



# Supercharge Microsoft SQL Server 2022

Cisco UCS® C225 M8 and C245 M8 rack servers with AMD EPYC™ processors can supercharge Microsoft SQL Server 2022, no matter the database size.

AMD EPYC processors deliver outstanding performance for databases, including world-[record-setting performance on the TPC-H benchmark](#) running Microsoft SQL Server 2022—proof that AMD is ready to power your database management software.

## The power of Cisco and AMD

Cisco UCS C225 M8 and C245 M8 servers based on AMD EPYC processors support two generations of processors. The C225 M8 uses a single processor with up to 192 cores. The C245 M8 supports up to two CPUs with up to 384 cores per server. Most important for database processing, they deliver I/O performance with 128 PCIe 5.0 lanes, and smart data cache injection, all designed to speed I/O and drive fast time to results.

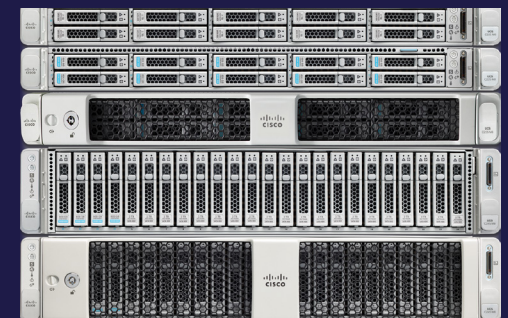
Our single-socket Cisco UCS C225 M8 can help conserve license costs by using a single

high-frequency CPU with from 8 to 64 cores and up to 256 MB L3 cache per processor. All these features add up to excellent performance at an affordable price that enables your business to adopt new capabilities, quickly.

With Cisco UCS C245 M8 and Cisco UCS C225 M8 rack servers powered by AMD EPYC processors, you can support hundreds of thousands of transactions per hour, with your complete infrastructure requiring no more than two servers (to eliminate single points of failure). Our M8 servers based on AMD EPYC processors

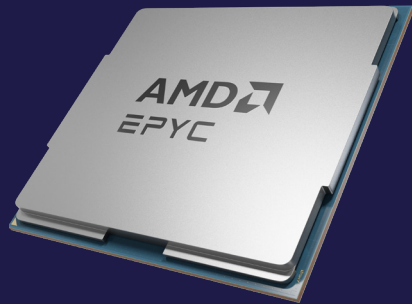
## Highlights

- Achieve high performance for your Microsoft SQL Server 2022 infrastructure.
- 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 desired with powerful lifecycle management to configure servers consistent with your policies.
- Choose between the leading hypervisors to consolidate your entire Microsoft SQL Server 2022 installation on just two powerful servers.





## 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 192 cores per processor, delivering leading performance while contributing to space, power, and cooling reductions
- **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

are our first multigenerational systems. You can populate them with either the 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 has claimed the highest core count

in the industry when released. And, if you don't need that many cores today and don't want to have the cost of software licenses for cores you don't yet need, simply turn off the cores through the Cisco Intersight® IT-operations platform until you are ready for them.

## Exceed expectations for all of your users

Your staff cares most about having a smooth, timely experience when accessing data. Our Microsoft SQL Server experience tells us that

using Cisco UCS rack servers with with AMD EPYC processors is a high-performance solution that is easy to install with low risk.

## Small- and medium-size businesses

One of the benefits of using rack servers for small- and medium-sized SQL Server deployments is that you can consolidate your entire business on just two of these powerful

rack servers. By running SQL Server on your favorite hypervisor, you can share the processors to simplify your infrastructure while maintaining excellent performance.

## Simplify management and reduce costs

One of the unique benefits of using Cisco UCS servers for your SQL Server infrastructure is that we are the only vendor offering a single, cloud-connected management platform that gives you control over all of your Cisco® infrastructure, whether you are a small organization with a single location or a global enterprise with infrastructure deployed across the globe. Cisco

Intersight helps you configure, deploy, manage, and monitor your infrastructure.

With Cisco UCS rack servers, you can choose to integrate your SQL Server infrastructure as a single system with Cisco UCS fabric interconnects, or deploy them as individual systems networked with third-party switches. Integrating through Cisco UCS fabric interconnects is often the optimal approach

## Cisco UCS C245 M8 Rack Server

The Cisco UCS C245 M8 Rack Server has claimed 20 world-performance records at its product launch. It is well suited to Microsoft SQL Server 2022 environments that need two CPUs or large amounts of local disk storage.



- 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 optional RAID controller
- Four optional rear-facing NVMe drives
- Flexible PCIe Gen 5 slots
- Support for Cisco UCS Series 15000 Series Interface Cards and OCP 3.0 network cards
- Internal dual M.2 drive options

for central data-center deployments, while integrating directly from each server 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.

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

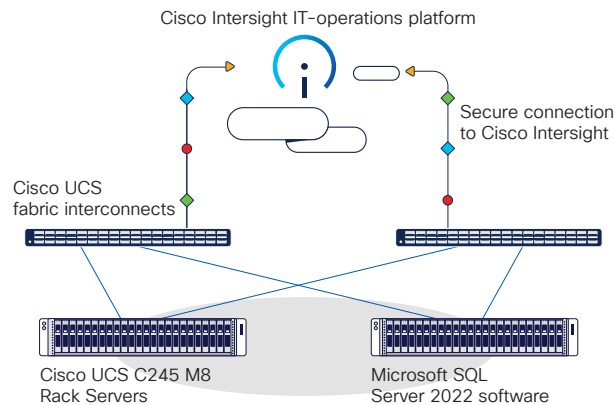


Figure 1. Managing with Cisco Intersight through Cisco UCS fabric interconnects is often the optimal approach for data-center deployments.

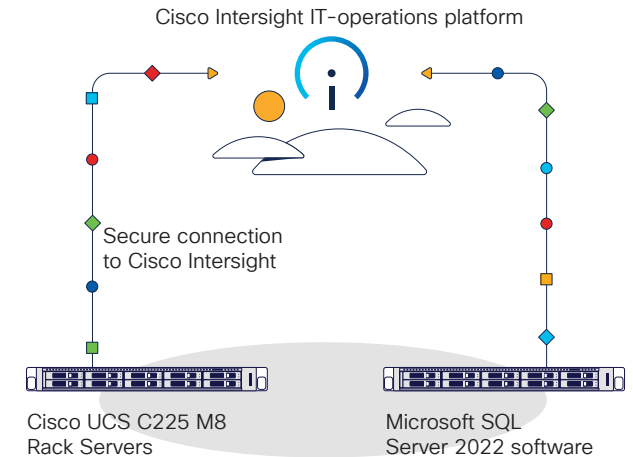


Figure 2. Managing with Cisco Intersight directly from the SQL servers is ideal for small and medium businesses, and remote and edge deployments.

- **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.



## Cisco UCS 225 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.



- A single AMD EPYC 9004 Series processor with up to 128 cores; 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
- Up to 10 front-facing SFF SAS, SATA, or NVMe drives with an optional RAID controller
- Support for Cisco UCS Virtual Interface Cards 15000 Series and OCP 3.0 network interfaces
- Internal dual M.2 drive options

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## 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, and VMware vSphere.

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 Microsoft SQL Server solutions for more than a decade, creating solutions with many with our enterprise shared-storage partners. These solutions include FlexPod with NetApp storage, FlashStack with Pure Storage, or Cisco and Hitachi Adaptive Solutions.

## Meet sustainability objectives

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 today to discover how Cisco UCS servers and the Intersight platform can help you migrate to

Microsoft SQL Server 2022 on these high-performance and energy-efficient servers.

## Learn more

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