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Enable Your Hybrid Work Force with Virtual Desktops

A flexible workforce supported in the cloud can be costly

The surprising cost of choosing the cloud for virtual desktop infrastructure (VDI) has prompted a reassessment of when to use cloud-based services versus on-premises infrastructure. The evaluation of VDI has expanded to include satisfying the needs of the future, including supporting AI initiatives and bringing more of the data center on premises.

On-premises infrastructure makes sense from an economic point of view. Additionally, many IT organizations have found that sensitive business applications and mission-critical data are best left in the data center. While the initial move to the cloud made good tactical sense, moving services such as VDI and AI on premises is a better long-term strategy.

## Move infrastructure on site with Cisco UCS and AMD EPYC processors

If you need to support up to hundreds of remote workers that are part of a regional office or departmental organization, you'll be delighted to learn how easy it is to return your virtual desktop infrastructure to your own data centers.

With Cisco UCS® C245 M8 and Cisco UCS C225 M8 rack servers powered by AMD EPYC™ processors, you can support hundreds of

workers per system with less than a handful of servers. Our M8 servers based on AMD EPYC processors are our first multigenerational systems. You can populate them with AMD EPYC 9004 Series processors with up to 128 cores per CPU, or the EPYC 9005 Series with up to 192 cores per CPU. Each generation of AMD EPYC processors claimed the highest core count in the industry when announced.

Highlights

- Move your virtual desktop infrastructure on premises for lower cost and excellent performance.

- Our Cisco UCS C225 M8 and C245 M8 rack servers support two generations of AMD EPYC processors for up to 192 cores per CPU.

- You can start small and scale as needed with automated role- and policy-based management that enables lifecycle management consistent with your configuration preferences.

- Choose between the leading hypervisors and desktop brokers for a solution that fits your needs.

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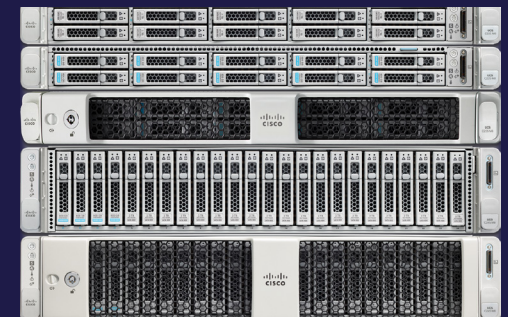
4th and 5th Gen AMD EPYC processors
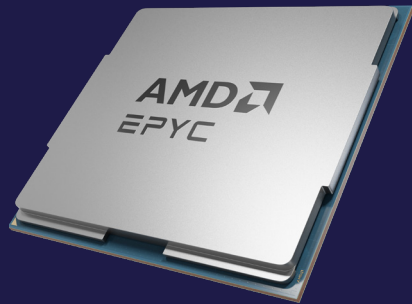
When you choose AMD EPYC processors to power your virtual desktop infrastructure, you gain benefits including:

· **Compute density**, with up to 128 cores (EPYC 9004 Series) or 192 cores (EPYC 9005 Series) per processor, propelling performance while helping to reduce space, power, and cooling costs

· **AMD Infinity Guard** features that promote security in virtualized environments with virtual machines encrypted with keys only the CPU knows

· **High-frequency options** when it's important to optimize per-core performance against the cost of per-core software licenses

· **Large cache sizes** (up to 768 MB L3 cache in the EPYC 9004 Series) to help propel power users with computer-aided engineering

Exceed expectations for all of your users

Your staff cares most about having a smooth experience when using their virtual desktops. Our VDI experience tells us that using Cisco UCS rack servers with AMD EPYC processors is an easy solution with low risk, regardless of whether you support task, knowledge, or power users.

One of the benefits of using rack servers for small- and medium-sized VDI deployments is that you can start small and grow as your needs grow, with the incremental cost of rack servers low compared to the cost of modular systems designed to tackle larger workloads.

Support hundreds of knowledge workers

Although performance testing of these servers is not yet complete, our analysis of M6 servers with prior-generation 64-core AMD EPYC processors demonstrated support for 400 users per 2-socket server running the Login VSI knowledge worker profile to simulate professional or office workers. Extrapolating these results to current CPUs with higher core counts and higher performance per

core suggests that your sizing choices will be influenced more by needing to have multiple servers for availability than by the number of users each server can support. In other words, you may need more servers for redundancy than you do for capacity.

Support task workers anywhere

Task workers, including call-center agents, can often be supported by shared virtual machine instances using Citrix Virtual Apps and Desktops or Microsoft Windows 11 multisession environments. Multiple user sessions can run in a single virtual machine with a familiar experience. With the power of AMD EPYC processors behind it, you can likely support several hundred such users per server.

Deliver performance to power users

For power users, such as architects, engineers, and animators who use intensive graphical applications normally supported with a GPU, you can choose from our supported NVIDIA accelerators to support even these most challenging of virtual desktop workloads.

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Cisco UCS C245 M8 Rack Server

The Cisco UCS C245 M8 Rack Server claimed 20 world-performance records at its product launch. It is well suited to virtual desktop environments that need expansion space for extra GPU acceleration

- Up to two AMD EPYC 9004 Series processors with up to 128 cores per socket; or up to two AMD EPYC 9005 Series processors with up to 192 cores per socket

- 24 DIMM slots for up to 6 TB of memory

- Up to 160 I/O lanes for fast access to data and networks

- Up to 24 front-facing small-form-factor (SFF) SAS, SATA, or NVMe drives with an optional RAID controller

- Four optional rear-facing NVMe drives

- Flexible PCIe Gen 5 slots with up to 3 full-height, full-width GPU accelerators

- Support for Cisco UCS Virtual Interface Cards 15000 Series and OCP 3.0 network cards

- Internal dual M.2 drive options

Simplify management and reduce costs

One of the unique benefits of using Cisco UCS servers for your virtual desktop infrastructure is that we are the only vendor offering a single, cloud-connected management platform that gives you control over all of your virtual desktop and other Cisco™ infrastructure, whether you are a small organization with a single location or a global enterprise with infrastructure deployed across the globe. The Cisco Intersight® IT-operations platform lets you configure, deploy, manage, and monitor your infrastructure.

With Cisco UCS rack servers, you can choose to integrate your set of virtual desktop servers as a single system with Cisco UCS fabric
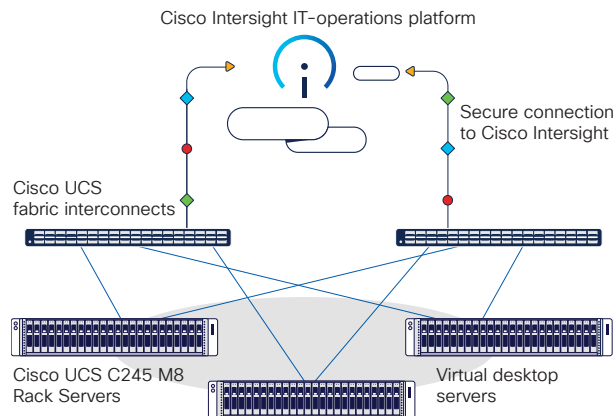

Figure 1. Managing with Cisco Intersight through Cisco UCS fabric interconnects is often the optimal approach for data-center deployments.
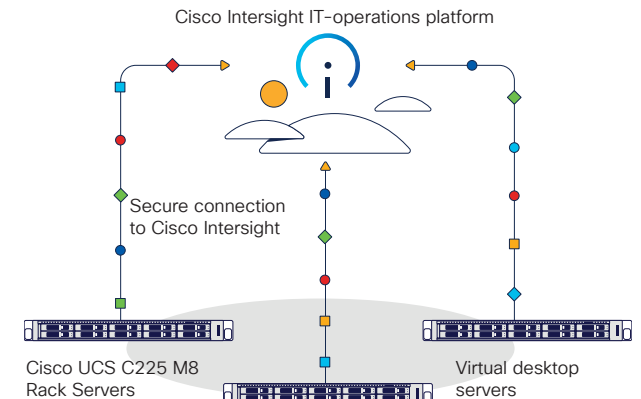

Figure 2. Managing with Cisco Intersight directly from the VDI servers is ideal for remote and edge deployments.

interconnects, or deploy them as individual systems networked with third-party switches. Integrating through Cisco UCS fabric interconnects is often the optimal approach for central data-center deployments, while integrating directly from the VDI servers is ideal for remote and edge deployments. Each approach enables Cisco Intersight to onboard your servers with policies and templates that eliminate manual errors, drive consistency, and enforce security and compliance. If you plan to grow your infrastructure, you can purchase CPUs with more cores than you need, and enable them through Cisco Intersight as the need arises, reducing the number of licenses to purchase until you need them.

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Cisco UCS C225 M8 Rack Server

AMD EPYC processors are so powerful that your sizing calculations may suggest using more servers with fewer cores per server to strike a balance between capacity and availability. The Cisco UCS C225 M8 is a single-socket rack server in a compact 1-RU form factor that can accommodate a single GPU for accelerating virtual desktops.

- A single AMD EPYC 9004 Series processor with up to 128 cores; or one AMD EPYC 9005 Series processor with up to 192 cores per socket

- 12 DIMM slots for up to 3 TB of memory

- Up to 128 I/O lanes for fast access to data and networks

- Flexible PCIe Gen 5 slot options with up to two full-height GPU accelerators

- Up to 10 front-facing SFF SAS, SATA, or NVMe drives with optional RAID controller

- Support for Cisco UCS Virtual Interface Cards 15000 Series and OCP 3.0 network interfaces

- Internal dual M.2 drive options

Intersight provides continuous guidance and support through its online connection to Cisco Technical Assistance Center (Cisco TAC) that provides:

- **Current security advisories** customized and pertinent to your specific environment
- **Hardware, software, and firmware stack** validated with our hardware and software compatibility lists

- **Coordination with Cisco TAC teams** for fast issue resolution and comprehensive solution support
- **Proactive RMAs** to automatically create authorized service requests, reducing the amount of time from failure to replacement

A secure management connection keeps your infrastructure safe, and a global dashboard lets you track inventory and status for all of your devices.

Deploy confidently using Cisco Validated Designs

When you choose Cisco, you have a choice of using hypervisors including Citrix, Microsoft Windows Server Hyper-V, Red Hat OpenShift, VMware vSphere, along with VDI brokers including Citrix Virtual Apps and Desktops or Horizon.

Regardless of your choice, we work diligently to develop design guidelines and Cisco Validated Designs, giving a cookbook-like guide to deployment that gets your solutions up and

running quickly and with high confidence. When you take the guesswork out of solution deployment, you help reduce costs and the risk that a configuration error could cause downtime.

We have invested in VDI solutions for more than a decade, many with our enterprise shared-storage partners. These solutions, are deployed as FlexPod with NetApp storage, FlashStack with Pure Storage, or Cisco and Hitachi Adaptive Solutions.

Accelerate performance with NVIDIA GPUs

For workloads that are graphics-intensive, power users may need the extra boost of GPU acceleration to ensure a smooth user experience. The Cisco UCS C225 M8 can

accommodate up to three NVIDIA L4 GPUs, and the Cisco UCS C245 M8 can support up to three NVIDIA H100-80, L40S, L40, L4, or A16 GPUs.

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Why Cisco for VDI?

There are many reasons why we believe our solutions are the right fit for your VDI deployment:

- We are a Tier-1 server vendor with solutions that reduce complexity and accelerate performance.

- Cisco Intersight management enables you to deploy small and scale easily, and manage your VDI cluster wherever it is deployed.

- Cisco Validated Designs can speed deployment and reduce risk.

- You can choose between the major hypervisors and virtual desktop brokers.

- Compatible NVIDIA GPU options are designed to meet the graphical needs of performance-sensitive VDI deployments.

- Cisco is the leader in data-center networking, so you can use the technology standard already in use in your data center or branch or remote locations.

Achieve sustainability goals with ease

When you deploy infrastructure on premises, you can help meet your organization's sustainability goals. The Cisco UCS C245 M8 Rack Server is U.S. ENERGY STAR certified, in part due to the efficiency of AMD EPYC processors. Each generation powers the most energy-efficient servers currently available. For example, the 128-core AMD EPYC 9754 CPU is #1 in key industry-recognized energy efficiency benchmarks.[SP5-172A]

Act now

Contact your Cisco sales representative or your Cisco channel partner today to discover how Cisco UCS servers and the Intersight platform can help you move your virtual desktop infrastructure on premises and deliver high performance with a lower a cloud-services bill.

Learn more

Visit cisco.com/go/ucs-amd