

Cisco Data Center Solutions for Microsoft Applications: Optimally Manage Applications in the Data Center

What You Will Learn

Companies that manage data centers find themselves balancing multiple challenges, including server and virtual machine sprawl, demands for power and cooling, policy coherency, security, and proliferation of management tools.

The intersection of computing, networking, storage, and software is the center of a new era of innovation. The alliance between Microsoft and Cisco extends the value of the Cisco Unified Computing System™ server platform and Cisco® Unified Network Services by integrating the operating system, application, and management stacks into manageable and scalable solutions.

Companies running Microsoft applications, such as Microsoft Exchange Server and Microsoft SharePoint Server, can benefit from the Cisco Unified Computing System and Cisco Unified Network Services, which provide cohesive computing, networking, storage access, and virtualization.

Challenges

Data centers remain a prime opportunity for cost control and efficiency gains, but organizations face these data center–related challenges:

- The need to piece together and integrate complex hardware, network, virtual machine, and IT management software configurations
- Costly, inefficient systems integration
- Proliferation of isolated virtual resources
- Optimal consolidation and configuration of servers
- Time-to-application-workload deployment and deployment and migration risk
- Safeguarding of critical data

Business Benefits

By running Microsoft applications with the Cisco Unified Computing System and Cisco Unified Network Services data center solutions, organizations can:

- Speed deployment and time-to-value by taking advantage of a range of reference architectures prebuilt by Cisco and backed by Cisco Services
- Reduce datacenter capital and operating costs while increasing IT agility by using a single, unified system that eases IT management and requires less hardware and power than competitors' offerings
- Increase IT staff productivity and business agility through just-in-time provisioning and mobility support for both virtualized and nonvirtualized environments

- Reduce total cost of ownership (TCO) at the platform, site, and organizational levels
- Support today's memory-intensive, 64-bit applications; Cisco Extended Memory Technology enables two-socket servers running the Cisco Unified Computing System to support up to 384 GB of RAM—more than twice the memory that traditional servers support—through our 8-GB dual in-line memory modules (DIMMs)
- Support growth with capability to scale to up to 320 discrete servers and thousands of virtual machines
- Ease support now and in the future by using a solution that incorporates open industry standards supported by a vast partner ecosystem and Cisco Services

Solution

Cisco data center solutions, including the Cisco Unified Computing System and Cisco Unified Network Services, help streamline and centralize management, including deployment, network optimization, and application services, for physical and virtual environments in contemporary data centers. Cisco has developed tightly integrated solutions for Microsoft workloads that include Microsoft Windows Server 2008 R2 with Hyper-V and Microsoft System Center as the foundation layer for the Cisco Unified Computing System. Microsoft applications, such as Microsoft Exchange Server, SQL Server, and SharePoint Server, which are already optimized to run on the Microsoft solutions-based platform, benefit from the Cisco Unified Computing System and innovative Cisco Unified Network Services, too. These data center solutions from Cisco combine computing, networking, storage access, and virtualization with integrated application delivery, network security, and network analysis for virtualized data centers and cloud computing environments. Cisco's participation in the Hyper-V Cloud Fast Track program from Microsoft supports simpler deployments of private cloud environments with Microsoft Hyper-V by using Microsoft prevalidated configuration and technologies from Cisco.

Cisco UCS Manager helps database administrators and server administrators simplify management tasks, especially for role-based access control (RBAC), virtualization, and high availability. Cisco data center solutions on the Microsoft platform also feature integrated Microsoft System Center tools to help streamline and centralize management for physical and virtual environments, including deployment, network optimization, and application services.

As companies face the critical problem of growing their data centers when they are already reaching maximum capacity for space, cabling, power, cooling, and management, many are considering consolidating and virtualizing application servers into the data center. Often topping the list are mission-critical enterprise applications that typically require deployment of a large number of physical servers. A prime example is Exchange Server, although other Microsoft applications are ideally suited as well for consolidation and virtualization with Cisco data center solutions.

A cohesive system supports tighter coupling of server, network, and storage virtualized deployment. Together, Cisco and Microsoft are helping companies achieve a cohesive system that can help reduce overall costs, increase organizational agility, and improve energy efficiency, along with providing these additional benefits:

- Allocate resources effectively, avoid server sprawl, and control operating costs: The Cisco UCS management architecture enables administrators to deploy and reconfigure new environments quickly. Through service profiling, the server platform dynamically allocates server and I/O resources to any application, enabling IT staff to manage systems at a higher level of abstraction. Instead of managing individual elements, such as servers, interface cards, storage networks, and switches, administrators can manage system resources holistically by associating the hardware components needed by any given application with a specific service profile. This capability enables IT staff to instantly allocate additional

resources to applications or migrate existing applications without the need to manually reconfigure server, LAN, or SAN settings.

- Enjoy advantages for consolidation and virtualization, and avoid capital expense: With virtualization becoming more mature and widely used, enterprises are now wanting to virtualize and consolidate core applications in the data center while maintaining service levels. Common Microsoft applications, such as Exchange Server and SharePoint Server, are among the prime candidates for such consolidation and virtualization. The Cisco Unified Computing System, together with Windows Server 2008 R2 with Hyper-V and Cisco high-bandwidth, low-latency, virtualization-aware unified network fabric, expedites and simplifies virtualization deployment, management, and operation for reduced cost, power consumption, and cooling requirements.
- Meet both budgetary constraints and business requirements: Virtualization has increased server memory requirements, and patented Cisco Extended Memory Technology, which is available for Cisco UCS B-Series Blade Servers and C-Series Rack-Mount Servers, supports up to 384 GB of RAM per server, which is two times more RAM than conventional two-socket servers support. Inexpensive 4-GB DIMMs can be used instead of 8-GB DIMMs, providing the flexibility to support 384 GB with 8-GB DIMMs or save up to 20 percent by using 4-GB chips, for a total of 192 GB. This option provides Cisco customers with a high degree of flexibility when configuring Cisco UCS servers to meet business and budgetary requirements.
- Experience dramatic reduction in supporting infrastructure by using Cisco Unified Fabric: You will have fewer network adapters and blade server switches and less cabling because Cisco Unified Fabric passes all network and storage traffic over one cable to the parent fabric interconnects, where it can be processed and managed centrally, improving performance and reducing the number of devices that need to be powered, cooled, secured, and managed.
- Lower the cost of management: Unified, model-based management helps teams automatically deploy servers with click-of-the-mouse simplicity. Cisco service profiles from Cisco UCS Manager speed system deployment and scaling while eliminating configuration errors that can cause downtime.
- Achieve fast memory access speeds for responsive business applications: Cisco technology delivers up to 27 percent faster memory access speeds at high memory densities. This higher access speed is critical for high-performance databases requiring both large memory footprints and low latency¹.
- Help increase Microsoft workload performance: Cisco Extended Memory Technology, available on the Cisco UCS B250 M1 and M2 Extended Memory Blade Servers and the Cisco UCS C250 M1 and M2 Extended-Memory Rack-Mount Servers, maps four physically distinct DIMMs to a single logical DIMM as seen on the processor's memory channel. Companies can benefit from increasing the memory capacity per server to reduce costs with a scalable approach that can deliver a better return on investment (ROI) and lower TCO.
- Meet business and IT goals by engaging with Cisco support: Cisco Professional Services helps ensure a smooth production rollout of Microsoft applications on the Cisco Unified Computing System that is on time and on budget by taking advantage of best practices and tools to scale to meet growth needs and business and IT objectives.

¹ Source: Cisco UCS: A Real-World TCO Analysis
http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns944/cisco_ucs_areal_world_tco_analysis.pdf

Organizations can benefit from a common architecture that links all the Microsoft data center resources together with Cisco data center solutions. This server platform and integrated network services solution virtualizes the data center through a preintegrated architecture that brings together applications, networking, storage, and virtualization to help address today's critical data center concerns regarding:

- Improved interoperability
- Better unified management
- Quicker completion of routine tasks
- Scalability
- Short time-to-application-deployment with the familiarity of the Microsoft Windows operating system
- Service levels
- Business continuity
- Support from technology providers and partners

Why Cisco for Microsoft?

We recognize that the intersection of computing, networking, virtualization, and software is at the center of a new era of innovation. The Microsoft and Cisco alliance extends the value of Cisco Unified Computing System and Cisco Unified Network Services data center solutions by integrating the operating system, native hypervisor, application, and management stacks into manageable and scalable solutions. Together, Microsoft and Cisco offer service and support to accelerate time-to-value and ROI.

The Cisco Unified Computing System unites applications, networking, storage, and Cisco Unified Network Services support for virtualization and cloud computing into a cohesive system that helps reduce overall costs, increase organizational agility, and improve energy efficiency. The Microsoft and Cisco alliance extends the value of the Cisco Unified Computing System and Cisco Unified Network Services by integrating the operating system, application, and management stacks, which are optimized for virtualization and supported by Cisco Validated Designs and support services.

Our partner ecosystem, including value-added resellers and global systems integrators, provides benefits for Microsoft partners and Cisco partners and customers alike.

Cisco and Microsoft take innovative approaches to help our customers get the most from their data centers and our technologies. One approach is to pretest, validate, and back with validated designs and support a growing list of Microsoft technologies, including Exchange Server 2010 running on Windows Server 2008 R2 with Hyper-V, SharePoint Server, and virtual desktops with Microsoft virtualization. These solutions are all part of our mutual commitment to help organizations thrive by getting the most from their data centers.

For More Information

For more information, contact your Cisco or Microsoft representative, or visit <http://www.cisco.com/go/microsoft>.



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