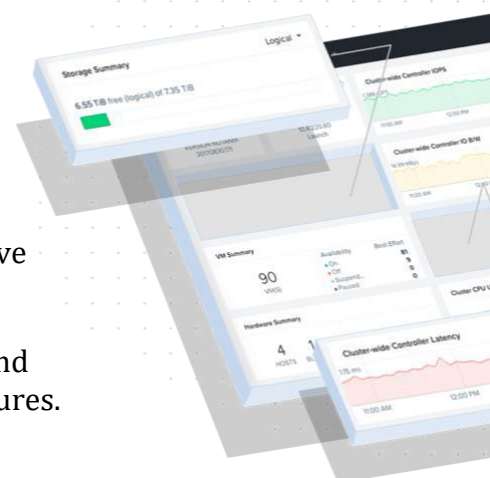
AMD has teamed with Nutanix™ to create reference architectures with excellent performance, while helping to lower risk and reduce implementation costs for customers.

AMD EPYC and Nutanix Enterprise Cloud Deliver Great Value

AMD EPYC processors provide flexibility by offering cost-effective infrastructure solutions to public and private clouds with high core counts, large numbers of VMs, exceptional I/O, and outstanding memory throughput. Nutanix Enterprise Cloud offers the foundational Acropolis™ OS software with AHV hypervisor delivering outstanding hyperconverged infrastructure (HCI) technology consisting of a 100% software-defined stack that integrates compute, virtualization, storage, networking, and security to power any application, at scale.

Nutanix offers a complete solution for delivering infrastructure services:

- Native virtualization with AHV, and additional support of VMware® virtualization solution.
- Platform services includes VM and container-based storage, and native block and file-based storage.
- Enterprise storage capabilities including performance acceleration and storage optimization technologies, data protection and recovery features.



Nutanix Enterprise Cloud Use Cases

Powered by AMD EPYC processors, Nutanix software unifies private, public, and distributed clouds, and empowers IT to deliver applications and use cases that power their businesses as listed below:

Enterprise Applications:

Deploy and scale critical workloads, such as Microsoft® SQL, Oracle® and SAP® business applications.

Virtual Desktop Infrastructure:

Make VDI a success by delivering excellent user performance and scalability without burdensome operational and high capital costs.

Big Data Analytics:

Applications scale linearly as business needs grow, enabling a pay-as-you-grow model for scaling without over-provisioning compute or storage.

Cloud:

Deliver an efficient private and hybrid cloud with Nutanix Calm™, VMware®, Microsoft® or OpenStack® based solutions.

Data Protection:

Full remote replication plus back up VMs and data to your local systems, to a remote site or to the cloud.

Messaging, Collaboration and Unified Communications (UC):

Proven deployments for Microsoft Exchange®, collaboration tools such as SharePoint® and major UC vendors, including Avaya®, Cisco®, and Microsoft.

Development & Test:

Engineering and QA get their own efficient high- performance VMs with access to private copies of production databases and data.

The EPYC Advantage: Security Features - AMD EPYC contains the industry's first dedicated security processor embedded in an x86-architecture server SoC. The processor manages secure boot, memory encryption, and secure virtualization on the SoC itself. Encryption keys never leave the system where they can be exposed to intruders.

Flexible Architectures for AMD EPYC Processor and Nutanix Enterprise Cloud Solutions

Architectures for AMD EPYC and Nutanix Acropolis-based Enterprise Cloud provide options for the performance and compute scalability requirements needed to maximize an investment in hyperconvergence.

The EPYC Advantage: Flexibility - Match core count with application needs without compromising processor features. EPYC's balanced set of resources means more freedom to right-size the server configuration to the workload.

AMD EPYC processors' ability to provide a no compromise single-socket solution helps ensure that organizations only pay for the processing required for the application. These architectures offer a foundation for creating custom configurations that meet unique application demands with the various storage and connectivity options to choose from offered by our leading server OEM partners.

AMD EPYC Advantage for Nutanix Enterprise Cloud Solution

AMD EPYC processors delivers significant advantages for Nutanix Enterprise Cloud Solutions, including:

- Bringing high core counts to Nutanix HCI solutions: the AMD EPYC SoC offers class-leading core counts in an x86-architecture server processor¹ with versatile configurations, large memory capacity, and exceptional I/O providing the flexibility to match workloads needs to optimize performance.
- Outstanding value in a single processor system: the AMD EPYC Soc offers excellent performance in a single socket HCI system with no compromise on I/O, memory and CPU performance, particularly useful for edge computing applications.
- Reduced cooling costs: low-power EPYC SoC technology combined with the no compromise single socket solutions enables less heat generation typically resulting in lower cooling costs
- Consistency in private and public clouds: the AMD EPYC processor offers a consistent x86 code standard for hybrid cloud configurations when using AMD EPYC processor-based Nutanix Enterprise Cloud in data centers that bridge to leading cloud providers that offer AMD EPYC powered cloud instances on-demand.
- Reduce risk when deploying HCI solutions: AMD and Nutanix, collaborate to create fully tested solutions with reference designs and performance information.
- Joint roadmap efforts benefit the customer: AMD and Nutanix plan to work together on an ongoing basis to benefit joint customers, protecting their investment by working to maintain compatibility.

Conclusion

Versatility and agility are among the most important requirements in modern datacenters. The AMD EPYC system-on-a-chip (SoC) enables organizations to deploy systems that meet today's needs while positioning themselves for tomorrow's requirements.

The Nutanix Acropolis hyperconvergence solution with the AMD EPYC processors offers freedom of choice for datacenter customers by providing the ability to rightsize their AMD x86 CPUs – choose the core counts the application needs without sacrificing other processor features like I/O and memory bandwidth.

Together, AMD and Nutanix empower the development of modern data applications that implement solutions to a diverse set of business problems with high-performance processing and cost-effective solutions that are precisely sized for current needs and easily scalable as the business grows.

For More Information

For more information about AMD's EPYC line of processors visit:

<https://www.amd.com/en/products/epyc-server>

For more information about the Nutanix solution visit:

<http://www.nutanix.com>



Footnotes

¹ NAP-166 – Class-leading based on industry-standard pin-based (LGA) X86 processors

DISCLAIMER

The information contained herein is for informational purposes only and is subject to change without notice. While every precaution has been taken in the preparation of this document, it may contain technical inaccuracies, omissions and typographical errors, and AMD is under no obligation to update or otherwise correct this information. Advanced Micro Devices, Inc. makes no representations or warranties with respect to the accuracy or completeness of the contents of this document, and assumes no liability of any kind, including the implied warranties of noninfringement, merchantability or fitness for particular purposes, with respect to the operation or use of AMD hardware, software or other products described herein. No license, including implied or arising by estoppel, to any intellectual property rights is granted by this document. Terms and limitations applicable to the purchase or use of AMD's products are as set forth in a signed agreement between the parties or in AMD's Standard Terms and Conditions of Sale. GD-18

©2019 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, EPYC, and combinations thereof are trademarks of Advanced Micro Devices, Inc. Nutanix is a trademark of Nutanix, Inc. in the United States and other countries. Microsoft is a registered trademark of Microsoft Corporation in the US and other jurisdictions. PCIe is a registered trademark of PCI-SIG Corporation. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.