

Cisco UCS Director

Challenges

As the transformation of the data center continues, the demand for IT to move faster has never been greater. In this Internet-connected era, customers have come to expect immediate delivery of just about every service. This expectation also applies to data center services. IT customers are no longer willing to wait weeks for delivery of requisitioned resources. Line-of-business and project managers not willing to wait for IT are exploring competitive solutions that reside outside the influence of IT and your organization.

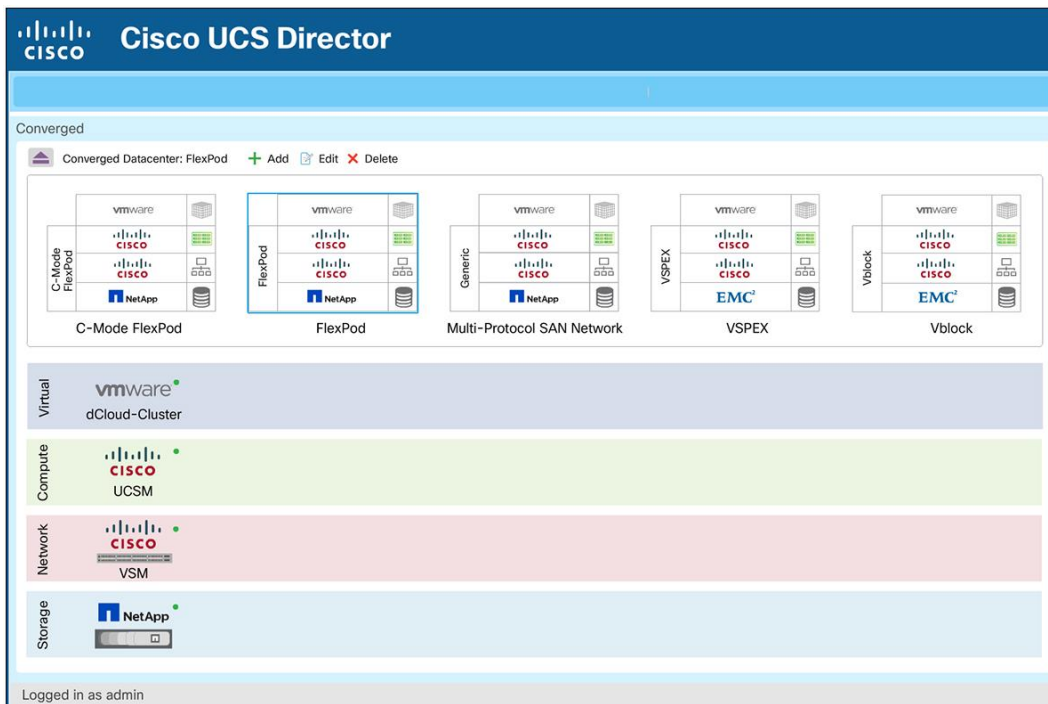
Faced with deflated budgets and increased competitive pressure, IT must deliver services judiciously without increasing costs. To do this, IT departments are embracing automation to speed up the delivery of services from weeks to minutes. Proven to increase operation efficiency and reduce costs, automation also relieves IT staff from the work of provisioning and deprovisioning tasks manually.

Cisco UCS[®] Director acts as the orchestra conductor of data center resources. For both physical and virtual infrastructure components, it provisions and manages hypervisor, computing, network, and storage resources from a single pane. With the process automated, IT is free to focus on responding to the needs of your business more quickly and creating and delivering new, innovative services.

Solution: Inclusive Management of Your Data Center Infrastructure

Figure 1 shows some of the capabilities of Cisco UCS Director.

Figure 1. Cisco UCS Director Orchestrates Infrastructure Across Multiple Data Centers



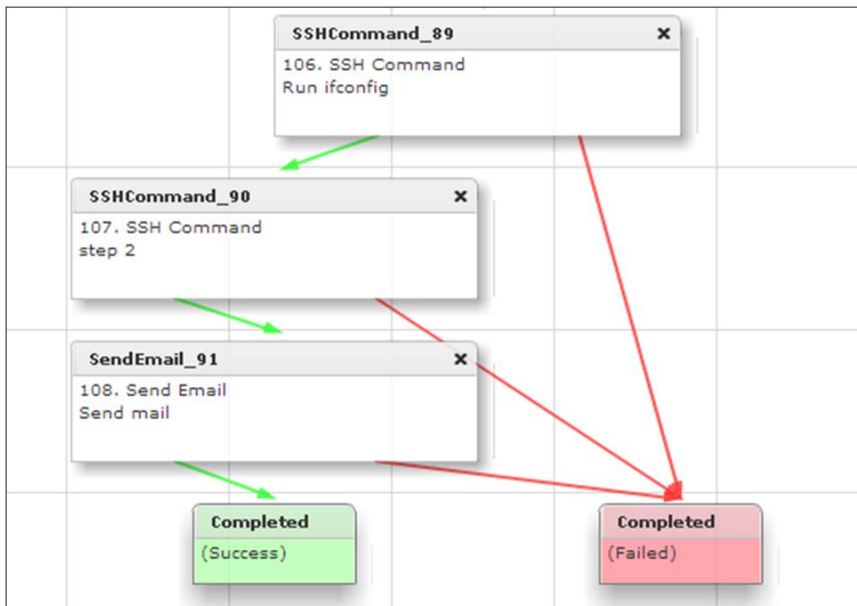
How It Works

Cisco UCS Director abstracts hardware and software into programmable tasks. Using the built-in workflow designer, IT administrators simply drag and drop these tasks into automated workflows that deliver resources within minutes (Figure 2). The model-based orchestrator maintains a physical and logical relationship map of your infrastructure on a virtual appliance. Cisco UCS Director regularly updates this infrastructure map to detect and reflect changes. This process helps ensure that workflows, and your business, run smoothly and efficiently.

With Cisco UCS Director, your organization will experience:

- Radically streamlined provisioning and management of infrastructure resources within minutes
- Greatly reduced data center complexity through heterogeneous infrastructure support for Cisco® and multivendor solutions
- Greater IT agility and consistency for increased customer confidence in IT, resulting in stronger influence on the effectiveness and productivity of your business

Figure 2. Workflow Designer Converts Tasks into Workflows



Main Capabilities

Superior Infrastructure-as-a-Service Management

Cisco UCS Director's unified provisioning and infrastructure management reduces operating costs and your data center's complexity. At the same time, it increases IT's efficiency and capability to respond quickly to changing business needs. This management capability is achieved by:

- Abstraction of hardware and software elements into more than 1000 programmable tasks used to create automated workflows
- Model-based orchestration that maintains the physical and logical relationships of your infrastructure with the capability to automatically detect and reflect infrastructure configuration changes

- Optimal resource use through the use of resource pools that span physical and virtual components and can be tailored to specific service levels: gold, silver, and bronze
 - Resource pools allow isolation of groups so that appropriate resources are available for specific teams, such as quality assurance (QA) and development.
 - This feature also prevents changes to one specific group from adversely affecting others.
- Real-time monitoring for dynamic load balancing and use to help reduce capital expenses

Figures 3 and 4 show examples of Cisco UCS Director's management capabilities.

Figure 3. Example of Programmable Tasks Out of Box

1. Select UCS Server	21. Modify UCS Boot Policy WWPN
2. Create UCS Server Pool	22. Create VLAN Group
3. Delete UCS Server Pool	23. Delete UCS VLAN Group
4. Add Servers to UCS Server Pool	24. Modify UCS VLAN/VLAN Group Org Permissions
5. Delete Servers from UCS Server Pool	25. Server Maintenance
6. Associate UCS Service Profile Template	26. Reacknowledge Server Slot
7. Reset UCS Server	27. Add VLAN
8. Power On UCS Server	28. Delete UCS Boot Policy
9. Power Off UCS Server	29. Delete UCS VLAN
10. Create UCS Service Profile from Template	30. Add VLAN to Service Profile
11. Create UCS Service Profile	31. Delete VLAN from Service Profile
12. Select UCS Service Profile	32. Add iSCSI vNIC to Service Profile
13. Modify UCS Service Profile Boot Policy	33. Delete iSCSI vNIC from Service Profile
14. Delete UCS Service Profile	34. Add vNIC to UCS Service Profile
15. Associate UCS Service Profile	35. Delete vNIC from Service Profile
16. Disassociate UCS Server	36. Create Service Profile iSCSI Boot Policy
17. Disassociate UCS Service Profile	37. Modify Service Profile Boot Policy to Boot from iSCSI
18. Create UCS Boot Policy	38. Delete VLAN from Service Profile vNIC
19. Modify UCS Boot Policy LUN ID	39. Add VLAN to vNIC Template
20. Clone UCS Boot Policy	40. Delete VLAN from vNIC Template

Figure 4. Administrator's View of Resource Pools, Status, and Assignments

Cloud	Datacenter Name	Owner	Resource Pool Name	Parent	Status
vCenter-5.5	New Datacenter 1	Cluster01	Resources	Cluster01	green
vCenter-5.1	SJ-02-QA-Datacenter-213	QA-Cluster-1	Resources	QA-Cluster-1	green
vCenter - SITE A	Protected Site	SITE-A	Resources	SITE-A	green
vCenter - SITE A	Protected Site	SITE-A	Resource-2	Resources	green
vCenter - SITE A	Protected Site	SITE-A	news	Resources	green
vCenter - SITE A	Protected Site	SITE-A	Resource-1	Resources	green
vCenter - SITE A	Protected Site	SITE-A	naveen	Resources	green
vCenter - SITE A	Protected Site	ramjitest	Resources	ramjitest	green
vCenter - SITE A	Protected Site	ramjitest1	Resources	ramjitest1	green

Application Acceleration

Provisioning the infrastructure for applications in traditional data centers requires manual setup and configuration to help ensure that the infrastructure can meet specific application requirements. These manual processes increase the time it takes to start projects and to configure changes and move or reallocate resources as business needs evolve.

Cisco UCS Director accelerates application deployment with the capability to design, configure, and deploy application-aware infrastructure containers. Every container spans physical and virtual computing, network, storage, and hypervisor components and is provisioned according to each application's unique requirements (Figures 5 and 6).

Figure 5. Administrator Dashboard of Available Infrastructure Containers

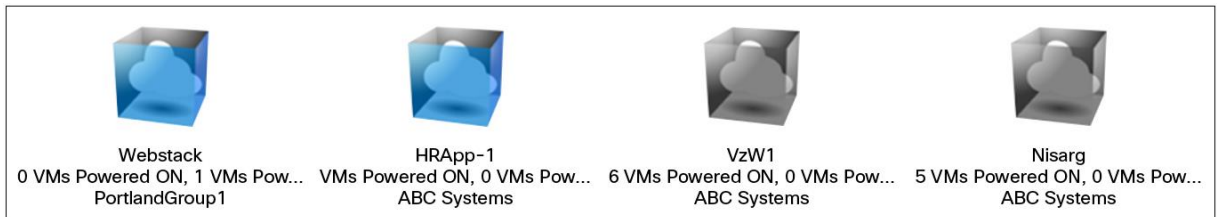
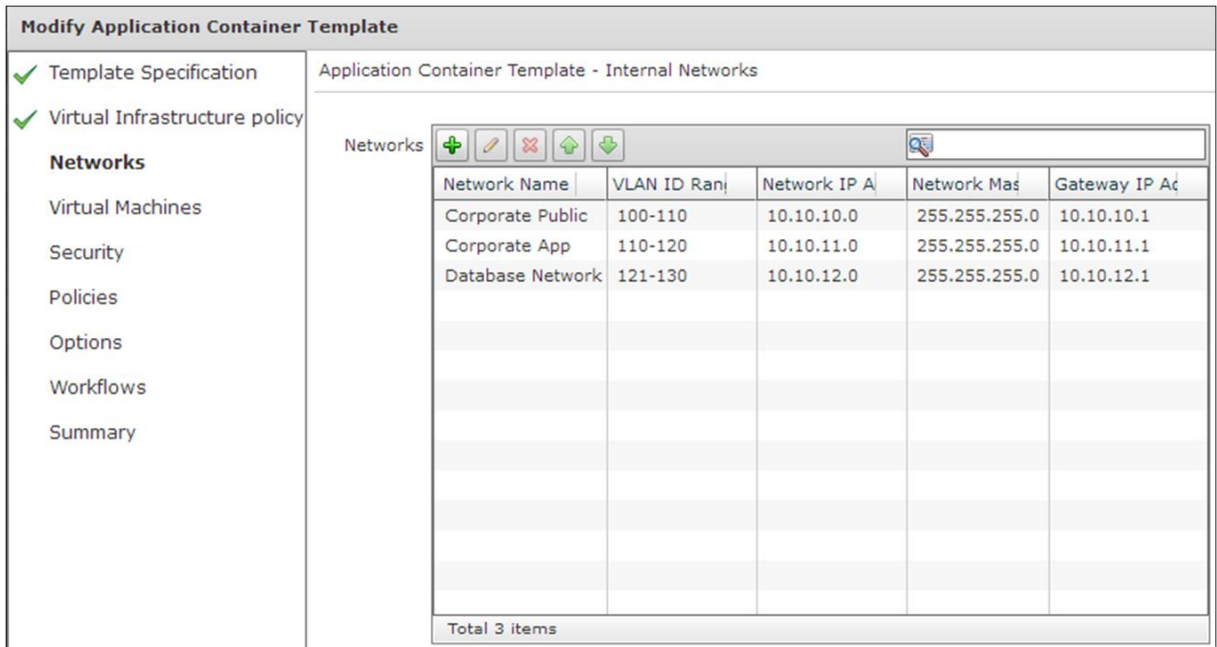


Figure 6. Configuration or Modification of Application Containers Completed Using Wizard-Based Templates



Cisco UCS Director allows IT to synchronize configuration and deployment of Cisco Application Centric Infrastructure (ACI) and Cisco Nexus® 1000V Switch network services with computing, storage, and virtualization components into a single entity. Working in tandem with Cisco Application Policy Infrastructure Controller (APIC) or Cisco Virtual Application Container Services (VACS), Cisco UCS Director binds together automated network services created by Cisco APIC or Cisco VACS with computing, storage, and virtualization resources into a single API. This API delivers infrastructure application containers on demand.

The benefits of these capabilities include:

- Automated delivery of application-aware infrastructure that relieves IT staff of the need to manually provision and configure infrastructure resources
- Automation and synchronization of the lifecycle of application infrastructure components to help ensure optimum application performance
- Support for a diverse range of workloads that span development, test, and production environments

Multivendor Solution

Your data center is composed of solutions from multiple vendors, so why limit yourself to management solutions that manage only a specific hardware stack? The multivendor capabilities of Cisco UCS Director help ensure that you get the greatest value from an infrastructure management solution and reduce costs across your entire data center. Enhancements to Cisco UCS Director's multivendor solution include:

- VMware enhancements
 - Support for VMware Virtual Remote Console (VMRC): Allows IT to launch a web-based console for managing physical and virtual connections of a VMware vSphere virtual machine
 - Support for VMware vMotion: Allows IT to move virtual machines from one physical server to another from the Cisco UCS Director console
 - Support for VMware Site Recovery Manager (SRM): Allows IT to simplify array-based replication
- VCE Vision I/O integration to synchronize inventory discovery and provisioning on vBlock™ Systems converged infrastructure
- EMC Isilon scale-out network-attached storage (NAS) solutions
- Publicly available software development kit: Allows third-party hardware and solutions vendors to integrate directly into the Cisco UCS Director infrastructure platform

Conclusion

Cisco UCS Director can support your data transformation with unified provisioning and management of data center infrastructure components. Cisco UCS Director allows IT to meet customers' expectations while better aligning with the needs of your business.

For More Information

- Learn more about Cisco UCS Director at <http://www.cisco.com/go/ucsdirector>.
- See an animated introductory video about Cisco UCS Director at <http://youtu.be/q-NX772MR78?list=PLA0164FAC1A432DE2>.
- To attend a live technical deep-dive, visit <https://buildprice.cisco.com/software/ucs-director>.




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