Better Together: Infrastructure Management with Cisco UCS and Cisco UCS Director

Highlights

Get a Great Combination

- There is no better combination than Cisco Unified Computing System™ (Cisco UCS®) and Cisco UCS Director to automate infrastructure management and orchestrate your provisioning.
- Cisco UCS Director manages Cisco UCS through Cisco UCS Manager. It manages every other aspect of your integrated computing, networking, and storage infrastructure to make it easy to deliver infrastructure as a service (IaaS).

Focus on What's Important

- Automate infrastructure management and orchestration so that your staff can focus on more important business-critical initiatives

Increase Agility

- Reduce time to value with comprehensive, automated, policy-based workflows

Improve Compliance

- Eliminate drift from predefined configurations and help ensure 100 percent compliance

Manage All of Your Integrated Infrastructure

- Start by managing Cisco UCS and your storage infrastructure and incrementally expand to holistically manage all of your integrated IT infrastructure.

You envision having time to focus on strategic business initiatives. We automate infrastructure management so that you can.

The vast majority of IT administrative expenditures are for maintenance rather than for addressing the long-term strategic initiatives that can propel your business forward. That's because so many IT processes are manual, tedious, and error prone. The only way to realign your cost structure is to automate infrastructure management and orchestration. Cisco Unified Computing System™ (Cisco UCS®) automates server and connectivity management. Cisco UCS Director automates everything beyond Cisco UCS: switching and storage, along with hypervisor, operating system, and virtual machine provisioning.

As you rely more on virtualization and cloud computing, your physical infrastructure needs to be just as flexible and agile as your virtual infrastructure. Comprehensive infrastructure management and orchestration is an essential step in the right direction. With Cisco UCS and Cisco UCS Director, we can help you simplify IT infrastructure, better align IT with your business, increase compliance, and reduce costs.

Cisco UCS: The First Step

If you are a Cisco UCS customer, you already know about infrastructure automation. Cisco UCS helps you manage growing administrative costs and reign in increasing complexity. Adopting Cisco UCS is a substantial first step on the road to cloud computing, helping reduce costs and increase agility with:

- **Automated, role- and policy-based provisioning** of the system's computing and connectivity resources: Cisco UCS Manager is model based, with Cisco UCS service profiles and service profile templates dictating server identity, personality, and configuration. An XML API makes it easy for tools such as Cisco

UCS Director to incorporate Cisco UCS as part of more comprehensive processes.

- **Single, unified, self-aware and self-integrating system** that eliminates the manual, time-consuming, and error-prone server configuration process: With these intelligent processes, Cisco UCS reduces administrative costs and shortens the time to value.

- **Simplified architecture** with Cisco SingleConnect technology providing a single way to connect to blade servers, rack servers, and virtual machines: Our approach uses less infrastructure per server, with fewer components to purchase, configure, maintain, power, and cool. The result: lower capital expenses and operating costs.

Imagine the Possibilities

With Cisco UCS, we already simplify and automate infrastructure management more than any other vendor. You may already have purchased Cisco UCS as part of an integrated infrastructure that includes storage: for example, FlexPod, Virtual Computing Environment (VCE) coalition Vblock™ Systems, or EMC VSPEX. No matter how you incorporate storage into your infrastructure, the next step is to automate the entire integrated stack.

Consider how your organization improves if you extend the management and orchestration scope to include upstream Layer 2 networking,
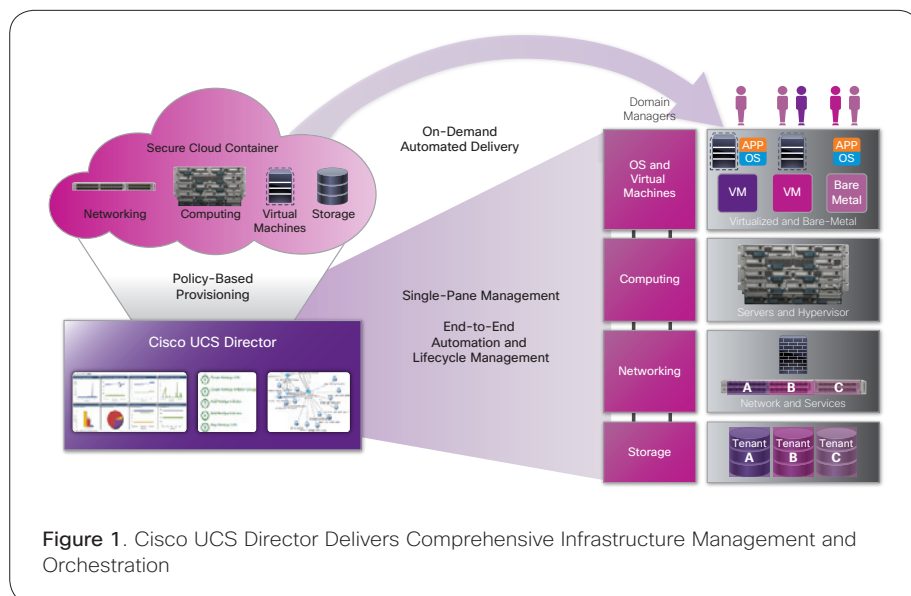

Figure 1. Cisco UCS Director Delivers Comprehensive Infrastructure Management and Orchestration

storage configuration, and both physical and virtual machine provisioning.

Complete Bare-Metal Provisioning
Imagine automated infrastructure management in which you configure all your infrastructure—including networking, computing, storage, and virtualization—through a single pane. We can help you spend less time on administration and more time helping your business adapt to changing demands.

Virtual Machine Provisioning
Virtual infrastructure and cloud-computing managers simplify virtual machine setup. But what if you could set up and provision virtual machines—including storage allocation and operating system provisioning—from a service catalog through a self-service

interface that your administrators can use? We can help you move one step closer to a more holistic implementation of virtualization and cloud computing.

Secure Multitenancy
What if you had automated tools to securely separate one application, client, or line of business from another, and to monitor resource consumption for easy accounting of charges? We can help you run your IT department as a service provider would: keeping your customers safe and charging them a fair price.

Prepare for Cloud Computing
Cloud computing environments with self-service infrastructure catalogs require administrators to rush to complete manual configuration processes to keep up with both

physical and virtual workload demands. What if your physical infrastructure could configure itself using the processes you design?

Your automated infrastructure management system could configure storage LUNs and provision virtual machines to support service catalog requests following the workflows that you design. When the cloud computing environment no longer needs the resources, another workflow could be activated to release resources back into a pool. Now your administrators do less rushing and more focusing on strategic business initiatives.

Realize the Possibilities

The combination of Cisco UCS and Cisco UCS Director make these possibilities realities. And because they were born of a similar design philosophy, there is no better combination than Cisco UCS Director with Cisco UCS.

Cisco UCS Director automates IT processes. Like Cisco UCS, Cisco UCS Director abstracts the complexity of individual devices, hypervisors, and virtual machines into a simplified model that makes them easy to manipulate and to incorporate into automated processes.

Cisco UCS Director uses the same concepts as Cisco UCS, but extends them to include all the resources you need to configure a service: computing, networking, storage, operating systems, and hypervisors (Figure 1).

Now you can deliver IT infrastructure through a single interface with point-and-click simplicity. A self-service portal lets administrators and trusted clients quickly request and receive the infrastructure they need, whether it is physical or virtual. Cisco UCS Director provides:

- Single-pane management
- Policy-based provisioning
- End-to-end process automation
- Lifecycle management

Common Operational Model

Cisco UCS Director inherits the Cisco UCS operating model and uses it to manage an environment with larger scope that includes storage, operating system, and hypervisor provisioning.

Like Cisco UCS, Cisco UCS Director brings together subject-matter experts who define policies and best practices (Figure 2).

- **Network engineers** define the VLANs and network configurations for specific groups and applications.
- **Storage engineers** define data protection and SAN configurations.
- **Server administrators** define allowable resource configurations and pools.
- **Virtualization administrators** define the characteristics of virtual machines that can be created on demand.

Cisco UCS Director exchanges Cisco UCS service profiles with Cisco UCS, using them as a language to communicate about desired server configurations and connectivity attributes. Cisco UCS Director enforces the broader policies that define how to
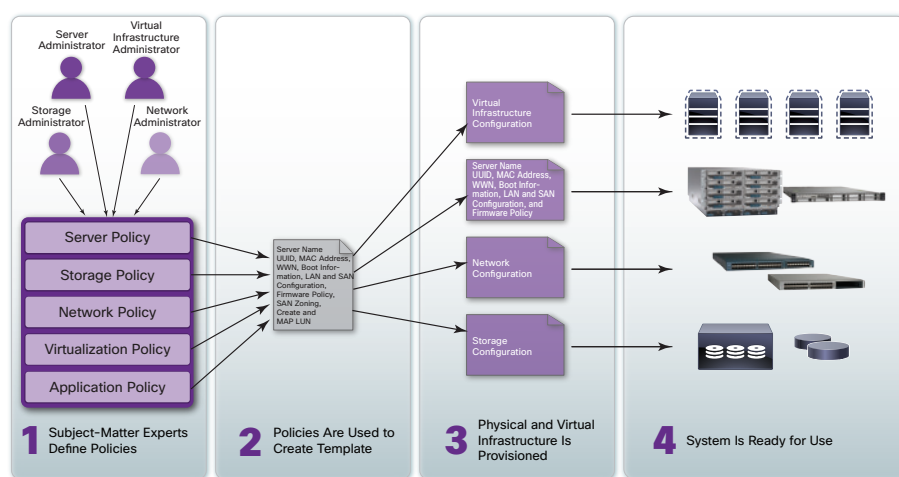
Figure 2. Cisco UCS Director Delivers Comprehensive Infrastructure Management and Orchestration

configure the rest of the infrastructure needed to deliver a service.

Policy-Based Workflow Automation

Cisco UCS and Cisco UCS Director share the powerful concept of model-based management. Cisco UCS Director maintains a faithful representation of every component and its relationship to other components.

Any workflow you can perform on the physical or virtual infrastructure can be first tested on the model. You can validate workflows without touching or changing hardware, saving time and potential disruption. When processes are established, consistency and compliance is essentially assured, and configuration drift is nonexistent.

Cisco UCS Director includes a toolbox of predefined tasks that you can combine to create workflows that not only direct Cisco UCS to apply Cisco UCS service profiles, but also to provision access-layer switching infrastructure, storage configuration, and operating system and hypervisor configuration so that your entire infrastructure is provisioned according to the policies that your subject-matter experts define.

Usage Monitoring

Cisco UCS Director helps you securely separate tenants, monitor and manage applications, provide resource consumption reports, and charge appropriately for IT infrastructure use. Cisco UCS Director provides:

- At-a-glance status panel for monitoring infrastructure status
- Resource utilization tracking with the capability to show IT resource charges
- Predefined reports that provide information about resource utilization and status

Extend Your Reach

There is no better place to start than with the combination of Cisco UCS and Cisco UCS Director. Cisco UCS Director extends your management capabilities so that you can automatically configure every aspect of your integrated infrastructure to make your IT infrastructure available as a service.

As the possibilities become reality in your organization, you can use Cisco UCS Director to incrementally extend your comprehensive infrastructure orchestration and automation across your data center to include servers, networking, and storage from both Cisco and third-party vendors.

Automate Today

Comprehensive infrastructure management and orchestration can reduce your costs. A recent Forrester Research report "The Total Economic Impact of NetApp's and Cisco's FlexPod Data Center Platform" cites a US$264,000 savings over three years for using a converged infrastructure. Cisco UCS Director takes you to the next level of automation and savings:

- **Operations** are simplified because infrastructure operations are automated, allowing you to more easily deploy and manage applications.
- **Business agility** is improved in a fast-paced environment, with more effective teamwork and reduced time to value.
- **Compliance** is increased because infrastructure is deployed as policies dictate, resulting in greater security, and a lack of configuration drift.
- **Multivendor support** lets you start with Cisco UCS and then expand your unified management across your data center.

For More Information

Learn more about Cisco UCS Director at http://www.cisco.com/go/ucsdirector.