Hybrid Cloud TCO Just Got Even Better

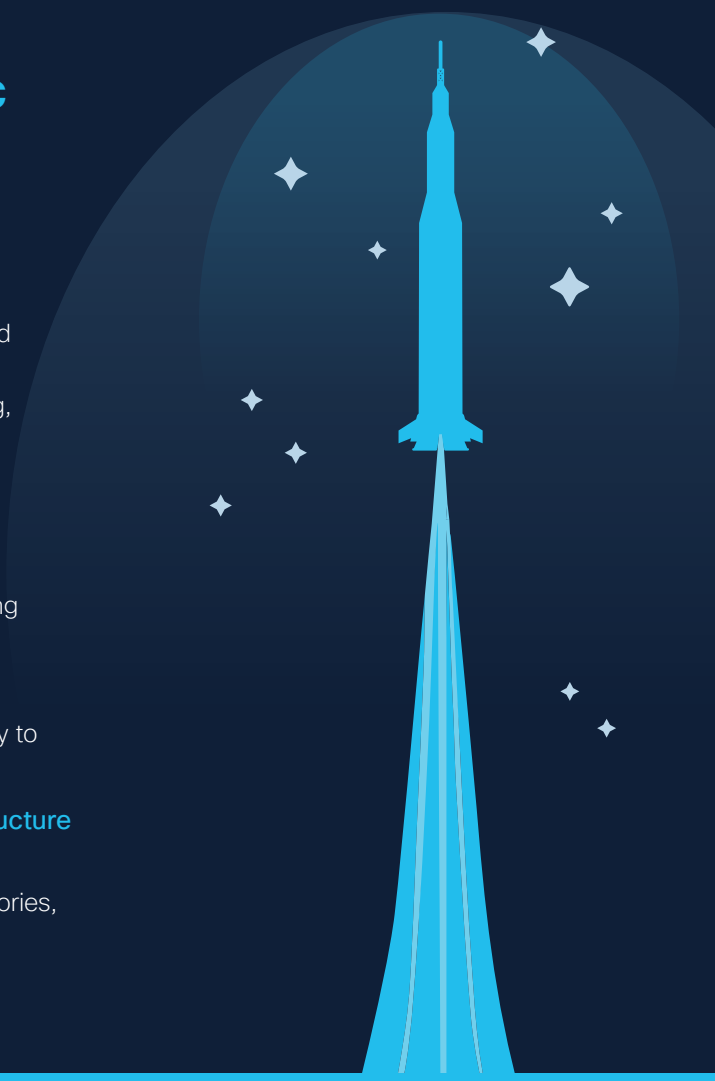
JUMPSTART your deployment with Cisco UCS™ + AMD EPYC™ processors

Address modern workloads and improve business outcomes

Cisco UCS™ Rack Servers with AMD EPYC™ processors help you maximize performance and density while reducing the total cost of ownership. Savings add up from improved scalability, reduced power, cabling and licensing costs, and lower administrative costs. And with embedded AMD security features configured through Cisco Intersight, your compute and I/O-intensive workloads are fast and secure.

1 **BUY 3 GET 1 FREE** on UCS C225, C245 M6 rack mount servers

2 **SAVE 20%** on AMD EPYC processors



UCS C225 M6 Rack Server – 1RU single socket optimized

- Utilizing just one socket can reduce space, and lower power, cooling and licensing costs
- Best for: VDI projects, edge-centric applications, high-frequency trading, space constraints

UCS C245 M6 Rack Server – 2RU dual socket optimized

- The workhorse of the datacenter, with high core counts and memory footprints
- Best for: Data intensive applications, VDI, service providers and streaming content, machine learning/AI, highly consolidation virtualization

Hyperflex™ nodes – based on C225 and C245

- Best for: High storage density and I/O expansion, large memory capacity to support VMs, faster data loading, content delivery

Cisco Intersight™ – management of physical and virtual infrastructure

- AMD security features enabled and configured within Intersight
- Connected TAC: enhanced support experience (predictive failure, advisories, and alerts)
- Manages 3rd party storage such as Netapp, Pure, and Hitachi

Contact your Cisco sales representative to find out how you can get the performance, efficiency, security, and I/O bandwidth needed to propel compute-intensive and I/O-intensive workloads to new heights.

cisco | AMD

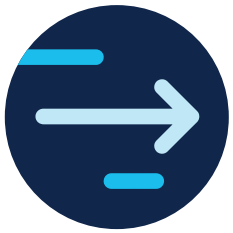
The bridge to possible

Thinking EPYC? Then Choose Cisco UCS

Elevate workloads to new heights with Cisco UCS® servers and AMD EPYC™ processors

Simplify with cloud-operated infrstructure

Supercharge your applications



Streamline your infrastructure

Applications are the heartbeat of businesses and they form the face of your organization.

They live across a complex, distributed, multidomain world that encompasses enterprise data centers; campus, branch, and edge locations; and private and public clouds. You need leading-edge technology to support your virtualized and hybrid-cloud applications, virtual desktop infrastructure, and database management systems—including excellent performance, high compute density, more cores per server, sophisticated security features, better economics, and unified management.

Cisco UCS servers with AMD EPYC processors

Fortunately, you can have it all with Cisco UCS servers powered by AMD EPYC processors. The result of a multiyear collaboration with AMD, Cisco UCS C225 M6 and Cisco UCS C245 M6 rack servers deliver on the needs of modern workloads, and they feature native integration with the Cisco Intersight™ cloud-operations platform, enabling simplified management at global scale.

Benefits

- **Simplify** with all of your infrastructure supported from a single software-as-a-service management interface.
- **Supercharge** your most compute-intensive workloads with AMD EPYC processors.
- **Streamline** your infrastructure by uniting computing, networking,and storage access into a single unified system.

The bridge to possible

A unified family

We offer a wide range of servers to meet specialized needs, including rack, blade, multinode, storage, and AI/ML servers. The AMD EPYC processor-powered servers described below join the family and become part of a single unified system:

Cisco UCS C225 M6 Rack Server is a single-socket-optimized server that delivers its full complement of disk and I/O capacity regardless of whether one or two AMD EPYC processors are configured, helping to save on capital and operational costs.

Cisco UCS C245 M6 Rack Server is a 2-socket, 2RU server with vast storage and I/O expansion capability.

Cisco UCS C4200 M5 Rack Server Chassis holds four 2-socket nodes in only 2 rack units to meet high-density computing needs.

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Why Cisco UCS with AMD EPYC processors

If you are attracted to the features and performance of AMD EPYC processors, then choose Cisco UCS as the platform to propel your workloads:

- **Simplify with cloud-operated infrastructure:** Deliver intelligent visualization, optimization, and orchestration to all of your applications and infrastructure with cloud-based Cisco Intersight management of your Cisco UCS servers with AMD EPYC processors. Respond at the speed and scale of your business through automated configuration and deployment.
- **Supercharge your applications:** Your most compute-intensive workloads come to life with Cisco UCS servers with AMD EPYC processors. Record-setting processors drive ultimate performance for everything from enterprise applications to hybrid-cloud infrastructure. These systems pack in up to 128 cores per server. Higher core density and massive I/O capability enables you to better support virtualized and cloud environments with lower capital and operating costs.
- **Streamline your infrastructure:** Streamline your infrastructure by incorporating all of it—computing, networking, and storage access—as part of a single unified system powered by AMD EPYC processors and managed by Cisco Intersight. All of your Cisco® servers, regardless of form factor or processor type, integrate into a single point of management. Processor features such as AMD Secure Memory Encryption (SME) and AMD Secure Encrypted Virtualization (SEV) can be set through policies that you define in Intersight and deploy consistently and accurately on a global scale.

EPYC advantages

When you choose Cisco UCS servers powered by AMD EPYC processors, you gain the benefits these processors contribute, including:

- **Compute density** with up to 64 cores per processor, propelling performance while helping to reduce space, power, and cooling costs
- **High performance** that derives from both AMD EPYC processors and the unique architecture of Cisco Unified Computing System™
- **Security features** that help secure virtualized environments with virtual machines encrypted in main memory that only the CPU knows
- **High-frequency options** when it is important to optimize per-core performance against the cost of per-core software licenses
- **Large cache sizes** for computer-aided engineering environments—AMD 3D V-Cache™ technology available on some CPU models propels workloads with 768 MB of Level 3 cache per CPU.

Better together

When you choose Cisco UCS servers powered by AMD EPYC processors, you unleash the value of EPYC processors with the benefits of a single unified system managed from the cloud.

The bridge to possible

Gain Enterprise-Grade VDI Performance and Density

With Cisco UCS C245 M6 Rack Servers with AMD EPYC processors

Imagine having the density and performance you need for virtual desktop infrastructure in your data center. We make this a reality.

The way people work has changed dramatically over the past two years. Intermittent work-at-home orders have many business organizations turning to the cloud for solutions that once seemed temporary. Some offices are opening back up; even so, 75 percent of staff now want to keep working from remotely or in a flexible work environment. This means you need to rethink your virtual desktop and application deployments and costs. For example, can hosting your virtual desktop infrastructure (VDI) on premises help you deliver a responsive and consistent user experience with optimal total cost of ownership (TCO)? Cisco UCS® C245 M6 Rack Server powered by 3rd Gen AMD EPYC™ processors, make this answer a resounding 'yes!'

Cisco UCS with AMD EPYC processors

Key benefits

- Simplify desktop provisioning, scaling, and management
- Increase in-office and remote employee productivity and collaboration
- Improve security by centralizing sensitive data
- Reduce IT operational and end-user support costs
- Support all desktop and workstation applications

Current and ongoing challenges

Many companies are moving to a desktop-as-a-service (DaaS) infrastructure to support remote work using a combination of on-premises and cloud-hosted infrastructure for staff convenience. These deployments face four primary challenges:

- Difficult and costly deployment and management
- Poor user experience and performance with teleconferencing applications
- Increased desktop session density and limited scalability
- Lack of data security assurances

Meet your challenges

The Cisco UCS C245 M6 Rack Servers can help you adopt a DaaS infrastructure that meets all four challenges.

- **Simplify desktop management, provisioning and scaling**—with our cloud-based Cisco Intersight™ platform
- **Improve employee collaboration**—with powerful 3rd Gen AMD EPYC processors
- **Increased desktop density and scalability**—with support for over 400 knowledge worker users on a single server
- **Improve security**—by keeping sensitive business data off remote desktops, laptops, tablets or mobile phones and enabling AMD Security Guard features, including secure encrypted virtualization (SEV)
- **GPU support**—if your organization runs complex graphical applications now or in the future

Cisco UCS C245 M6

The Cisco UCS C245 M6 has all the value-added capabilities you have come to expect from Cisco UCS servers including both high performance and up to 64 cores per ADM EPYC processor.

VDI users fall into three general use cases that help with sizing and performance calculations:

- **Task users**, such as call center workers
- **Knowledge workers**, such as professional or office workers
- **Power users**, such as architects, engineers, and animators who use very intensive graphical applications that normally require a GPU

We tested the Cisco UCS C245 M6 using the Login VSI knowledge worker profile to simulate virtual desktop users running Microsoft Windows 10 and Citrix Virtual Apps and Desktops. These workloads represent the most commonly used personas and delivery mechanisms for knowledge workers.

We also ran Login VSI in test mode on Microsoft Windows Server 2019 Remote Desktop Session Host (RDSH) with Citrix Virtual Apps and Desktops to determine the maximum supported number of task worker sessions.

The results of both tests demonstrate the power, performance, and value of Cisco UCS servers powered by 3rd Gen AMD EPYC processors.

Cisco UCS C245 M6 Rack Server

The world-record-setting Cisco UCS C245 M6 used in all of the measurements discussed in this paper is well suited for a wide range of storage- and I/O-intensive applications, such as VDI, collaboration, virtualization, and server consolidation.

- Up to two 3rd Gen AMD EPYC processors with up to 64 cores per socket
- 32 DIMM slots for up to 8 TB of memory
- Up to 128 I/O lanes for fast access to data
- Up to 24 front-facing small-form-factor (SFF) SAS or SATA drives, including up to 4 NVMe drives
- Four optional rear-facing NVMe drives
- Up to 8 PCIe Gen 4 slots
- Support for Cisco UCS 1400 Series Virtual Interface Cards and OCP 3.0 network cards
- RAID controller and GPU options
- Internal dual M.2 drive options

Excellent virtual desktop performance

400 knowledge workers

Testing shows that the Cisco UCS C245 M6 server powered by one or two 64-core 3rd Gen AMD EPYC processors can easily support more than 400 simultaneous knowledge worker sessions running Microsoft Windows 10 virtual desktops. These tests did not saturate the CPU; available memory was the limiting factor.

1000 RDSH sessions

Testing also shows that the Cisco UCS C245 M6 server powered by one or two 64-core 3rd Gen AMD EPYC processors can support nearly 1000 task workers accessing Microsoft Windows Server 2019 RDSH with Cirtrix Virtual Apps and Desktops.

Powered by AMD EPYC

3rd Gen EPYC processors are highly recommended for VDI workloads including graphics-intensive workloads that can benefit from additional CPU cores and GPUs.

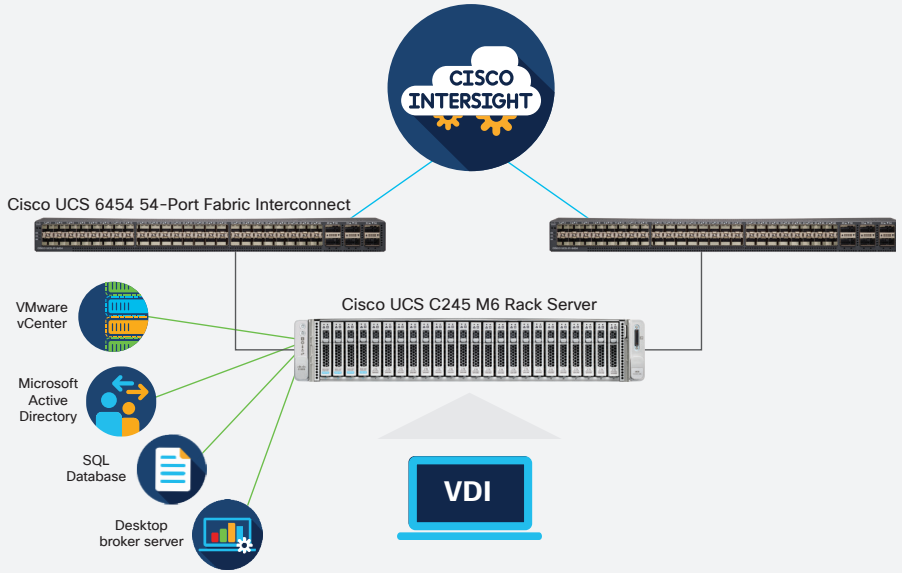

Figure 1. Cisco UCS C245 M6 Rack Server logical VDI configuration used for this test

3rd Gen AMD EPYC processors

These world-record setting 3rd Gen AMD EPYC processors are built on the new "Zen 3" core combined with AMD Infinity Architecture. AMD EPYC processors support up to 64 cores, up to 128 lanes of PCIe Gen 4 I/O, and an integrated security processor on the chip. AMD EPYC 7003 CPUs provide up to 32 MB of L3 cache per core, 4-6-8 memory channel interleaving designed for better economics and performance in multiple DIMM configurations, plus synchronized clocks between fabric and memory to speed access.

Simplify management and reduce costs

You can manage Cisco UCS C245 M6 Rack Servers either as standalone systems or with the Cisco Intersight platform. Intersight is a software as-a-service (SaaS) infrastructure lifecycle management solution that delivers simplified configuration, deployment, visibility, maintenance, and support. The SaaS model means you always use the most up-to-date management software with no need to manage managers or worry about incompatible versions. Cisco Intersight gives you all the benefits of SaaS delivery and the full lifecycle management over Intersight-connected distributed servers and third-party

Learn more

- Cisco Intersight platform
- Cisco UCS C245 M6
- Cisco UCS C245 M6 Characterization for VDI

storage systems across data centers, remote sites, branch offices, and edge environments (Figure 2). This can help move you closer to a DaaS model for efficient desktop services.

The modular Cisco Intersight platform Lets you can adopt the services that best meet your requirements and significantly simplifies IT operations by bridging applications with infrastructure. The full visibility and ability to manage everything from bare-metal servers and hypervisors to serverless applications reducing both costs and risk. The included open REST API provides a common interface that natively integrates with third-party platforms and tools.

Performance that delivers

Cisco UCS C245 M6 powered by 3rd Gen AMD EPYC processors have all the power you need to run your VDI or RDSH workload with maximum efficiency and compute density—the foundations of a successful on-prem DaaS deployment. Add in Cisco Intersight platform and you are well on your way!

Act now

Contact your Cisco sales representative today to discover how Cisco UCS C245 M6 Servers and the Intersight platform can help you make DaaS a reality.

Figure 2. Cisco Intersight platform delivers complete lifecycle management.

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