

Cisco UCS: The Optimal Infrastructure for Microsoft SQL Server 2014 Workloads



With the proliferation of database and virtualization sprawl and the growing requirement for business insight that has increased I/O performance demand and complexity in the datacenter, enterprises are asking for a simplified approach. Cisco UCS offers industry-leading performance along with the flexible infrastructure you need to deploy, manage, move to the cloud and scale your bare metal or virtual SQL Server workloads.

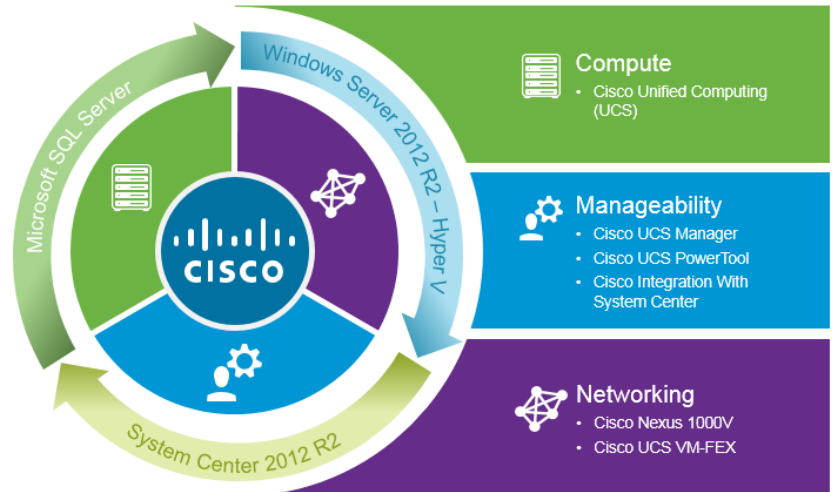
Meet the Cisco Unified Computing System (UCS)

Cisco Unified Computing System (UCS) is an intelligent fabric-based computing infrastructure that simplifies operations and speeds application deployment in physical and cloud computing environments. The industry's first unified data center platform, Cisco UCS combines industry-standard x86 architecture blade and rack servers, networking, and enterprise-class management into a single system.

The system's configuration is entirely programmable using unified, model-based management to simplify and accelerate deployment of enterprise applications, bare-metal or virtual, such as SQL Server 2014. A unified I/O infrastructure uses a high-bandwidth, low-latency unified fabric to support networking, storage I/O, and management traffic.

UCS unified fabric increases performance, security, and manageability by extending fabric directly to servers and virtual machines. UCS servers are 100% stateless, delivering a highly flexible server environment that allows for dynamic utilization of server hardware.

Cisco and Microsoft have worked to create Cisco Validated Designs built on Microsoft reference architectures. All solutions and reference architectures are field tested and validated with a primary objective to help simplify implementation and the deployment of Microsoft SQL Server workloads on Cisco UCS.



Simplify and Standardize SQL Server Deployments

Reduce the complexity from your SQL Server deployments with UCS Service Profiles. UCS Service Profiles are XML files that contain the metadata for the server. Because UCS servers are stateless, every UCS server serving a workload must be associated with a UCS Service Profile. When a Service Profile is applied to a blade, it takes just minutes to turn on and bring up in the environment, and make available to end users.

Enforce Standardization in Your Organization

Configure Service Profile Templates specifically for your SQL Servers and foster consistent standardization of your SQL Server implementations. Once templates are created, Service Profiles can be created and associated to a server in seconds. Every time you deploy a SQL Server, you create the service profile from its template and that server will be deployed per the standards set forth by your organization, with the same firmware revisions and configurations.



Quickly and Easily Deploy SQL Servers

Service Profiles can provide considerable relief for SQL Server administrators bringing failed servers back into production. Just disassociate the Service Profile from the downed server, associate it with another server and the workload will be back up and running in minutes. This can even be done over multiple UCS domains using UCS central and other network extensible technologies from Cisco. Additionally, easily customize your operations with automated PowerShell scripts. Finally, with UCS unified fabric with automatic failover capability and up to 80Gb bandwidth, UCS provides the perfect opportunity for deploying mission critical SQL Server 2014 deployments.

Proactively and Efficiently Monitor, Manage, and Maintain Your SQL Server Implementations

Together, Cisco and Microsoft provide an integrated management experience for both bare metal and virtual workloads. Cisco UCS Manager provides flexible, standards-based management tools and interfaces through a comprehensive, open XML API that works with and extends the Microsoft System Center 2012 R2 suite of tools.

Free Cisco integration and management packs along with Microsoft tools make it easy to:

- Proactively manage and monitor your Cisco UCS Hardware with Microsoft System Center 2012 R2 Operations Manager
- Automate, standardize and extend Cisco UCS deployment and management with Microsoft System Center 2012 R2 Orchestrator
- View and manage Cisco UCS infrastructure directly from SCVMM with the UI Extension Add-in for Microsoft System Center 2012 R2 Virtual Machine Manager

Automate Your Data Center With Cisco UCS and Microsoft PowerShell Integration

PowerShell's use across Microsoft operating systems and applications makes Cisco's UCS PowerTool incredibly valuable. Reduce your administrative and operational overhead while decreasing your automation time with UCS PowerTool. It's an easy to use, extensive PowerShell library of purpose-built cmdlets to automate provisioning and configuration tasks for Cisco UCS and Nexus 1000V.



Control Your Server Consolidation and Scale Your Virtual Deployments

Cisco UCS provides large amounts of compute and memory per standard rack unit and it does not stop there. On other blade systems, companies implementing large, virtualized SQL Server workloads often find their systems do not have enough I/O to service the workloads and must resort to adding more blades and/or ports to their environment. This risk is reduced considerably on Cisco UCS due to its implementation of converged adapters. The Cisco UCS Virtual Interface Card (VIC) 1280, 1240 and 1225 adapter cards have the ability to expose up to 256 NIC and/or HBA devices to a host and can provide between 20 Gb (1225) to 80Gb (1280/1240) of network throughput. Cisco UCS VM-FEX technology coupled with Cisco UCS VIC ensures predictable and consistent network and storage performance for virtualized SQL server deployments on Windows 2012. Network and storage bandwidth is paramount for successfully consolidating SQL Server workloads and these highly innovative adapter cards from Cisco make UCS a very attractive server platform for virtualized SQL Server workloads.

Support for Scale-Out or Scale-Up Virtual Deployments

Cisco UCS allows enterprises to take either a Scale-Up or Scale-Out approach. With the Scale-Up approach there are multiple databases or SQL Server instances per virtual machine. Fewer virtual

machines overall can lead to a potential reduction in SQL Server licensing costs as well as moderate workload management benefits. The Scale-Out approach has a single database per virtual machine. This means more virtual machines, but also better isolation, performance, load balancing, and workload management. Users also experience easier security and change management as well as a potential increase in management overhead. With the Cisco UCS architecture you can easily upgrade to a 4 socket server as the SQL Server workload grows. Easily upgrade to the new server by simply migrating the service profile to a newer blade. This reduces the complexity involved in setting up infrastructure when demand grows, while implementing Scale-Out or Scale-Up requirements.



Transition your SQL Server platform to the cloud

With the capabilities inherent in UCS and the new capabilities Microsoft has released in Windows, including Windows Server 2012 R2 and System Center 2012 R2, you can now graduate your SQL Server platform to the cloud inexpensively and efficiently. Cisco and Microsoft have worked together with storage partners NetApp and EMC to create validated designs with proven reference architectures for availability and reliability in your data center.



Get Started Today

Get Started Today

This is your opportunity to take advantage of an ultimate unified computing and server infrastructure for your Microsoft applications. Cisco Unified Computing System gives you the flexible infrastructure you need to deploy, manage, and scale your bare metal or virtual SQL Server workloads.



Why Cisco for Microsoft?

We recognize that the intersection of computing, networking, virtualization, and software is central to a new era of innovation. The Microsoft and Cisco alliance extends the value of the Cisco Unified Data Center, including low-latency unified fabric to support networking, storage I/O, and Cisco UCS and model-based management to simplify and accelerate deployment of enterprise applications, whether bare-metal or virtual. Together, Microsoft and Cisco offer service and support to accelerate time-to-value and ROI. Our partner ecosystem, including value-added resellers and global systems integrators, benefits Microsoft partners and Cisco partners and customers alike.

Learn More

For more information, contact your Cisco or Microsoft representative, or visit:

www.cisco.com/go/microsoft

www.cisco.com/servers

www.cisco.com/go/datacenter

<https://communities.cisco.com>



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)