

Deliver End-to-End Systems Management for Cisco Data Centers That Run Microsoft Applications

What You Will Learn

For businesses in which the Cisco Unified Computing System™ (Cisco UCS™) and Microsoft software are central to the IT strategy, Cisco has developed technologies to help you manage the data center cohesively—from the bare-metal and operating system environments to the applications and the cloud. By using Cisco UCS together with data center management capabilities in Cisco UCS Manager, you can provide outstanding service delivery with increased agility. Cisco UCS Manager works with and extends the capabilities of Microsoft systems management tools to bring together application and infrastructure management, helping you achieve more efficient architectural design, outstanding performance for business applications, and simplification within IT operations.

Business Value in the Data Center

IT departments need to think differently about how to design, operate, and deliver services from the data center. Effective delivery starts with evolution from a reactive mode of service delivery to one in which IT is truly viewed and operated as a service that can deliver the greatest business value.

However, IT departments have traditionally struggled to both increase overall operational efficiency and bring new solutions to the business quickly and cost effectively. Bringing together the data center platform and management tools, Cisco UCS and Cisco UCS Manager complement and extend Microsoft systems management tools, including Microsoft System Center and Windows PowerShell, for a complete computing-center management solution that helps ensure ease of operations and streamlined service delivery.

Cisco Management Tools for Computing Centers That Run Microsoft Software

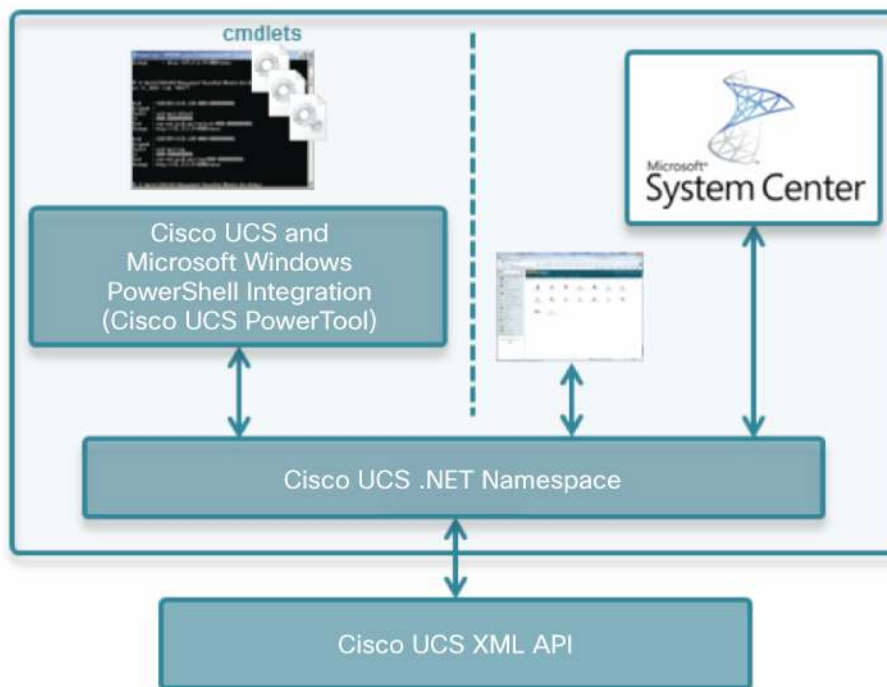
With Cisco® systems, you have choices for your computing-center management software. Cisco offers powerful management capabilities in its data center offerings, and Cisco management tools also complement and extend the management capabilities of Microsoft systems management tools. Tools like Microsoft System Center Operations Manager and System Center Orchestrator can take advantage of the programmatic control provided through the Cisco UCS Manager XML API framework. With this approach, architects and administrators can monitor, manage, and orchestrate both hardware and software by using Cisco management technologies with Microsoft System Center server management tools and a Cisco feature that integrates with Microsoft Windows PowerShell, called Cisco UCS PowerTool (Figure 1).

To enable cohesive management of Cisco UCS and your Microsoft software, Cisco has developed these technologies:

- Cisco UCS Manager, which provides embedded management for all software and hardware components in Cisco UCS

- The Cisco UCS PowerTool command-line toolkit based on Microsoft Windows PowerShell for automating and integrating Cisco UCS management with Microsoft applications
- A management pack tailored for Microsoft System Center Operations Manager and an integration pack for Microsoft System Center Orchestrator to ease IT management through a single interface

Figure 1. Bringing Cisco and Microsoft Management Tools Together in One Cohesive Solution



Easier, Automated Management of Updates, Patches, and Firmware

IT administrators can streamline systems updates and patches and firmware updates with less manual effort. By using the Cisco UCS Management Pack for Microsoft System Center Operations Manager and the Cisco UCS PowerTool, administrators can apply updates and patches, even to the firmware, far more quickly during planned downtime. They can efficiently plan and apply updates and proactively orchestrate data center management, helping your organization meet service-level agreements (SLAs) and further protect systems and data by helping ensure that machines are up-to-date.

Systems Management Powerful Enough for the Most Demanding Data Centers

With Microsoft System Center connected to the fabric interconnect of Cisco UCS rather than to each individual blade in Cisco UCS, IT departments can reduce the number of connections, making it dramatically easier to manage large Cisco UCS installations. Through that single connection, administrators gain access to detailed information, such as server status and health, for an entire chassis, not just an individual blade.

Improvements in IT Productivity

The capability to use Cisco and Microsoft systems management tools transparently together can help staff be more productive. Main capabilities include:

- **Role-based administration:** Preserve the current division of responsibilities for applications, hardware, operating systems, and network management.
- **Availability:** Gain early awareness of potential problems before they affect service availability or the user experience.
- **Single interface:** View the health of Cisco UCS hardware, including chassis, blades, and subsystems, directly through Microsoft System Center. Even manage software and firmware updates.
- **Customizability:** Because the integration is based on the Cisco UCS XML API, administrators can customize the management experience for the monitoring and management of Cisco UCS.
- **Visual controls:** Correlate blades, service profiles, and host operating systems by using Microsoft System Center Operations Manager status views to quickly determine how an event will affect the overall system; identify root causes; and resolve problems.
- **Easy provisioning:** Provision physical resources as needed, just like virtual resources.
- **Automatic discovery:** Automate discovery of the infrastructure within Cisco UCS, including fabric, computing, and new resources, and correlate faults and events with the current topology.
- **System and data protection assurance:** By simplifying update management, you help ensure that updates, patches, and firmware are applied regularly, safeguard important information, and meet regulatory compliance.

A Boost to IT Agility

With one cohesive solution providing the capability to manage the data center from the bare-metal and operating system environment all the way to the applications and the cloud, IT departments can become vastly more responsive to the needs of the business. You also spend less time in break-fix mode and more time innovating.

The Unified Data Center

Programmatic systems management begins with Cisco UCS, the first converged data center platform that combines industry-standard, x86-architecture servers with networking and storage access into a single system. The system is entirely programmable through the use of unified, model-based management to simplify and accelerate deployment of enterprise-class applications and services that run in bare-metal, virtualized, and cloud-computing environments. The system's unified I/O infrastructure uses a unified fabric to support both network and storage I/O, and Cisco Fabric Extender technology extends the fabric directly to servers and virtual machines for increased performance, security, and manageability.

Cisco UCS Manager

Cisco UCS Manager provides unified, embedded management of all software and hardware components in Cisco UCS. It controls multiple chassis and manages resources for thousands of virtual machines and offers:

- A unified embedded management interface that integrates server, network, and storage access
- Policy-based and model-based management with service profiles that improve agility and reduce risk
- Autodiscovery to detect, inventory, manage, and provision system components that are added or changed
- A comprehensive XML API, which facilitates integration with third-party systems management
- Role-based administration that builds on existing skills and supports collaboration across disciplines

Cisco UCS PowerTool

Based on Microsoft Windows PowerShell, Cisco UCS PowerTool gives organizations a user-friendly command-line tool for managing the entire IT infrastructure, including:

- Cisco UCS B-Series Blade Servers, Cisco UCS C-Series Rack-Mount Servers, and stand-alone Cisco UCS C-Series servers
- Operating systems
- Applications

In addition, by using the Cisco UCS PowerTool together with similar management tools based on Microsoft Windows PowerShell from third-party vendors, you can manage and operate all components in the data center programmatically.

Cisco UCS Management Pack for Microsoft System Center Operations Manager

The Cisco UCS Management Pack for Microsoft System Center Operations Manager helps you monitor the health of Cisco UCS by using Microsoft System Center Operations Manager. With the management pack in place, you can:

- Monitor Cisco UCS devices such as Cisco UCS blades, chassis, and rack servers
- View Cisco UCS hardware, service profiles, operating systems, and virtual machines on a single interface
- Enable the correlation of faults and events between Cisco UCS infrastructure and both bare-metal and virtualized operating systems that you manage with Microsoft System Center Operations Manager
- Visually correlate blades, service profiles, and host operating systems by using Microsoft System Center Operations Manager status views to quickly determine how an event will affect the overall system

Cisco UCS Integration Pack for Microsoft System Center Orchestrator

The Cisco UCS Integration Pack for Microsoft System Center Orchestrator exposes prebuilt runbook actions created for Cisco UCS. It is built on the same Cisco UCS Manager XML API framework as Cisco UCS Manager and enables runbook actions designed in Microsoft System Center Orchestrator to connect to Cisco UCS. This integration pack helps IT administrators:

- Automate Cisco UCS management, improving predictability, expediting delivery, and reducing human errors
- Deliver scalable and reliable Cisco UCS management through orchestrated workflows to provide consistent service across multiple systems and departments
- Optimize and extend Cisco UCS capabilities, enabling integration with third-party management tools

Why Cisco?

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 Cisco UCS 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.

For More Information

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



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