Cisco UCS Automated Management Easily Integrates into CA Technologies Enterprise Management

Solution Brief
May 2012

Highlights

Cisco UCS Automated Management

- Embedded model-based management in the Cisco Unified Computing System™ (Cisco UCS®) enables server personality, configuration, and connectivity attributes to be programmed automatically.

Cisco UCS Manager and CA Technologies Enterprise Management Integration

- Cisco UCS Manager and CA Technologies enterprise management environments combine to deliver a single, integrated solution that enables IT departments to handle faults and manage the performance, configuration, and automation of physical, virtual, and cloud resources.

Optimal Cloud and ITaaS Capabilities

- The ability to implement consistent business processes and policies for Cisco UCS deployments, and increase the performance, availability, efficiency, and agility of Cisco UCS, helps to deliver optimal cloud or ITaaS deployments.

IT departments often are reluctant to add a new vendor's server to their data center because it must be managed separately from everything else. This lack of integration between management solutions increases operating costs and affects efficiency. Cisco Unified Computing System™ (Cisco UCS®), with its XML API, integrates effectively with CA Technologies enterprise management software.

Cisco and CA Technologies help IT departments gain optimum performance from a Cisco UCS environment to meet and exceed the service levels required by today's dynamic business applications and cloud services. Using the Cisco UCS Manager open APIs, Cisco UCS easily integrates with CA Technologies management software to deliver critical visibility, control, and automation of services across physical, virtual, and cloud computing environments. Staff can manage the entire infrastructure efficiently using consistent management interfaces. Tight integration between Cisco UCS and CA Infrastructure Management and CA Automation Suite for Data Centers increases the performance, efficiency, and agility of your Cisco UCS platform, enabling optimal cloud or IT-as-a-service (ITaaS) capabilities.

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Cisco UCS: An Investment in Efficiency and Performance

Companies are seeing incredible benefits and efficiencies with Cisco UCS–and its ability to help solve business challenges is leading to Cisco UCS adoption worldwide. According to the IDC Worldwide Quarterly Server Tracker, Cisco UCS has risen to the number-two market position in the fastest-growing segment of the x86-architecture server market (the United States) in less than three years, and it is number-three in the worldwide market based on x86 architecture blade revenue. In just two-and-a-half years, Cisco UCS moved to the Leader's Quadrant in Gartner's Magic Quadrant for Blade Servers, rising faster than any other vendor and two years earlier than Gartner originally predicted. In those two-and-a-half years, Cisco UCS has set 63 world-records on industry-standard performance benchmarks against other x86-architecture servers and RISC processor-based servers.

To enable businesses to be highly successful, Cisco invests in technologies that bring extreme value. For example, Cisco created Cisco® Extended Memory Technology to give customers a low-cost way, using lower-density DIMMs, to support a larger memory capacity than any other 2-socket servers using the Intel® Xeon® 5500 and 5600 families. The success of Cisco UCS in such a short time shows the value businesses can expect with Cisco's data center innovation.

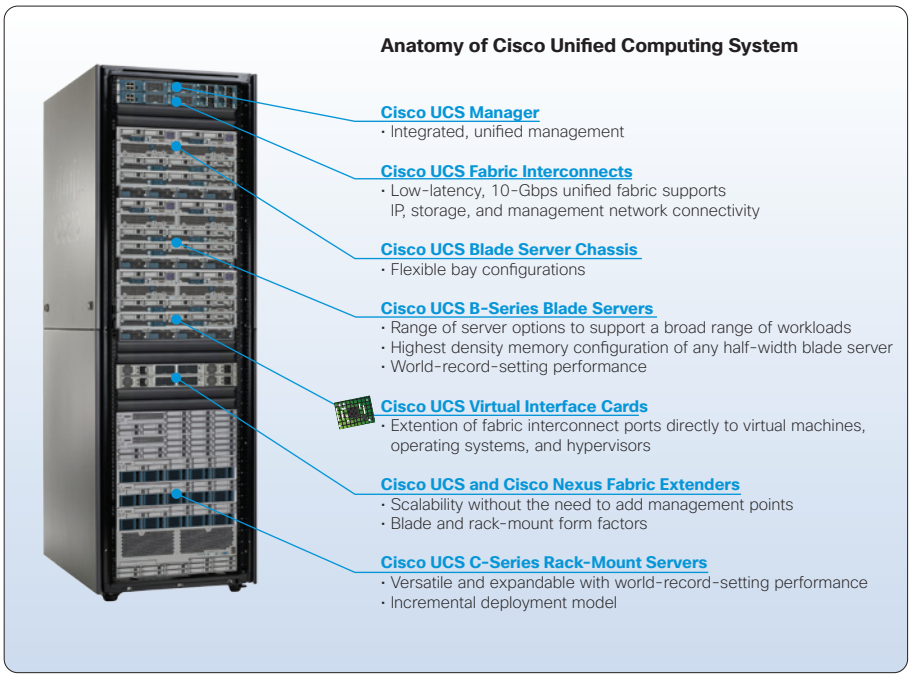

Figure 1. Cisco UCS is Intelligent Infrastructure Integrated into a Single Unified System

A Truly Unified System

Cisco UCS is the only truly unified system on the market. An integrated system, Cisco UCS brings together server, network, and storage access resources. It transcends the boundaries of blade chassis and racks, forming a physically distributed, but centrally managed, system. A unified fabric integrates the system's computing resources with a single network that supports all I/O in the system: IP, storage, and management. Cisco Fabric Extender Technology (FEX Technology) extends fabric interconnect ports to reach directly to blade servers and individual virtual machines. By condensing three networks into one while eliminating blade server and hypervisor-based switches, Cisco UCS delivers simplified infrastructure. Cisco FEX Technology brings all I/O traffic to a single point, where it is managed efficiently and consistently, and transforms a set of rack servers and blade chassis into a single distributed virtual system (Figure 1).

Cisco UCS Manager: Intelligent Infrastructure

Cisco UCS is intelligent infrastructure that abstracts the personality, configuration, and connectivity of server and I/O resources (including firmware) so that these attributes can be programmed automatically rather than set manually through individual element managers. This model transforms the physical infrastructure

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into a pool of resources that can be provisioned to support any workload in minutes. Cisco UCS Manager performs these tasks either through a GUI or an open standard XML API, enabling access by higher-level orchestration and management tools, such as CA Technologies enterprise management software, for consistent management with greater operational scale.

Embedded Model-Based Management

Cisco UCS Manager is an embedded device manager that runs in the Cisco UCS fabric interconnects, as shown in Figure 1. Using Cisco UCS Manager, administrators can create a model of a desired server configuration (using Cisco service profiles and templates), including all I/O connectivity and policy attributes. When the model is complete, it is instantiated on a Cisco UCS blade or rack server. The configuration is applied quickly, accurately, and automatically, fostering business agility and eliminating a major source of errors that can cause downtime. Role- and policy-based management preserves current staff roles (server, network, and storage administrators) and enables better communication and visibility among your entire staff.

Facilitated Compliance

With Cisco UCS Manager, it is very difficult to create noncompliant configurations. The model becomes the source of truth about the system and enables Cisco UCS to be integrated as part of higher-level management tools, such as CA Automation Suite for Data Centers, facilitating compliance with existing data center best practices and staff knowledge. The transparent integration between CA Management Technology and Cisco UCS Manager is so complete that compliance can be monitored from a single, familiar interface.

Flexible Management: Cisco UCS Manager and CA Technologies Enterprise Management

Every successful cloud computing or ITaaS initiative must have flexible, efficient management to be cost effective. The integration between Cisco UCS Manager and CA Technologies enterprise management solutions enables extreme flexibility and staff efficiency. By combining CA Infrastructure Management and CA Automation Suite for Data Centers, IT departments gain a single, integrated solution to handle faults and manage the performance, configuration, and automation of physical, virtual, and cloud resources.

As shown in Figure 2, the CA Application Insight Module for Cisco UCS acts as the integration point between Cisco UCS Manager and CA Technologies management solutions. The CA Application Insight Module developed for Cisco UCS is a lightweight data collector that gathers information through the Cisco UCS Manager XML API. It allows Cisco UCS information to be queried by CA Technologies management solutions using the standard Simple Network Management Protocol (SNMP).

CA Automation Suite for Data Centers

CA Automation Suite for Data Centers is designed to orchestrate a broad range of operation processes and dynamically deploy and elastically scale IT services running on Cisco UCS. CA Automation Suite for Cisco UCS integrates with, and builds on, Cisco UCS Manager to automate and orchestrate maintenance and operating procedures. With these tools, IT departments can reduce

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complexity, increase efficiency, and respond faster to changing demands. Its primary capabilities include:

- Automated provisioning, configuration, administration, and lifecycle management of Cisco UCS and associated applications, as well as other major platforms, all from a single interface
- A self-service interface that lets users quickly and easily reserve Cisco UCS resources
- Policy-based control, using Cisco service profiles, for dynamic resource allocation based on changing business conditions dynamic resource allocation based on changing business conditions
- Rapid migration of complete physical or virtual server images from other platforms to Cisco UCS

The process is quick and simple, with the capability to apply Cisco UCS model-based, role-based, and policy-based management to any resource through a service profile.

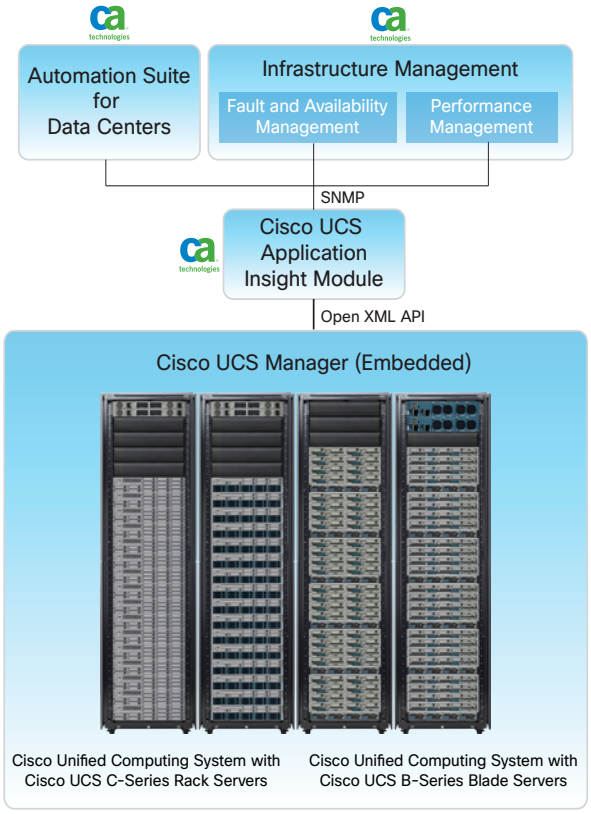

Figure 2. Cisco UCS Snaps into CA Management Solutions for Extreme Flexibility and Efficiency

CA Infrastructure Management

CA Infrastructure Management provides comprehensive monitoring and management for Cisco UCS infrastructure, including fault and availability management and performance management. These capabilities help ensure that the cloud or ITaaS infrastructure, composed of Cisco UCS platforms, performs optimally and reliably.

Fault and Availability Management

Based on CA Spectrum technology, the fault and availability management component of CA Infrastructure Management performs a number of critical monitoring tasks across Cisco UCS, including:

- Automated discovery of physical and virtual infrastructure, including Cisco blade chassis, blade servers, and fabric interconnect switches, together with other data center infrastructure elements
- Service modeling to monitor and manage relationships between the infrastructure, services, and users of services across physical, virtual, and cloud environments
- Fault isolation, to detect and correlate events to suppress unnecessary alarms and automate root-cause and impact analysis
- Change-aware infrastructure management to capture, monitor, track, and remediate changes to Cisco UCS infrastructure
- Integration with Cisco UCS Manager to enable the rapid provisioning of new hardware based on faults or performance degradation

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Cisco UCS is a self-aware and self-integrating system. As soon as new components are added to the infrastructure, Cisco UCS Manager detects their presence and automatically adds them to the known pool of resources. CA Infrastructure Management integrates with Cisco UCS Manager to recognize new hardware components as they are added to the infrastructure and maps the topology of Cisco UCS for instant visualization.

Performance Management

Based on CA eHealth technology, the performance management component of CA Infrastructure Management collects critical performance indicators specific to Cisco UCS to enable proactive performance management. Data is analyzed to identify systemic performance problems, and IT operations staff is alerted before users and services are negatively affected. This approach leads to end-to-end performance visibility across a comprehensive range of applications and services hosted on Cisco UCS platforms, including business applications such as SAP, virtual workspaces, private clouds, and unified communications and collaboration systems. Proactive performance and capacity management also is provided, with insight and analysis of historical data to help identify and resolve persistent performance problems.

Conclusion

Transparent integration with CA Technologies enterprise management environments enables consistent business processes and policies for Cisco UCS deployments. With CA Infrastructure Management and CA Automation Suite for Data Centers, you can increase the performance, availability, efficiency, and agility of Cisco UCS for optimal cloud or ITaaS capabilities.

For More Information

For more information about Cisco UCS, please visit http://www.cisco.com/go/ucs.

For more information about Cisco UCS managed by CA, please visit http://www.cisco.com/en/US/netsol/ns1123/index.html.

For more information about Cisco UCS Manager, please visit http://www.cisco.com/en/US/products/ps10281/index.html.com/go/ucsm.

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