



Cisco ONE Enterprise Cloud Suite – Infrastructure Automation

Transforming infrastructure into consumable Private Clouds

Market Trends

IT Challenges remain in Datacenter

Manual



OPERATIONS
MANAGER



CHANGE
MANAGER



NETWORK
ADMIN



VIRTUALIZATION
ADMIN



SERVER
ADMIN



STORAGE
ADMIN



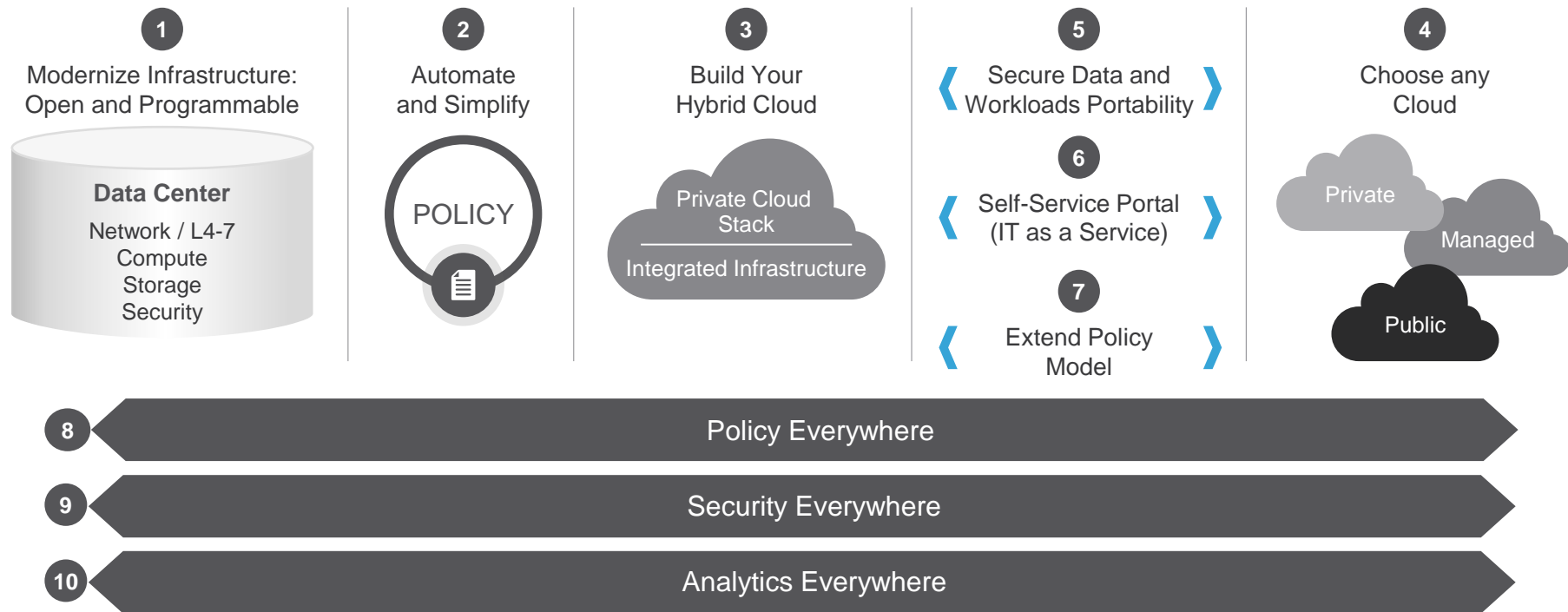
CLOUD
ARCHITECT

Siloed

Ticket Based

7 weeks, 136 service tickets

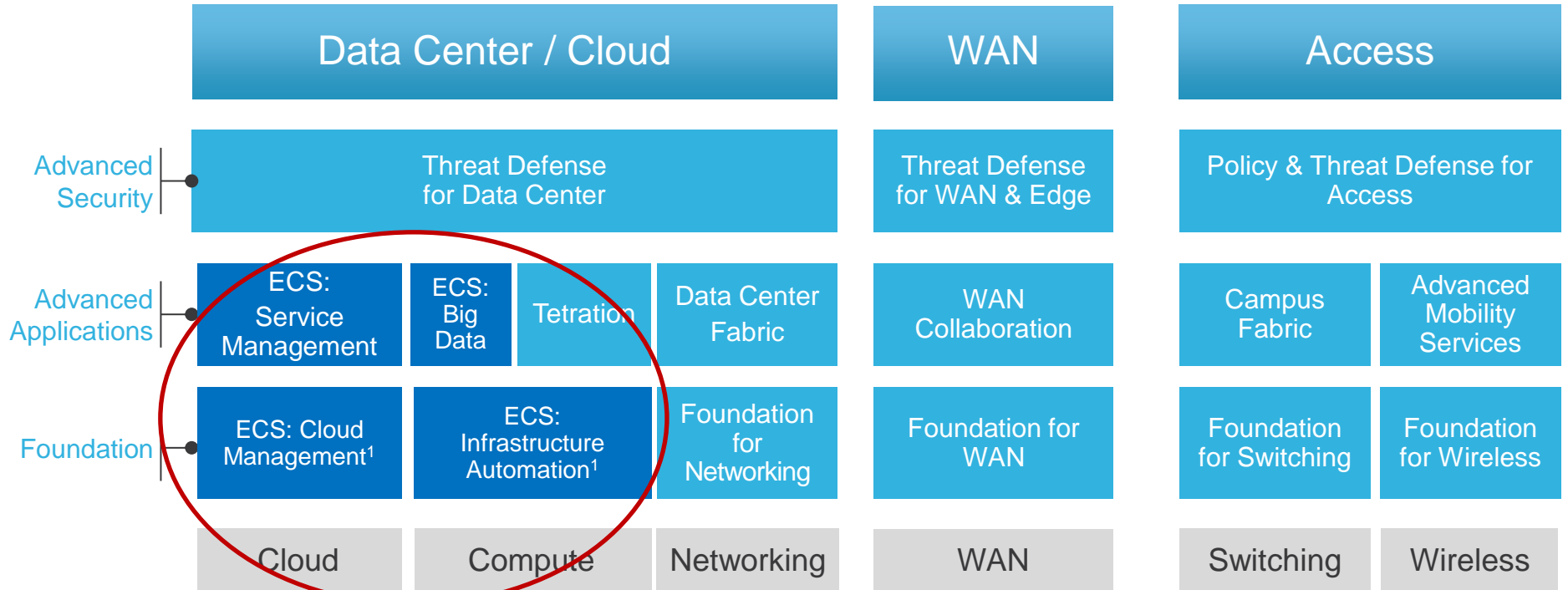
Cisco's Approach - Loosely Coupled, Fine Grained Programmable Policy-Driven Models



Cisco ONE Enterprise Cloud Suite

Solution Overview

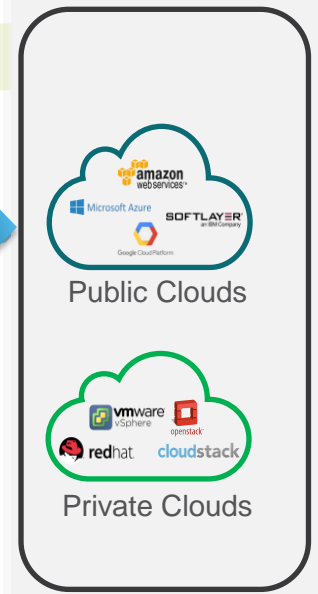
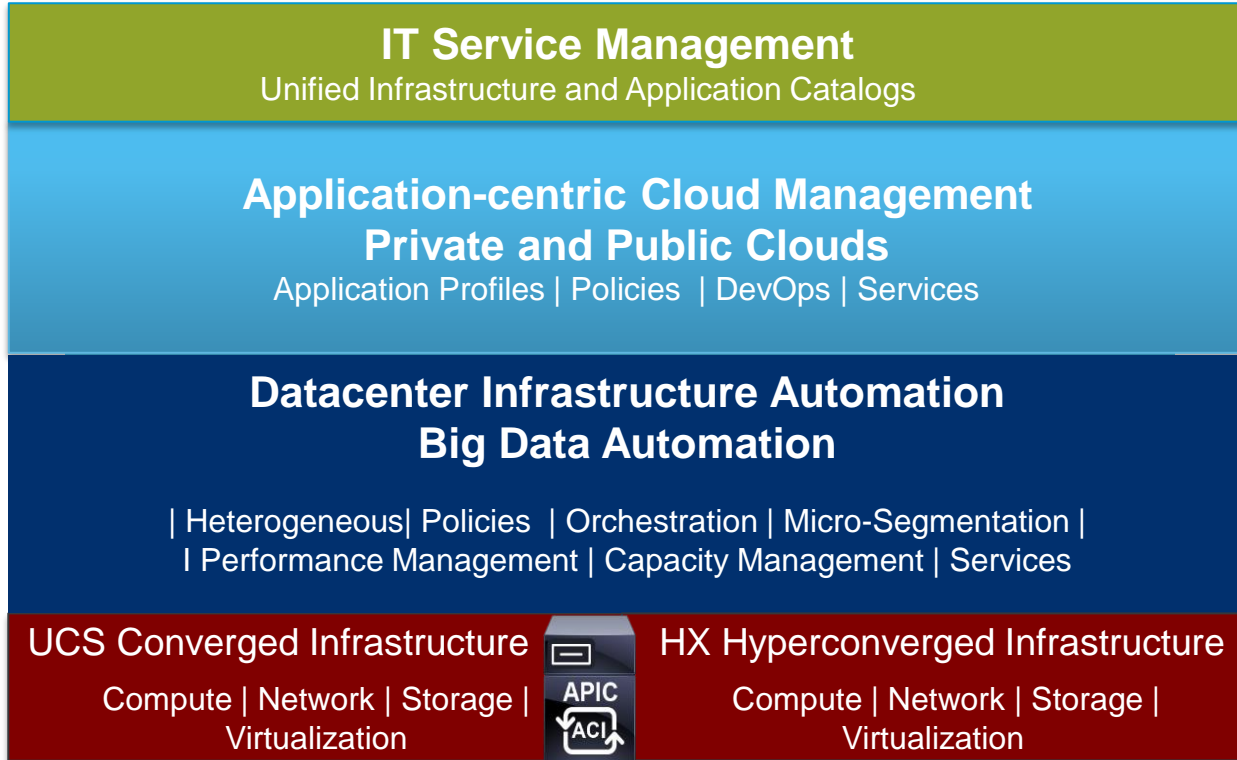
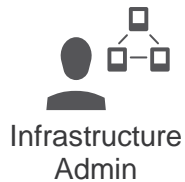
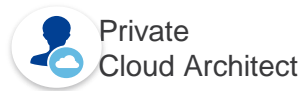
Cisco ONE Software



¹Available together as **“Foundation for Cloud”**

Enterprise Cloud Suite – Reloaded for FY17!

Comprehensive Cisco Cloud Platform for Hybrid IT

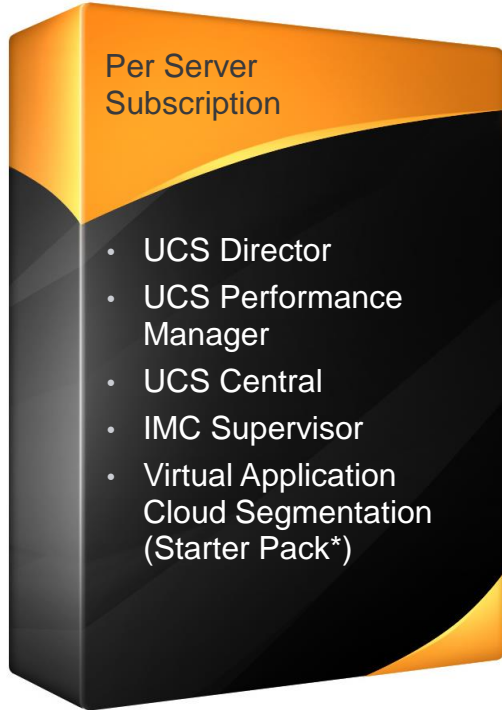


New Cisco ONE Enterprise Cloud Suite Offers!



All ECS Packages can be purchased independently or together

Infrastructure Automation



Use Cases & Outcomes

Use Cases:

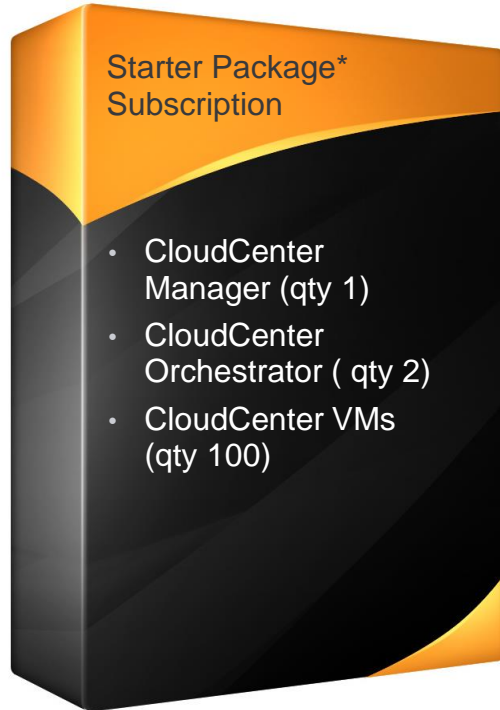
- Self-service consumption of data center infrastructure (compute, network, storage & virtualization)
- Multi-vendor automation & orchestration
- Performance monitoring & capacity planning
- Unified management of UCS Domains
- Secure, repeatable application deployment with micro-segmentation

Business Outcomes:

- Greater data center productivity
- Simplifies and standardizes data center processes
- Support business acceleration
- Maintains IT control

* Starter Pack allows up to three application containers per license purchased

Cloud Management



Use Cases & Outcomes

Use Cases:

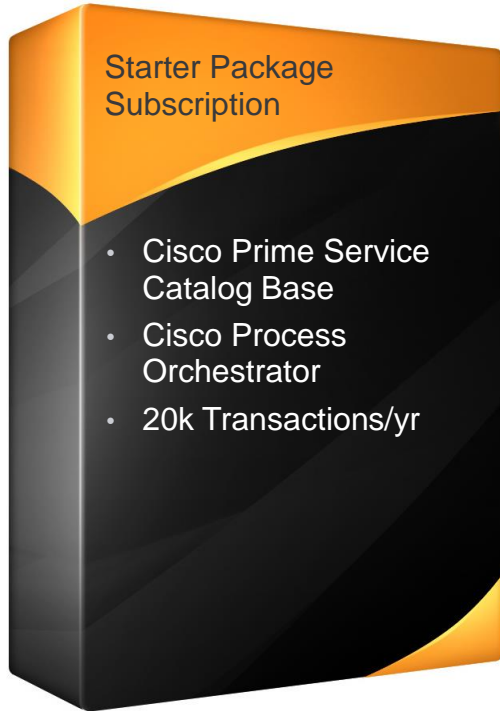
- Deploy and manage applications across data center, private and public cloud environments
- Single application profiles integrate into DevOps and CI/CD solutions
- Migrate and redeploy workloads to any cloud with ongoing management

Business Outcomes:

- Capacity Augmentation by optimizing utilization of DC, private cloud and public
- Up to 60% faster application deployment across environments
- Real-time benchmark capabilities ensure cost-effective workload placement

- * Not Sold Per Server
- Additional Managers, Orchestrators and VMs can be ordered using a C1 "spare" PID
- Support provided is Solution Support

Service Management



Use Cases & Outcomes

Use Cases:

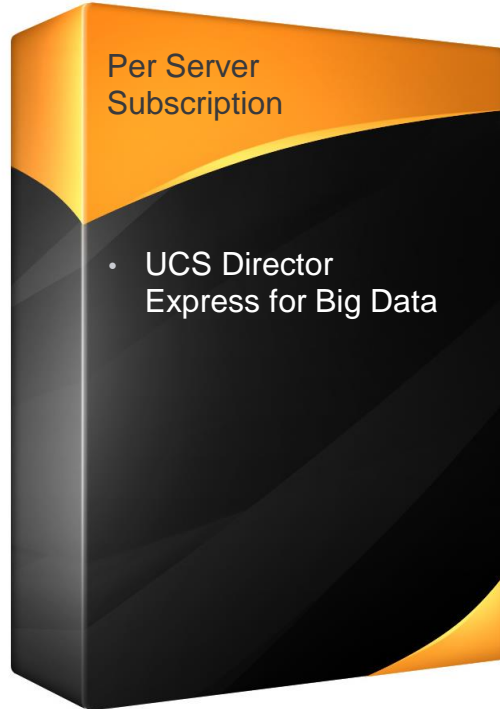
- Unified self-service Catalog and Configuration Management for Cloud, Application and Infrastructure services
- Out of the box integration with Cisco UCSD, Cloud Center, and Process Orchestrator
- Auto Import of automation tasks, workflows, application profiles and publish them into the unified catalog
- Solution can be extended to Workplace services and Business Process automation

Business Outcomes:

- Consolidate multiple portals into one portal
- Automate integration with backend systems
- Deliver unified digital experience to LoB, DevOps, and ITOps user segments

- Sold per transaction - a transaction is a PSC service request or PO workflow execution
- This package includes PSC base features and full PO features including all PO adapters
- Additional Service Management features and transaction capacity can be added to Service Management Base

Big Data Automation



Use Cases & Outcomes

Use Cases:

- Single touch deployment of Hadoop clusters on UCS architecture
- Integrate with major distributions: Cloudera, MAPR, HortonWorks, and Splunk Enterprise
- Comprehensive Diagnostics for infrastructure and Hadoop configurations
- Customization via northbound API to integrate with 3rd party solutions

Business Outcomes:

- Consistent Hadoop configurations
- Reduces data center complexity through centralized management of Big Data hardware and software

Choose the ECS Offer that customer needs now



All ECS Packages can be purchased independently or together

Or choose to buy in combination and save!

Foundation for Cloud

Infrastructure
Automation

+

Cloud
Management

Save more when you combine ECS - Infrastructure Automation with ECS - Cloud Management – This combination is called “Foundation for Cloud”

The more you buy the more you save!

Foundation for Cloud

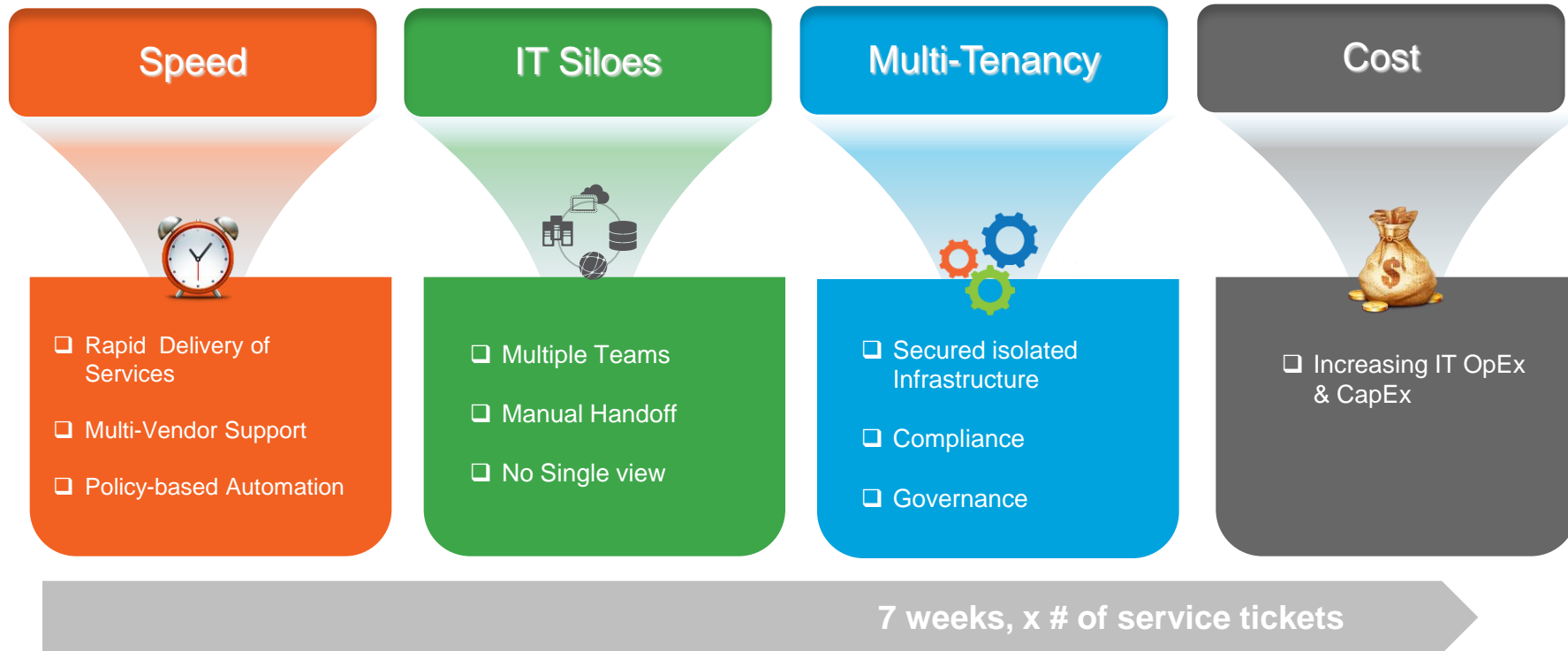


Save more on the other ECS Offers when ordered in combination with "Foundation for Cloud"

Enterprise Cloud Suite - Infrastructure Automation

IT Challenges

Automation critical for Data Center Transformation



Typical Customer Pain Points

Fully Exploit Capabilities

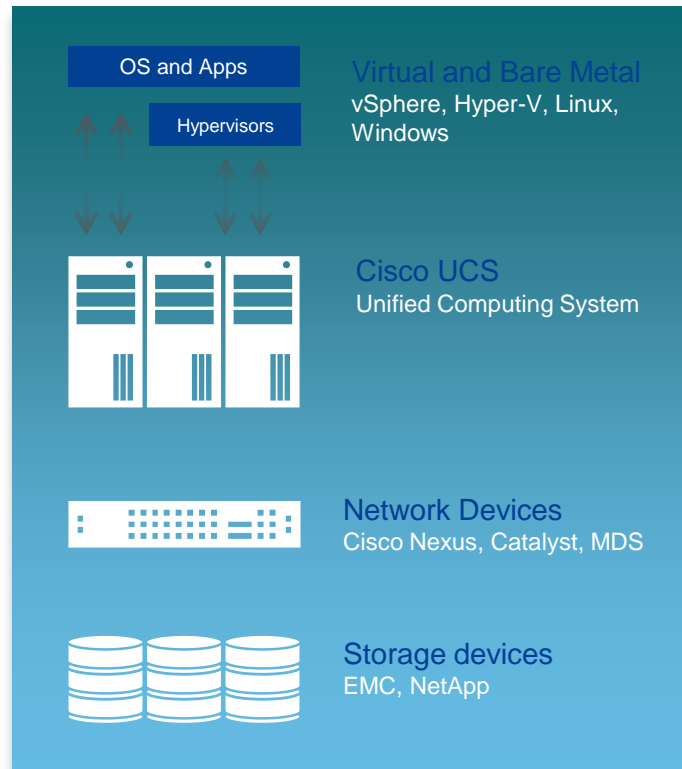
- Understanding performance and capacity within an integrated infrastructure is challenging
- Without appropriate information, customers are reluctant to change configurations even when change can deliver better ROI

Application Visibility

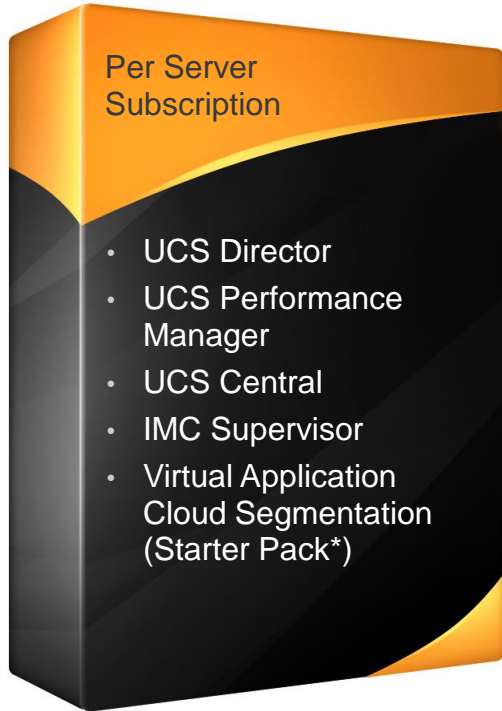
- Quickly identify whether application issues are related to integrated infrastructure configuration
- Forecast when integrated infrastructure configuration should be adjusted or additional resources acquired

Time to Value

- In order to deploy integrated infrastructure, need management tools and processes
- But asking teams to make 5+ tools work together takes too long



Infrastructure Automation



Use Cases & Outcomes

Use Cases:

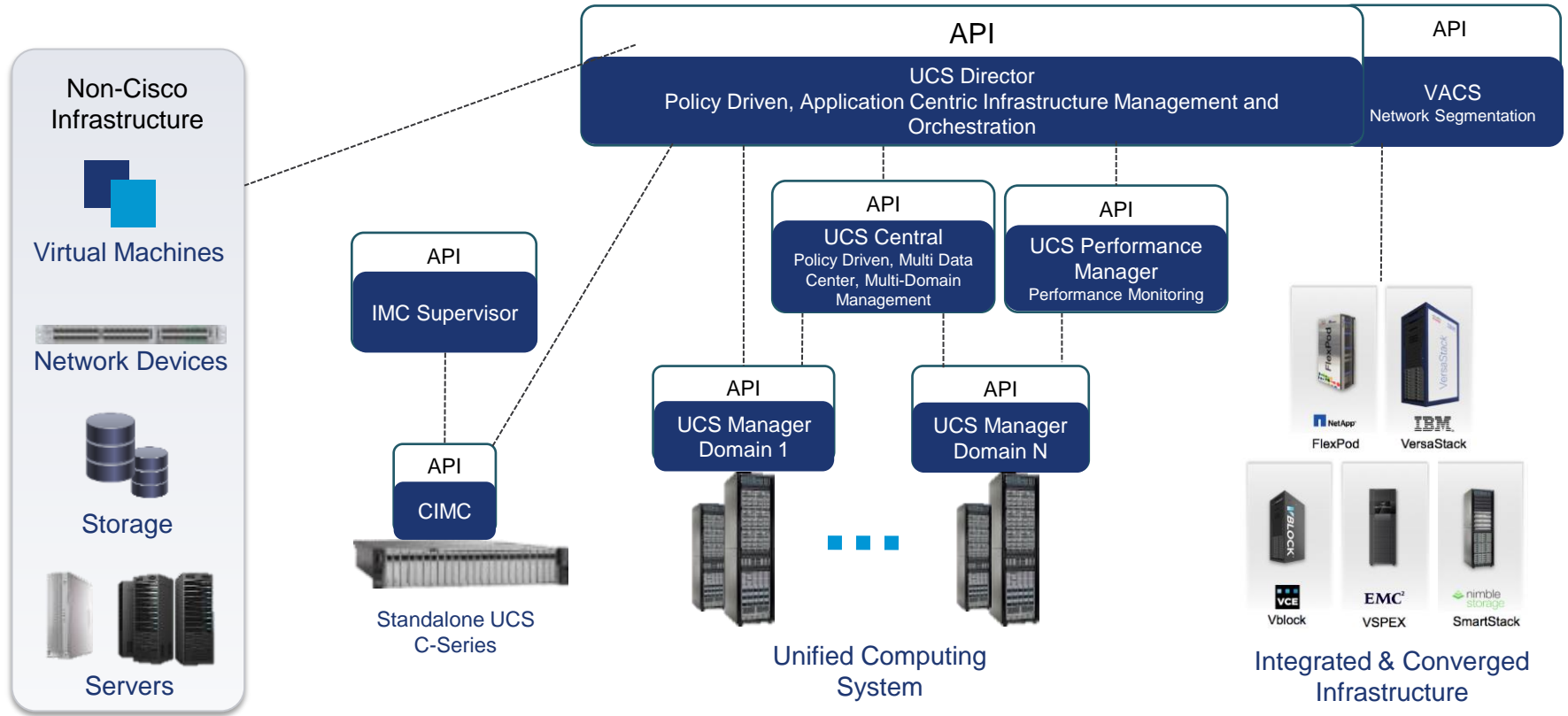
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Infrastructure Management



Cisco UCS Performance Manager

WHAT

Virtual appliance for performance and capacity management for Cisco integrated infrastructure

WHY

Enables active performance monitoring of entire integrated infrastructure stack

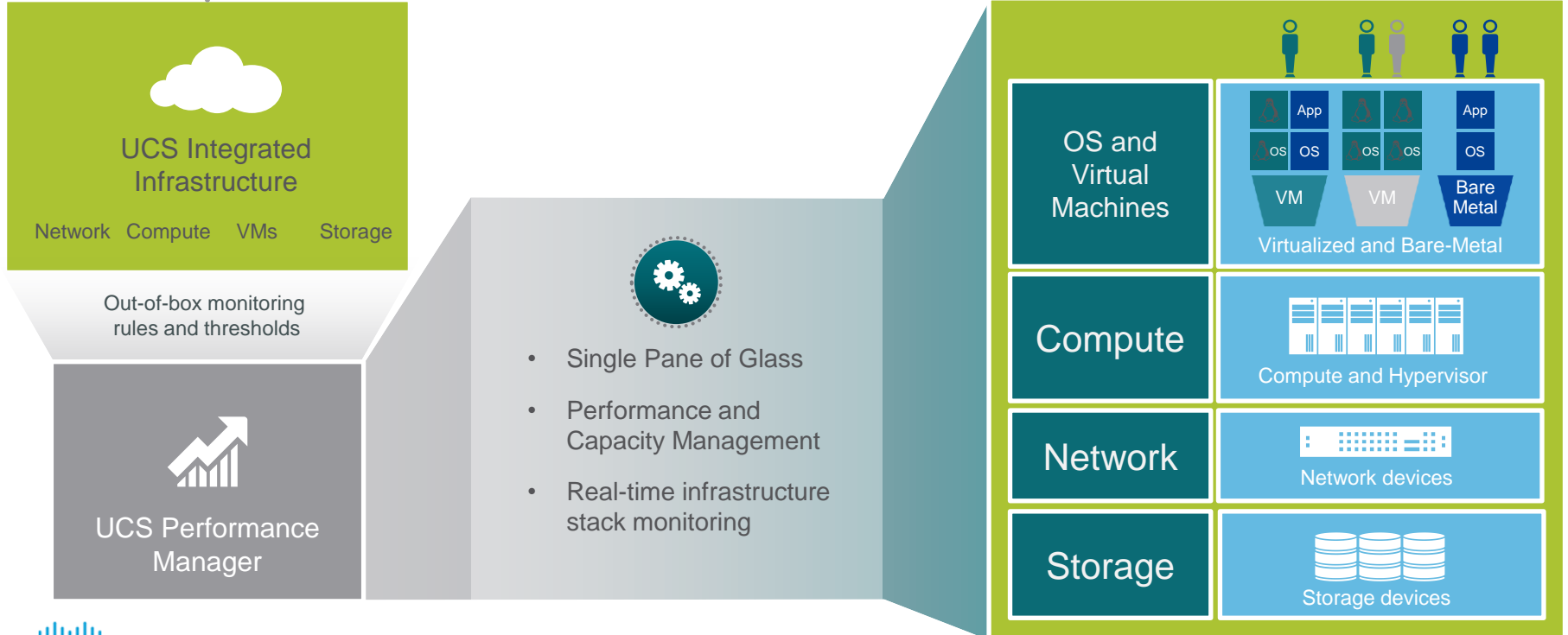
WHO

Cisco integrated infrastructures: VCE Vblock, NetApp FlexPod, EMC VSPEX, and custom

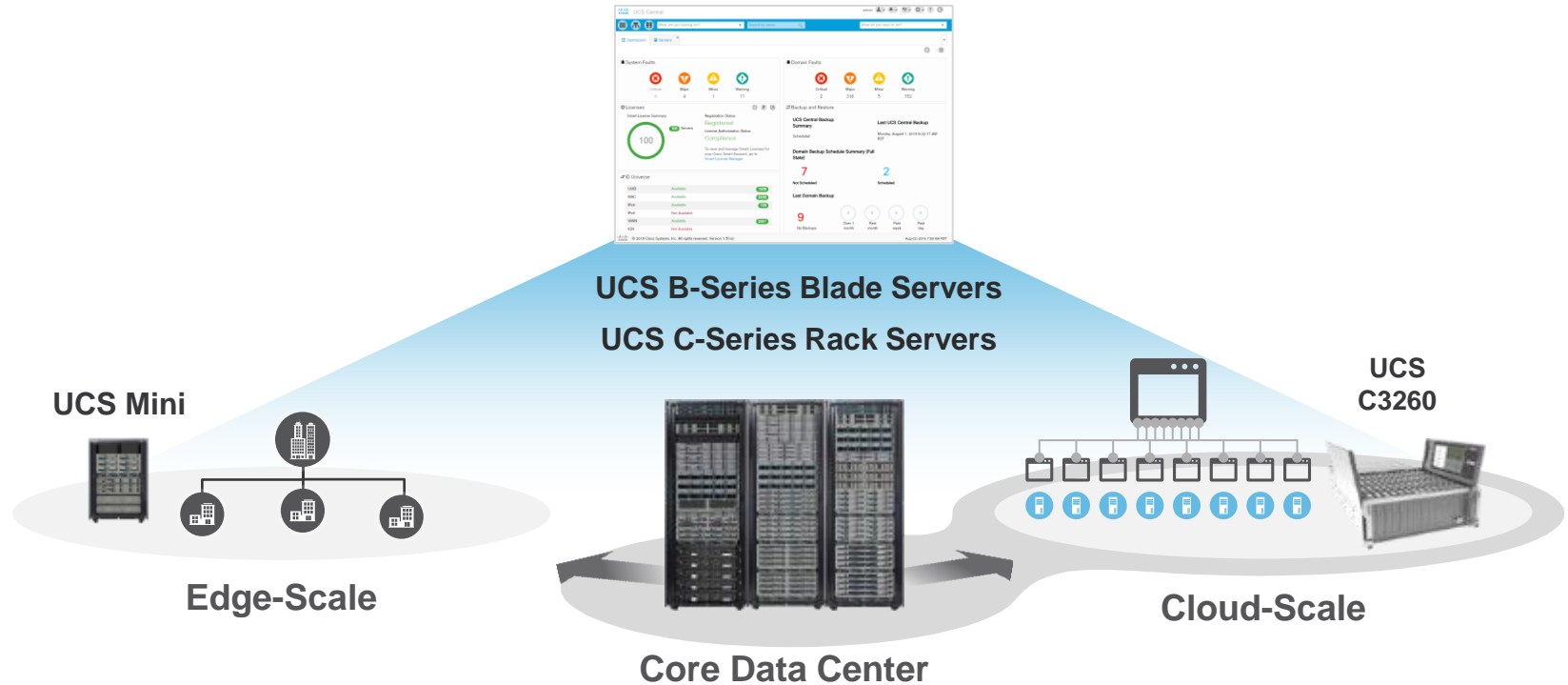


Cisco UCS Performance Manager

Automated Topology



UCS Central: Unified Management for UCS



Cisco IMC Supervisor

Centralized Management for Cisco C-Series & E-Series Servers

Reduce costs and increase efficiency in managing Cisco Standalone Servers



Platforms Supported:

- C-Series M3 & M4 Servers
- E-Series M1 & M2 Servers

Core Features:

- Platform Hardware Inventory
- Hardware Health Status
- vKVM Launcher (Incl. vMedia)
- Firmware Inventory + Mgmt
- Call Home (E-mail Alerting)
- Cisco Smart Call Home

Advanced Features:

- Policy-Based Framework
- Hardware Profiles

Cisco Virtual Application Container Services (VACS)



**Secure segmentation in
mins on shared
infrastructure**



**Simplified virtual
networking and security**



**Unified virtual services
licensing: cost-effective
solution**

A Closer Look: UCSD

Cisco UCS Director - Overview

Infrastructure Automation and Private Cloud Foundation automation



Infrastructure Automation and Orchestration

- Physical Compute, Network, Storage, Hypervisor
- Day0 bring up of Infrastructure
- Single Pane Management
- Converged Infrastructure (FlexPod, Vblock,..etc.)



Private Cloud Foundation

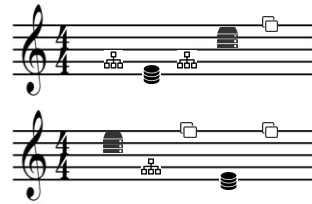
- Secure Multi-Tenancy
- Application Infrastructure Blueprint
- Resource Management
- Self-Service Portal
- Metering and Showback



Improve IT Operational Efficiency

- Reduce Opex & Decrease Service Delivery time
- Reduce Capex
- Increased Visibility
- Increase focus on value-add services

“Like music...there's an appropriate timing and order of operations when provisioning infrastructure...”



Virtualization

vmware



Physical Servers



Network



CITRIX



Storage



 UCS Director

UCS Director - How Does it Work?

- Abstracts configurations of hardware and software into programmable tasks
- Tasks used to create automated workflows
 - API attached to task eliminating scripting
 - Pre-validated, run immediately after creation
- Workflows published into service catalog or called via APIs by CloudCenter and others
- Dynamic orchestration that keeps business moving
- No other vendor that offers such comprehensive Infrastructure Automation capabilities



DC Automation for Cisco Converged Infrastructure Stacks

Converged Stack w/ Storage Partners

FlexPod



NetApp

Vblock



VCE

VersaStack



IBM

SmartStack



Nimble
Storage

FlashStack



Pure
Storage

Cisco Stacks w/ Software Defined Storage

Big Data &
Analytics



All Cisco
Infra

OpenStack



Red Hat
OpenStack

Container Stack



Docker

Cisco
HyperFlex



Hyper
Converged

Cisco Converged and HyperConverged Infrastructure

Cisco
UCS



UCS Director



Cisco
Nexus

Primarily Blades

Primarily Racks

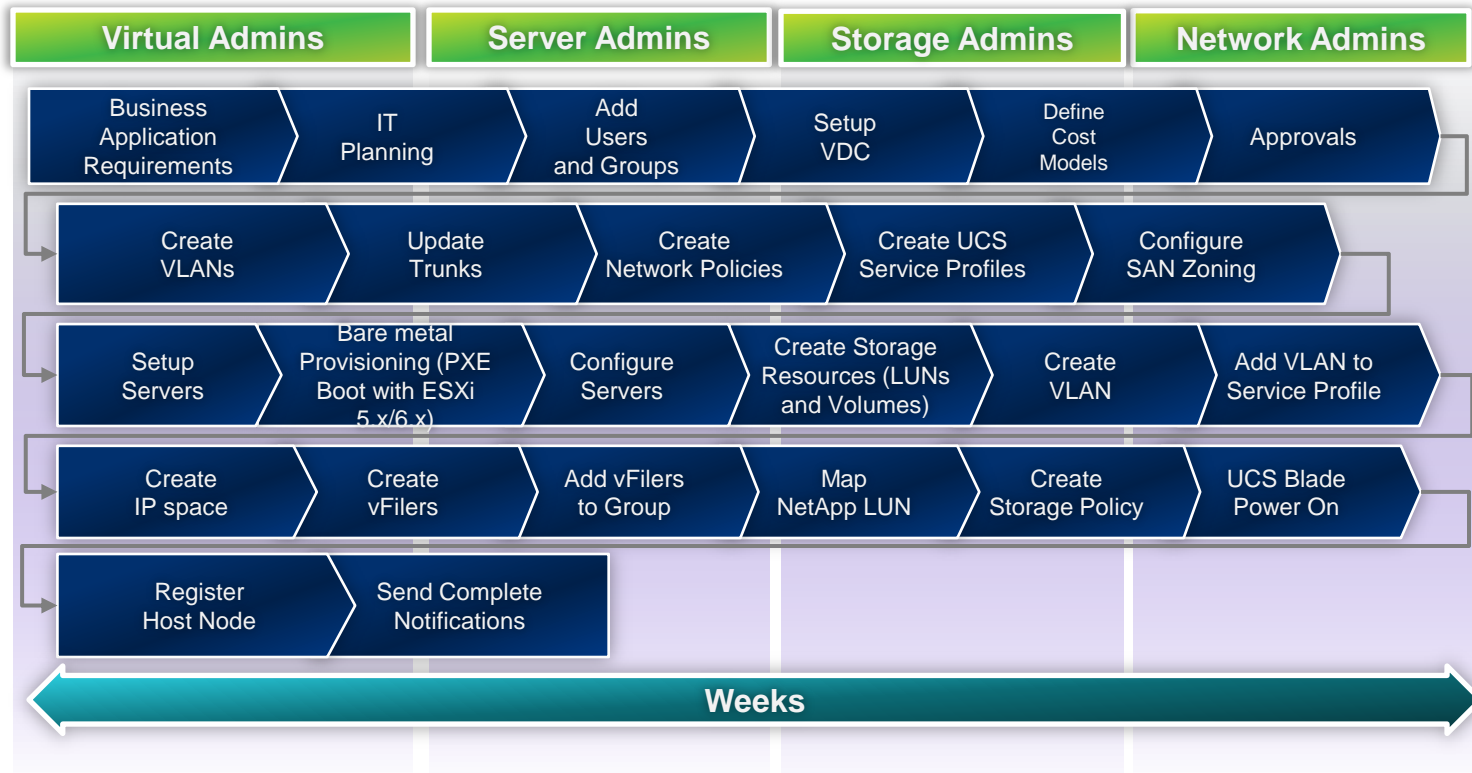
Example - How are we managing Converged Infrastructure?

Challenges:

- Many groups
- Many human interfaces
- Manual steps
- Compliance

Result:

Delays



Cisco DC Automation – UCS Director

Broad Multi-Vendor Infrastructure Support

Hyper-Converged



HyperFlex



Converged



VM



L4-L7



Compute



Network



Storage

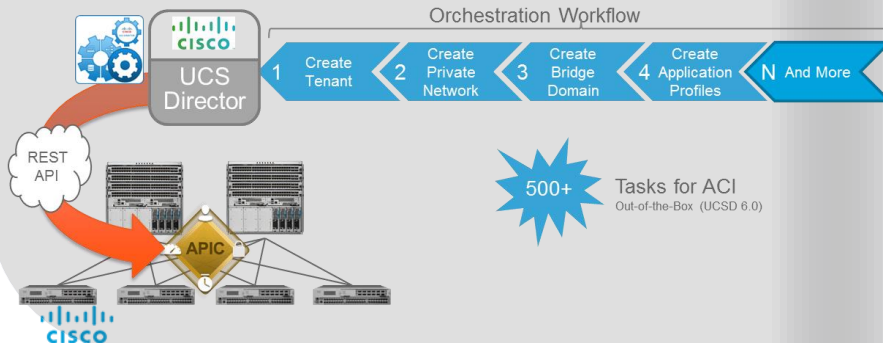


Importance of UCS Director with ACI

Automation - ACI Fabric Only

Out-of-box Workflow Tasks for:

- ✓ Tenant
- ✓ Application Network Profile
- ✓ VRFs, Contracts, EPGs, BDs, L2Out, L3Out
- ✓ Service Graphs, Device Clusters, etc.
- ✓ VMM Domain, Static Paths, etc.



Automation- ACI Fabric, Compute/Storage/Virtualization

End-to-End automation support:

- ✓ ACI Model (Tenancy, application infra profile, other ACI constructs)
- ✓ Compute Layer - Virtual/Physical Server
- ✓ Storage Layer
- ✓ Virtualization Layer
- ✓ Lifecycle Management - Services



Extensibility with UCS Director

API

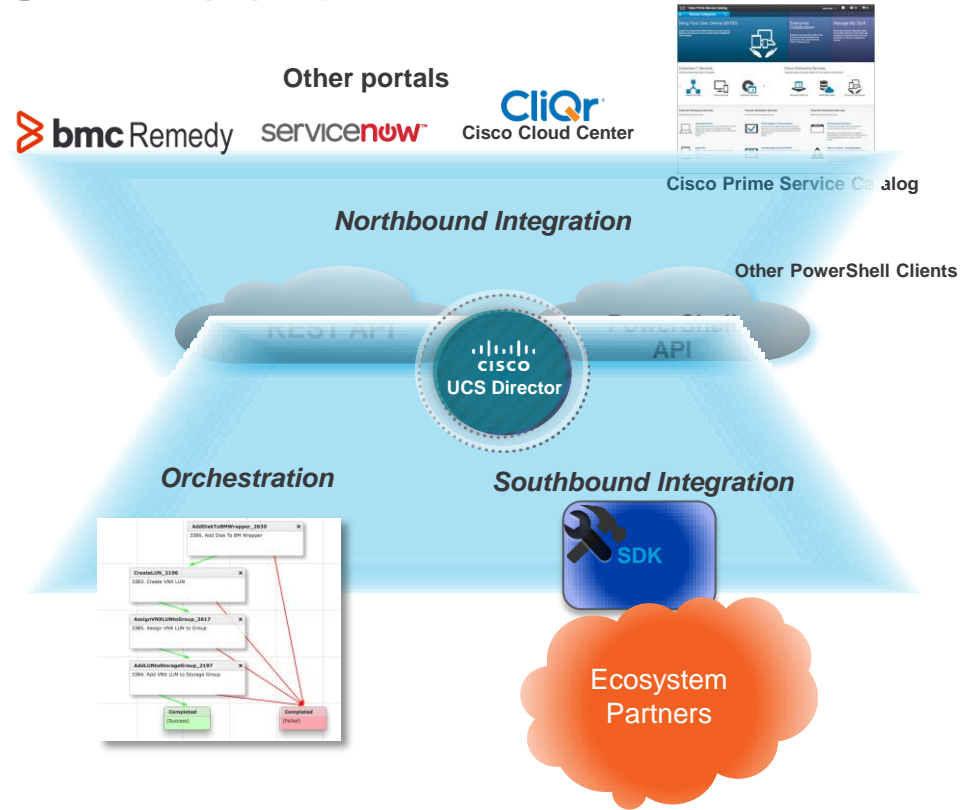
- ❖ Northbound Integration
 - ❖ REST API
 - ❖ Powershell

SDK

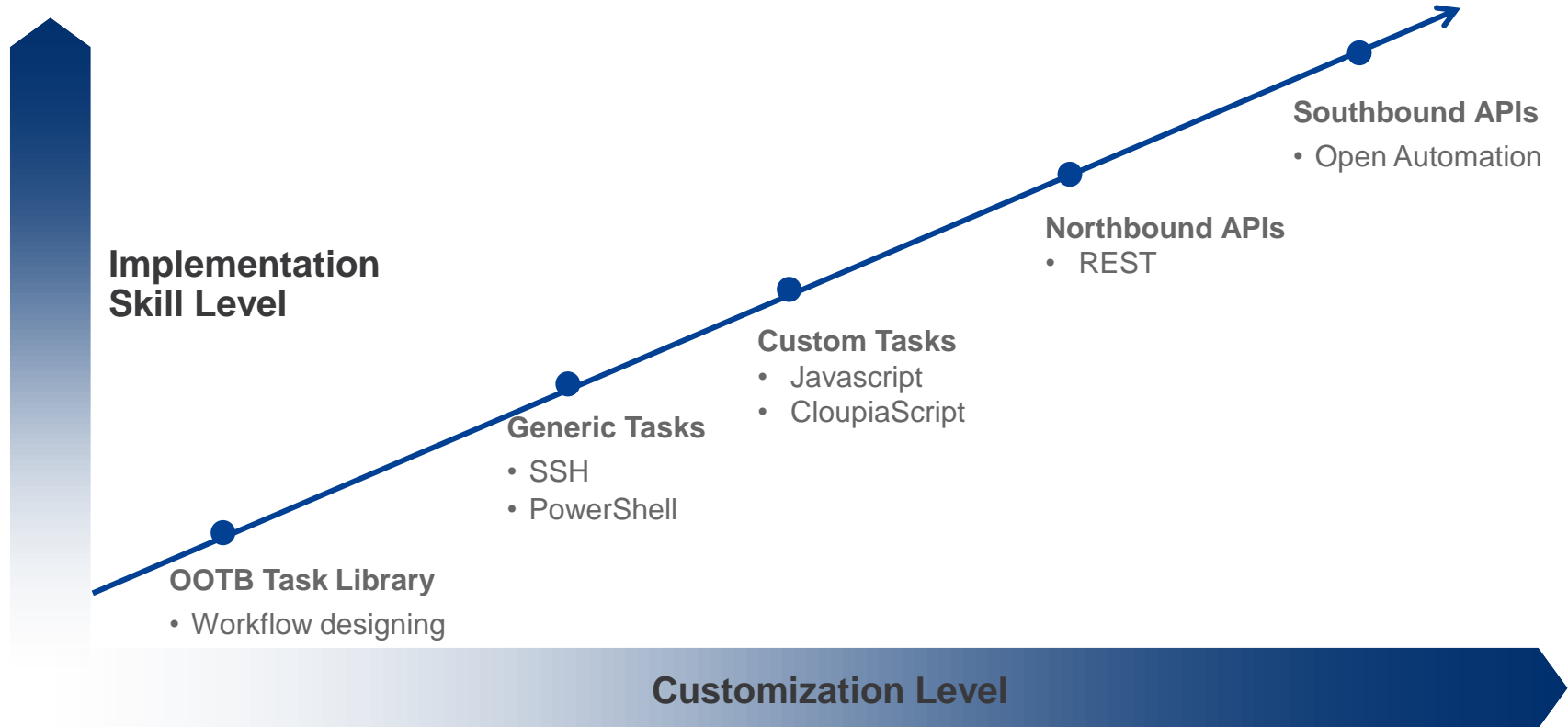
- ❖ Southbound Integration
 - ❖ Open Automation SDK

Orchestration

- ❖ Workflow Orchestration
 - ❖ Workflow Designer
 - ❖ 2000+ Tasks (4 SMEs in a box)
 - ❖ Custom Tasks



UCS Director Extensibility Model



UCS Director 6.0 – What's New Highlights

End User Portal UI

- ✓ New User Interface (HTML5)
- ✓ Revamped End User Portal
- ✓ Customizable Landing Page Dashboard
- ✓ Simplified Wizard Experience
- ✓ Actions with refreshed icons
- ✓ Improved search experience
- ✓ Admin Portal remains as Flash based UI (Glacier Bay target for HTML5)

Bare Metal – UCS Managed Servers

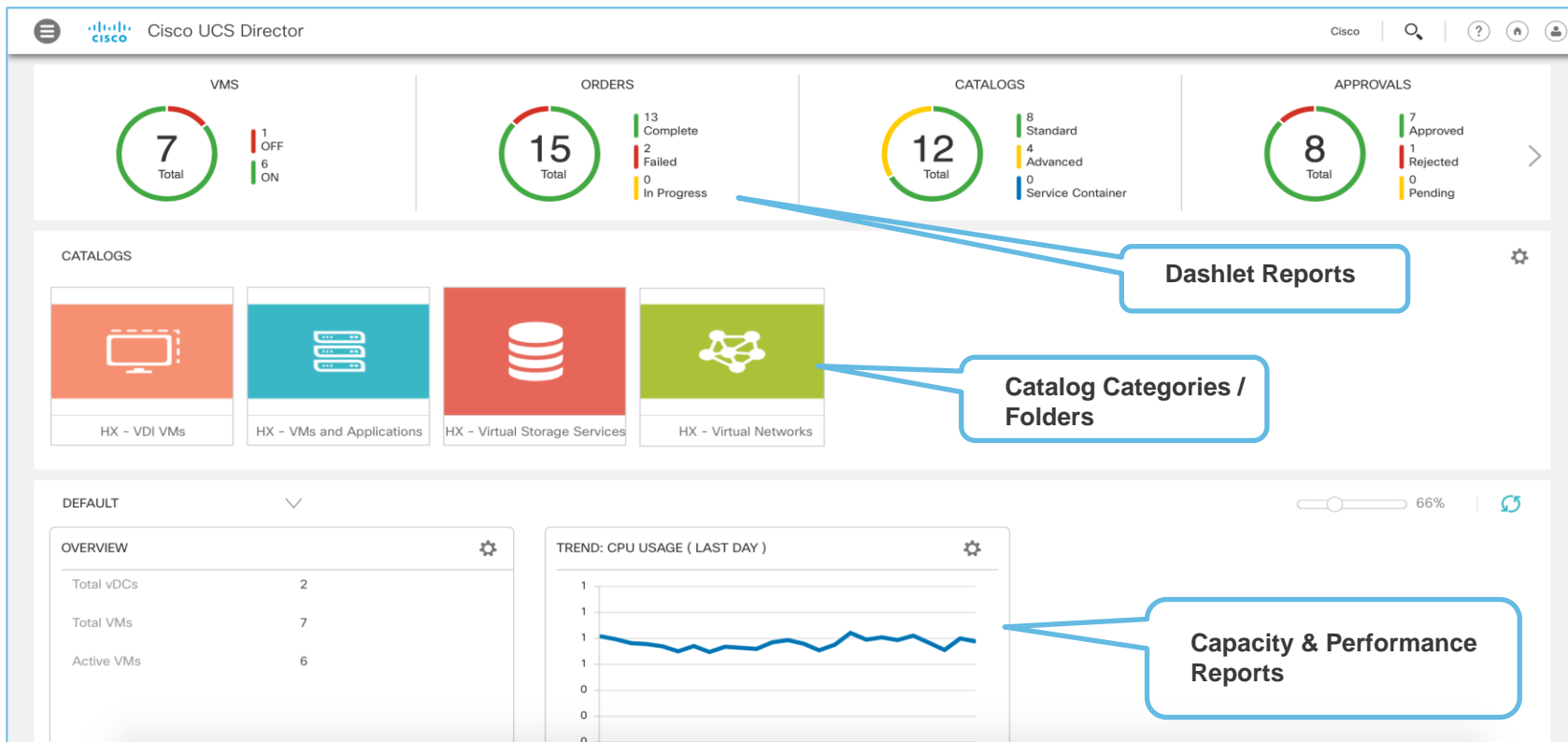
- ✓ Policy based Bare Metal for UCS Managed Servers (only)
- ✓ Bare Metal Catalog with Workflow support for UCS Manager based policy
- ✓ Bare Metal Cost Model – compute, storage, network, fixed and one-time cost
- ✓ BM UCS Server Selection – option to delegate to End Users (devOps BM roll out)
- ✓ BM UCS Server Lifecycle, Showback and Chargeback (devOps BM roll out)

HyperFlex Management

- ✓ HyperFlex Pod – Wizard (account setup)
- ✓ Day1 / Day2 HyperFlex Infrastructure automation (Tasks and Workflows)
- ✓ HyperFlex based Private Cloud – IaaS automation
- ✓ HX 1.7.1 support

HTML5 End User Portal – UI

End-User Landing Page



HTML5 End User Portal – UI (Contd...)

Catalog Items with new ICON Images

The screenshot displays the Cisco UCS Director interface. At the top, the header includes the Cisco logo, the text "Cisco UCS Director", and navigation icons for search, help, home, and user profile. Below the header, the "Catalog" section is visible, featuring a search bar and navigation icons. On the left, a sidebar lists categories: "All", "VMs and Applications", "HX - Applications", "Virtual Storage Services", and "Big Data Applications". The main content area shows a grid of catalog items, each with a distinct icon and a label. The items are:

- SLES 11 SP1 vCenter_FP (OpenSUSE icon)
- RHEL 6.0 vCenter_FP (Redhat icon)
- Windows 2008 VM vCenter_FP (Windows icon)
- HX - RHEL 6.5 vCenter_HX_01 (Redhat icon)
- HX - Apache Web Server vCenter_HX_01 (Apache icon)
- HX - Sugar CRM vCenter_HX_01 (Sugar CRM icon)
- HX - Storage Service (Storage icon)
- Big Data Applications vCenter_FP (OpenSUSE icon)

A blue callout box with a pointer highlights the "HX - Storage Service" and "Big Data Applications vCenter_FP" items, containing the text: "Published Catalog Items with refreshed ICON images".

HTML5 End User Portal – UI (Contd...)

New ICONS for VM Lifecycle Management

The screenshot displays the Cisco UCS Director interface. At the top left, there is a menu icon and the Cisco logo followed by the text "Cisco UCS Director". Below this, the "Virtual Resources" section is visible, with tabs for "Summary", "vDCs", "Application Containers", "VMs" (which is selected and underlined), "VM Action Requests", "Images", and "Resource Pools". A callout box points to the "VMs" tab with the text "New ICONS for VM's life-cycle management". Below the tabs, there is a row of icons: an eye, a rocket, a power button, a stop sign, a person with a stop sign, and a refresh icon. A "More Actions" dropdown menu is also present. Below the icons is a table with the following columns: Cloud, Request ID, VM-ID, VM Label, VM Name, Host Name, IP Address, Power State, and vDC. The table contains three rows of data, with the second row highlighted in light blue.

Cloud	Request ID	VM-ID	VM Label	VM Name	Host Name	IP Address	Power State	vDC
vCenter_FP	2	160		MK-VM-001				MK_Prod_v...
vCenter_FP	3	161		MK-VM-002	MK-VM-002	172.20.11...		MK_Prod_v...
vCenter_FP	4	162		MK-VM-003	MK-VM-003	172.20.11...		MK_Prod_v...

HTML5 End User Portal – UI (Contd...)

Switch User profile without LogOut and Login

The screenshot displays the Cisco UCS Director interface. At the top, there are five dashboard cards: VMS (1 Total, 1 OFF, 0 ON), UCS SERVERS (6 Total, 5 Associated, 1 Unassociated), ORDERS (15 Total, 2 In Progress, 11 Complete, 2 Failed), CATALOGS (24 Total, 22 Standard, 2 Advanced, 0 Service Container), and APPROVALS (14 total, 1 Rejected). A user profile dropdown menu is open, showing 'enduser' and options like 'Classic View', 'Edit My Profile', 'Log Out', 'Approved', and 'Rejected'. Below the dashboard is the 'ACCESS PROFILES' section with a table:

Profile	Description	Access Level	Default Profile
EndUser		Service End-User	<input checked="" type="radio"/>
testSPAdmin		Group Admin	<input type="radio"/>

Below the table is a 'DASHBOARD' section with a checkbox 'Enable Dashboard (in the top level menu)' which is checked. At the bottom, there are three buttons: 'Close', 'Save', and 'Login with New Default profile'. Callouts point to the 'Edit user profile' button, the 'Select User Profile' radio button, and the 'Switch User Profile' callout.

UCS Director - Automation for HyperFlex

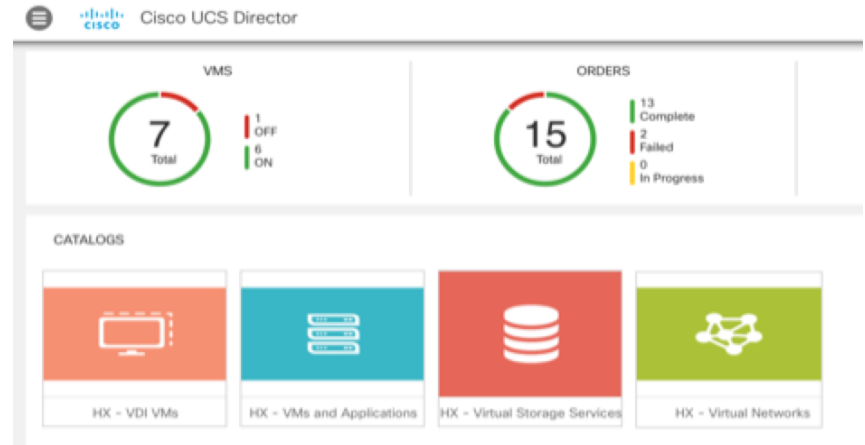
New!

Use cases

- Turn HyperFlex into Private Cloud – IaaS
- HyperFlex Pod View, VM stack-view- Unified Mgmt across Converged & HyperConverged DC Infra
- HyperFlex – Automation / Orchestration Tasks & Workflow

Benefits

- Unified HyperFlex, FlexPod, vBlock – Private Cloud – IaaS automation
- Policy based automation to match workload targets for HyperFlex (VDI, VSI, etc.)



HyperFlex Tasks

- 📄 Create HyperFlex Datastore
- 📄 Create HyperFlex ReadyClones
- 📄 Delete HyperFlex Datastore
- 📄 Edit HyperFlex Datastore
- 📄 Mount HyperFlex Datastore
- 📄 Unmount HyperFlex Datastore

Current status for the service request.

- 1 Initiated by admin
- 2 Create HyperFlex Datastore Completed action
- 3 Complete Completed successfully.



DevNet

UCS Developer Center

Tools to help in your journey of infrastructure automation for DevOps and cloud native apps

- Learning Tracks customized for Infrastructure and Application Developer
- UCS Director Sandbox and Emulator to try your code as you build solutions
- Solutions ideas to accelerate your development cycle



Start learning the UCS Unified APIs

FEATURED LEARNING TRACKS

- UCS for Infrastructure Developers
- UCS for Application Developers

See what others are creating!

DevNet Creations - a platform of Ideas, Innovations, and Inspiration

Chef
By Cisco DevNet Team
Next UI toolkit is an HTML5, JavaScript based toolkit for network web application.
Next UI Toolkit

Puppet
By Cisco DevNet Team
DevNet is an internet of things development environment enabling frictionless design and deployment of complex IoT solutions.
CMX Mobility Services, Data in Motion, Enterprise IoT, Next UI Toolkit, Trepo

Ansible
By Cisco DevNet Team
Flare allows users with mobile devices to discover and interact with things in an environment.
CMX Mobility Services

[View more creations](#) [Submit your creation](#)



<https://developer.cisco.com/site/ucs-director/overview/>

Cisco UCS Director Community Workflows Index



Products & Services

Partners

Global

Developer

Support

Cisco Communities > Technology > Data Center & Cloud > Unified Computing System (UCS) > Cisco Developed UCS Integrations :

UCSD Workflow INDEX

created by ogelbric on Jan 19, 2015 5:11 AM, last modified by ogelbric on Jan 24, 2015 3:40 PM

Number	Description	Page Link
1	CIDR Calculator	CIDR Calculator
2	UCSD Play Book	UCS Director Play Book
3	Portal Folder Icons	Portal Folder Icons
4	Custom SSH	Custom Enhanced SSH



111	ISO Images In UCSD	ISO Images in UCSD
112	Simple 3 Tier App / Web / DB Example	Simple 3 Tier Stack / Multiple VM(s) / Multiple Catalogs / Multiple VDC(s)
113	UCSD Custom Graph Reports	UCSD Custom Graph Reports
114	Report Service Profiles / Blades over Time	Report Service Profiles / Blades over Time

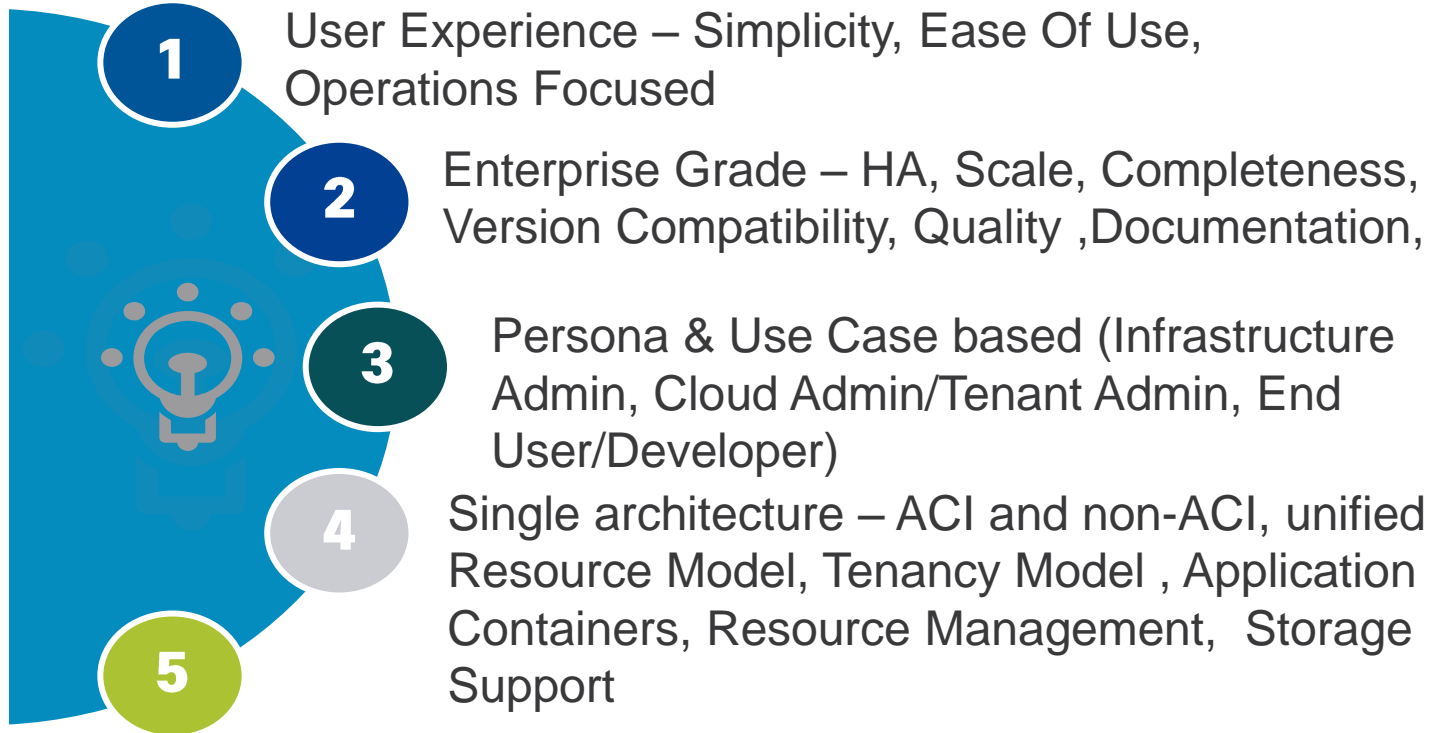
<https://communities.cisco.com/docs/DOC-56419>



UCSD - Tech Module Series

- Tech Modules provide technical information on what is supported as part of each integrated connector in UCS Director
- Follow a specific template and consumers can expect consistent data across any available connector
- Includes real-world use-cases and example workflow(s) to automate those use-cases
- Valuable tool for both pre and post-sales engagements, possibly even a substitute when live demo is not available
- Current Tech Modules are “connector-based”, plan is to also create and offer “solution-based” (or “use-case-based”) modules as well

UCSD Product Direction



Open and Extensible, SDK (industry standards), IVT Certification, Documentation, Information model consistency, API Consistency

Private Cloud

UCS,HP,DELL

Virtualization
VMWARE, Hyper-V, KVM

ACI , L4-L7

Storage

SDK, OpenStack

Nexus, MDS

Containers

Integrated
Infrastructure

Hyperconverged

UCS Director Unique Value Proposition

Out of the box Turn-Key Solution (2500+ Tasks)

Single integrated solution for virtual and physical infrastructure

Multi-vendor and converged infrastructure support

Flexibility with Model based orchestration

Expanding ISV Ecosystem based on Open Automation

Ease of use. Rapid deployment. Lower TCO



