

Microsoft and Cisco Data Center Management Solution

The Cisco® Unified Computing System unites applications, networking, storage, and virtualization 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 Cisco's Unified Computing System by integrating the operating system, application, and management stacks which are tuned for virtualization.

Cisco's Unified Computing System on the Microsoft platform features integrated Microsoft® System Center tools to help streamline and centralize management for physical and virtual environments, including deployment, network optimization, and application services.

Windows Server®, Microsoft Hyper-V™, and Microsoft® System Center provide the foundation layer for Cisco's Unified Computing System, and Microsoft® SQL Server® provides the data platform. Together, we are helping you lower costs, speed deployments, and increase flexibility, scalability, productivity, and performance.



The Changing Data Center Landscape

IT teams are re-evaluating their strategies for managing data centers. Increasing demands from the organization, rapid advances in technology, limited IT resources, and new regulatory and compliance standards are driving data center managers to change how they operate. Higher energy costs and limited space in the data center require new ways to manage resources more efficiently. At the same time, more mission-critical systems and line-of-business applications are being moved into the data center, with organizations requiring them to be available and responsive around-the-clock, all while delivering superior levels of service to the end user.

Key Challenges in the Data Center

- Data centers remain a top cost center for enterprises.
- IT organizations must piece together and integrate complex hardware, network, virtual machine, and IT management software configurations.
- The burden of costly, inefficient systems integration needs to be replaced by an integrated architecture.
- Currently isolated virtual resources need to be traversed simply, seamlessly and securely.
- Servers need to be consolidated and optimally configured.
- Critical data must be safeguarded.

Benefits of an Optimized Data Center

Cisco's Unified Computing System (UCS) and the Microsoft platform can help enterprises:

- Reduce overall costs at the platform, site, and organizational levels—both capital expenditure (CAPEX) and operational expenditure (OPEX).
- Increase business agility through just-in-time provisioning and mobility support for both virtualized and non-virtualized environments.
- Improve energy efficiency by reducing power and cooling demands through architectural innovation that results in fewer servers, switches, and adapters for workloads.

Microsoft and Cisco Data Center Management Solution Components

Each of the component Microsoft technologies benefits from existing within a Cisco Unified Computing System.

Windows Server 2008

Windows Server 2008, with its built-in Web and virtualization technologies, is a highly robust and reliable foundation on which to develop, deliver, and manage rich user experiences and applications. Together, the Windows Server 2008 operating system and Cisco's UCS provide a highly trusted network infrastructure and help reduce costs while increasing technological flexibility and value in your data center.

- **Built for the Web**—A service-oriented architecture delivers rich Web-based experiences efficiently and effectively, with improved administration and diagnostics, development and application tools, and low infrastructure costs.
- **Virtualization Built In**—Server and presentation virtualization technologies included with Windows Server helps reduce costs, increase hardware utilization, accelerate and extend application deployment and access, while improving server and application availability.
- **Enhanced Security**—The most secure Windows Server ever, with a hardened platform that provides policy-based access to the network and helps ensure sensitive information is not compromised, enabling businesses to host mission-critical applications and workloads.
- **Solid Foundation for Workloads**—provides flexible and robust tools to manage your IT infrastructure. With new technologies and features and

enhanced management, networking, and clustering technologies, provides the most robust, versatile, and reliable Windows platform for all of your workload and application requirements, from the server to the desktop.

- **Cisco's Integrated Management**—Dramatic improvements in time to provision services, seamless repurposing of existing resources for new workloads, and enhances better coordination with Windows Server 2008.

Windows Server Hyper-V

Windows Server 2008 Hyper-V is the hypervisor-based virtualization feature included as a role of Windows Server 2008. It contains elements needed to support machine virtualization. Using Microsoft Hyper-V as the foundation for your virtual environment inside the Cisco UCS can help your organization to reduce costs, improve server utilization, and create a more dynamic IT infrastructure.

- **Flexible**—Hyper-V provides great flexibility through dynamic, reliable, and scalable platform capabilities.
- **Scalable**—Hyper-V and Cisco's patented Memory Extender technology can provide greater virtual machine density.
- **Manageable**—Both virtual and physical resources can be managed with the single set of integrated management tools available through System Center.
- **Ease of Use**—Easier Windows Server setup, administration, and faster deployment.
- **Available**—High availability and business continuity through the use of failover clusters.
- **Efficient**—Powerful automation of IT administration tasks.

Microsoft System Center

IT teams are turning their attention to the data center as increased organizational demands, ongoing technology changes, internal policies, new regulations, and limited resources are driving them to re-evaluate their data center management strategies. As enterprises focus on refining work processes, IT organizations are undertaking new projects to drive efficiencies such as server consolidation and green IT, both of which can reduce costs by lowering data center power consumption. Meanwhile, IT groups continue to maintain service-level agreements to meet constant and critical organizational demands.

- **Powerful**—System Center offers robust solutions for configuration management, end-to-end monitoring, server compliance, and data protection and recovery.
- **Integrated**—System Center incorporates Microsoft's deep knowledge and expertise in server platforms, operating systems, and application software and provides a suite of products that work together effectively.
- **Cost Effective**—System Center can help save money by lowering overall costs via a reduction in maintenance costs and fewer demands on IT staff to solve integration problems for solutions built from multiple vendor products.
- **Manageable**—Microsoft System Center Virtual Machine Manager plus complementary solutions based on the other System Center products can help improve management of both physical and virtual servers.
- **Ease of Use**—Ease of implementation and use. System Center is ready out-of-the-box, requiring little or no consulting and integration services.

Microsoft SQL Server 2008

Microsoft SQL Server 2008 provides a trusted, productive, and intelligent data platform that can help you to run your most demanding mission-critical applications, reduce time and cost of development and management of applications, and deliver actionable insight to your entire organization. SQL Server provides the high levels of security, reliability, and scalability that today's enterprises need. When installed on the Cisco UCS platform, it can help lower costs and improve the flexibility of your database environment.

- **Help Ensure Business Continuity**—Increase the availability of applications and simplify their recovery from storage failures. Transfer operational data between the active systems and backup

systems. Add system resources, such as CPU and memory, without affecting applications.

- **Enhanced Database Mirroring**—SQL Server 2008 builds on SQL Server 2005 by providing a more reliable application platform that has enhanced database mirroring including automatic page repair and log shipping, enabling improved performance, and enhanced supportability.
- **Data Compression**—Enable data to be stored effectively and reduce the storage requirements for your data. SQL Server data compression can also provide significant performance improvements for large I/O-bound workloads such as data warehousing.
- **Hot Add CPU**—Dynamically scale a database on demand by

allowing CPU resources to be added to SQL Server 2008 on supported hardware platforms without forcing any downtime on applications. Note that, as in the previous release, SQL Server also supports the ability to add memory resources online.

- **Streamlined Installation**—SQL Server 2008 introduces significant improvements to the service life cycle for SQL Server through the re-engineering of the installation, setup, and configuration architecture. These improvements separate the installation of the core functionality from the configuration of the SQL Server software enabling organizations like yours to follow recommended installation configurations.

Cisco Unified Computing System and Microsoft—Powerful Solution for Your Data Center

Cisco's innovative Unified Computing System management architecture enables you to deploy and reconfigure new environments quickly. Cisco's UCS dynamically allocates server and I/O resources to any application through Service Profiles. This concept enables IT staff to manage their 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 configurations.

Organizations can benefit from a common architecture linking all the Microsoft data center resources together with Cisco UCS. This platform virtualizes the data center through a pre-integrated architecture that brings together applications, networking, storage, and virtualization to help address today's pressing data center concerns:

- Helps reduce costs through consolidation
- Interoperability
- Unify your IT management experience
- Speed up routine it tasks
- Scale and extend as needed
- Get up and running fast—use the Windows you know
- Business continuity
- Uncompromising support from Microsoft and Cisco

Learn more

<http://cisco.com/go/unifiedcomputing>
<http://microsoft.com/cisco>
<http://microsoft.com/virtualization>

<http://microsoft.com/windowsserver2008>
<http://microsoft.com/systemcenter>
<http://microsoft.com/sqlserver/2008>

Contacts

Contact your Microsoft or Cisco representative to evaluate the UCS product for your data center environment today.

© 2009 Microsoft and Cisco Systems, Inc.

All rights reserved. This summary is for informational purposes only. Microsoft and Cisco make no warranties, express or implied, in this summary.

Cisco, the Cisco logo, and Cisco Systems are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries. All other trademarks mentioned in this document 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. (0805R)