Private Cloud Management mit Enterprise Cloud Cloud Suite

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Cisco Data Center Vision
Defined by Applications. Driven by Policy. Delivered as a Service
Changing Customer Expectations

- **Speed**: IT Services Delivered in Minutes, Not Days or Weeks
- **Open**: Portability and Interoperability Across Diverse Technologies
- **Self Service**: Control Shifting to the Customer
IT Challenges in Datacenter

Manual

Siloed

Ticket Based

OPERATIONS MANAGER

CHANGE MANAGER

NETWORK ADMIN

VIRTUALIZATION ADMIN

SERVER ADMIN

STORAGE ADMIN

Many More

7 weeks, 136 service tickets

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Capabilities Needed to build Private Clouds

**INFRASTRUCTURE AUTOMATION**
Remove error-prone manual process and silos

**SECURE APP SEGMENTATION**
Policy based deployment and isolation of application tiers and tenants

**SELF-SERVICE USER EXPERIENCE**
Empowers developers and IT to order and manage lifecycle of applications

**HYBRID EXTENSION**
Secure data center extension into public cloud
Cisco ONE Enterprise Cloud Suite
What can an enterprise do with CECS

Infrastructure Automation

Provision and configure physical and virtual components to create secure private clouds

Deploy and manage VMs, bare-metal servers, network segments, and storage

Deploy and manage complex application stacks on multiple clouds

Expand beyond infrastructure-based IT offerings

IT-as-a-Service

Application-as-a-Service

Infrastructure-as-a-Service

Infrastructure Automation

Deploy and manage VMs, bare-metal servers, network segments, and storage

Deploy and manage complex application stacks on multiple clouds

Expand beyond infrastructure-based IT offerings

IT-as-a-Service

Application-as-a-Service

Infrastructure-as-a-Service

Infrastructure Automation
Complex IT Processes to Deploy Application Resources

Challenges:

• Manual processes
• Complex handoffs between teams and domains
• Static resource allocation

Result:

• Days/weeks/months to deploy IT services
• High operational cost
• Rigid silos
• Infrastructure inefficiency and under utilization
Unified Management
Automated Self-Service Provisioning

FROM 8 WEEKS TO 15 MINUTES

Architect
Design
Where Can We Put It?
Procure
Install
Configure
Secure
Is It Ready?

Manual

Transparency

Capacity On-Demand
Policy-Based Provisioning
Built-In Governance

Cisco Intelligent Automation for Cloud
Unified Management
Automated Self-Service Provisioning

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Cisco ONE Enterprise Cloud Suite
Comprehensive Cloud Automation for Hybrid IT

- IT Catalog (PSC, Service-now, Remedy etc.)
- Application-centric Private and Hybrid Mgmt, Cloud Center (CliQr)
  Applications | Policies | DevOps | Services
- Policy Driven Datacenter Infrastructure Automation (UCSD)
  Heterogeneous IT | Policies | Orchestration | Segmentation | Services | ACI (VACS) (ICF)
- UCS Integrated Infrastructure Management
  UCS Management
  Compute | Network | Storage | Multi-site | DC Virtualization

Public Clouds
Private Clouds
Ecosystem of Service Providers
Self Service Portal

Single Pane of Glass User Portal

Easy and simple user interface for ordering services and lifecycle management of these service assets

Seamlessly design and deploy complete application stacks

Rich integration and automation APIs with support for custom branding and look and feel
Multi Cloud Management Platform

Business (ITSM)
Prime Service Catalog, ServiceNow, Custom

Development (DevOps)
CliQr, Jenkins

Application-Centric Lifecycle Management
Model - Benchmark
Deploy - Manage

Application Profiles

Datacenter
Private Cloud
Public Cloud

UCS Director
ACI
UCS
Storage
Nexus Switching

Cloud Providers:
- Amazon Web Services
- Microsoft Azure Government
- Google Cloud Platform
- IBM Cloud
- SoftLayer
- VMware vCloud Air
- OpenStack
- Mesosphere
- Kubernetes
- Hyper-V
- MetaPod
Cisco ONE Enterprise Cloud Suite – UCS Director

Comprehensive Automation Across all Layers

- Heterogeneous bare-metal and virtualized infrastructure automation
  - Compute, network, L4-L7, storage
  - Multi-hypervisor support

- Out-of-box UCS integrated infrastructure support: FlexPod, Vblock, VersaStack, VSPEX…

- Application segmentation and zoning for ACI and non-ACI N2K-7K environments (VACS)

- Wizard-driven deployment and configuration

- Extensible automation REST API
Service Assurance – UCS PM

Comprehensive Monitoring of Integrated Infrastructure

- Out-of-box configurations, thresholds to prevent under provisioning and resource constraints
- Integrated infrastructure capacity planning
- Single console for device health and performance monitoring (compute, network, storage and hosts)
(Demo / Slides) Use Cases UCS Director....
Cisco UCS Director Turn-Key Solution

- Policy-Driven Provisioning
- Secure Cloud Container
- On-Demand Automated Delivery
- Single Pane of Glass
- End-to-End Automation and Lifecycle Management

UCS Director

Virtualized and Bare-Metal
Compute and Hypervisor
Network and Services
Tenant A, Tenant B, Tenant C

OS and Virtual Machines
Compute
Network
Storage

VM
Bare Metal

End-to-End Automation and Lifecycle Management

Policy-Driven Provisioning
On-Demand Automated Delivery
Secure Cloud Container

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Cisco UCS Director
Infrastructure Automation

Heterogeneous physical and virtual infrastructure automation across compute, network and storage

Wizard driven rapid deployment of UCS integrated infrastructure (FlexPod, Vblock, VersaStack, VSPEX)

Extensible REST API for integration with north bound orchestration systems
Real-World Workflow: OS Deployment Automation on UCS

Create VLANs → Update Trunks → Create Network Policies → Create UCS Service Profiles → Configure SAN Zoning

Service Profile Creation → Bare metal Provisioning (ESX 5.5) → Configure Servers → Create LUNs & Volumes → Create VLAN → Add VLAN to Service Profile

Create IP space → Create vFilbers → Add vFilbers to Group → Map NetApp LUN → Create Storage Policy → UCS Blade Power On

Register Host Node → Send Complete Notifications

Legend:
- Network Admin
- Storage Admin
- Compute Admin

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Cisco UCS Director Streamlines the Converged Data Center and more…

- Easy-to-Implement, Agentless, Turnkey Solution
- Addresses four Key Challenges:
  1. Multi-Vendor Data Center Management
  2. Infrastructure Provisioning & Lifecycle Management
  3. Data Center Operations & Reporting
  4. Multi-tenancy
Task Library – 1300+ Tasks
Plus create Custom Tasks in minutes

- Physical Compute Tasks
  - Cisco UCS Tasks
    - Add NTP Server to UCSM
    - Add Servers to UCS Server Pool
    - Add vNIC to UCS Service Profile
    - Associate UCS Service Profile
    - Associate UCS Service Profile Template
    - Clone UCS Boot Policy
    - Clone UCS Service Profile
    - Clone UCS Service Profile Template
    - Create UCS Boot Policy
    - Create UCS Organization
    - Create UCS Server Pool
    - Create UCS Service Profile
    - Create UCS Service Profile from Template

- Physical Network Tasks
  - Brocade Network Tasks
  - Cisco DFA Tasks
  - Cisco Network Tasks
    - Activate SAN Zone Set
    - Add IP ACL Rule
    - Add MAC ACL Rule
    - Add Member To SAN Zone
    - Add SAN Zone to Zone Set
    - Allocate Port To VDC
    - Assign FC Port to VSAN
    - Assign Port to Port Channel
    - Assign Static MACAddress
    - Assign VLAN to Group
    - Assign VXLAN to PortProfile
Drag ‘n Drop Workflow Creation

Orchestration, Workflow and Tasks Defined
Introducing UCS Director Orchestration and Workflows

my-workflow

Start

Storage
Task-1

Network
Task-2

Compute
Task-3

Virtualization
Task-4

End

✓ Resume Workflow
✓ Rollback
✓ Deprovision
✓ Approvals
✓ Publish to Catalog
Cisco UCS Director
End-to-End Operations and Provisioning

- Single-click provisioning
- Intelligent resource allocation
- Automated, controlled delivery

Result:
Improved time to market
Self-serve provisioning of IT infrastructure
Request for Stateless server from Catalog
Role-based access
Service delivered in Minutes