



Cisco UCS Mini

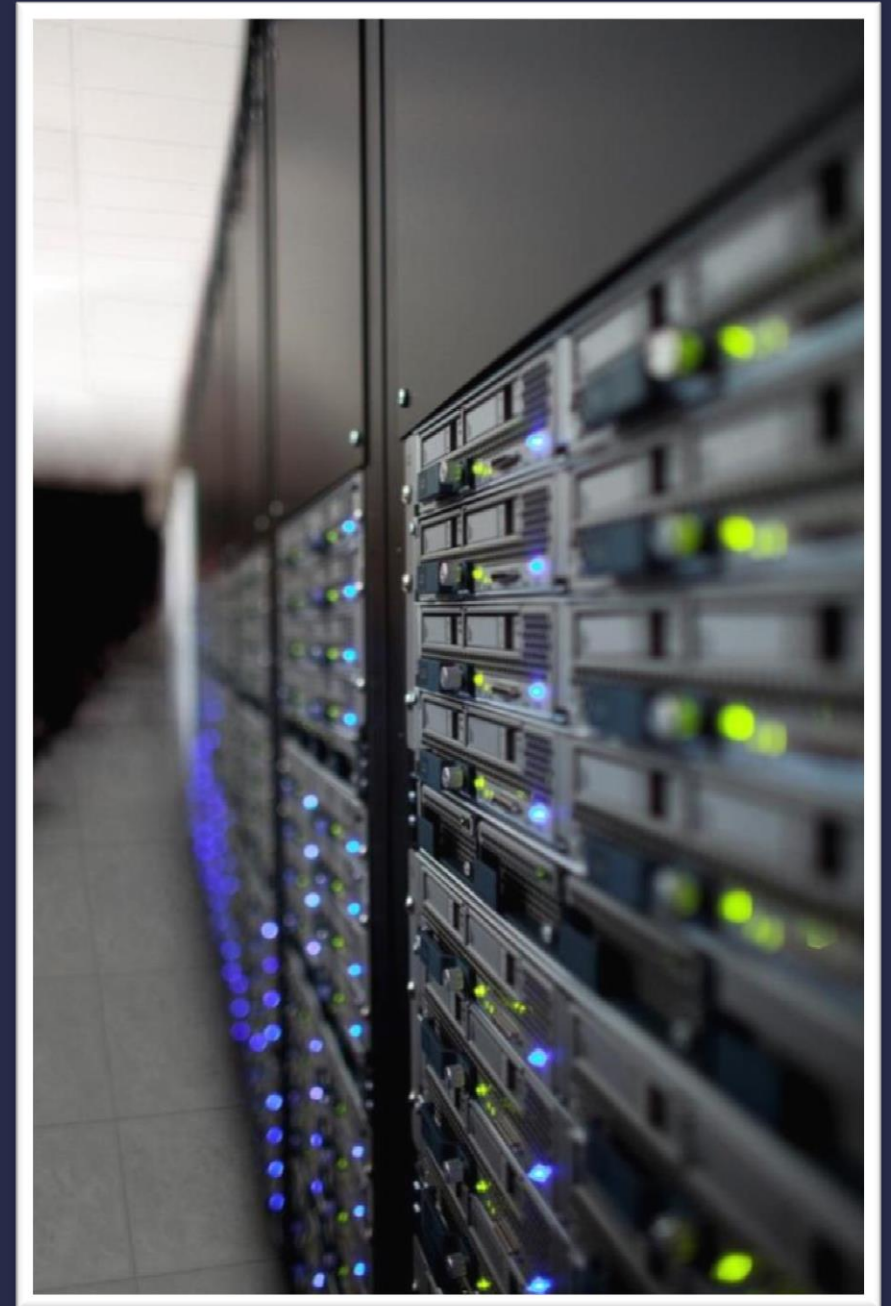
Use Cases, Solutions, Products, Management

Daniel DeBusschere

Cisco Consulting Systems Engineer
SLED Data Center

+1 678-352-3792, ddebussc@cisco.com, @ddebuss

January 20th, 2015



Cisco Data Center CSE Profile

Name: Daniel DeBusschere

Joined Cisco: November 09, 2009

Industry Experience: 22+ years (1992)

Social Media



Twitter: @ddebuss, #CiscoUCS

Web Site: <http://ciscoquicklinks.com/>



Background:

Overview: My entire 17+ year career at IBM was focused on technical selling to all types of customers including very large enterprises, SMB, SLED, and partner technical enablement.

Product areas: Assigned Regional Designated Specialist (RDS) in multiple technical skill areas including Systems Management, BladeCenter, Virtualization (including VMware), and high-end servers.

Publication: Co-writer of Implementing IBM Director Management Solutions, IBM Redbook, December 2001, 556 pages, ISBN-10: 0738423785.

Publication: Co-developer of IBM professional certification exam 000-079 System x IBM Director v5.2

Certifications: Dozens of professional technical certifications from IBM, Microsoft, and Novell (most from IBM).

Education: Graduated with honors from Eastern Michigan University with degrees in Finance and Economics.

History:

11/2009 – Present:	Cisco Data Center Consulting Systems Engineer
10/2000 – 11/2009:	IBM BladeCenter, System x, iDataPlex, xSeries Field Technical Sales Specialist (FTSS)
02/1999 – 10/2000:	IBM Netfinity Channel Technical Sales Specialist (CTSS), Advanced Technical Support (ATS)
05/1996 – 02/1999:	IBM K-12 Global Education Technical Sales Specialist
09/1992 – 05/1996:	IBM K-12 Global Education Marketing Sales and Services Specialist

Agenda

UCS Introduction

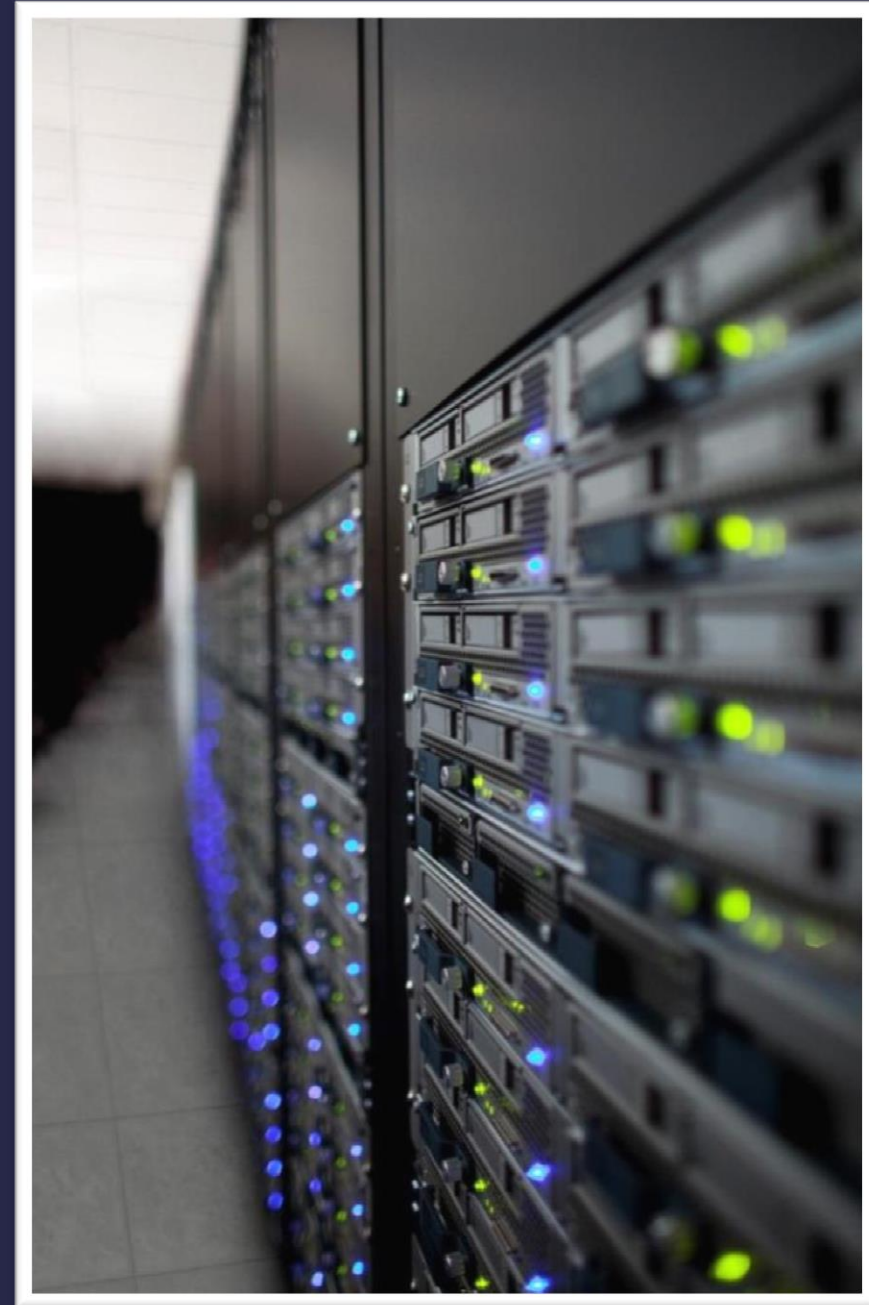
UCS Overview

UCS Mini

UCS Update

UCS Management

Conclusion



Data Center Demands



Business
Process Agility



Regulatory
Compliance

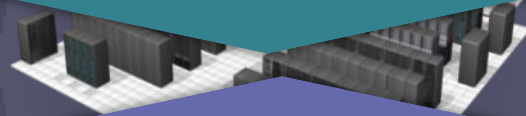


Security Threats



Budget Constraints

Business Challenges



Technology Trends

Cloud



Data Deluge



Energy Efficiency



Productivity





Cisco's Data Center Momentum

“

“In a market many thought we would exit, we gained share for the 18th consecutive quarter to gain the number one position in revenue share for x86 blade servers in the US with 41% share, six point ahead of our nearest competitor and currently we have the number two position worldwide, which I expect to close to the number one if we execute the way I believe we can run.”

John Chambers

August 2014

FY14 Q4 Earnings Announcement

Cisco Unified Data Center

The Platform for Delivering Data Center and Cloud Services



Unified Computing

Modular,
Stateless
Computing
Elements



Unified Fabric

Highly Scalable,
Secure
Network Fabric



Unified Management

Automated
Resource
Management
(Physical and
Virtual)



Unified Cloud Networking Services

Automated
L4-7 Virtual
Services
Provisioning
and
Deployment

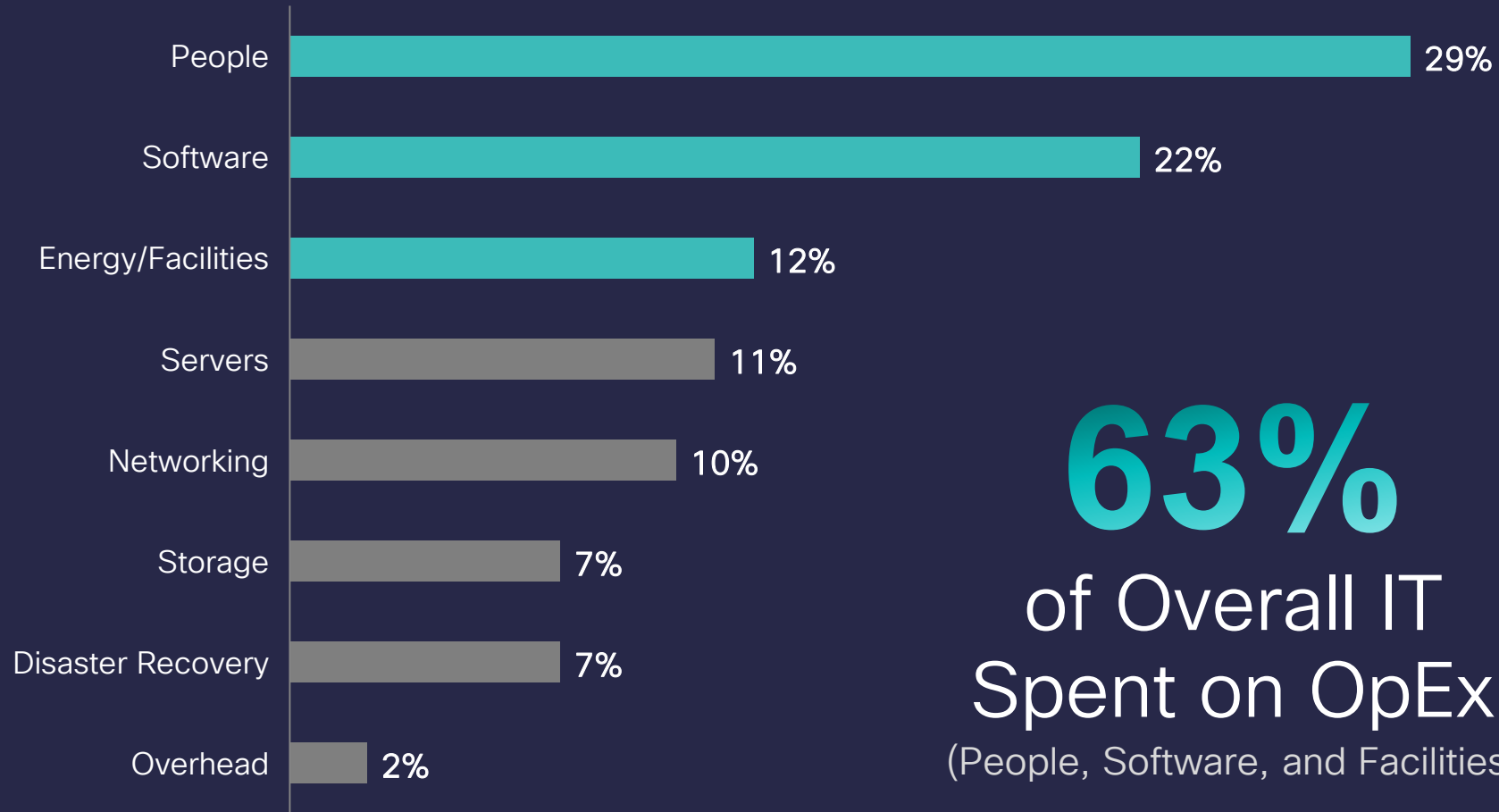
OPEN

RESILIENT

SECURE

SCALABLE

Data Center Economics



Source: Gartner-Cisco IT, "Data Center Cost Portfolio"

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Cisco UCS Leadership and Momentum

- As of Q4FY14 Data Center revenue run rate reached **over \$3 B**
- In Q4FY14, Data Center revenue* was **\$772M growing 30% Y/Y**
- As of August 2014, there are over **36,500 unique UCS customers** which represents 39% Y/Y growth
- More than **85% of all Fortune 500 customers** have invested in UCS
- As of Q4FY14 we have over **17,000 repeat customers** which represents 49% Y/Y growth
- Over **3,650 Channel Partners are actively selling UCS** worldwide and over 2,100 UCS specialized partners
- In CY14 Q1 Cisco is still one of the **Top 4 Server Vendors** based on Worldwide Revenue Share¹
- **100 World Record** Performance Benchmarks to date

*Data Center Revenue is defined as Cisco UCS and Nexus 1000V



Cisco Unified Computing System

Fastest Growing Product in the Market

#1

Americas revenue
market share in x86
blades ¹

36,500+

UNIQUE UCS
CUSTOMERS ²

Top 4

Server Vendor ¹

\$3B+

Data Center
Annualized
Revenue Run
Rate ²

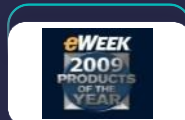
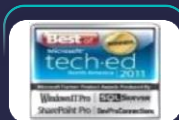
More than 85% of all Fortune 500
customers have invested in UCS

3,650+

UCS CHANNEL PARTNERS

100

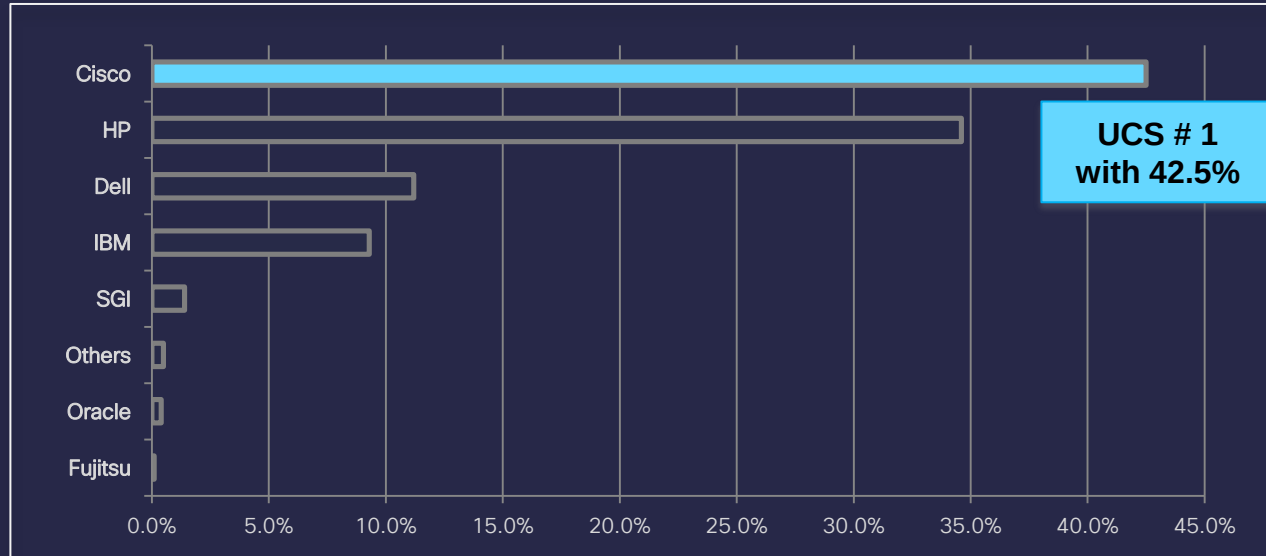
world record performance benchmarks to date



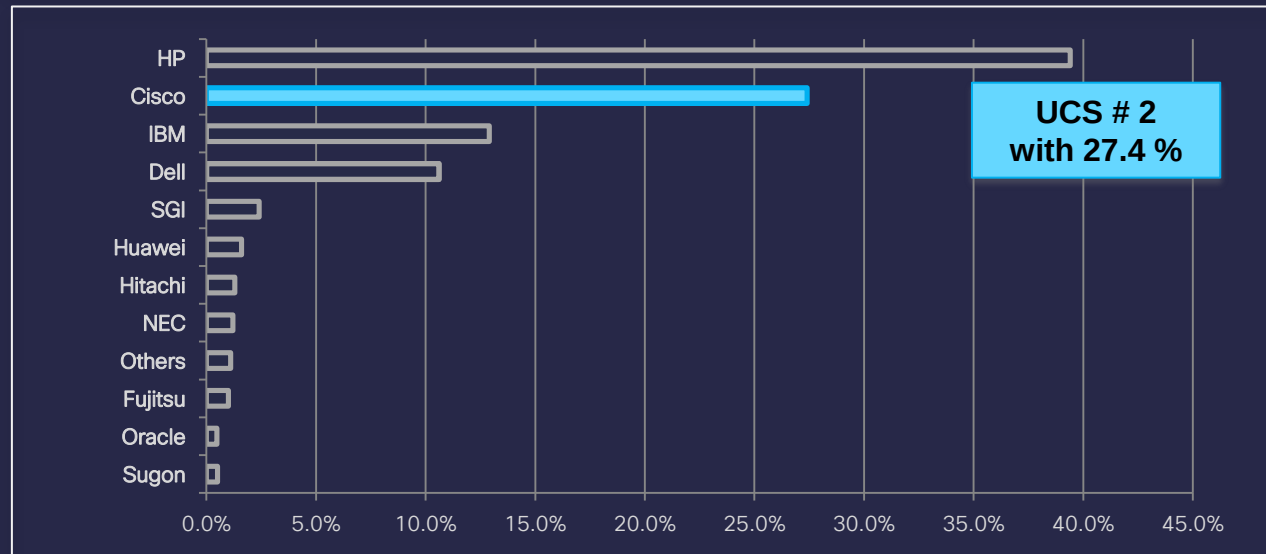
UCS Market Share Growth

X86 Server Blade Market Share Q2CY14

North America



Worldwide



UCS # 1 in Only Five Years

1 in North America (42.5%)¹
2 Worldwide and growing 37% YoY¹

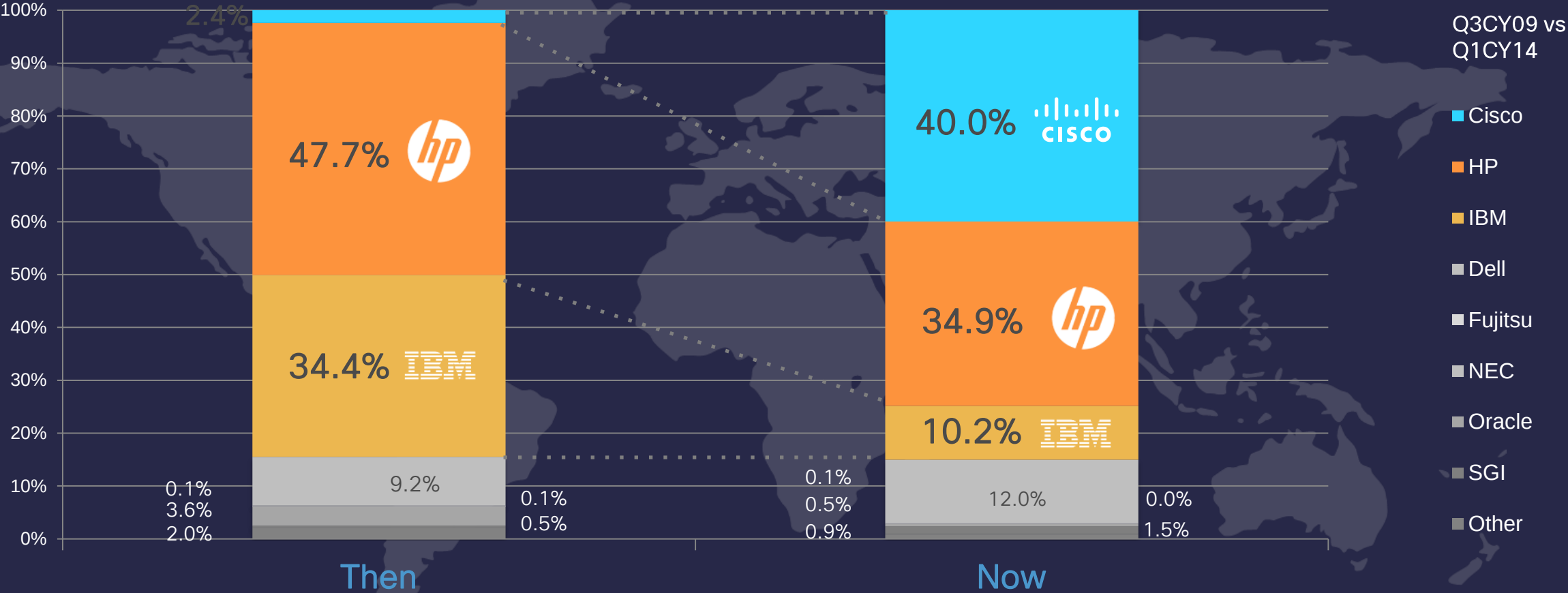
UCS momentum
36,500+ Unique Customers
17,000 Repeat Customers

Cisco UCS #1 in North America X86 Blade Server Market

Q3CY09 vs. Q1CY14 Vendor Shares¹

Q3CY09

Q1CY14



Source:¹ IDC Worldwide Quarterly Server Tracker, 2014Q1, May 2014, Vendor Revenue Share

Cisco UCS Performance: 100 Records

World-Record Performance

23

CPU

17

Virtualization/
Cloud

7

Database

17

Enterprise
Application

18

Enterprise
Middleware

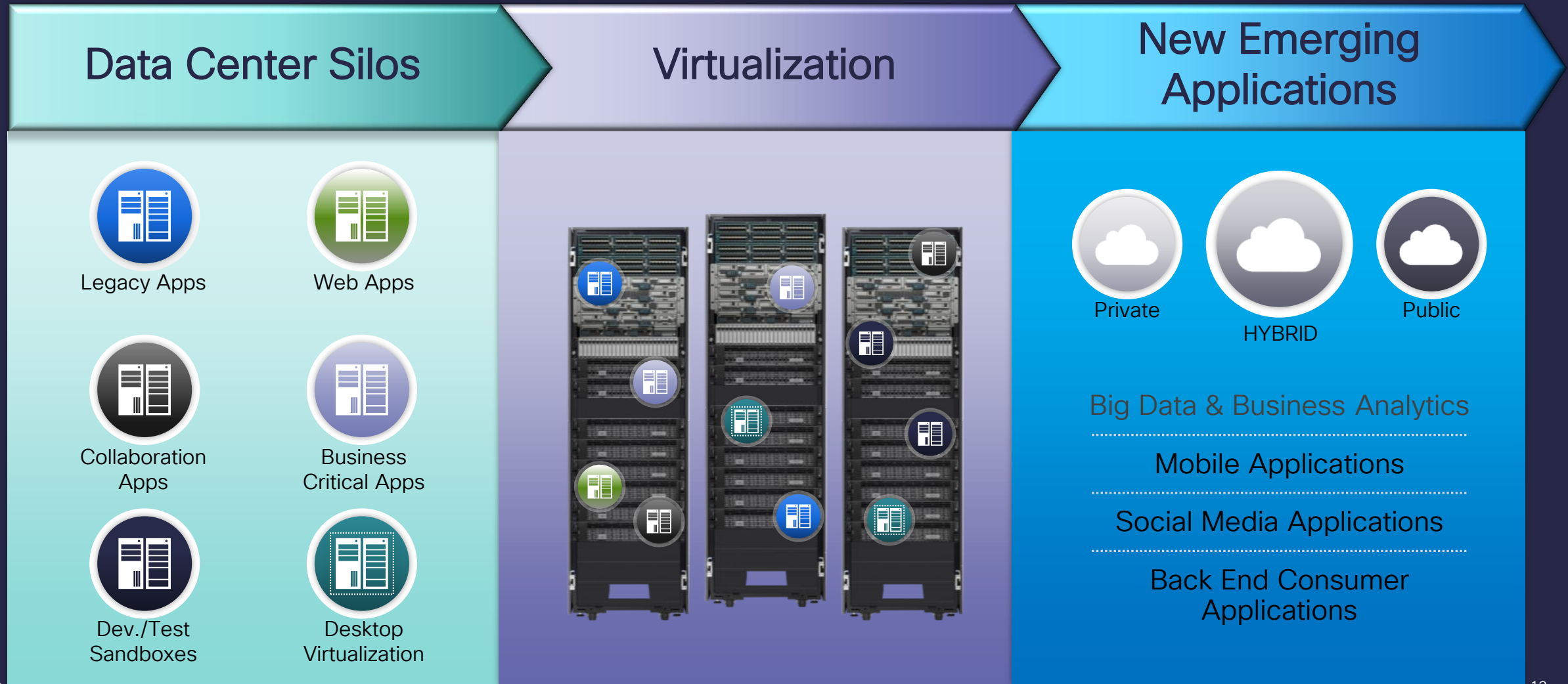
18

HPC

Cisco UCS Benchmarks that held world record performance records as of date of publication For details, please see source document “Cisco Unified Computing System and Intel Xeon Processors: 100 World-Record Performance Results” at http://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/le_32801_pb_ucs_worldrecords.pdf

Why Have We Seen Such Momentum

UCS Value Proposition



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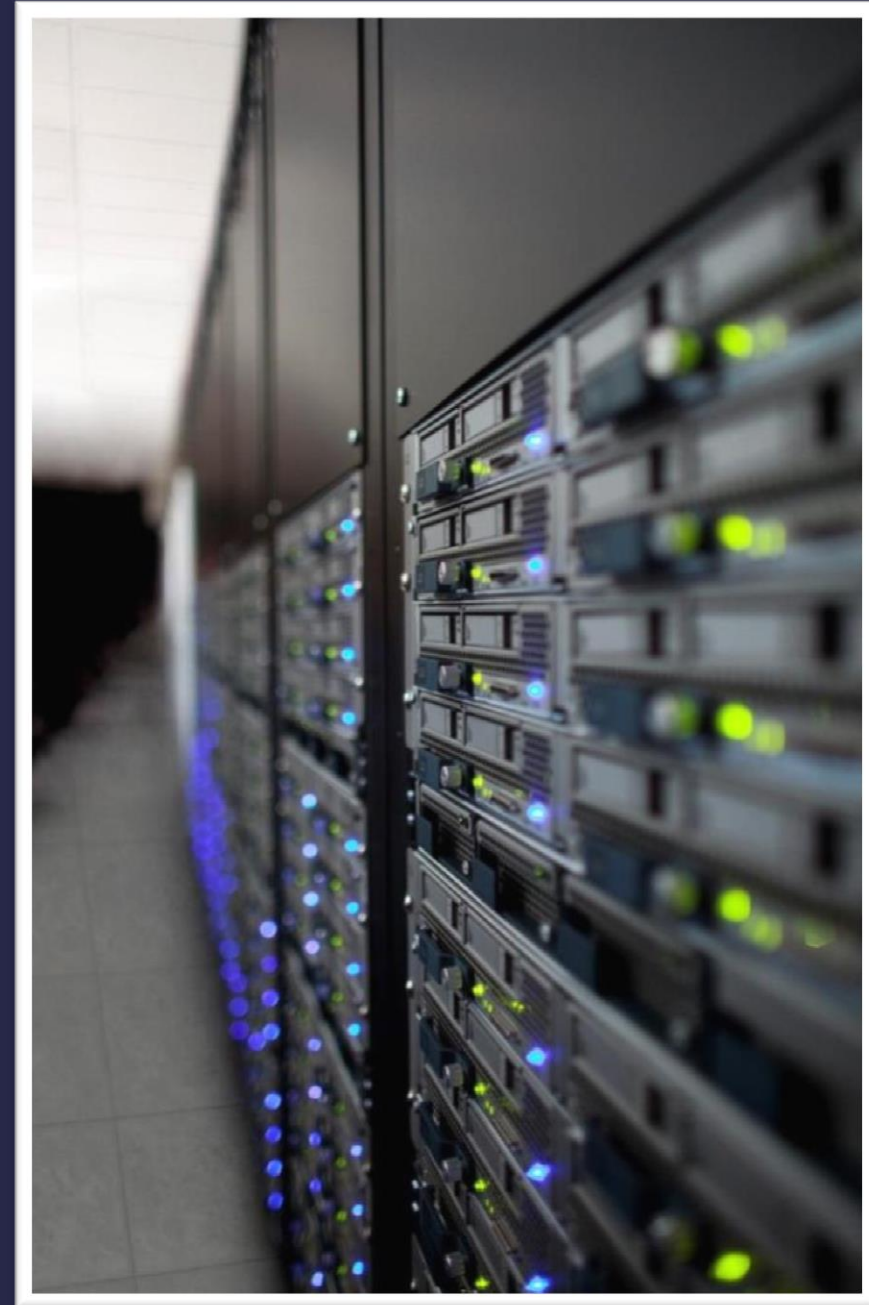
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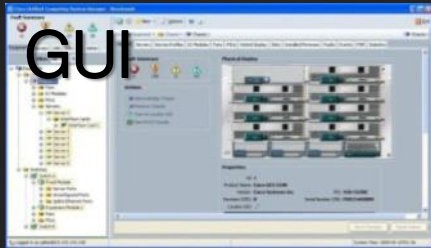


Convergence in consumer electronics



Convergence in servers and networking

Cisco Unified Compute System (UCS)



GUI

```
Putty
login as: ctiuser
ctiuser@9.168.232.128's password:
Cisco Nexus Operating System (NX-OS) Software
TAC: http://www.cisco.com/tac
Copyright (c) 2002-2010, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
```

XML-API

XML-API

CISCO
UCS Manager
(Embedded)

Fabric Interconnects



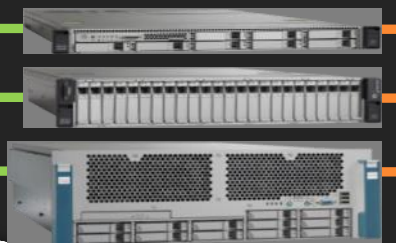
Chassis
Fabric Extenders
Blade Servers



Fabric Extenders



Rack Servers



Server Management
LAN Management
SAN Management

LAN Switches
SAN Switches

Blade Servers

Rack Servers

Cisco UCS Product Design Perspectives

Management – Product has equal or better management than competing product(s) with a focus on simplicity and admin effort.

Ask your partner or Cisco for a management demo

Capability – Product has equal or better capabilities and value than competing product(s).

Ask your partner or Cisco for a product overview and management demo

Cost – Product is equal or less expensive than competing product(s) INCLUDING support (SMARTnet).

Ask your partner and/or Cisco for competitive quote before purchasing a competitive solution.

Unified Computing System Innovation

Integrated Design

Performance optimized for any type of workload

Service Profiles

Agility and reduced time to deploy and provision applications

UCS Manager

Role-based management, automation, ease of integration

UCS Central

Centralized, multi-domain management, alerting and visibility

Unified Fabric

Simplified infrastructure

Virtualized I/O

Security isolation per application, scale, improved performance

Form Factor Independence

Supports both blades and rack mount servers in a single domain

Extended Memory

Cost effective application performance, scale



Cisco Unified Computing System

Benefits Beyond Efficiency: More Effective IT

Single Unified System



Eliminates cost manual integration

Unified Management



Consistent, error free alignment of policy, configuration, and workload

Intelligent Infrastructure



Automates IT processes to support any workload in minutes

Unified Fabric



Lower infrastructure cost per server
Operational integration of physical and virtual

Server Innovations



Superior price/performance and IT productivity for lower cost of computing



Unified Computing Product Innovation

Innovation to Improve Applications

UCS Management

- Reduced time to deploy new apps
- Reallocate resources quickly and efficiently

Unified Fabric

- Reduced infrastructure
- Cohesive resource pools

Virtualized I/O

- Improved scalability and flexibility
- Increased performance

Compute With NO Compromise

- Blade and rack servers in a single UCS managed domain
- Physical and virtual workloads
- Fill the server with memory regardless of CPU choice



Cisco Unified Computing System

A differentiated, revolutionary approach

Simplified Architecture



- Networking with fewer components
- Lower cost and easier scaling
- Fewer management touch points
- Stateless: any resource, any time
- Better TCO/ROI

Unified Management



- Faster deploy/provision
- Unification leads to reduced complexity
- Management via a single interface

Higher Performance



- Brings out the best of x86 architecture
- Optimized resource utilization for compute, networking, and management

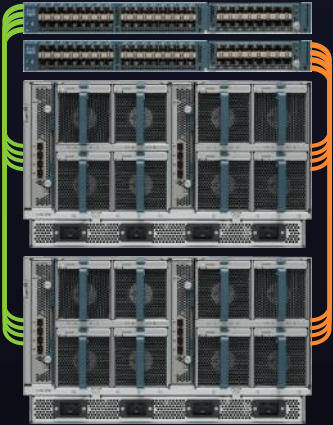
Scale



- Ultimate Scalability
- Enhanced design capability
- Designed for the future, today

UCS Enables Simple Capacity Expansion

1 UCS Manager
16 B-Series servers



Add B-Series Chassis(s)

Perform physical setup

1. Install chassis(s) into rack
2. Connect IOM A to FI A
3. Connect IOM B to FI B
4. Apply power to chassis(s)

Time: Varies by install

Enable with UCS Manager

5. Right-click each port connected the chassis(s) IOM(s) on FI A and B and select "Configure as Server Port".

Time: Less than 15 minutes

UCS Manager will discover the hardware, collect inventory, and make the systems available.

1 UCS Manager
32 B-Series servers



Add C-Series Server(s)

Perform physical setup

1. Install server(s) into rack
2. Install FEXs into rack
3. Connect FEX A to FI A
4. Connect FEX B to FI B
5. Connect 1st port on server adapter(s) to FI A
6. Connect 2nd port on server adapter(s) to FI B
7. Apply power to server(s)

Time: Varies by install

Enable with UCS Manager

8. Right-click each port connected the FEXs and the server(s) on IC A and B and select "Configure as Server Port".

Time: Less than 15 minutes

UCS Manager will discover the hardware, collect inventory, and make the systems available.

1 UCS Manager
32 B-Series servers
3 C-Series servers



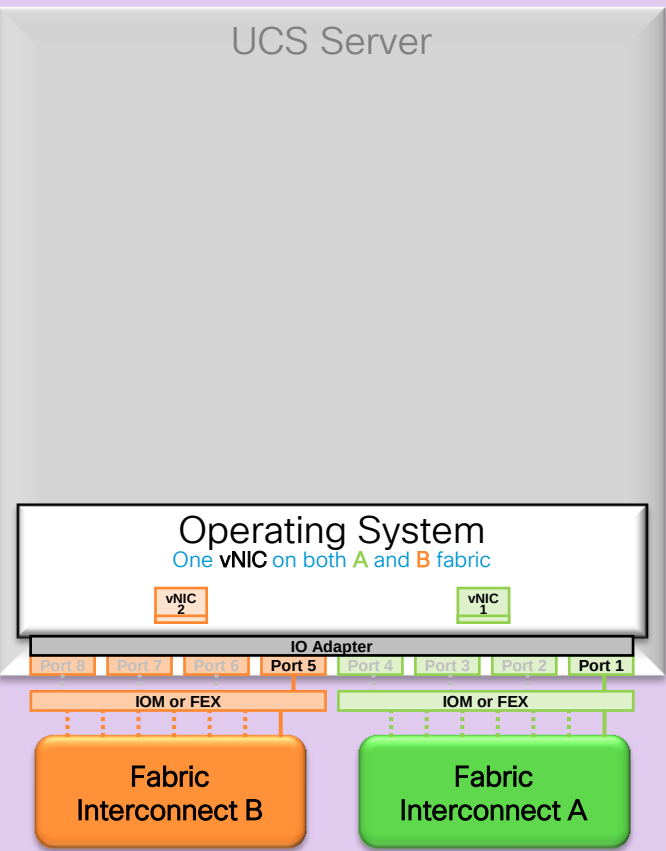
Adding a new UCS Chassis *takes 25:30*

http://www.youtube.com/watch?v=RS231c_awFw (4:18)

Communication Options

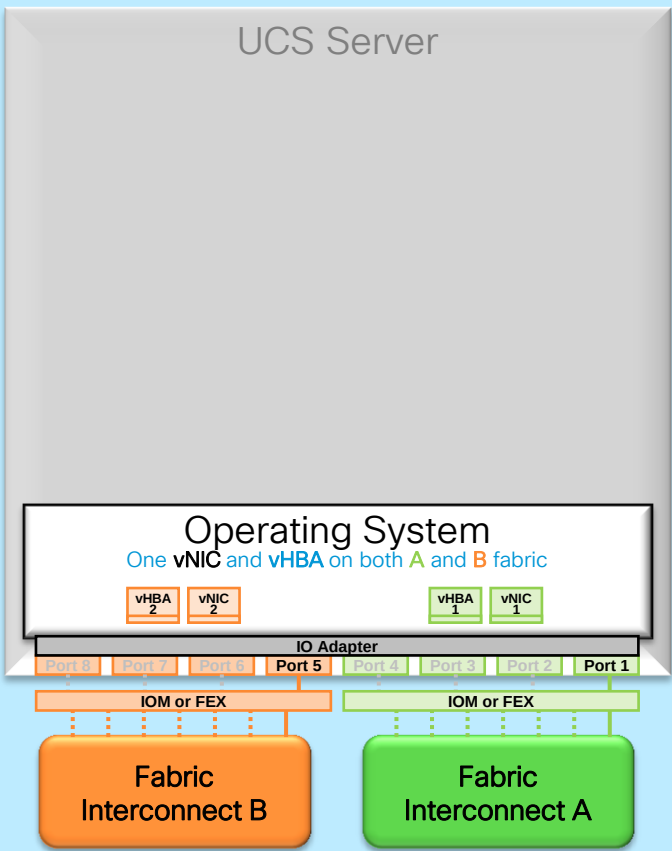
LAN Only

Existing Driver Stacks



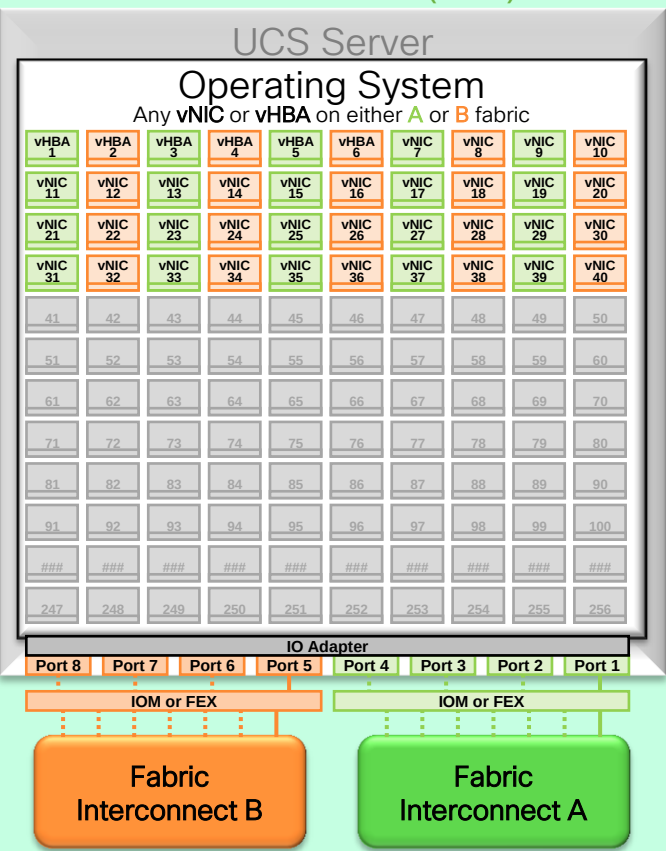
CNA Solution

Existing Driver Stacks



Cisco VIC

VM I/O Virtualization and Consolidation (VIC)



Cisco VIC: GUI views

Cisco UCS Manager GUI view

The Cisco UCS Manager GUI displays a tree view of service profiles. Under 'Service Profile AUS-Palo-01', there are six vHBAs (vHBA HBA3 through vHBA Palo-B) and 34 vNICs (vNIC NIC50 through vNIC vNIC3). Annotations indicate '6 Fibre Channel Interfaces' for the vHBAs and '34 LAN Interfaces' for the vNICs.

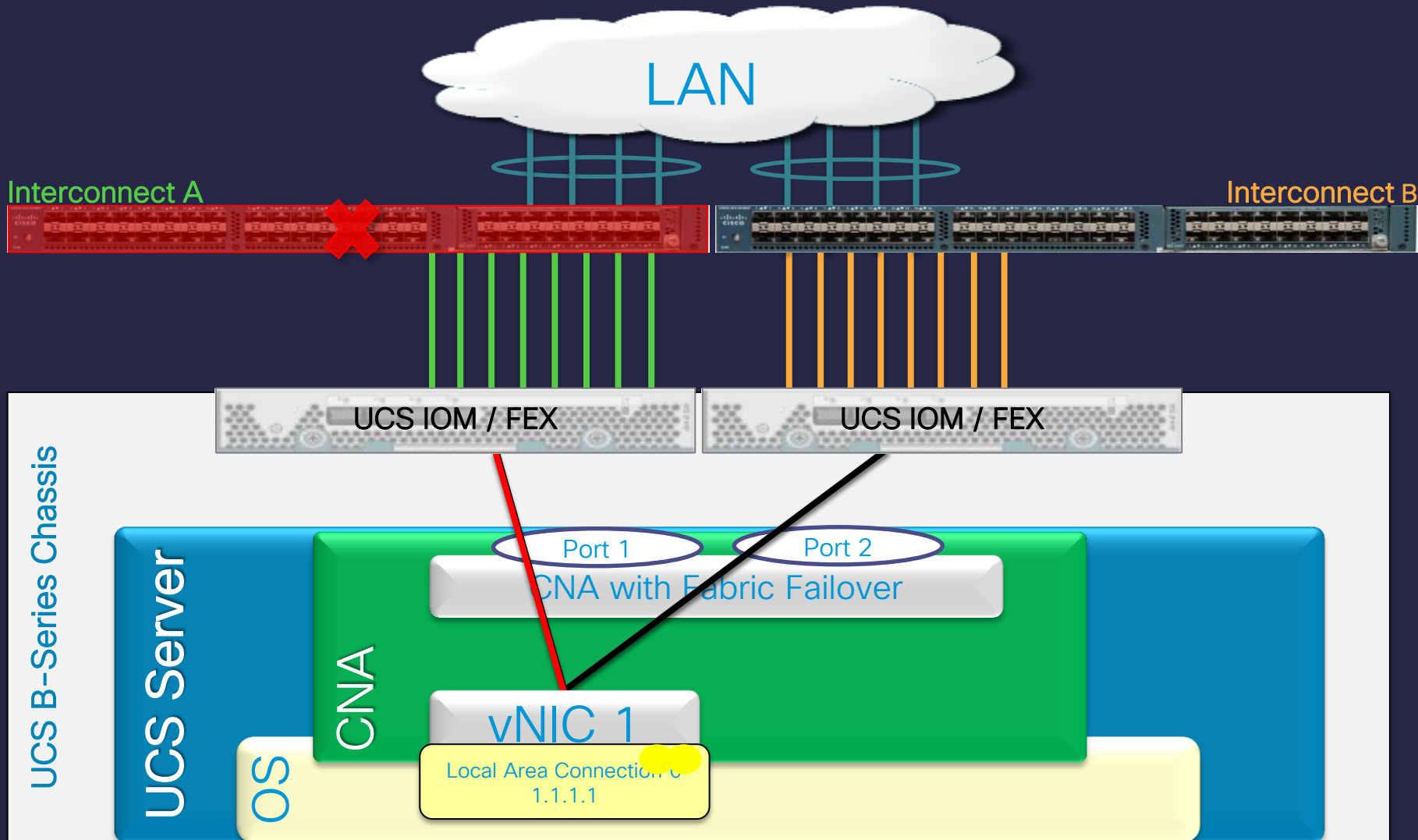
The vNIC configuration page shows a list of vNICs with columns for Name, vNIC, and vNIC. The list includes vNIC vNIC0 through vNIC vNIC76.

The VMware vCenter Console view shows the configuration for a VM named 'AUS-UCSLAB-VC01'. The 'Hardware' tab is selected, showing details for Processors, Memory, Storage, Network Adapters, and Advanced Settings. The 'Software' tab is also visible, showing details for Licensed Features, Time Configuration, DNS and Routing, Power Management, Virtual Machine Startup/Shutdown, Virtual Machine Swapfile Location, Security Profile, System Resource Allocation, and Advanced Settings.

VMware vCenter Console view

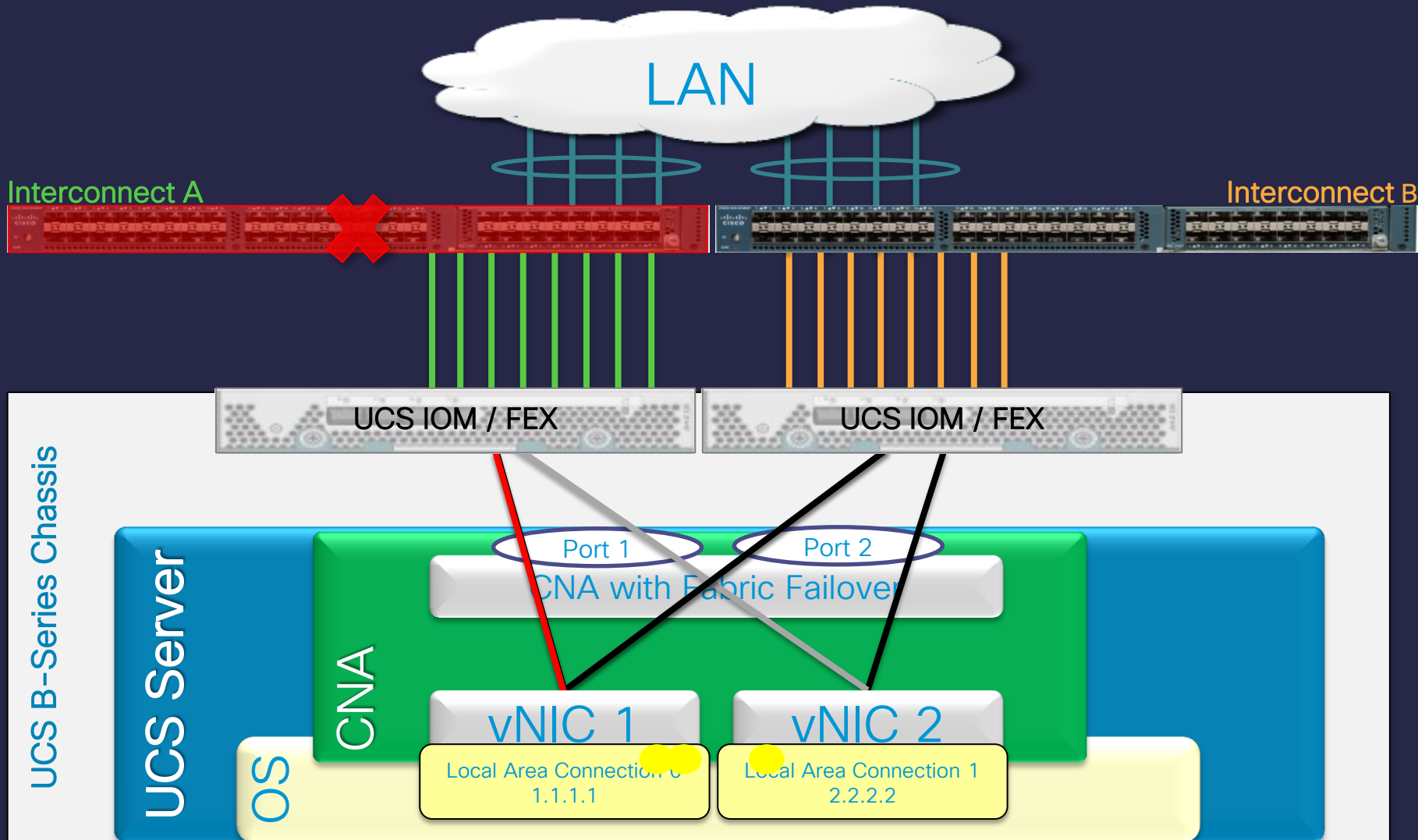
Network Adapters					
Device	Speed	Configured	Switch	MAC Address	Observed IP ranges
10G Ethernet NIC					
vmnic4	1 Full	Negotiate	None	00:25:b5:00:00:af	10.89.174.72-10.89.174.75
vmnic5	100 Full	10000 Full	None	00:25:b5:00:01:3f	None
vmnic6	10000 Full	10000 Full	None	00:25:b5:00:01:6e	None
vmnic34	10000 Full	10000 Full	None	00:25:b5:00:01:5e	None
vmnic33	10000 Full	10000 Full	None	00:25:b5:00:00:6e	None
vmnic32	10000 Full	10000 Full	None	00:25:b5:00:00:4e	None
vmnic31	10000 Full	10000 Full	None	00:25:b5:00:00:2e	None
vmnic30	10000 Full	10000 Full	vSwitch1	00:25:b5:00:00:0e	None
vmnic3	10000 Full	10000 Full	None	00:25:b5:00:01:df	172.16.100.10-172.16.100...
vmnic29	10000 Full	10000 Full	vSwitch1	00:25:b5:00:01:fe	None
vmnic28	10000 Full	10000 Full	None	00:25:b5:00:01:ee	None
vmnic27	10000 Full	10000 Full	None	00:25:b5:00:01:ce	None
vmnic26	10000 Full	10000 Full	None	00:25:b5:00:01:8e	None
vmnic25	10000 Full	10000 Full	None	00:25:b5:00:01:7e	None
vmnic24	10000 Full	10000 Full	None	00:25:b5:00:01:2e	None
vmnic23	10000 Full	10000 Full	None	00:25:b5:00:00:7e	None
vmnic22	10000 Full	10000 Full	None	00:25:b5:00:00:5e	None
vmnic21	10000 Full	10000 Full	None	00:25:b5:00:00:3e	None
vmnic20	10000 Full	10000 Full	None	00:25:b5:00:00:1e	None
vmnic19	10000 Full	10000 Full	None	00:25:b5:00:01:ff	172.16.100.10-172.16.100...
vmnic18	10000 Full	10000 Full	None	00:25:b5:00:01:de	None
vmnic17	10000 Full	10000 Full	None	00:25:b5:00:01:be	None
vmnic16	10000 Full	10000 Full	None	00:25:b5:00:01:ae	None
vmnic15	10000 Full	10000 Full	None	00:25:b5:00:01:9e	None
vmnic14	10000 Full	10000 Full	None	00:25:b5:00:01:4e	None
vmnic13	10000 Full	10000 Full	None	00:25:b5:00:00:cf	None
vmnic12	10000 Full	10000 Full	None	00:25:b5:00:00:1f	10.89.174.72-10.89.174.75
vmnic11	10000 Full	10000 Full	vSwitch0	00:25:b5:00:00:0f	10.89.174.72-10.89.174.75
vmnic10	200 Full	Negotiate	None	00:25:b5:00:01:2f	None
vmnic9	2000 Full	Negotiate	None	00:25:b5:00:01:1f	None
vmnic8	500 Full	Negotiate	None	00:25:b5:00:01:0f	None
vmnic7	500 Full	Negotiate	None	00:25:b5:00:00:df	None
vmnic6	5000 Full	Negotiate	None	00:25:b5:00:00:ff	None
vmnic5	5000 Full	Negotiate	None	00:25:b5:00:00:bf	None
vmnic4	5000 Full	Negotiate	None	00:25:b5:00:00:ef	None

Cisco VIC: Fabric-based NIC Failover



- Chassis backplane (or Fabric) provides redundant path for each vNIC
- Failures detected on border ports or fabric ports
- Transparent to OS
- Unlike OS NIC Teaming, redundancy provided with single interface
- After failover:
 - Transmit GARP
 - Multicast Group reRegistration

Cisco VIC: Fabric-based NIC Failover



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Traditional Element Configuration



Storage
SME

- Subject matter experts consumed by manual configuration chores
- Serial processes and multiple touches inhibit provisioning speed
- Configuration drift and maintenance challenges



Server
SME



Network
SME

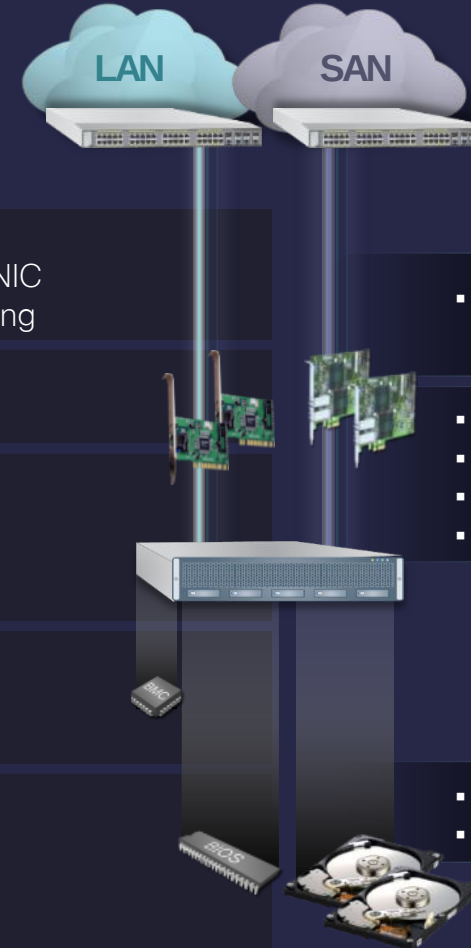
- QoS settings
- Border port assignment per vNIC
- NIC transmit/receive rate limiting

- VLAN assignments for NICs
- VLAN tagging config for NICs

- Number of vNICs
- PXE settings
- NIC firmware
- Advanced feature settings

- Remote KVM IP settings
- Call home behavior
- Remote KVM firmware

- Server UUID
- Serial over LAN settings
- Boot order
- IPMI settings
- BIOS scrub actions
- BIOS firmware
- BIOS settings



- FC fabric assignments for HBAs

- Number of vHBAs
- HBA WWN assignments
- FC boot parameters
- HBA firmware

- RAID settings
- Disk scrub actions

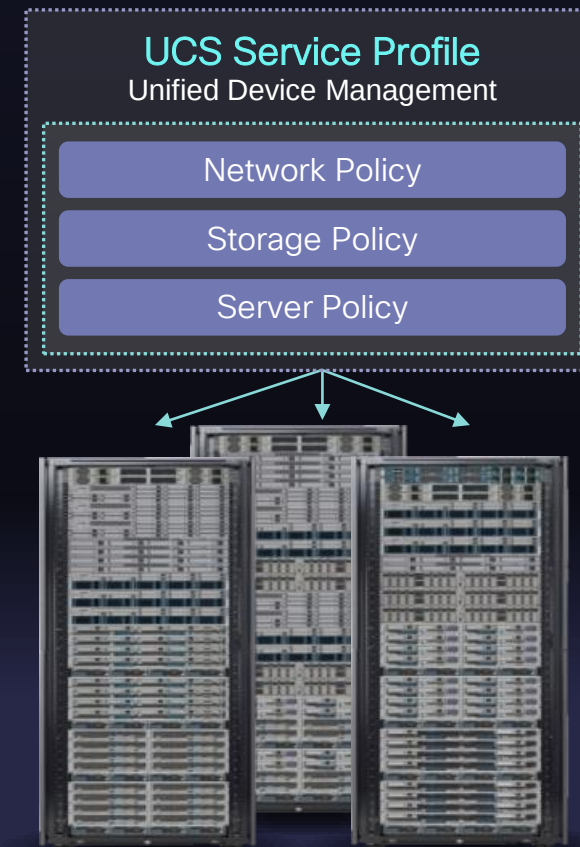
UCS Service Profiles

Configuration Portability

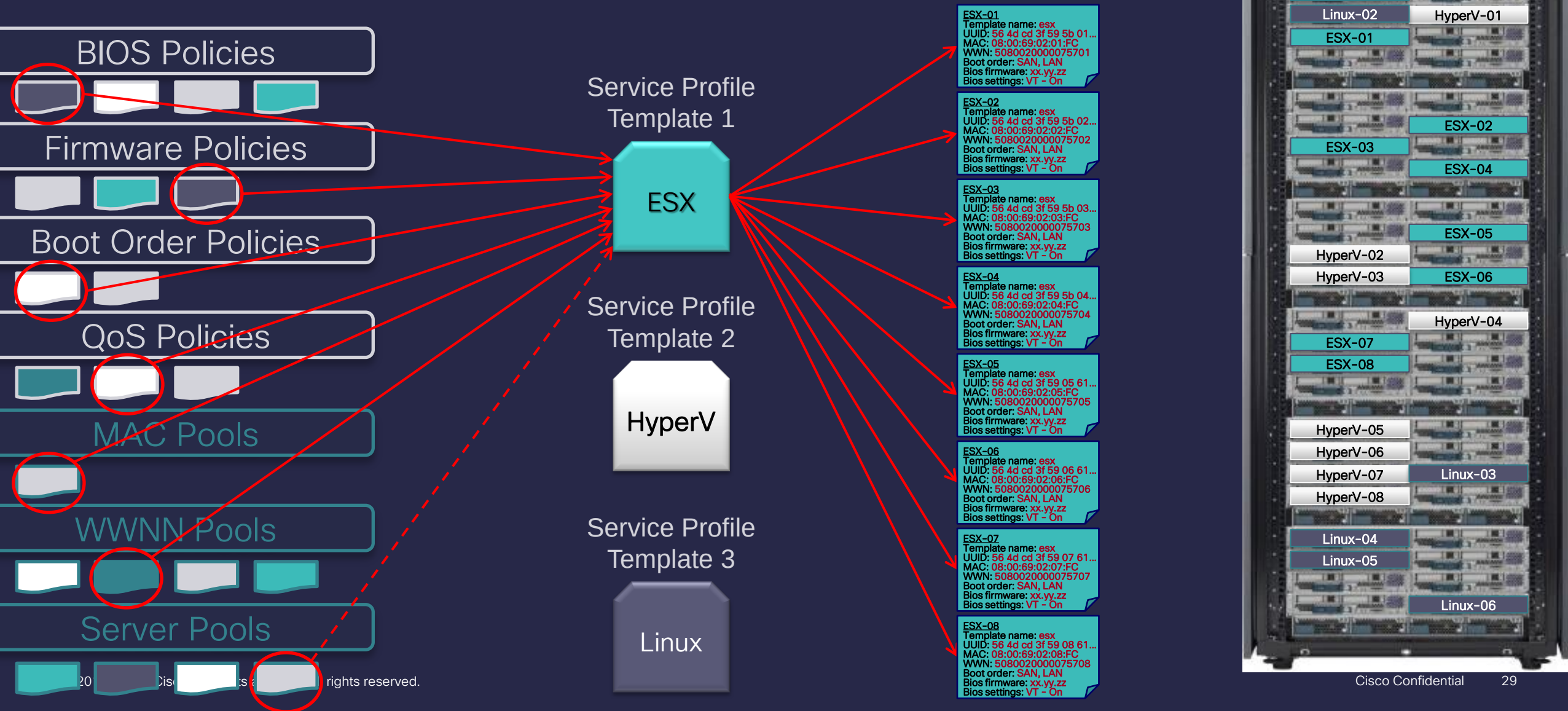
SIM Card
Identity for a Phone



Service Profile
Identity for a Server



UCS Service Profile Templates enable consistency



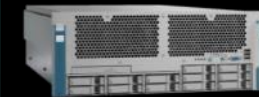
Unified Management

Blade and Rack Servers Managed a Cohesive Resource Pool

UNIFIED MANAGEMENT
A SINGLE UNIFIED SYSTEM FOR
BLADE AND RACK SERVERS



UCS Manager



C-Series Rack
Optimized Servers

Service Profile Template

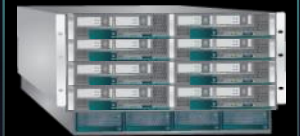
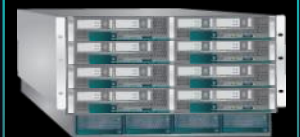
Uplink port configuration,
VLAN, VSAN, QoS, and
EtherChannels

Server port configuration
including LAN and SAN settings

Network interface card (NIC)
configuration: MAC address,
VLAN, and QoS settings;
host bus adapter HBA configuration:
worldwide names (WWNs), VSANs,
and bandwidth constraints;
and firmware revisions

Unique user ID (UUID),
firmware revisions,
and RAID controller settings

Service profile assigned to server,
chassis slot, or pool



B-Series
Blade Servers

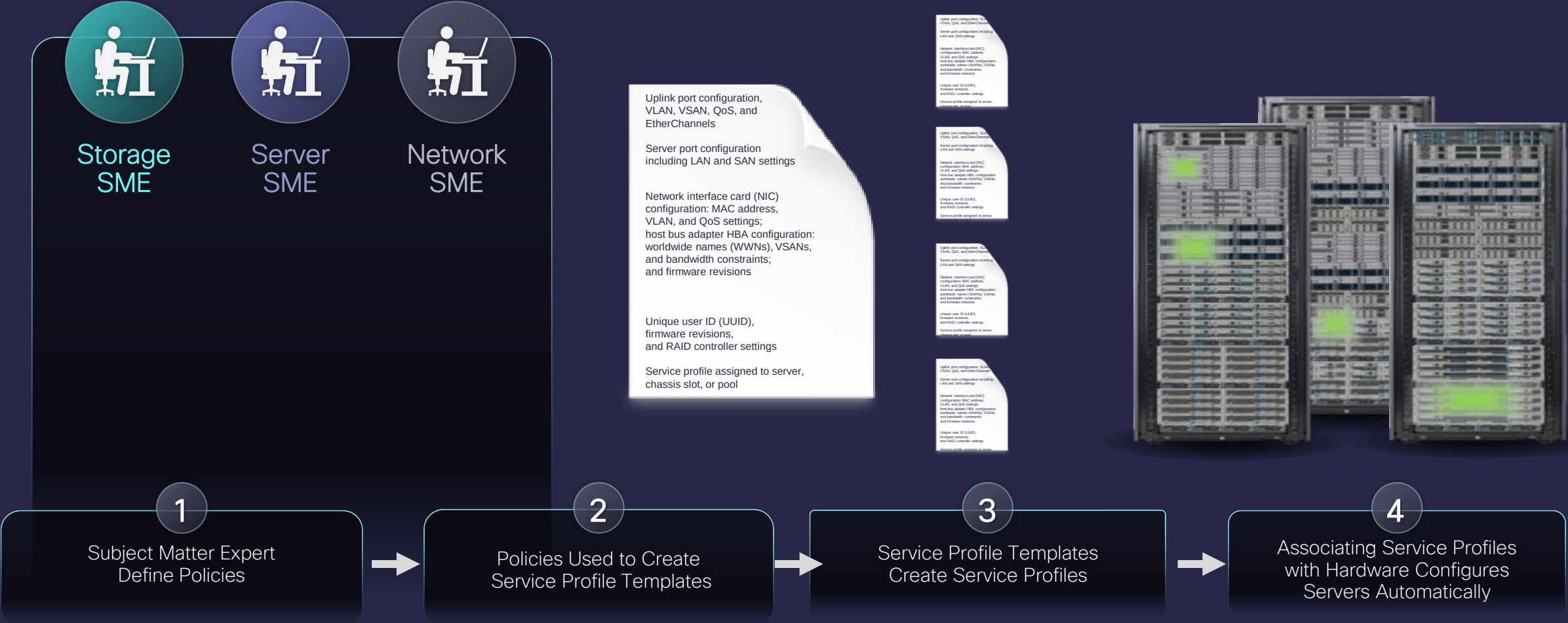
A Major Market Transformation in
Unified Server Management

Benefits of UCS Manager and
Service Profiles for Both Blade and
Rack-Optimized Servers

Add Capacity
Without Complexity

UCS: Embedded Automation

Integrated, Policy-Based Infrastructure Management



UCS: Bare Metal Abstraction



Programmable Infrastructure

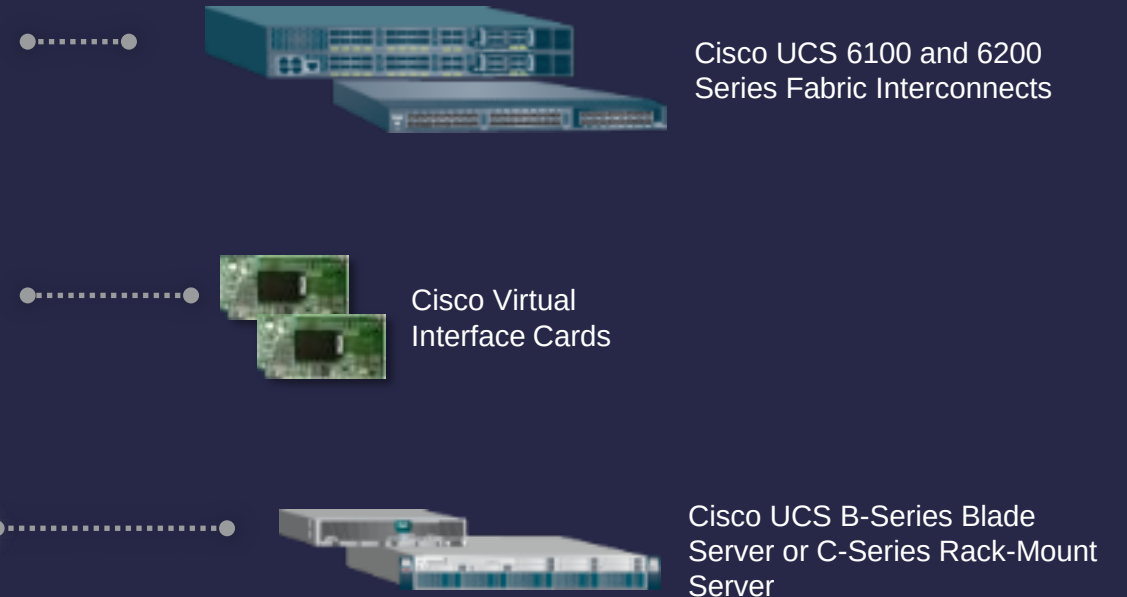
- Abstraction of bare metal configuration
- Encapsulated in Cisco service profiles
- Available through an intuitive GUI, CLI, or XML API
- Over 9000 objects in system management model

Network Interface Card (NIC) Configuration:
MAC Address, VLAN, and QoS Settings;
Host Bus Adapter

HBA Configuration: Worldwide Names (WWNs), VSANs, and Bandwidth Constraints, and Firmware Revisions

Cisco Service Profile

Automated, Policy-Based Configuration of Entire Hardware Stack



Agenda

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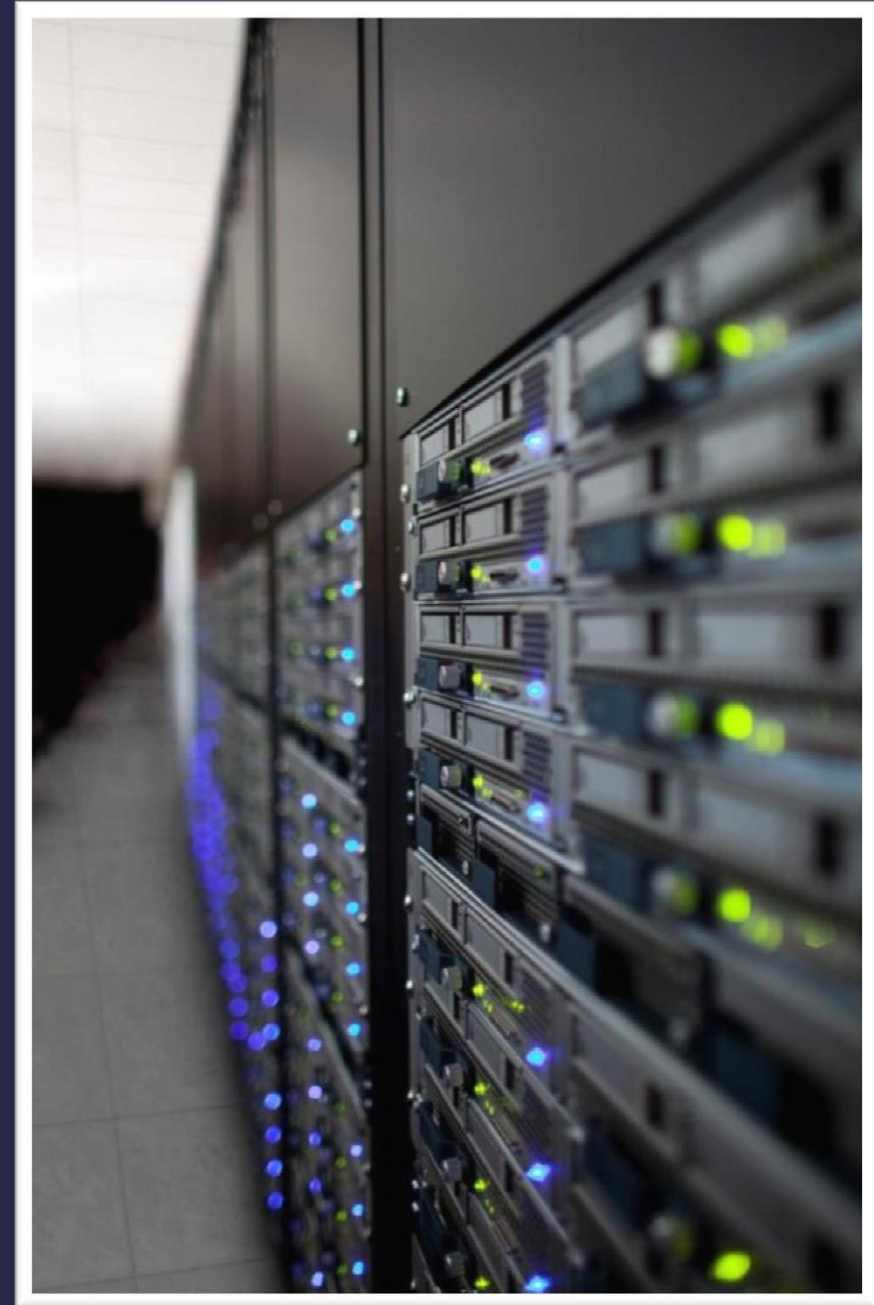
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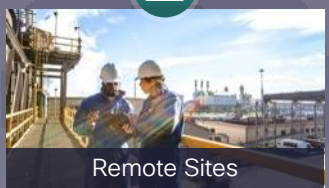


Edge-Scale Computing

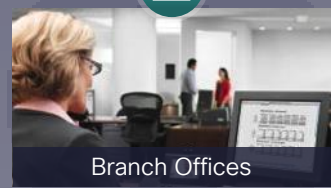
Computing Near the Source of Demand



Central IT



Remote Sites



Branch Offices



Customer Premise

Customer Needs

- Computing proximity for IoE / Fog, Remote Site, Branch
- Comprehensive remote management at global scale

Enabling Small Scale IT



Small & Medium Organizations



Test / Dev

Customer Needs

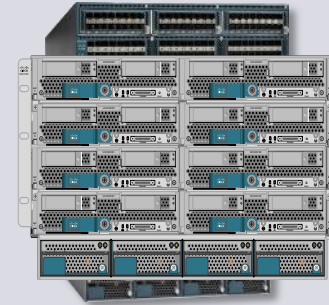
- “No Assembly Required” total computing solution
- Simplified systems management
- 1-15 servers

UCS Mini Design Requirements

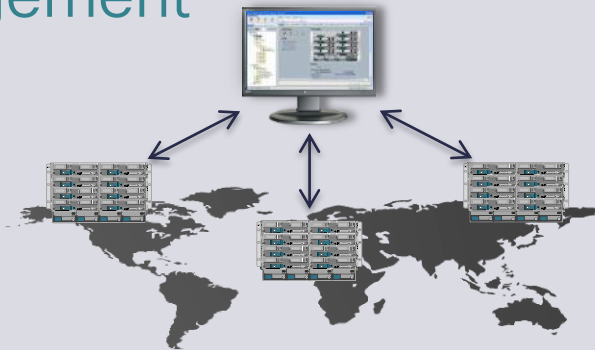
Converged Infrastructure



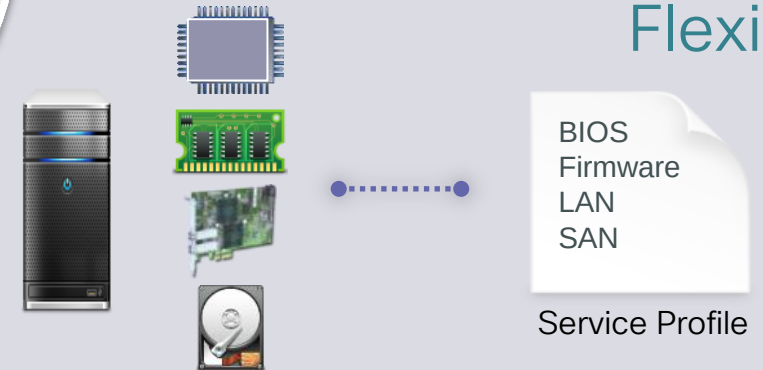
Small Footprint



Management



Flexibility



Use cases for UCS Mini

Government/Education

General workloads

Virtualization

Bare Metal

Productivity applications

Mail/Print servers/DB

Collaboration/Video

Industry applications

Banner/SAP

Security applications

Cameras/Phy Security

Disaster Recovery

Industrial/Healthcare

Virtualization

Server

Desktop

Office applications

Mail/Print servers

Database

Industry applications

Imaging

ERP



Data Center/Mini DC

Managed Services

Onsite premises

Application migration

Security

DMZ

Hardware Separation for
compliances

Smaller failure domains



Unified Computing Product Innovation

Innovation to Improve Applications

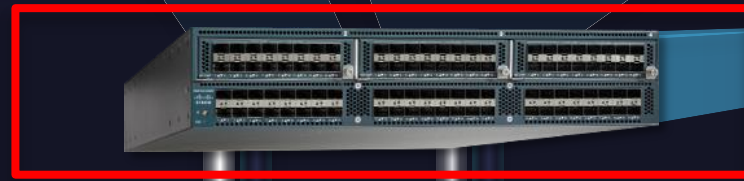
UCS Management

- Reduced time to deploy new apps
- Reallocate resources quickly and efficiently



Unified Fabric

- Reduced infrastructure
- Cohesive resource pools



Virtualized I/O

- Improved scalability and flexibility
- Increased performance



Compute With NO Compromise

- Blade and rack servers in a single UCS managed domain
- Physical and virtual workloads



Unified Computing Product Innovation

Innovation to Improve Applications

UCS Management

- Reduced time to deploy new apps
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Compute With NO Compromise

- Blade and rack servers in a single UCS managed domain
- Physical and virtual workloads



UCS “All-in-One” Solution

UCS innovation optimized for Branch Office and Remote Sites



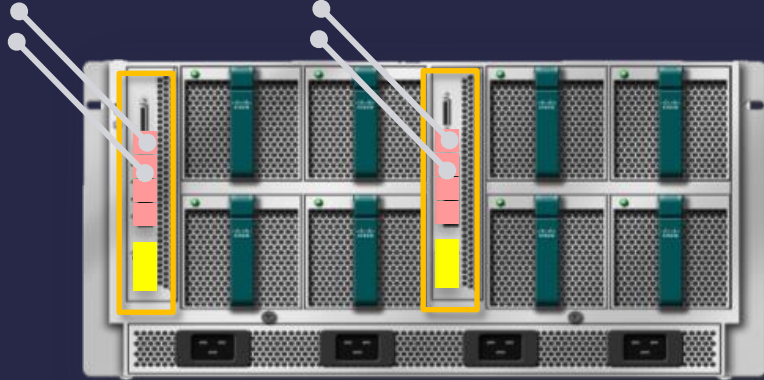
Integrated server, networking and management in a single chassis

- New Fabric Interconnects fit in current IOM bays
- Based on current chassis hardware
- Allows 110v AC enablement on power supplies
- Same compute blades, fans, power supplies
- Fully capable UCS Manager
- Service Profiles, UCS Central, XML APIs, etc...
- Up to 16 Blade Servers and up to 7 Rack Servers

Simple to setup, leverages UCS Central for remote site management at scale

Connection Examples with UCS Mini Solution

Architecture supported at FCS



New low-power option

PSU's support 110v or 208v

Connect up to 20 servers

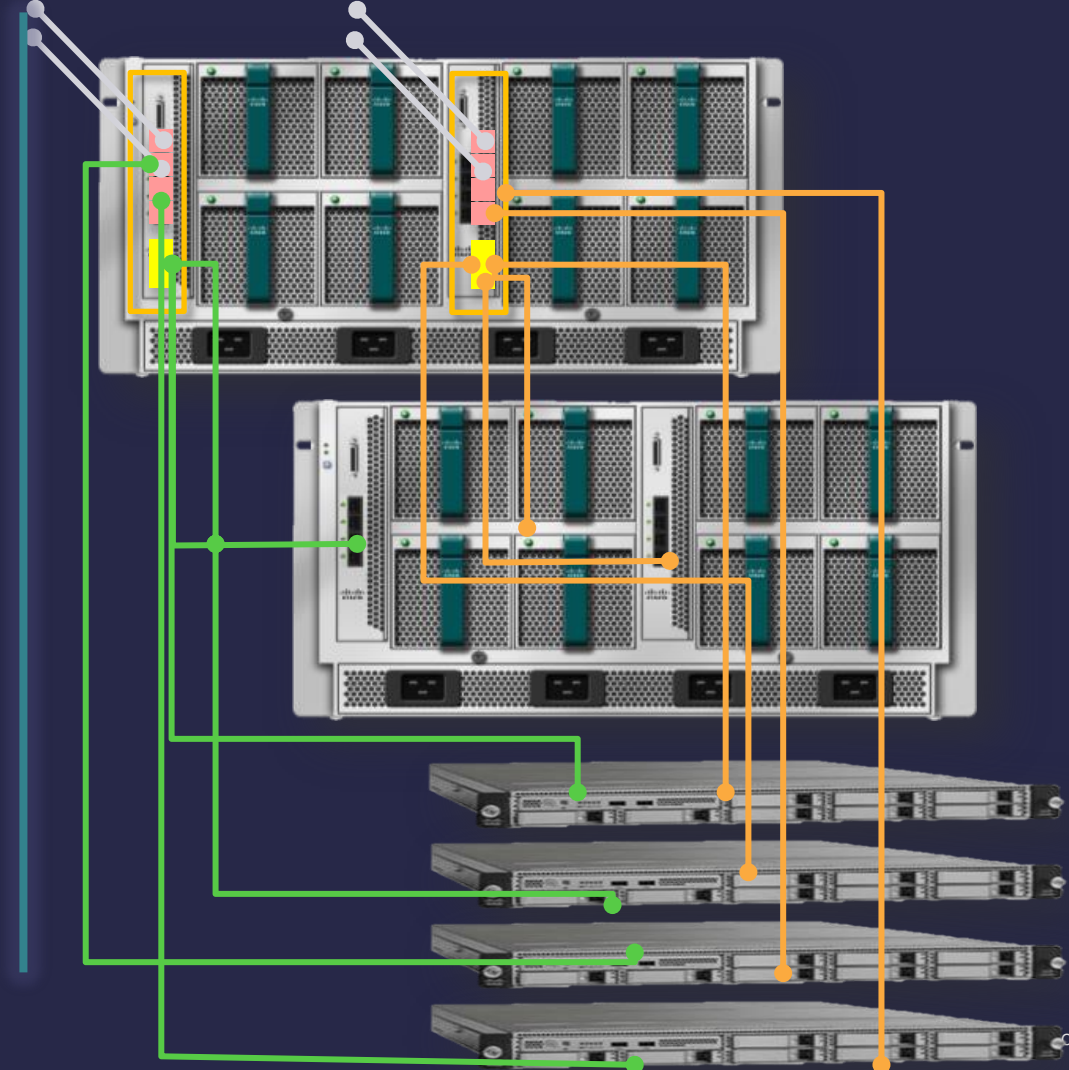
FCS: 8 blades + 7 rack servers

Post-FCS: 16 blades and 4 rack servers

Uses existing UCS servers

Uses the same blades

Max Scale Architecture supported post-FCS



UCS Product Platforms

C-Series Standalone

Summary

Designed for low compute density

Competitive rack server platform



UCS Classic

Summary

Designed for high compute density

Leading blade/rack server platform



UCS Product Platforms

C-Series Standalone

Summary

Designed for low compute density

Competitive rack server platform



UCS Mini

Summary

Designed for small compute density

Leading blade/rack server platform



UCS Classic

Summary

Designed for high compute density

Leading blade/rack server platform



UCS Product Platforms

C-Series Standalone

Positioning

Small # of servers in each location

High or low voltage power

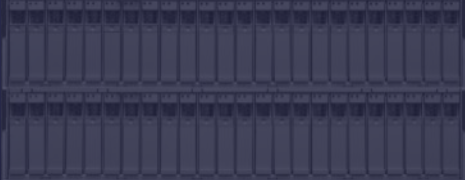
Bare metal and/or hypervisor

Management

Embedded: Cisco IMC (1 server)

Centralized: Cisco IMC Supervisor

Advanced/Cloud: UCS Director



UCS Mini

Positioning

A couple servers in each location

High or low voltage power

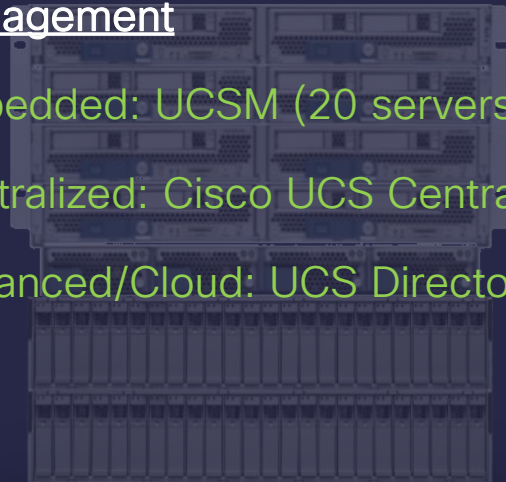
Bare metal and/or hypervisor

Management

Embedded: UCSM (20 servers)

Centralized: Cisco UCS Central

Advanced/Cloud: UCS Director



UCS Classic

Positioning

Several servers in each location

High voltage power (low roadmap)

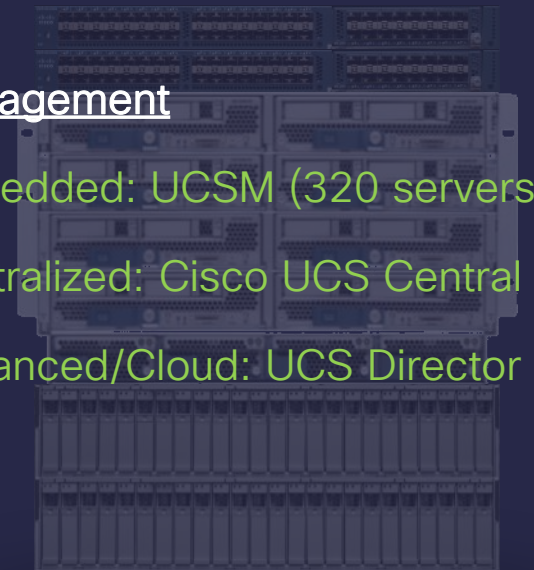
Bare metal and/or hypervisor

Management

Embedded: UCSM (320 servers)

Centralized: Cisco UCS Central

Advanced/Cloud: UCS Director



UCS Product Platforms

C-Series Standalone

Upgradability

UCS Mini Integration (Offline)

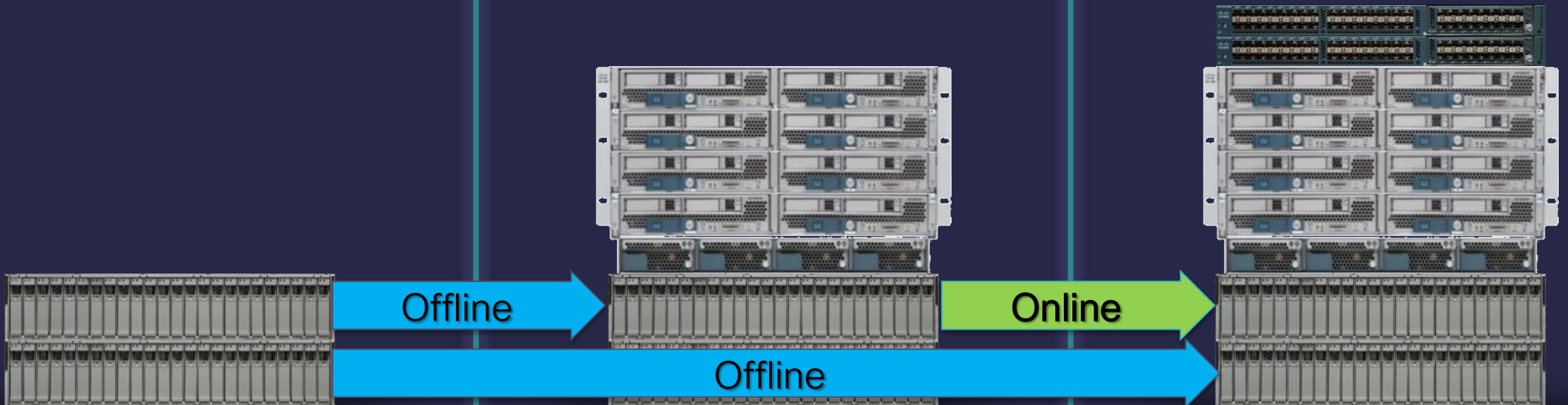
UCS Classic Integration (Offline)

UCS Mini

Upgradability

UCS Classic Integration (Online)

UCS Classic

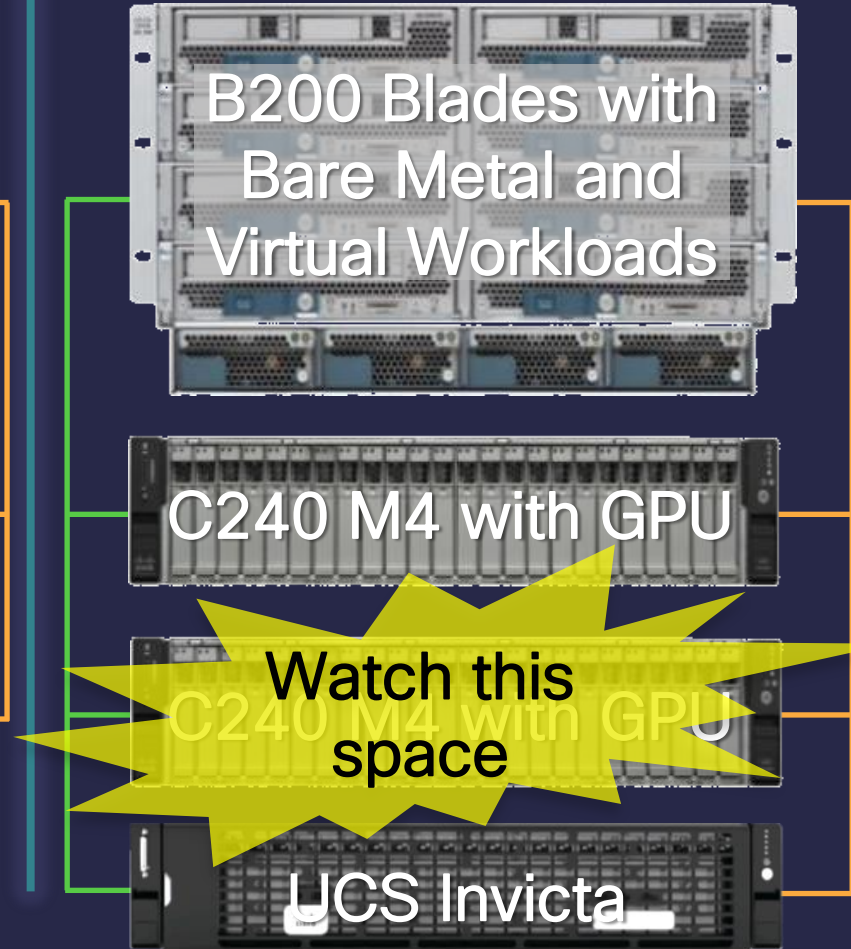
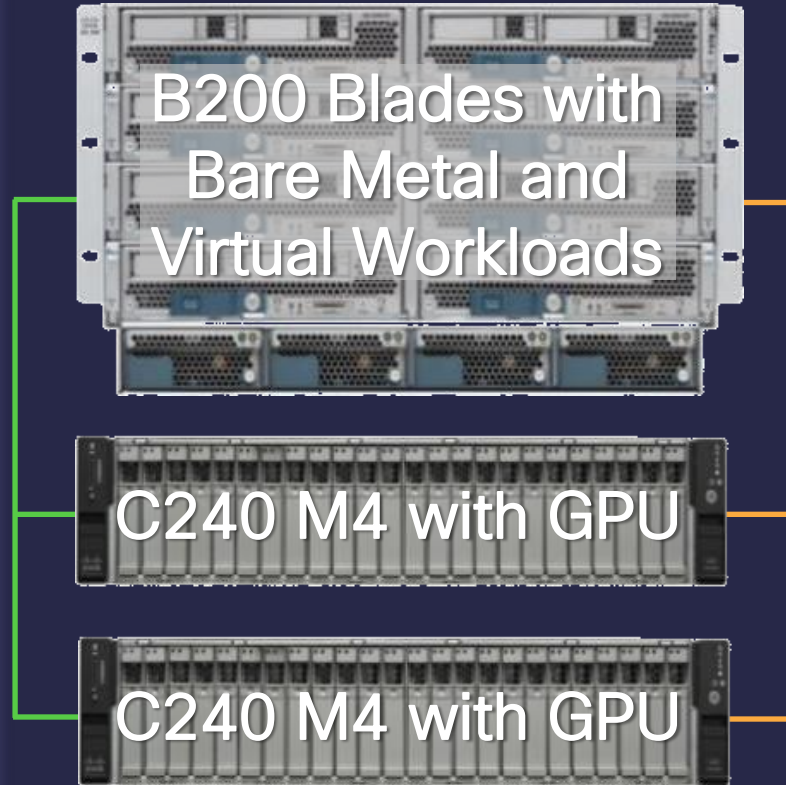


UCS Mini for Bare metal and virtualized workloads

Blade Servers

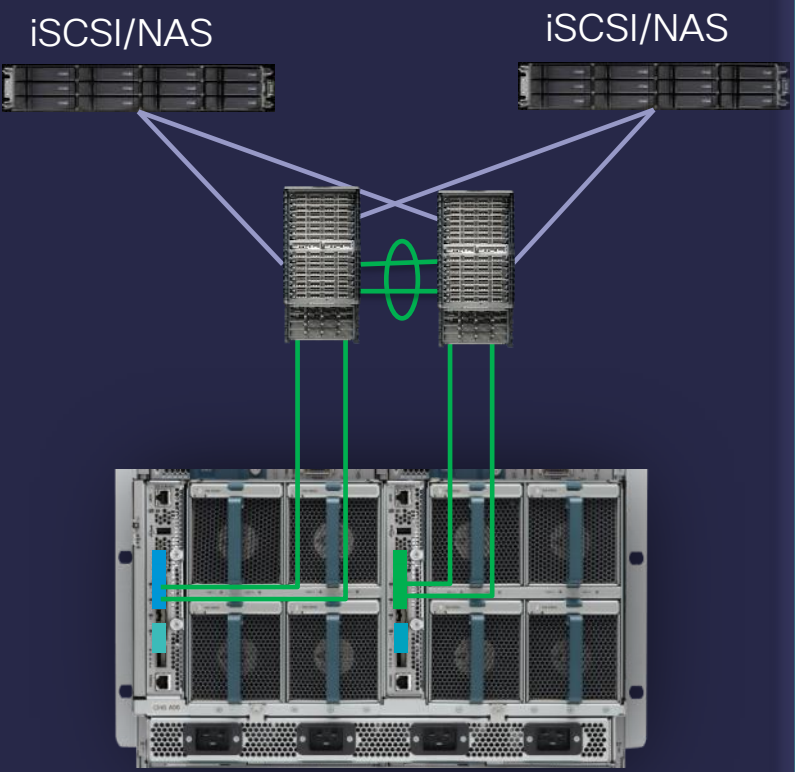
+ Rack Servers

+ Storage



Storage Support

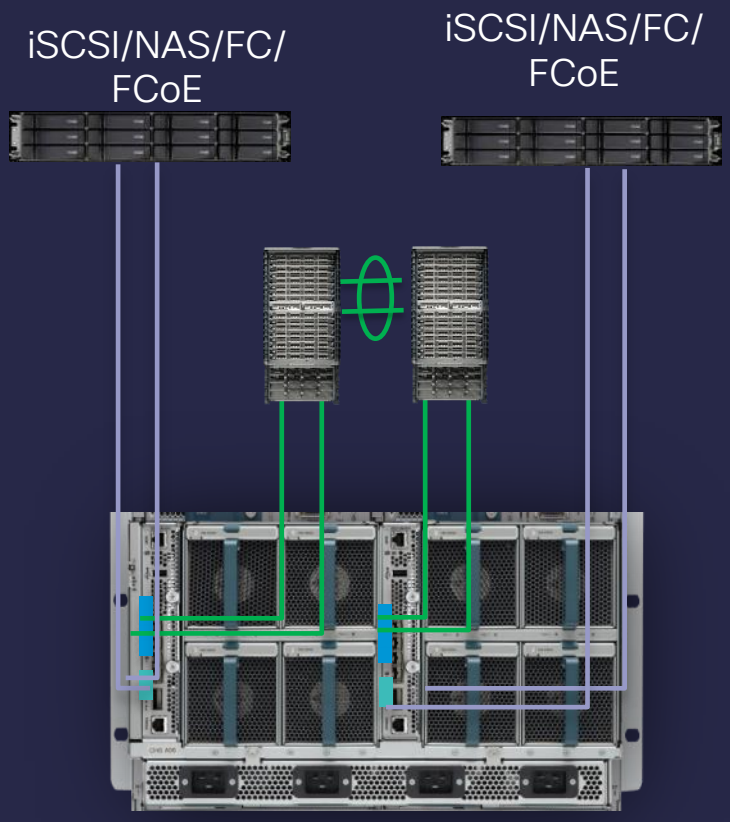
Network Attached Storage



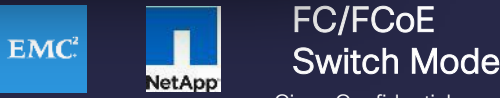
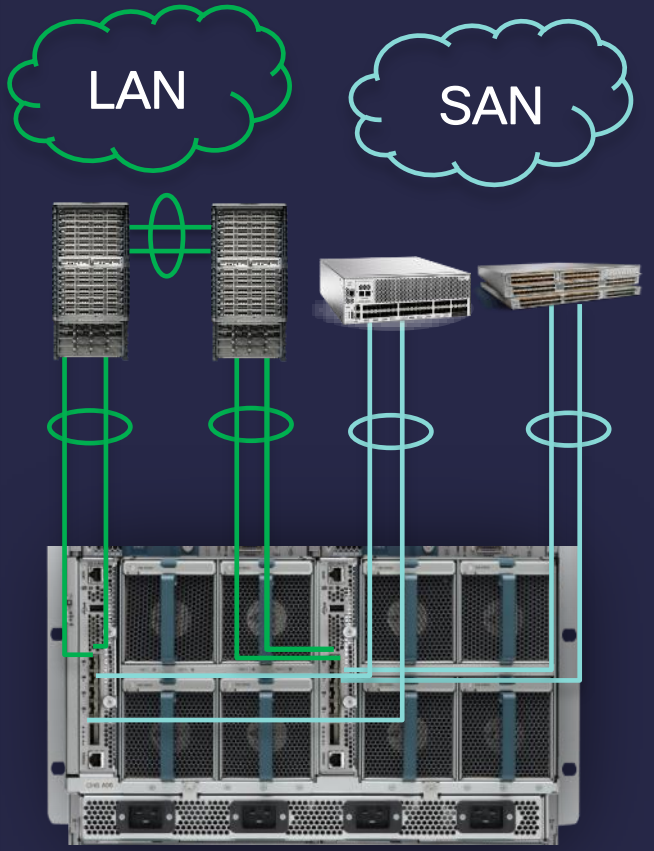
Network Attached File/Block
No certification required

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Direct Attached Storage

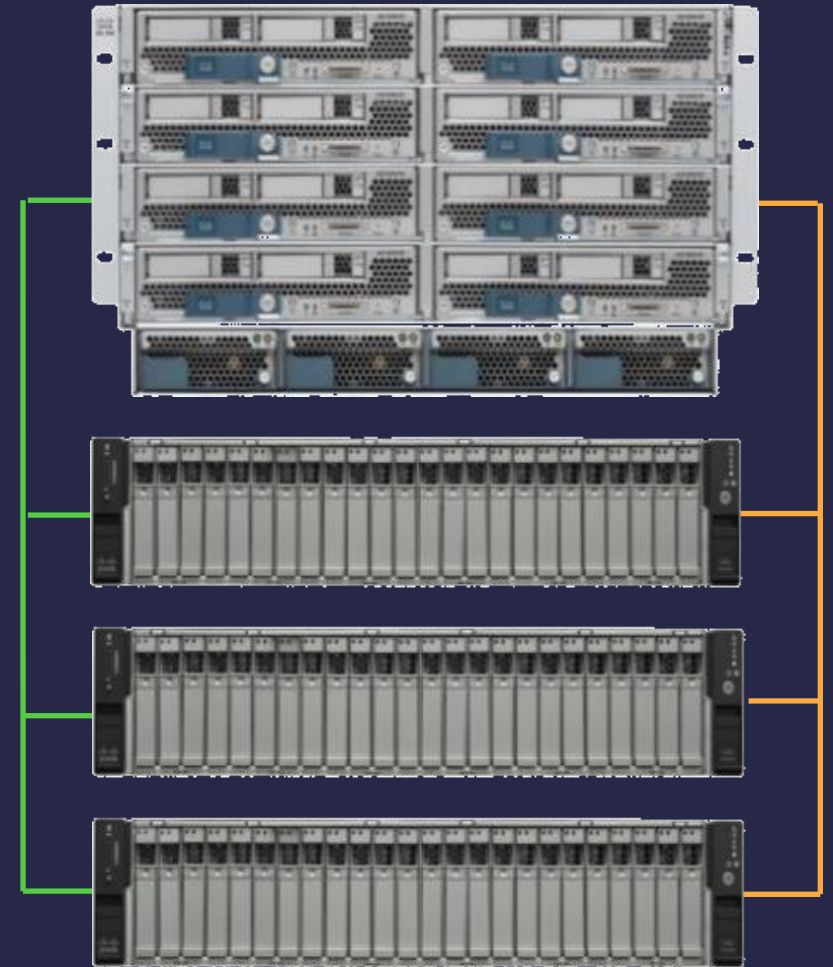


SAN Attached Storage



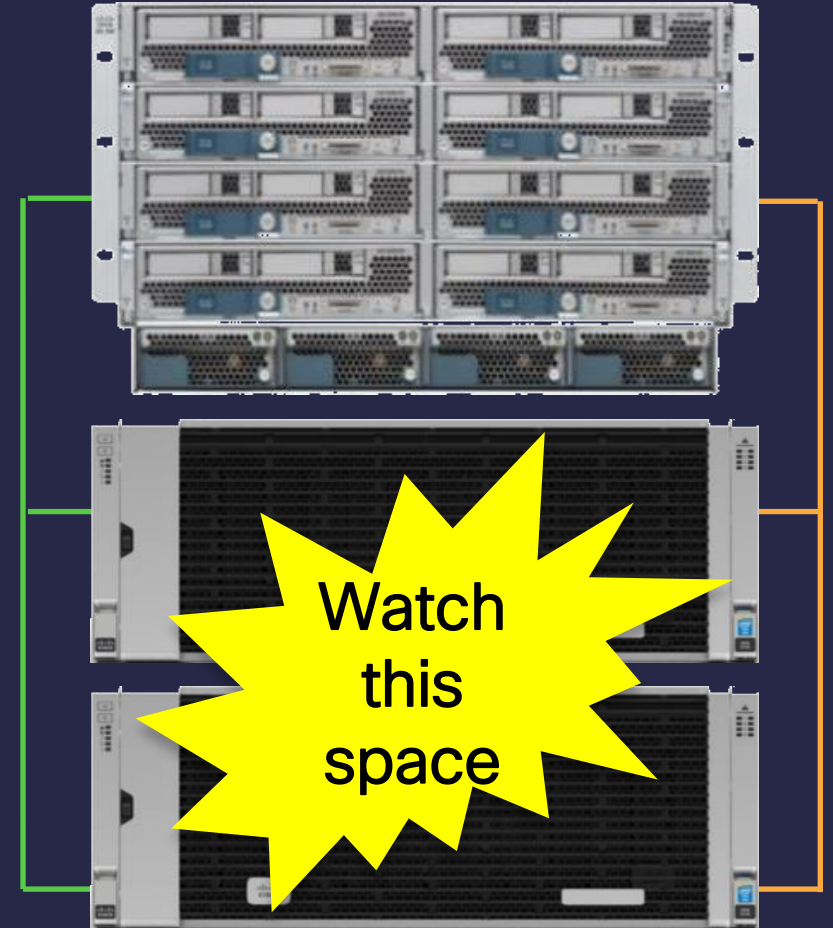
UCS Mini Software Defined Storage Options

- UCS C-Series Rack Server Integration
 - Provides low cost PCIe storage combined with a storage software Virtual Storage Appliance
 - Simple low cost storage connectivity
 - Scale up to 7 rack server nodes
 - Use off the shelf Software Defined Storage solutions
 - VMware VSAN
 - Simplivity
 - StorMagic SvSAN
 - Scale I/O
 - Nexenta
 - Maxta
 - GridStore



UCS Mini Software Defined Storage Options

- UCS C-Series Rack Server Integration
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 - Nexenta
 - Maxta
 - GridStore



UCS Mini Solution Blueprints

Cisco Validated Designs

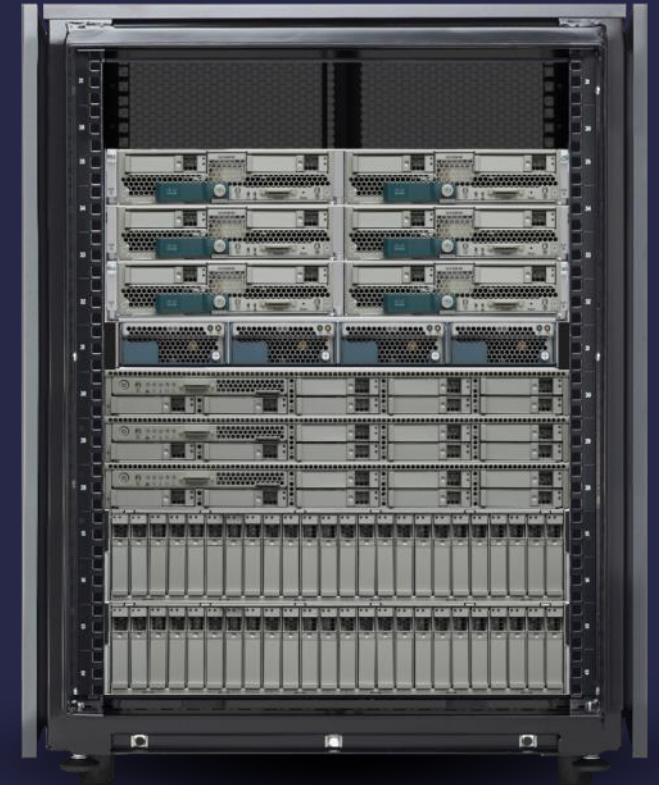
- VSPEX Branch VMware Remote Office CVD
- VSPEX Branch Hyper-V CVD
- Flexpod UCS Mini Remote Office VMWare CVD
- Flexpod UCS Mini Remote Office Hyper-V CVD



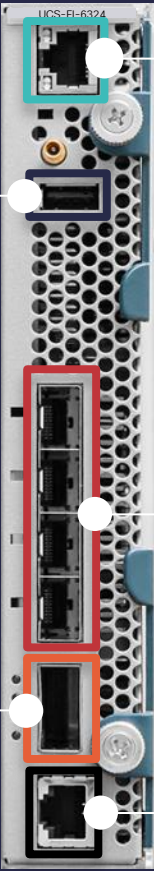
Reference Architectures



- ROBO VDI SmartStack
- Oracle JD Edwards SmartStack



Fabric Interconnect 6324



1x Management Port

- 10/100/1000 Mbps

1x USB Port

- Firmware upgrades

4x SFP+

- Unified Ports
 - Uplink (Eth/FC/FCOE)
 - Server - Direct-attached only
 - Appliance
- Supports 1G or 10G

1x QSFP+

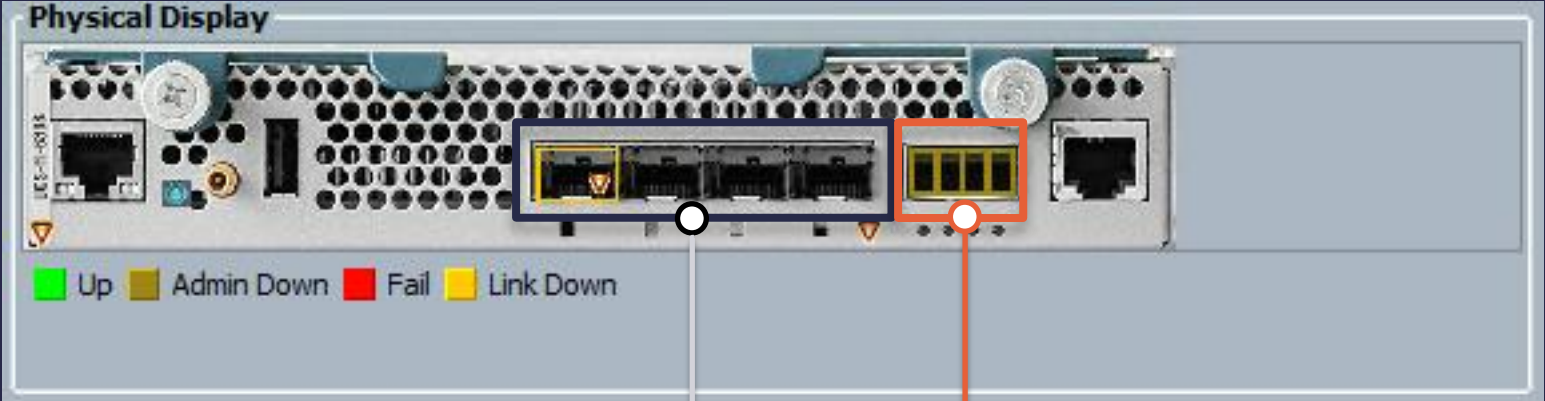
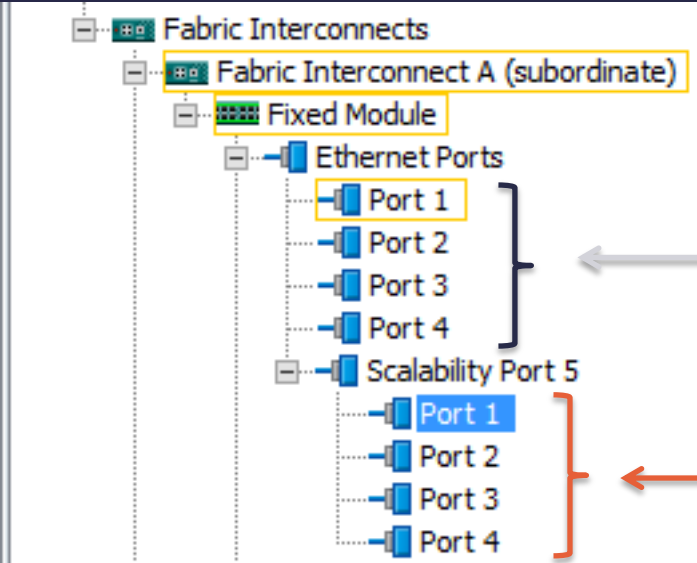
- Licensed Server Port
 - 2nd Chassis (post-FCS)
 - Direct-attached C-series
- Appliance Port
- FCoE Storage Port

1x Console Port

Product Features and Specs	Scale Numbers
Switch Fabric Throughput	500Gbps
LAN 1 Gigabit Port Density	4
LAN 10 Gigabit Port Density	4
FC Ports	4 (8G/4G)
MAC Address	8K
# of VLANs	200
# of IGMP Multicast Groups	50
Virtual Interface Support	648
P,V count	1K
Max frame size	9K

UCSM

10G/40G Port



Port Roles

- Uplink
- Server port
- FC/FCOE Storage port

Port Roles

- Server port
- Appliance port
- FCOE Storage port

Cabling requirements for a 8 server environment

Traditional Rack Solution

Power connections

4x for network switches (2 per switch)

16x for servers (2 per server)

?x PDU's

LAN connections

8x for remote hardware management

8x+ for connectivity to network switch 1

8x+ for connectivity to network switch 2

More switches and related management?

Dedicated storage connections

Lots of additional cables and switches?

UCS Mini Solution

Power connections

0x for network switches

8x for servers (max)

?x PDU's (fewer cables = fewer PDUs)

LAN connections

2x for remote hardware management

1x for connectivity to chassis 2 IOM-A

1x for connectivity to chassis 2 IOM-B

Dedicated storage connections

2x for direct, FC, and/or storage LAN

Cabling requirements for a 16 server environment

Traditional Rack Solution

Power connections

4x for network switches (2 per switch)

32x for servers (2 per server)

?x PDU's

LAN connections

16x for remote hardware management

16x+ for connectivity to network switch 1

16x+ for connectivity to network switch 2

More switches and related management?

Dedicated storage connections

Lots of additional cables and switches?

UCS Mini Solution

Power connections

0x for network switches

8x for servers (max)

?x PDU's (fewer cables = fewer PDUs)

LAN connections

2x for remote hardware management

1x for connectivity to chassis 2 IOM-A

1x for connectivity to chassis 2 IOM-B

Dedicated storage connections

2x for direct, FC, and/or storage LAN

Blade Power up Limitations at 100–120 VAC

Power Configuration	Number Of PSU	Power Available	Powered Up Blades ^{1,2}		
			High Power Server	Medium Power Server	Low Power Server
Non-Redundant (2+0)	2	2600W	4	5	6
Non-Redundant (3+0)	3	3900W	6	7	8
Non-Redundant (4+0)	4	5200W	8	8	8
N+1 (2+1)	3	2600W	4	5	7
N+1 (3+1)	4	3900W	6	7	8
Grid (2+2)	4	2600W	4	5	6

Example Configurations B200 M3 based

- Low Power Server = 2X 80W E5-2600 CPU, 4x 8GB RAM, 1X HDD and 1X VIC1240
- Medium Power Server = 2X 105W E5-2600 CPU, 12x 8GB RAM, 2X HDD and 1X VIC1240
- High Power Server = 2X 130W E5-2600 CPU, 24x 8GB, 2X HDD and 1X VIC1240, 1x VIC1280

1. Actual number of blades that will power on is dependent on the exact configuration.
2. There are no restrictions on blades powering up when operating at 200–240 VAC or with -48VDC PSU

UCS Manager 3.0: HTML5 support

Cisco UCS Manager - 3.0(0.131)

Single point of device management for the Cisco Unified Computing System

UCS Manager requires Java Runtime Environment 1.6 or higher. If it is not already installed, please [download](#) and install it on your system.

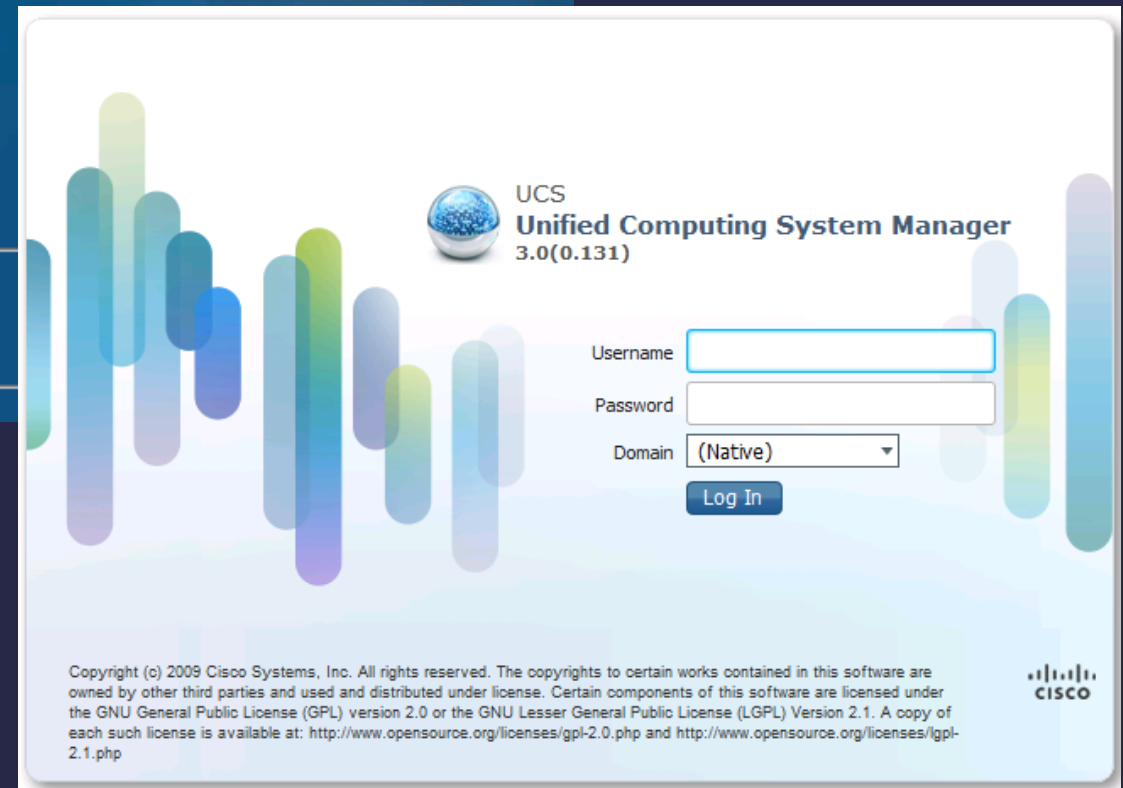
Launch UCS Manager

Launch KVM Manager

HTML

Launch UCS Manager

Launch KVM Manager



The login interface for Cisco UCS Manager 3.0(0.131) features a light blue background with abstract vertical bars in shades of blue, green, and purple. At the top center is the UCS logo, a blue sphere with white dots. To its right, the text "UCS Unified Computing System Manager 3.0(0.131)" is displayed. Below this, the login fields are arranged vertically: "Username" with a text input box, "Password" with a text input box, and "Domain" with a dropdown menu showing "(Native)". A "Log In" button is positioned below the domain field. At the bottom left, a copyright notice states: "Copyright (c) 2009 Cisco Systems, Inc. All rights reserved. The copyrights to certain works contained in this software are owned by other third parties and used and distributed under license. Certain components of this software are licensed under the GNU General Public License (GPL) version 2.0 or the GNU Lesser General Public License (LGPL) Version 2.1. A copy of each such license is available at: <http://www.opensource.org/licenses/gpl-2.0.php> and <http://www.opensource.org/licenses/lgpl-2.1.php>". The Cisco logo is in the bottom right corner.

UCS
Unified Computing System Manager
3.0(0.131)

Username

Password

Domain

Log In

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CISCO

HTML5 Support

Fault Summary

0 1 10 2

Equipment Servers LAN SAN VM

Filter: All

Equipment

- Chassis
 - Chassis 1 (primary)**
- Fabric Interconnects
 - Fabric Interconnect B (subordinate)
 - Fabric Interconnect A (primary)
- Rack-Mounts
 - Servers

General Servers Service Profiles FI-IO Modules Fans PSUs Hybrid Display Slots Inst

Fault Summary

0 0 2 2

Status

Overall Status : **Power Problem**

[Status Details](#)

Actions

- [Acknowledge Chassis](#)
- [Decommission Chassis](#)
- [Remove Chassis](#)
- [Turn on Locator LED](#)
- [View POST Results](#)
- [Start Fault Suppression](#)
- [Stop Fault Suppression](#)
- [Suppression Task Properties](#)

Physical Display

Properties

ID : 1

Product Name : Cisco UCS 5108 AC2 Chassis

Vendor : Cisco Systems Inc

PID : UCSB-5108-AC2

Revision : 0

[Save Changes](#) [Reset Value](#)

Logged in as admin@10.29.131.170 Registered with UCS Central @172.22.250.54 System Time: 2014-05-12T19:33

UCS Mini under UCS Central Management

The screenshot displays the Cisco UCS Central Management web interface. At the top, the Cisco logo and 'UCS Central' are visible. A 'UCS Domains Fault Summary' box shows counts for different fault types: 3 critical (red X), 40 major (red triangle), 7 minor (yellow triangle), and 85 informational (green triangle). The main navigation bar includes links for Domains, Servers, Network, Storage, Operations Management, Statistics, Logs and Faults, Administration, and Import. The 'Equipment' tab is active, showing a 'UCS Fault Summary'.

On the left, a tree view shows the hierarchy: UCS Domains > Domain Groups > Domain Group root > UCS Domain R2D2 > Chassis > Chassis 1 > Servers > Server 1/1. The 'Server 1/1' node is selected and highlighted in green.

The main content area for 'Server 1/1' is divided into several sections:

- General** tab is active.
- Actions** section includes links for KVM Console, Launch UCS Manager, Boot Up Server, Shutdown Server, Reset, Recover Server, Server Maintenance, and Turn on Locator LED.
- Fault Summary** section shows counts: 0 critical, 14 major, 0 minor, and 0 informational.
- Status** section shows 'Overall Status: ok' with a green up arrow and a '+ Status Details' button.
- Physical Display** section shows a 3D rendering of the server rack with a red warning triangle on the right side.
- Properties** section shows 'Slot ID: 1' and 'Chassis ID: 1'.

At the bottom right of the main content area are 'Save' and 'Reset' buttons. The bottom status bar shows 'User: (admin)' on the left and 'System Time: 2014-05-13T05:09' on the right.

Why Central for a single UCS Domain?

Summary – 5 Key “Global” UCS Functions:

1. Information Dashboard

- Inventory
- Faults / Logs
- Statistics

2. Identifier / ID Pool Management

3. Domain-wide Infrastructure Policies

- Admin Settings & Enforcement

4. Server Policies

- Component Settings
- Policy Subscription

5. Workload Mobility

- Global Service Profiles
- Site Specific Settings

Benefits for a Single Domain:

1. Information Dashboard

- KVM Launch
- Inventory

2. Statistics Collection

- Long term collection of Network/Power statistics

3. Planning for the future

- Why migrate to UCS Central when you can start day one.

UCS “All-in-One” Benefit Summary

UCS innovation optimized for Branch Office and Remote Sites

UCS for smaller scale environments with

Fewer things to... buy
install
break
manage

But still all the best of the existing UCS solution

The same UCS... parts (chassis/servers/etc)
management
redundancy
support



Next Steps



- Engage with your partner and/or Cisco
 - See a management demo
 - Get a more in-depth product update
 - Ask for comparative configuration
- SmartPlay Bundles
 - Includes all the server parts to get started
- Cisco® Validated Design Reference Architectures
 - Predefined system and network configurations
 - Joint testing at scale
 - 100 or more virtual desktops per server
- Solution Design Assistance
 - Technical support
- Analysis
 - Power Calculator, ROI tool and TCO calculator

Agenda

UCS Introduction

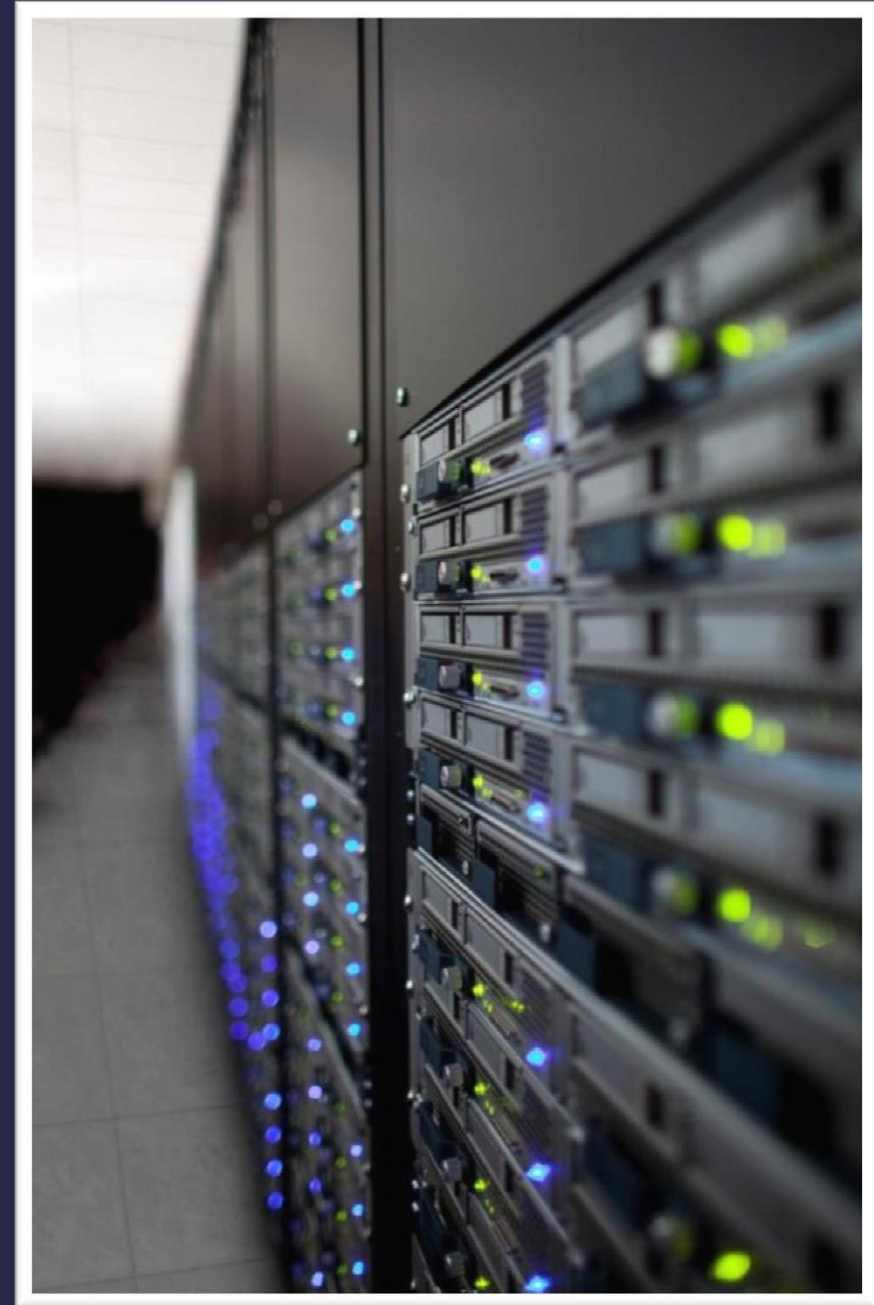
UCS Overview

UCS Mini

UCS Update

UCS Management

Conclusion



Lifecycle transition plan

- We will continue to offer and sell B200/C220/C240 M3 through at least end of Calendar 2016
- We will continue to provide service and support for B200/C220/C240 M3 through end of Calendar 2021 (5 years after last sell date)
- We will sell key options such as CPU and memory and VICs for at least 12-18 months past the last sell date of the B200/C220/C240 M3

Cisco UCS E5-xxxx B2xx and C2xx M4 CPU Options

Select one or two Intel Xeon E5-2600v3 product family CPUs

PID	DESCRIPTION	GPL
UCS-CPU-E52699D	2.30 GHz E5-2699 v3/145W 8C/45MB Cache/DDR4 2133MHz	\$13,280
UCS-CPU-E52698D	2.30 GHz E5-2698 v3/135W 6C/40MB Cache/DDR4 2133MHz	\$10,250
UCS-CPU-E52697D	2.60 GHz E5-2697 v3/145W 4C/35MB Cache/DDR4 2133MHz	\$8,490
UCS-CPU-E52695D	2.30 GHz E5-2695 v3/120W 4C/35MB Cache/DDR4 2133MHz	\$7,570
UCS-CPU-E52690D	2.60 GHz E5-2690 v3/135W 2C/30MB Cache/DDR4 2133MHz	\$6,465
UCS-CPU-E52683D	2.00 GHz E5-2683 v3/120W 4C/35MB Cache/DDR4 2133MHz	\$5,655
UCS-CPU-E52680D	2.50 GHz E5-2680 v3/120W 2C/30MB Cache/DDR4 2133MHz	\$5,235
UCS-CPU-E52670D	2.30 GHz E5-2670 v3/120W 2C/30MB Cache/DDR4 2133MHz	\$4,675
UCS-CPU-E52667D	3.20 GHz E5-2667 v3/135W 8C/20MB Cache/DDR4 2133MHz	\$6,355
UCS-CPU-E52660D	2.60 GHz E5-2660 v3/105W 10C/25MB Cache/DDR4 2133MHz	\$4,210
UCS-CPU-E52658D [NEBS]	2.20 GHz E5-2658 v3/105W 2C/30MB Cache/DDR4 2133MHz	\$5,345
UCS-CPU-E52650D	2.30 GHz E5-2650 v3/105W 10C/25MB Cache/DDR4 2133MHz	\$3,628
UCS-CPU-E52650LD	1.80 GHz E5-2650L v3/65W 2C/30MB Cache/DDR4 2133MHz	\$4,060
UCS-CPU-E52643D	3.40 GHz E5-2643 v3/135W 8C/20MB Cache/DDR4 2133MHz	\$4,820
UCS-CPU-E52640D	2.60 GHz E5-2640 v3/90W 8C/20MB Cache/DDR4 1866MHz	\$2,895
UCS-CPU-E52637D	3.50 GHz E5-2637 v3/135W 4C/15MB Cache/DDR4 2133MHz	\$3,255
UCS-CPU-E52630D	2.40 GHz E5-2630 v3/85W 8C/20MB Cache/DDR4 1866MHz	\$2,015
UCS-CPU-E52630LD	1.80 GHz E5-2630L v3/55W 8C/20MB Cache/DDR4 1866MHz	\$1,948
UCS-CPU-E52623D	3.00 GHz E5-2623 v3/105W 4C/10MB Cache/DDR4 1866MHz	\$1,515
UCS-CPU-E52620D	2.40 GHz E5-2620 v3/85W 6C/15MB Cache/DDR4 1866MHz	\$1,345
UCS-CPU-E52609D	1.90 GHz E5-2609 v3/85W 6C/15MB Cache/DDR4 1600MHz	\$985

Some vendors are challenged by the higher power requirements making customers compromise between CPU model and memory quantity

Post-Grantley Consolidated UCS Compute Portfolio

Performance Optimized for Bare Metal, Virtualized, and Cloud Applications

Cisco UCS: Many Server Form Factors, One System

Industry-Leading Compute Without Compromise

Rack

Scale Out

Enterprise Performance

Intensive/Mission Critical



UCS C240 M4

Ideal Platform for Big Data, ERP, and Database Applications



UCS C220 M4

Versatile, General Purpose Enterprise Infrastructure, and Application Server



UCS C460 M4

Mission-Critical, 4-Socket Server for Large, CPU-Intensive Applications

Blade



UCS B200 M4

Optimal Choice for VDI, Private Cloud, or Dense Virtualization/Consolidation Workloads



UCS B420 M4

Enterprise Class, 4-Socket Blade for Large, Memory-Intensive Bare Metal and Virtualized Applications



UCS B260 M4

Mission-Critical, 2-Socket Blade for Large, CPU-Intensive Bare Metal and Virtualized Applications



UCS B460 M4

Mission-Critical, 4-Socket Blade for Large, CPU-Intensive Bare Metal and Virtualized Applications

Cisco Dense Storage Server

Modular high density storage server for enterprise and industry verticals

- 360TB of dense storage in a compact 4U Form Factor
- Ideal for large unstructured data repositories, media streaming and content distribution
- Single or dual servers offering both high-performance compute and storage throughput



4U Server

Dual CPU socket per server

Up to 1TB Memory

512GB per server

Up to 64 Drive Bays

60 LFF, plus 4 SFF

RAID Cache

Enterprise storage features

Dual Modular LOM (mLOM)

Multiple Connectivity Options

Optional Bezel

UCS C3160

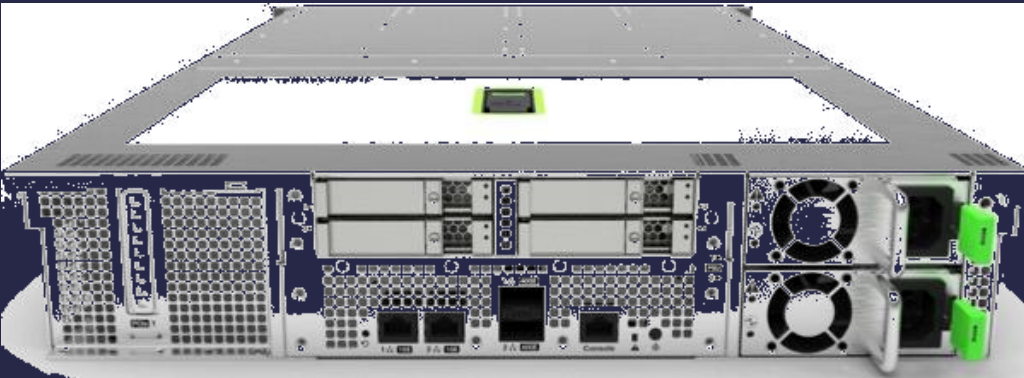
Dense Storage Server

UCS M-Series Specifics

Front View



Rear View



Aggregate Capacity per Chassis
16 Servers, 64 Cores, 512 GB Memory



Watch
this
space

CPU	Intel Xeon E3	1275Lv3, 1240Lv3, 1220Lv3
Memory	8 GB UDIMM	32 GB Max/Cartridge
Disks	2 or 4 SSDs	SATA (240 GB, 480 GB, 960 GB) SAS (400 GB, 800 GB, 1.6 TB)
RAID Ctr	Cisco 12 Gb Modular RAID Controller with 2GB Flash-Backed Write Cache (FBWC)	
Network	2 * 40 Gb	
Power	2 * 1400W	

Cisco UCS Invicta Series

Built upon the C240M3 platform

Converged target (FC/iSCSI) and media management (BTL)

Workgroup / POD focused

UCS Invicta Appliance



250,000 IOPS
1.9 GB/s Bandwidth
Up to 24 TB RAW

✓ Application Acceleration

✓ Data Optimization

✓ Multiple Workloads

✓ Tuning-Free Performance

UCS B200 M4 Next Gen Density-Optimized Blade Server

An uncompromised combination of CPU, Memory, IO, and expansion capabilities in a modular blade form-factor

- *Designed for a wide range of enterprise workloads including virtualization and bare metal applications*
- *Provides enterprise-level capabilities and features*
- *Ultimate density-optimized general compute blade platform*



Two E5v3 CPUs 24 DDR4 DIMM Slots
Up to 18 cores per socket Up to 2133 MHz speeds

Flexible Storage
Controller / Cache / Media Options

Up to 80G of I/O
One PCIe 3.0 mezzanine slot

Modular LOM (mLOM)
3rd Generation VIC

UCS B200 M4
*Density-Optimized
Enterprise Blade Server*

IO/Infrastructure configurations – support matrix

B200 M4 IO combinations								
Adapter configurations			Fabric Extenders (aggregate bandwidth)			Fabric Interconnects		
Adapter slot 1	Adapter slot 2		2 x 2208XP	2 x 2204XP	2x 2104XP*	2x 61xx*	2x 62xx	CPU dependency
For 62xx	VIC 1340	not populated	40 Gb/s	20 Gb/s	no support	no support	62xx	1 or 2 CPUs
	VIC 1340	VIC Port Expander	80 Gb/s	40 Gb/s	no support	no support	62xx	1 or 2 CPUs
	VIC 1340	VIC 1380	80 Gb/s	40 Gb/s	no support	no support	62xx	Requires 2 CPUs
	VIC 1340	3rd party CNA	60 Gb/s	40 Gb/s	no support	no support	62xx	Requires 2 CPUs
	VIC 1340	non-IO mezzanine (ex. Fusion IO)	40 Gb/s	40 Gb/s	no support	no support	62xx	Requires 2 CPUs
	not populated	3rd party CNA	20 Gb/s	20 Gb/s	no support	no support	62xx	Requires 2 CPUs
For 61xx/62xx	VIC 1240	not populated	40 Gb/s	20 Gb/s	20 Gb/s*	61xx*	62xx	1 or 2 CPUs
	VIC 1240	VIC Port Expander	80 Gb/s	40 Gb/s	IO card in slot 2 ignored*	61xx*	62xx	1 or 2 CPUs
	VIC 1240	VIC 1280	80 Gb/s	40 Gb/s	IO card in slot 2 ignored*	61xx*	62xx	Requires 2 CPUs
	VIC 1240	3rd party CNA	60 Gb/s	40 Gb/s	IO card in slot 2 ignored*	61xx*	62xx	Requires 2 CPUs
	VIC 1240	non-IO mezzanine (ex. Fusion IO)	40 Gb/s	40 Gb/s	20 Gb/s*	61xx*	62xx	Requires 2 CPUs
	not populated	3rd party CNA	20 Gb/s	20 Gb/s	IO card in slot 2 ignored*	61xx*	62xx	Requires 2 CPUs
					*support only with EI Cap	*support only with EI Cap		
B200 M4/FI/IOM/UCSM Combinations								
B200 M4	61xx*	2104*	support with EI Cap only		VIC 12xx only			
B200 M4	61xx*	22xx	support with EI Cap only		VIC 12xx only			
B200 M4	62xx	2104*	support with EI Cap only		VIC 12xx only			
B200 M4	62xx	22xx	support with EI Cap/Grenada/+		VIC 12xx / VIC 13xx			
		*support only with EI Cap	*support only with EI Cap					
CCW order configurator - confirmed it can guide blade VIC choice based on 61xx or 62xx								

UCS C220 M4 – Next Gen Density-Optimized Rack Server

A modular blend of CPU, Memory, Storage, IO and expansion capabilities in a 1U form-factor

- *Designed for a wide range of enterprise workloads including virtualization and bare metal applications*
- *Stand-alone or UCS-managed operations*
- *Provides enterprise-level capabilities and features*
- *Ultimate density-optimized, modular general compute platform*



UCS C220 M4

*Density-Optimized
Enterprise Rack Server*

Two E5v3 CPUs

Up to 18 cores per socket

24 DDR4 DIMM Slots

Up to 2133 MHz speeds

Security Bezel

Optional

Two PCIe 3.0 Slots

Two NCSI “VIC-Optimized”

Modular LOM (mLOM)

VIC or CNA Options

Flexible Storage

Up to 8 SFF or 4 LFF drives

PCIe SSD support

UCS C240 M4 – Next Gen Storage & IO-Optimized Server

A modular blend of CPU, Memory, Storage, IO and expansion capabilities in a 2U form-factor

- *Designed for a wide range of enterprise workloads including virtualization, big data, and bare metal applications*
- *Stand-alone or UCS-managed operations*
- *Provides enterprise-level capabilities and features*
- *Ultimate configurable, modular general compute platform*
- *Supports up to two double-wide GPUs*



UCS C240 M4
Storage and IO-Optimized
Enterprise Rack Server

Two E5v3 CPUs
Up to 18 cores per socket

24 DDR4 DIMM Slots
Up to 2133 MHz speeds

Security Bezel
Optional

Six PCIe 3.0 Slots
Four Full / Full – Four NCSI

Modular LOM (mLOM)
VIC or CNA Options

Flexible Storage
Up to 24 SFF or 12 LFF +2 SFF boot drives
PCIe SSD support

Next Gen Dense 4-Socket Blade Server

A density-conscious quad-socket blend of CPU, Memory, Storage, IO and expansion capabilities in a full blade form-factor

- *Designed for a wide range of enterprise workloads including virtualization and bare metal applications*
- *Provides enterprise-level capabilities and features*
- *Ultimate 4-socket density-optimized enterprise blade platform*



UCS B420 M4

*Density-Optimized
Enterprise Blade Server*

Four E5v3 CPUs

*Up to 14 cores per
socket*

48 DDR4 DIMM Slots

Up to 2133 MHz speeds

Flexible Storage

*Controller / Cache / Media
Options*

Up to 160G of I/O

Three PCIe 3.0 mezzanine slot

Modular LOM (mLOM)

3rd Generation VIC

M4 Scalable EX Blade Highlights



Single Configuration
UCS B260 M4
Full-Width, 2-Socket
(Brickland EX - up to 30 cores), 48 DIMMs

*Dual / Quad Socket EX scalable design
Optimized for both 2 and 4 socket scale
(w/ required Scalability connector)*

Up to 60 Cores

*Up to 6 TB of memory
(up to 96 DIMM sockets)*

Up to 320 Gb of IO Bandwidth

- Designed for the most processor, memory, and IO-intensive workloads
- Provides mission-critical RAS features
- Offers the benefits of blade density and ecosystem with the added flexibility of a truly scalable system



Scaled Configuration
UCS B460 M4
Double-High -Full-Width, 4-Socket
(Brickland EX - up to 60 cores), 96 DIMMs

Next Gen 4S-EX Rack Highlights

A “No-Compromise” balance of CPU, Memory, Storage, IO and expansion capabilities in a 4U form-factor

- *Designed for the most demanding server workloads such as in-memory database, EDA and CPU / GPU rendering*
- *Stand-alone or UCS-managed operations*
- *Provides mission-critical RAS features*
- *Ultimate scale-up platform*



Four E7v2 CPUs

Up to 15 cores per socket

10 PCIe 3.0 Slots

Four Full / Full GPU-ready

96 DIMM Slots

DDR3 w/ upgrade path to DDR4

Modular LOM (mLOM)

VIC or CNA Options

12 Drive Bays

Two PCIe-capable

Security Bezel

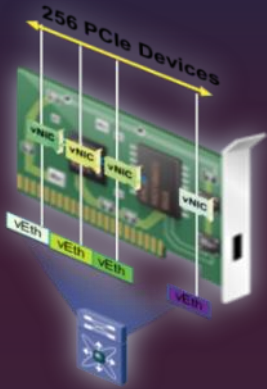
Optional

UCS C460 M4

*Performance-Optimized
Enterprise Rack Server*

Innovative UCS I/O Cards

Cisco VIC



- IO consolidation, scale, and flexibility managed by UCSM
- Industry-leading performance
- Robust ecosystem with storage and OS qualifications

Third-Party Adapters



- Best-of-breed options for Ethernet, Fibre Channel, and CNAs
- Fiber and copper interfaces
- Broad support for most popular operating systems and storage

Flash Card



- Tier-0 storage/server side flash
- High performance: 100K + IOPS
- Significantly reduce application latency and response time

GPUs



- GPU acceleration for VDI
- Rich graphics experience on thin clients
- GPU pass through or sharing for 20 users or more

Next Steps



- Engage with your partner and/or Cisco
 - See a management demo
 - Get a more in-depth product update
 - Ask for comparative configuration
- SmartPlay Bundles
 - Includes all the server parts to get started
- Cisco® Validated Design Reference Architectures
 - Predefined system and network configurations
 - Joint testing at scale
 - 100 or more virtual desktops per server
- Solution Design Assistance
 - Technical support
- Analysis
 - Power Calculator, ROI tool and TCO calculator

Agenda

UCS Introduction

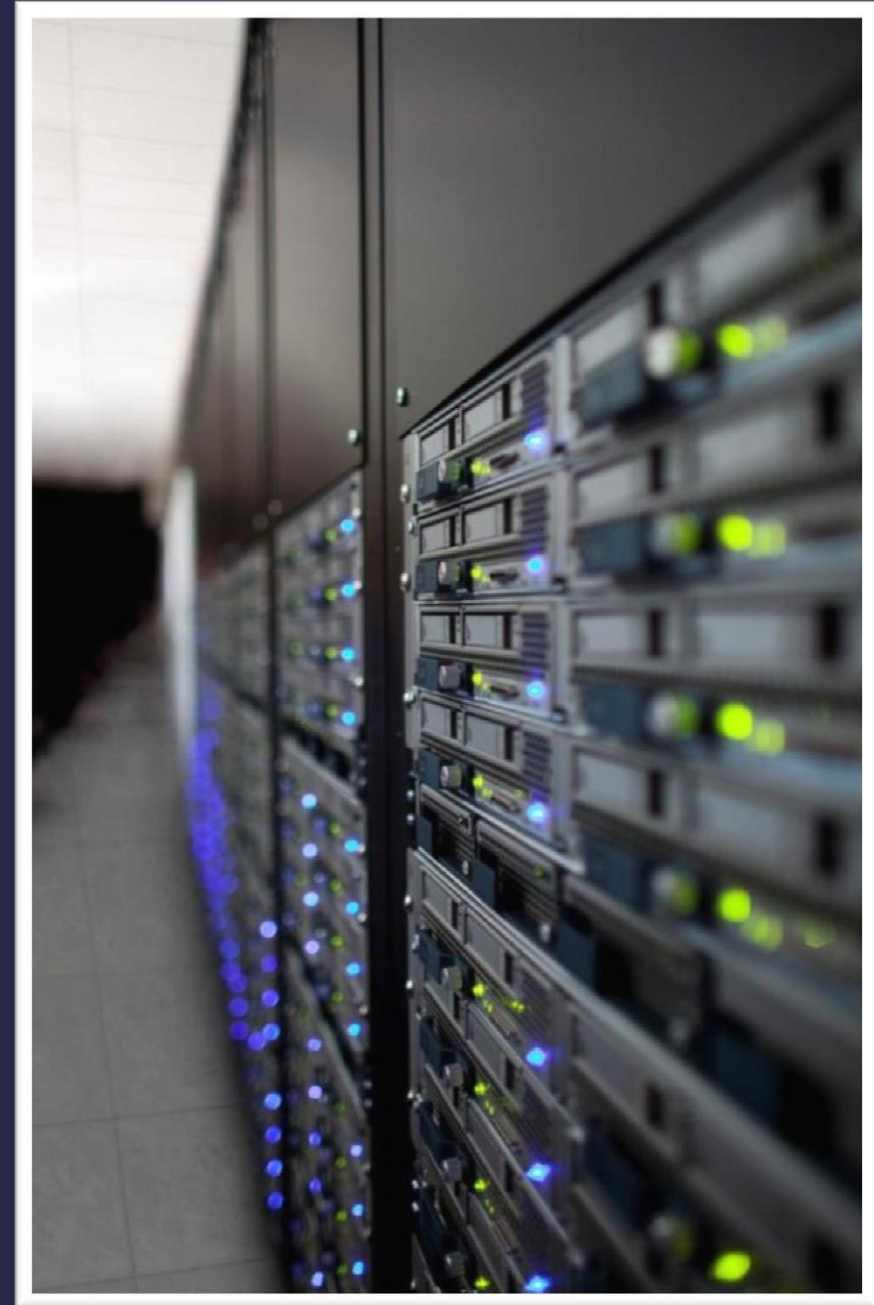
UCS Overview

UCS Mini

UCS Update

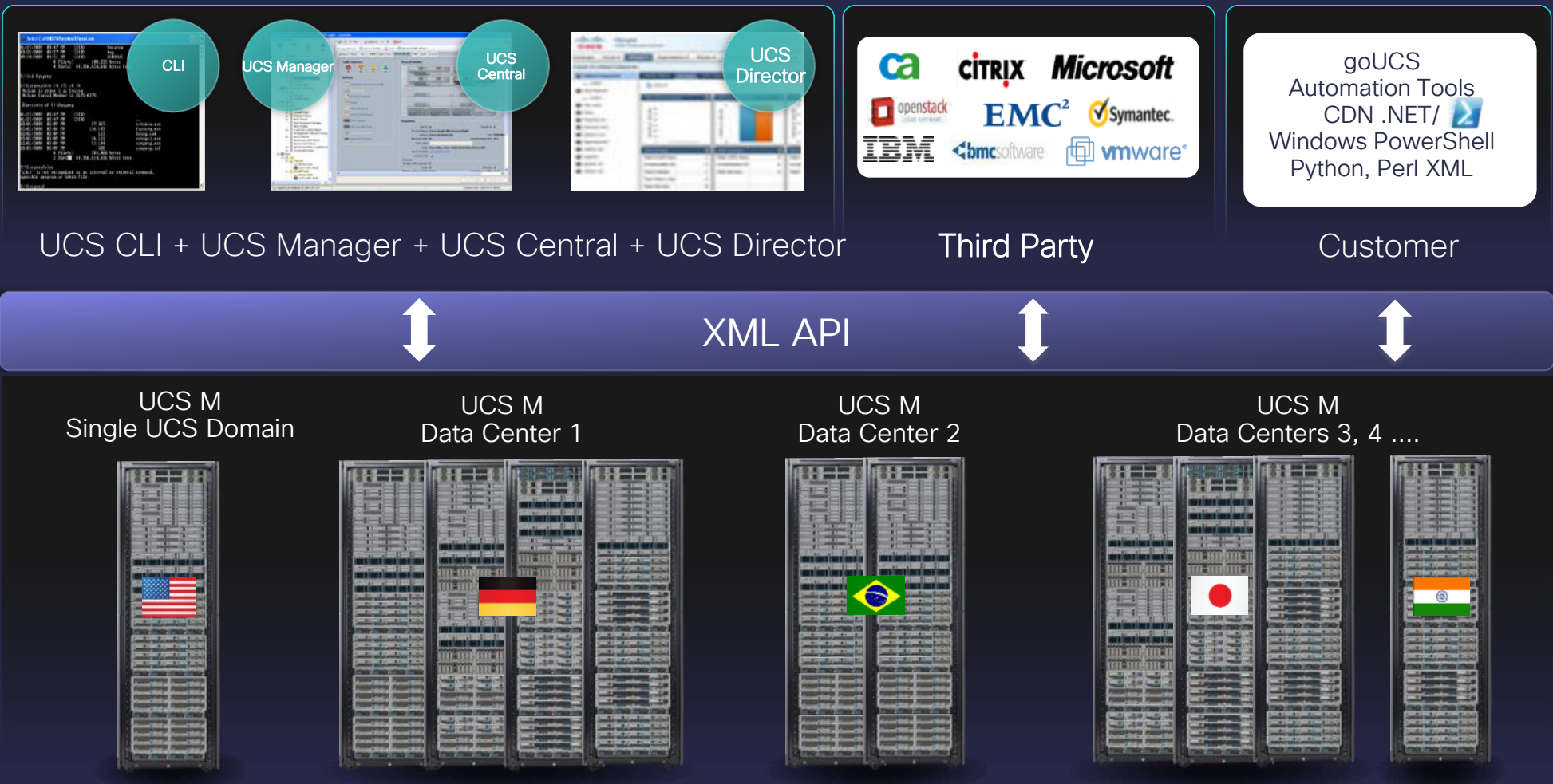
UCS Management

Conclusion



UCS Is Redefining Server Management

10,000 UCS Servers: Monitor and Manage Seamlessly

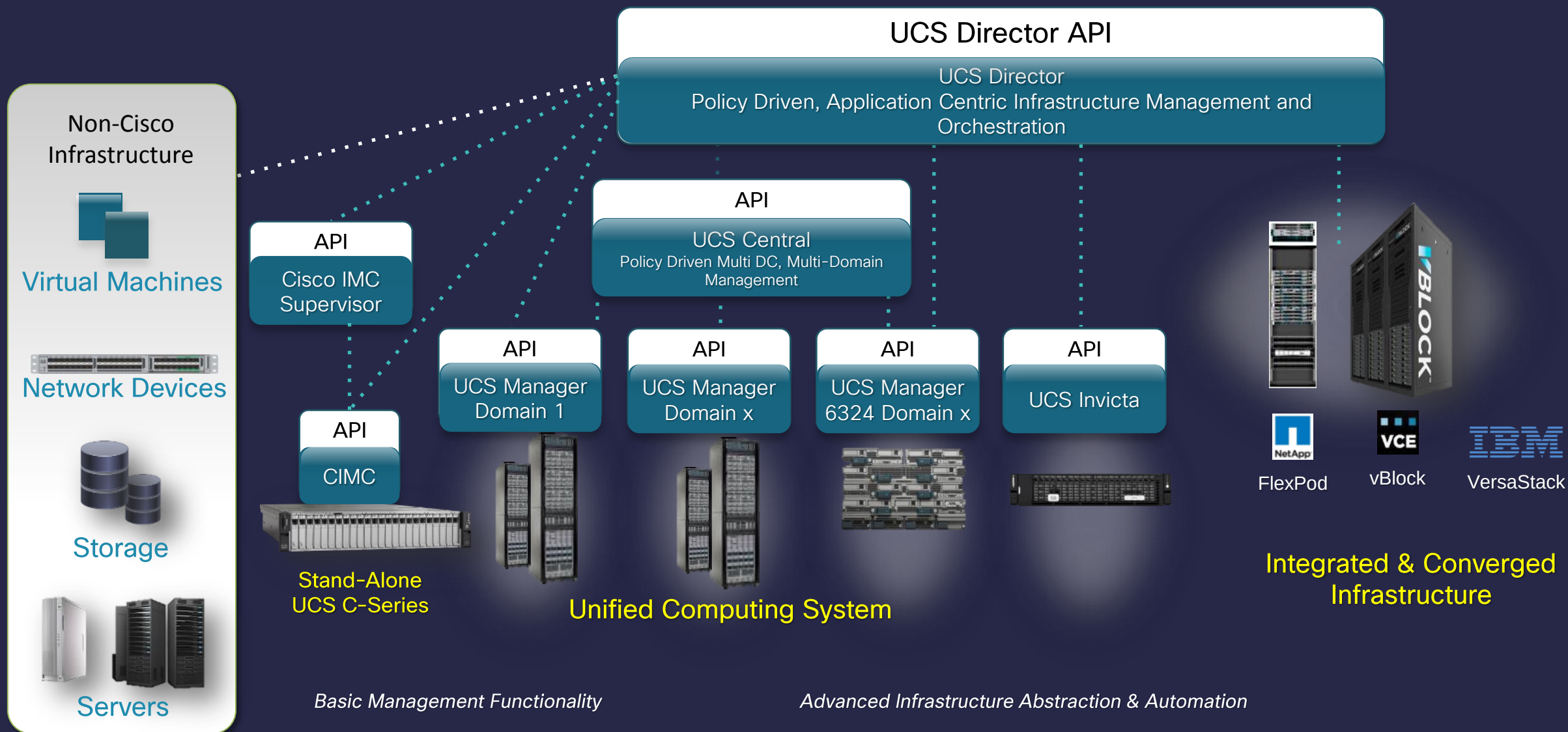


Blade and rack servers
in the same domain—
form factor agnostic

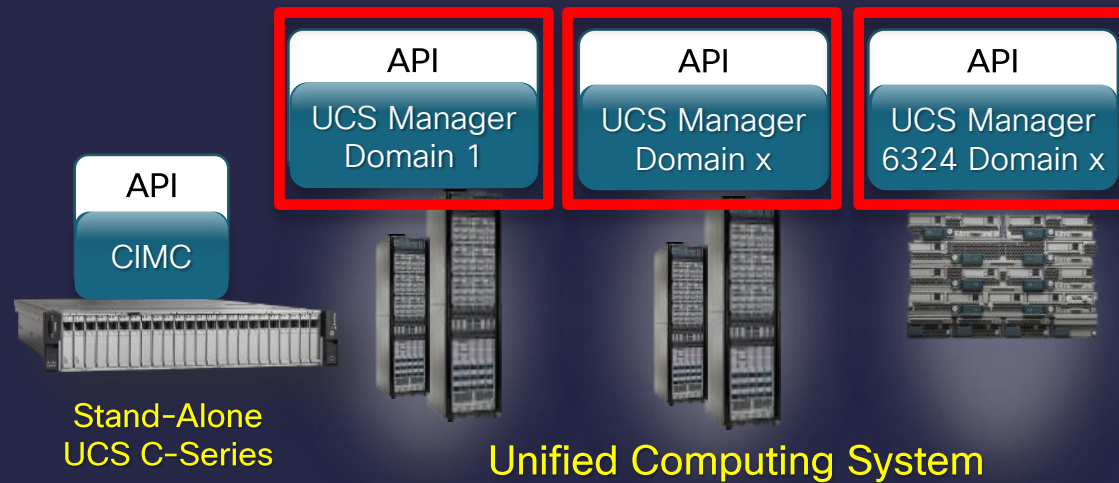
Standards-based XML
API presents
bidirectional single
interface to entire
solution

UCS offers the
customers the
broadest choice of
Cisco or third-party
management tools

UCS Management Portfolio



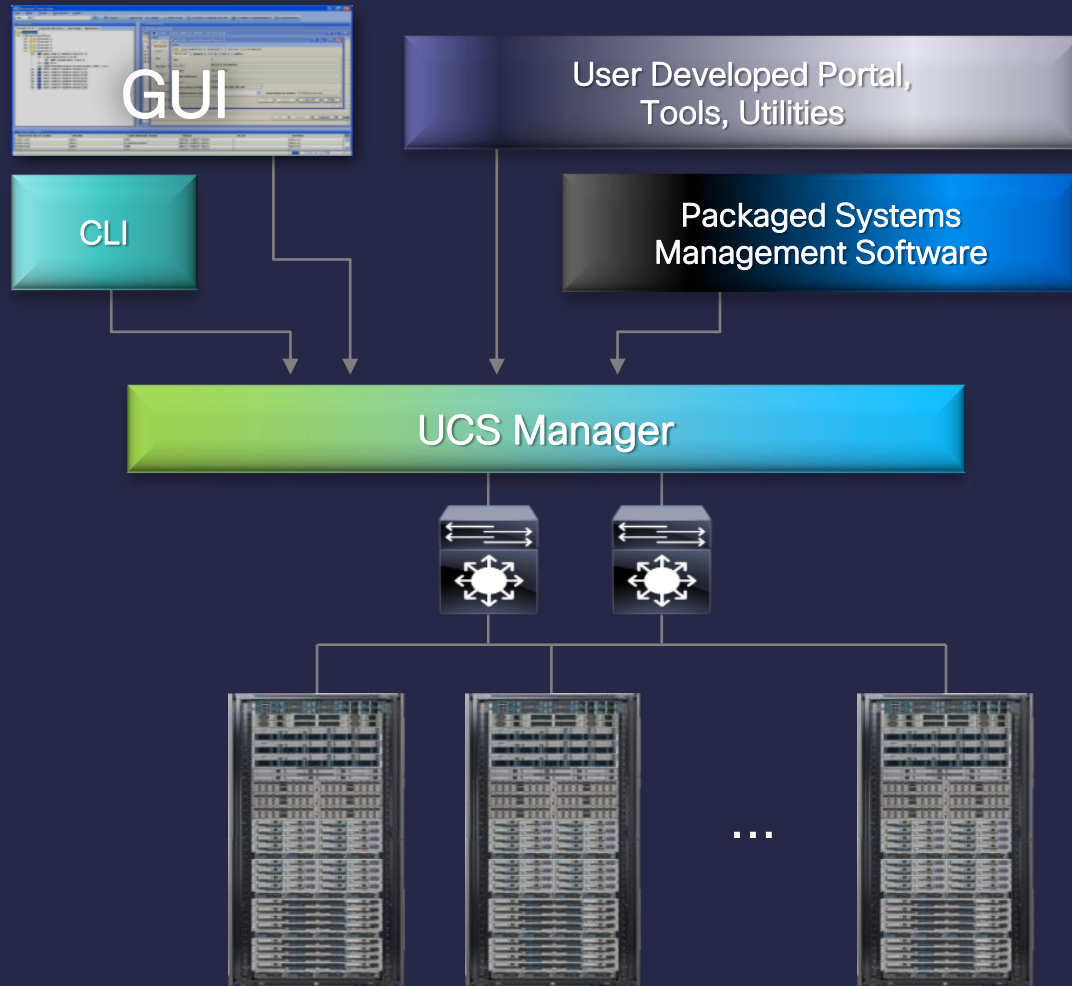
UCS Management Embedded and Centralization



Basic Management Functionality

Advanced Infrastructure Abstraction & Automation

UCS Manager



Embedded Device Manager

- Discovery, inventory, monitoring, diagnostics, statistics collection, configuration

Unifies many UCS HW components into a single, cohesive system

- Adapters, blades, chassis, fabric extenders, fabric interconnects

APIs for integration with new and existing data center infrastructure

- SMASH-CLP, IPMI, SNMP
- XML SDK for commercial and custom implementations

Key feature: Service profiles

- Coordinated deployment to managed endpoints

Cisco UCS PowerTool

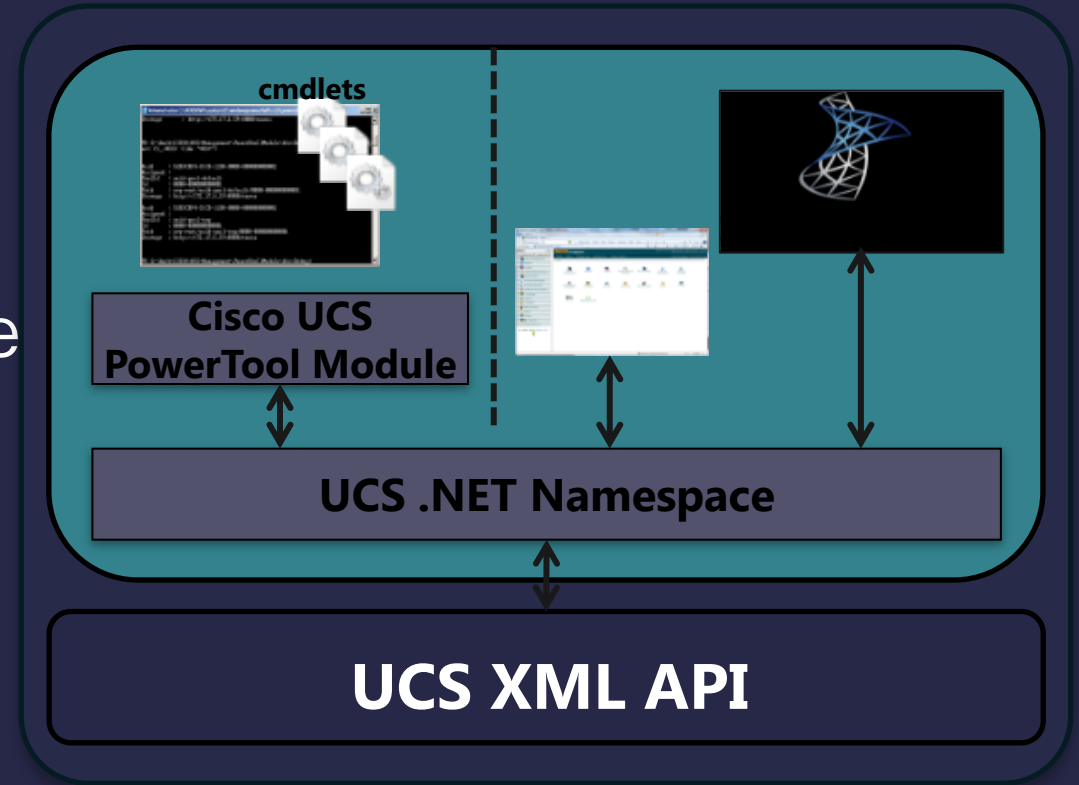
Programmatic control over UCS hardware

- **Architected for Flexibility and coverage**

- PowerShell Wrapper
- Cmdlet definition and structure
- Get-help support
- .NET UCS Namespace Library
 - XML API call construction
 - Class Definition
 - Validation

- **PowerShell Design**

- .NET Namespace provides common base for all Microsoft integration
- Targeted to support full manageability of UCS across multiple releases



goUCS Automation Toolkit

What's New With goUCS v2.0

Linux and Mac OS X Support

HTTPS Communication Support

Tagged-Based User Arguments

Performance Enhancements

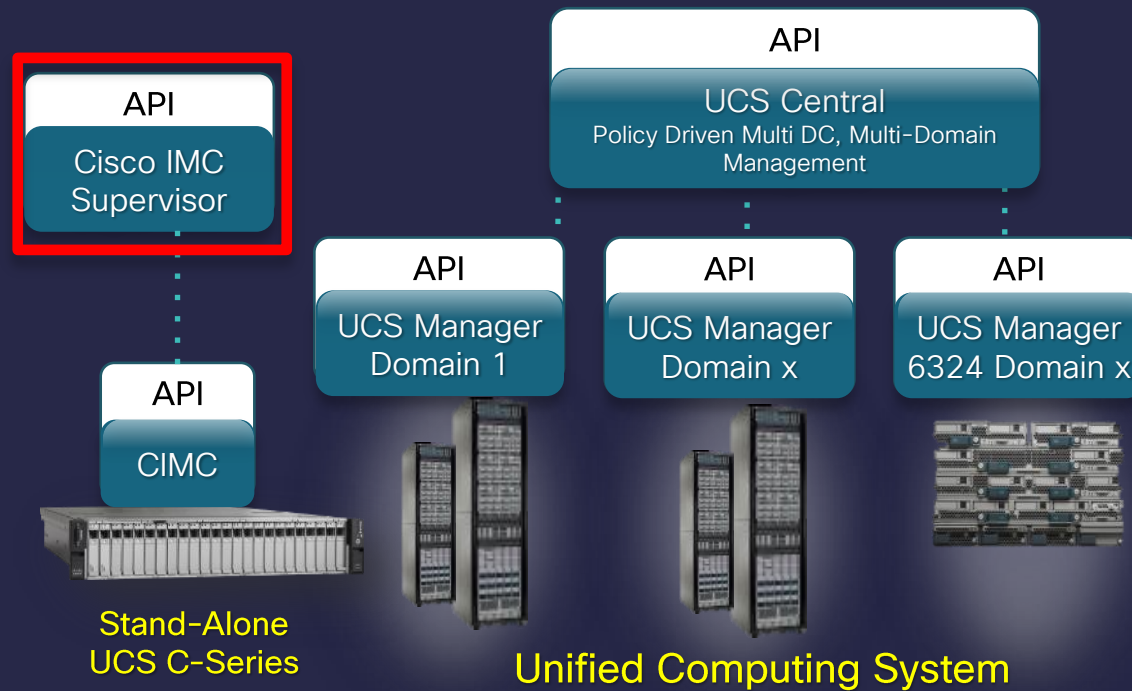
- UCS Manager: Know XML, no problem
- With goUCS: No XML, no problem
- Convert UCS Manager actions into automation scripts

1 Perform single action on UCS Manager and capture it

2 Create script in go UCS framework with variable substitutions

3 Rerun script over and over against single or multiple UCSMs

UCS Management Embedded and Centralization



Basic Management Functionality

Advanced Infrastructure Abstraction & Automation

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

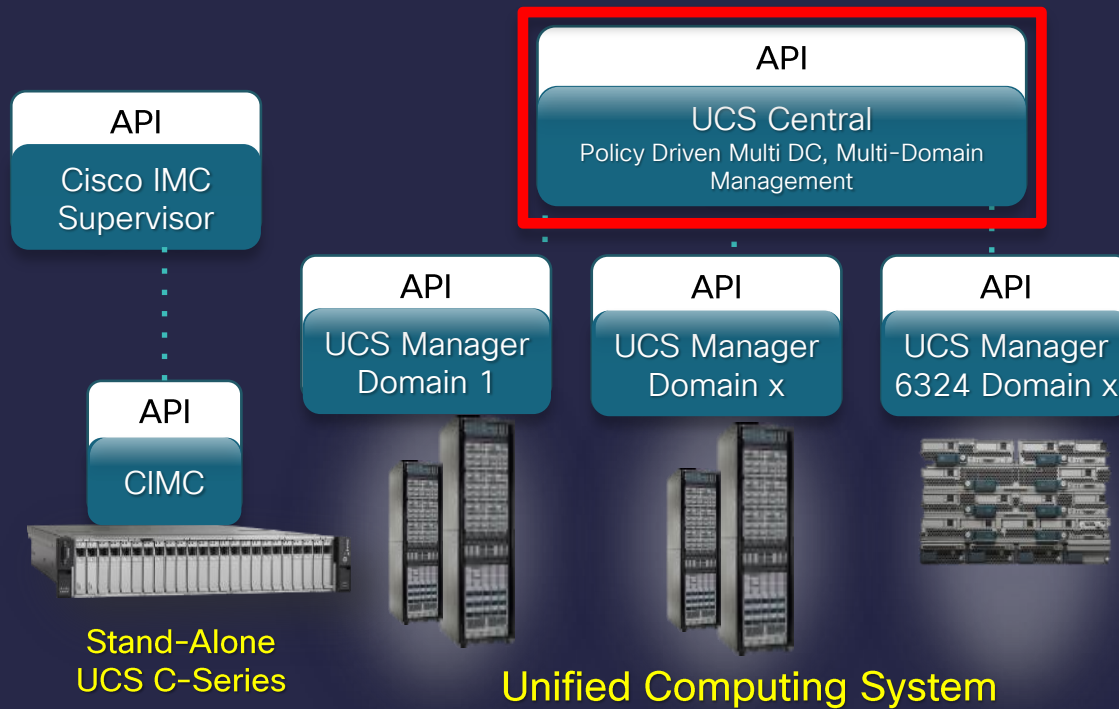
IMC Supervisor Core Features:

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

Scale:

FCS Target: 1,000 Servers

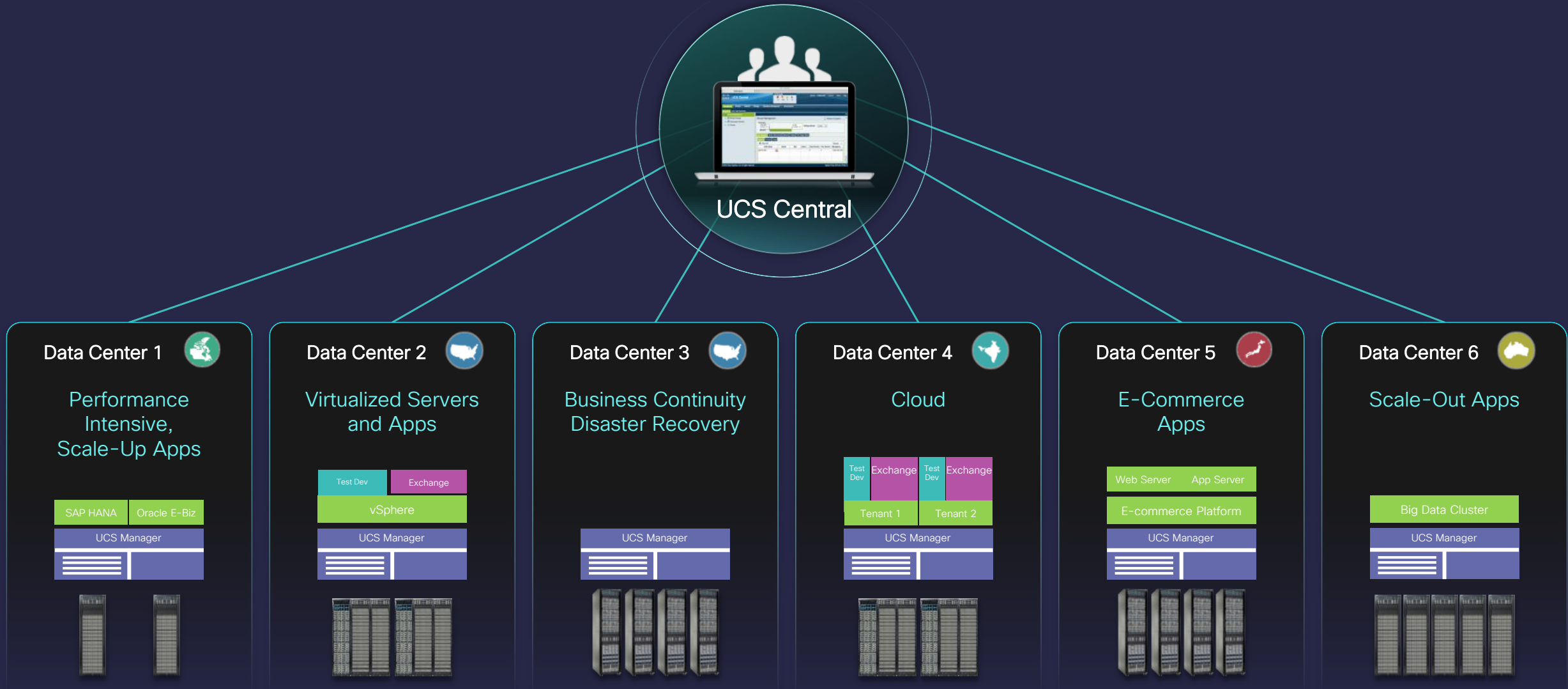
UCS Management Embedded and Centralization



Basic Management Functionality

Advanced Infrastructure Abstraction & Automation

All Workloads, Common Platform Unified Management



UCS Central: Inventory

HW Inventory

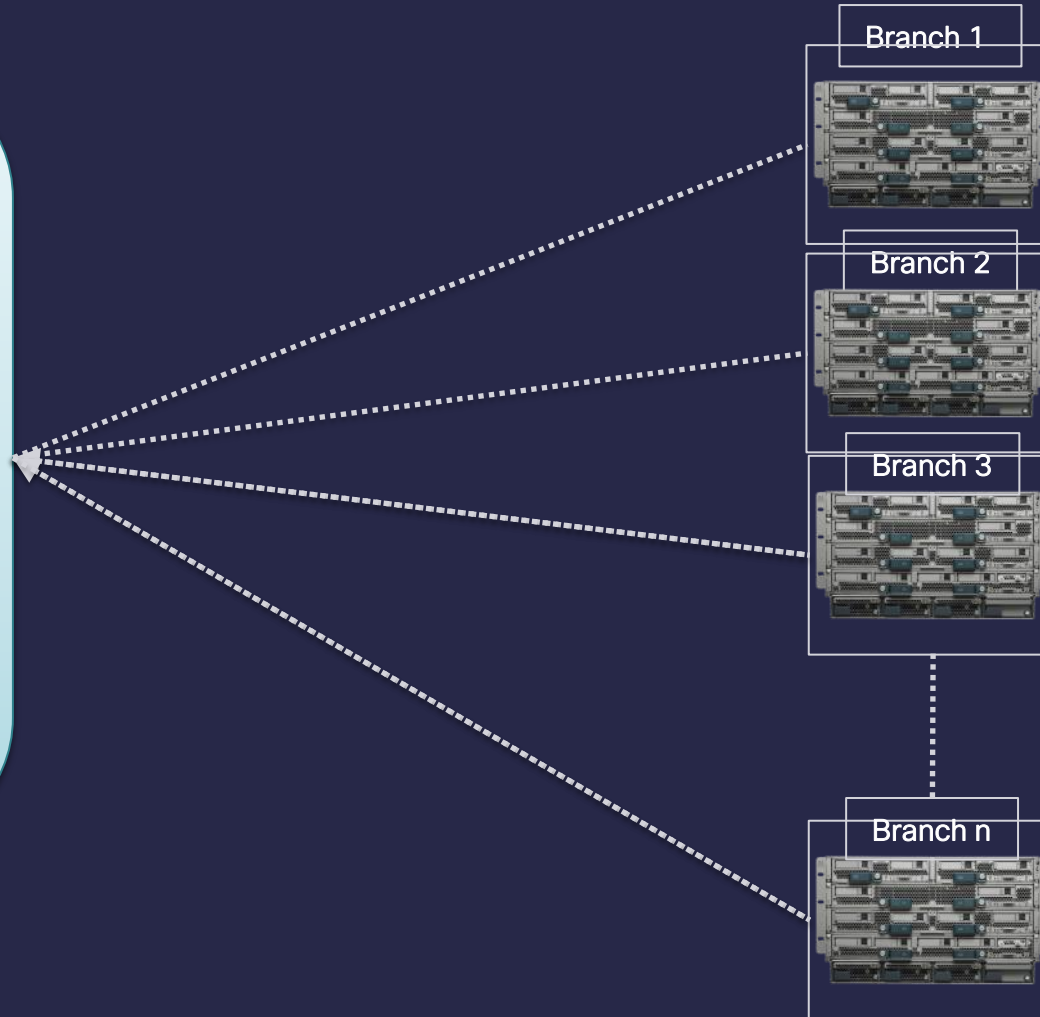
- Blade Type
- CPU Type and Quantity
- Memory DIMMs and serial numbers
- Power Supply Information

Logical Inventory

- Service Profile
- vNIC, vHBA, iSCSI vNIC

System Inventory

- Available Network VIFs,
- VLAN
- VSAN
- VLAN port capacity
- zone capacity



UCS Central: Standardization

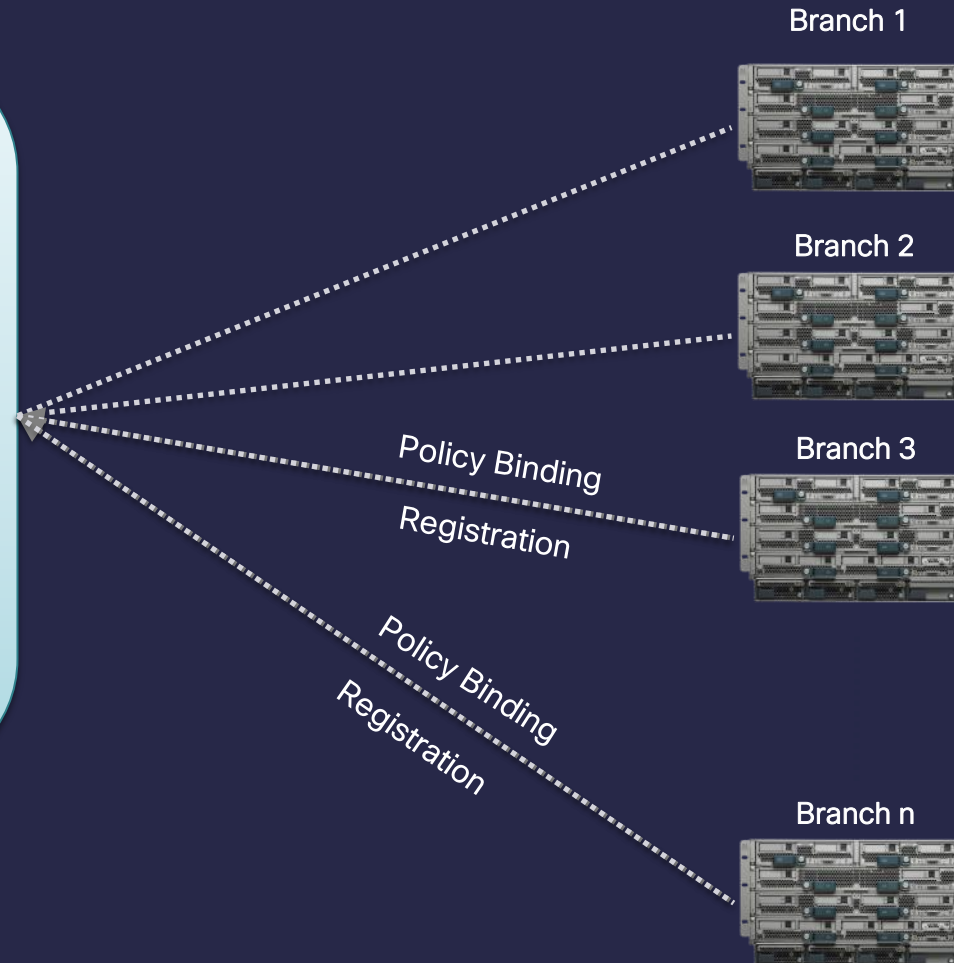
Global Admin Policies

HW Configuration Policies

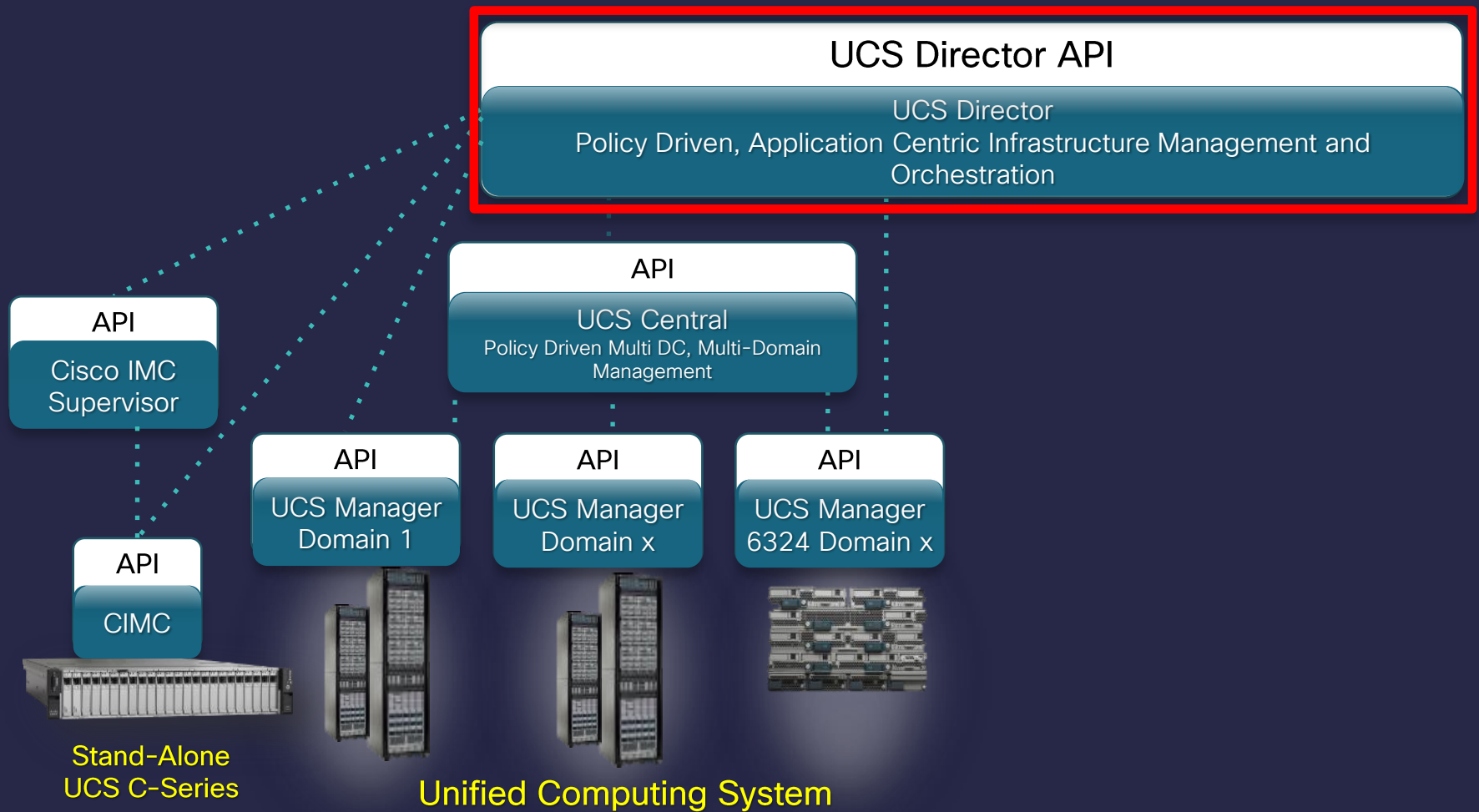
- BIOS Settings
- VLAN Settings
- VNICs & VHBA

Operational Policies

- Date & Time: NTP, Timezone
- DNS
- Remote Access
- SNMP
- Debug Settings
- Call Home
- Authentication (LDAP, Radius, TACACS)
- Equipment Power and SEL policies
- Firmware



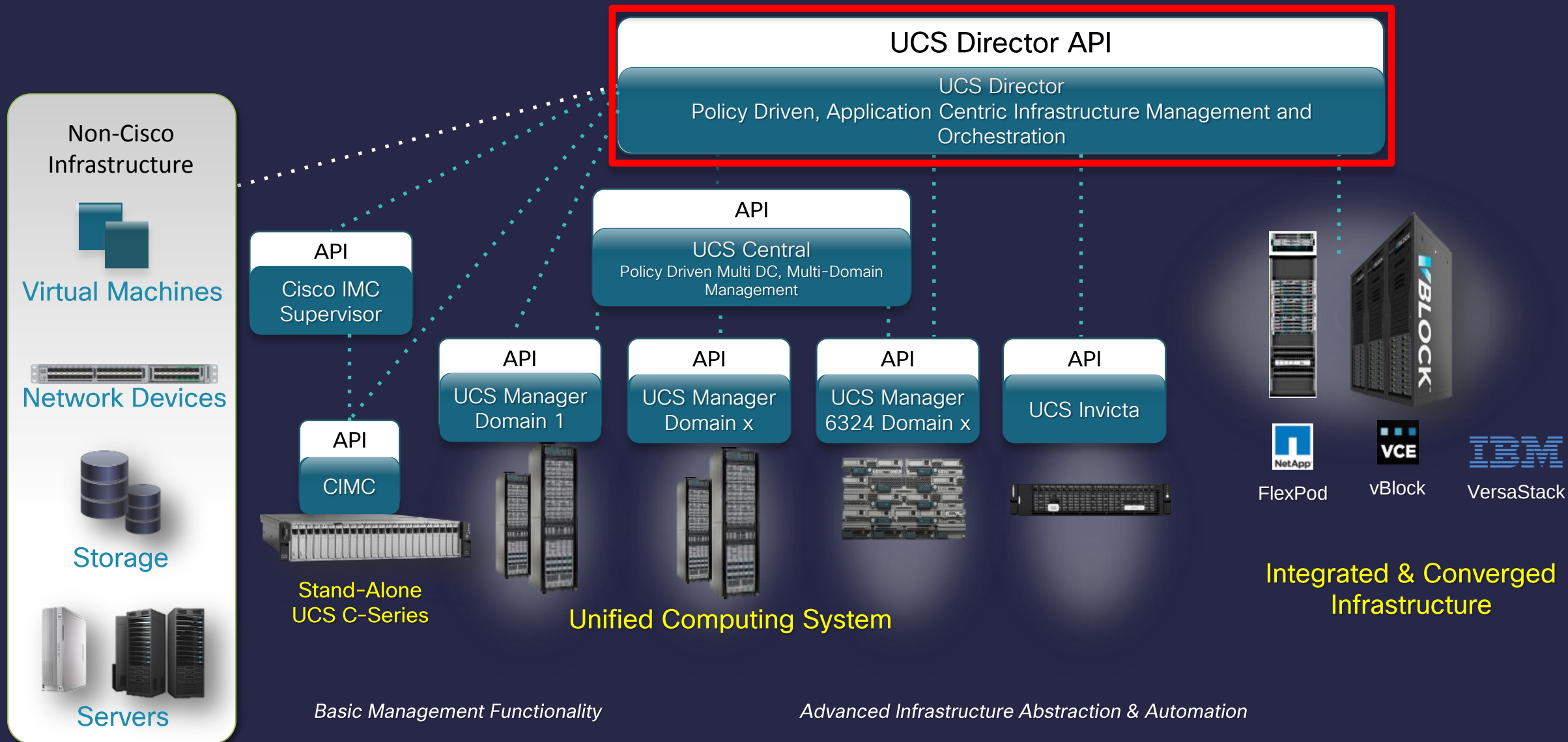
UCS Management Portfolio



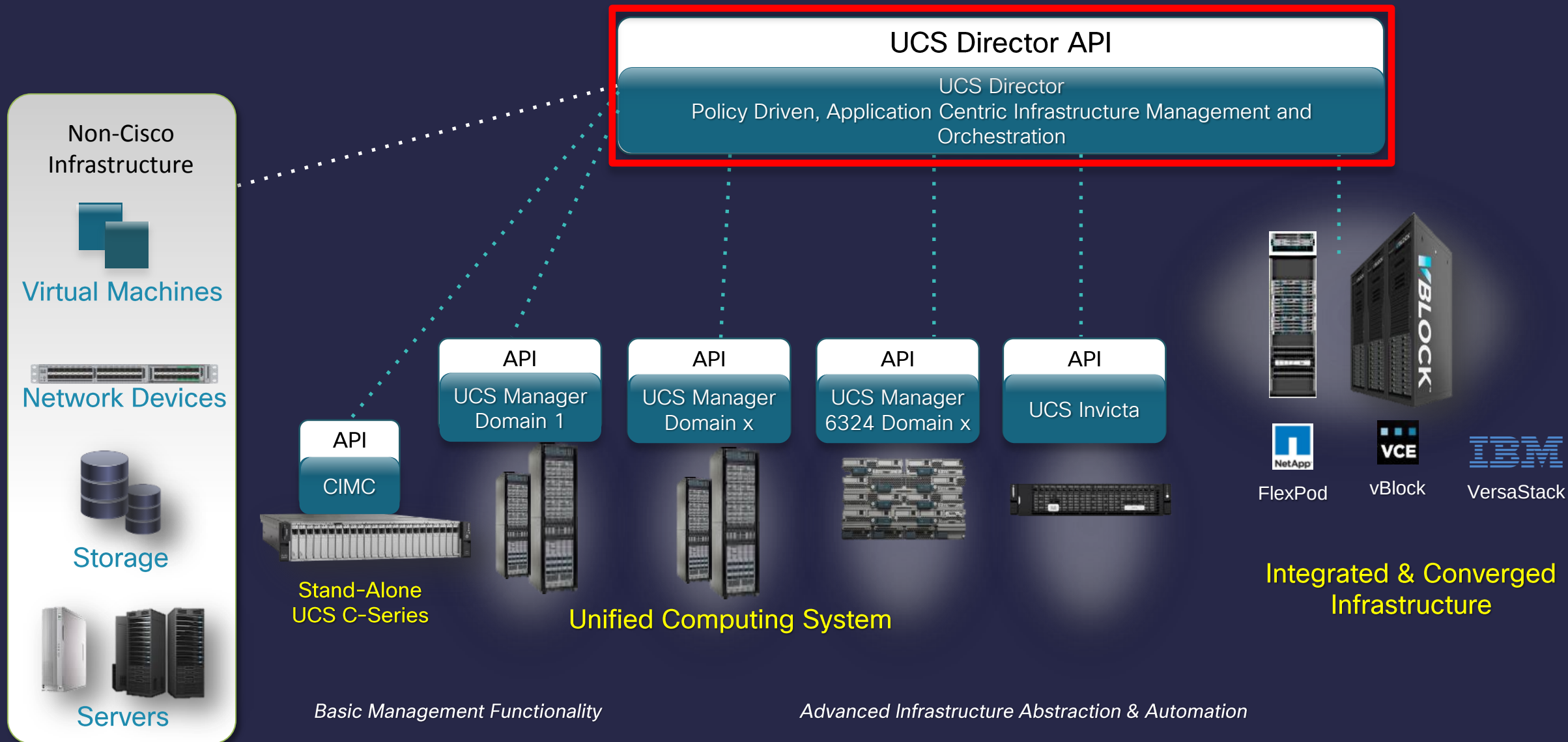
Basic Management Functionality

Advanced Infrastructure Abstraction & Automation

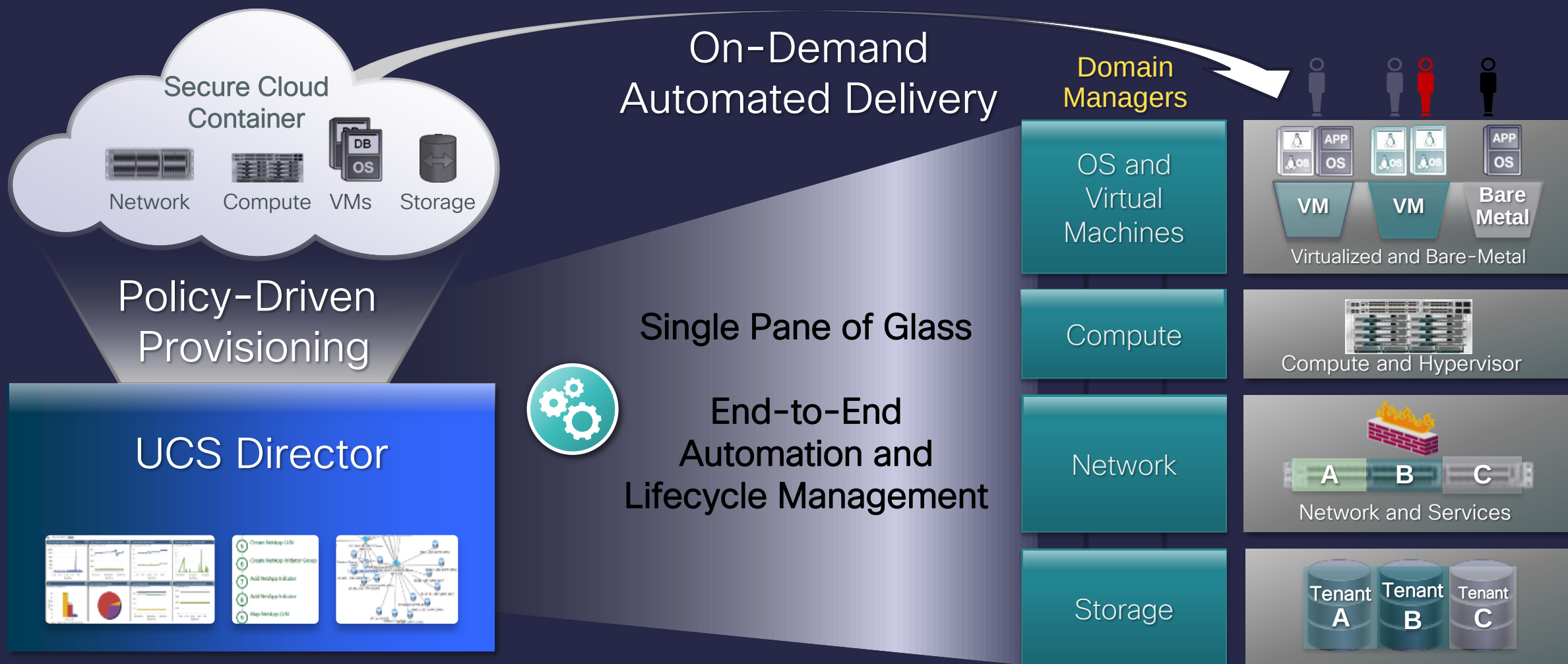
UCS Management Portfolio



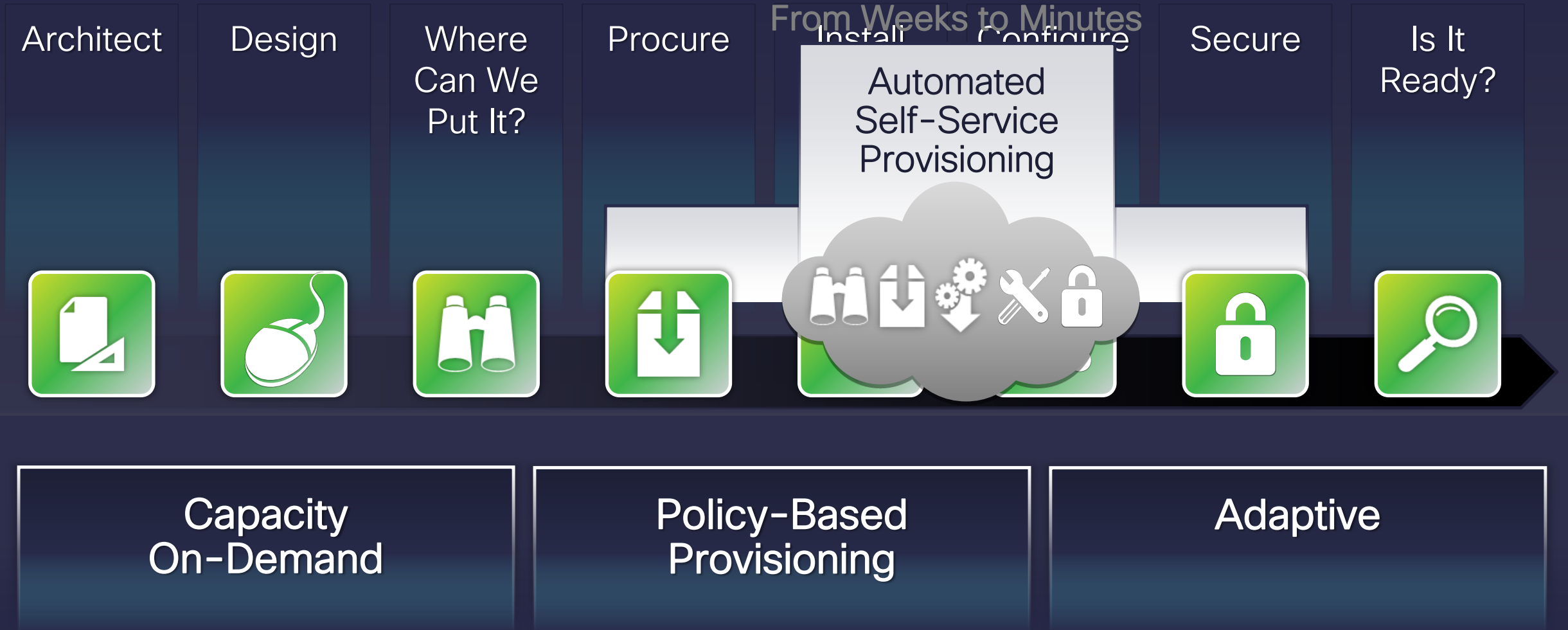
UCS Management Portfolio



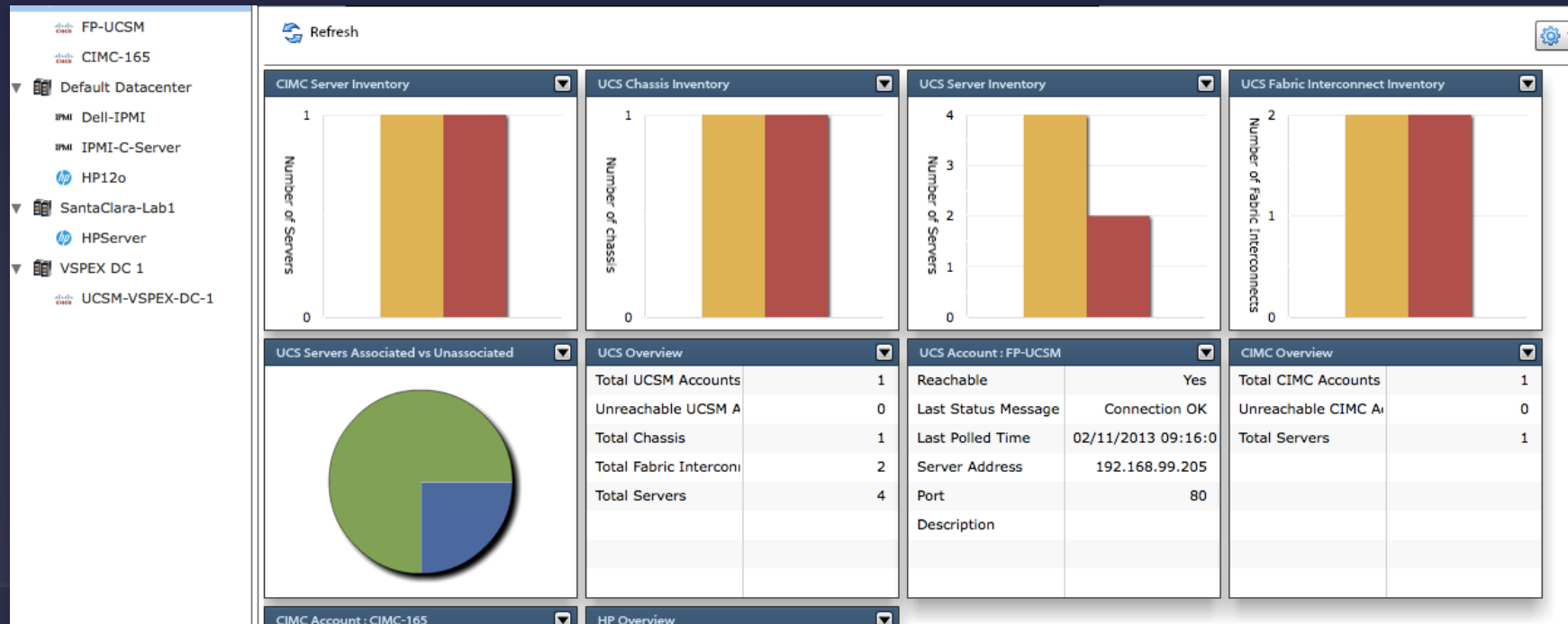
Cisco UCS Director Turn-Key Solution



Automate Service Delivery

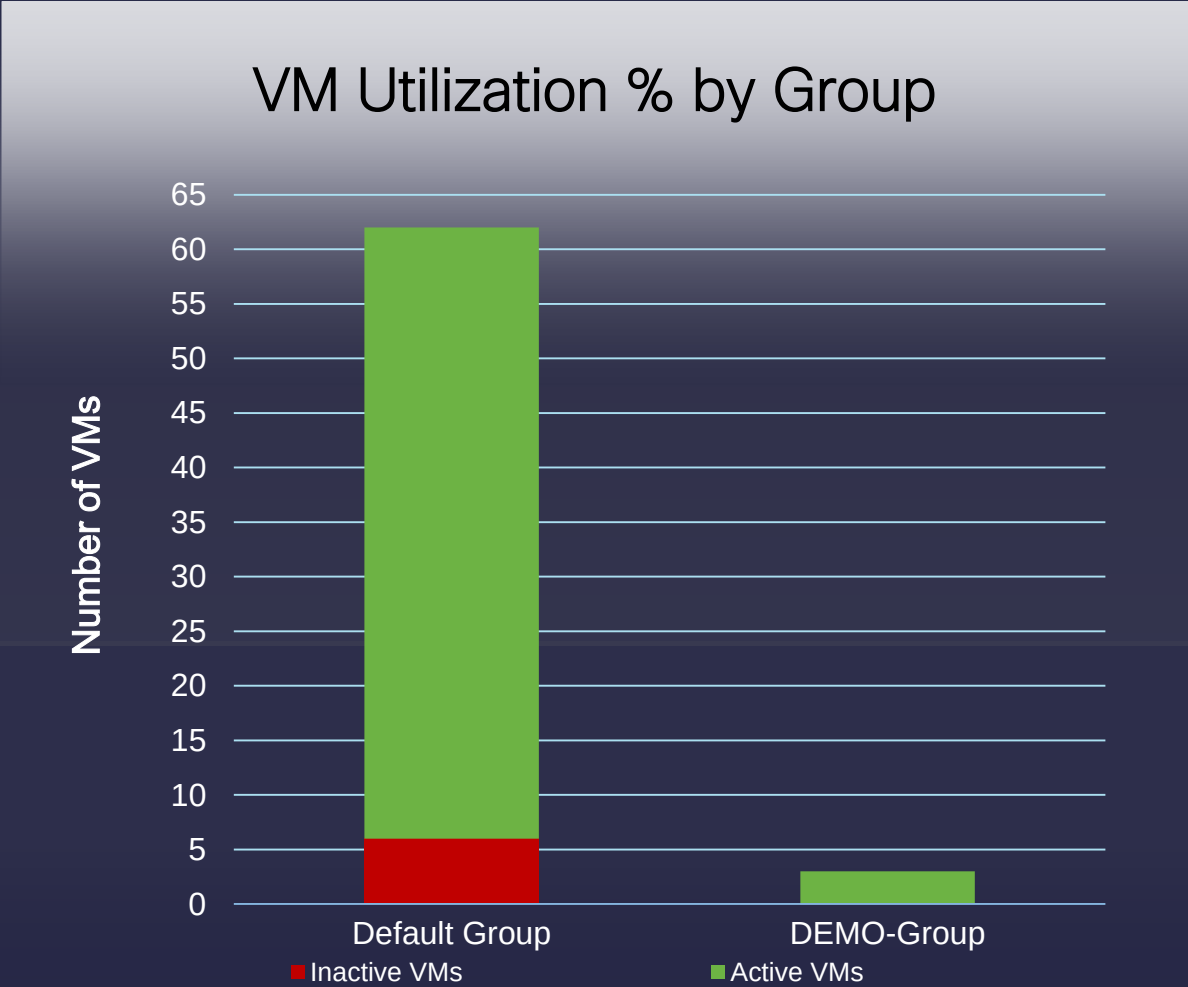
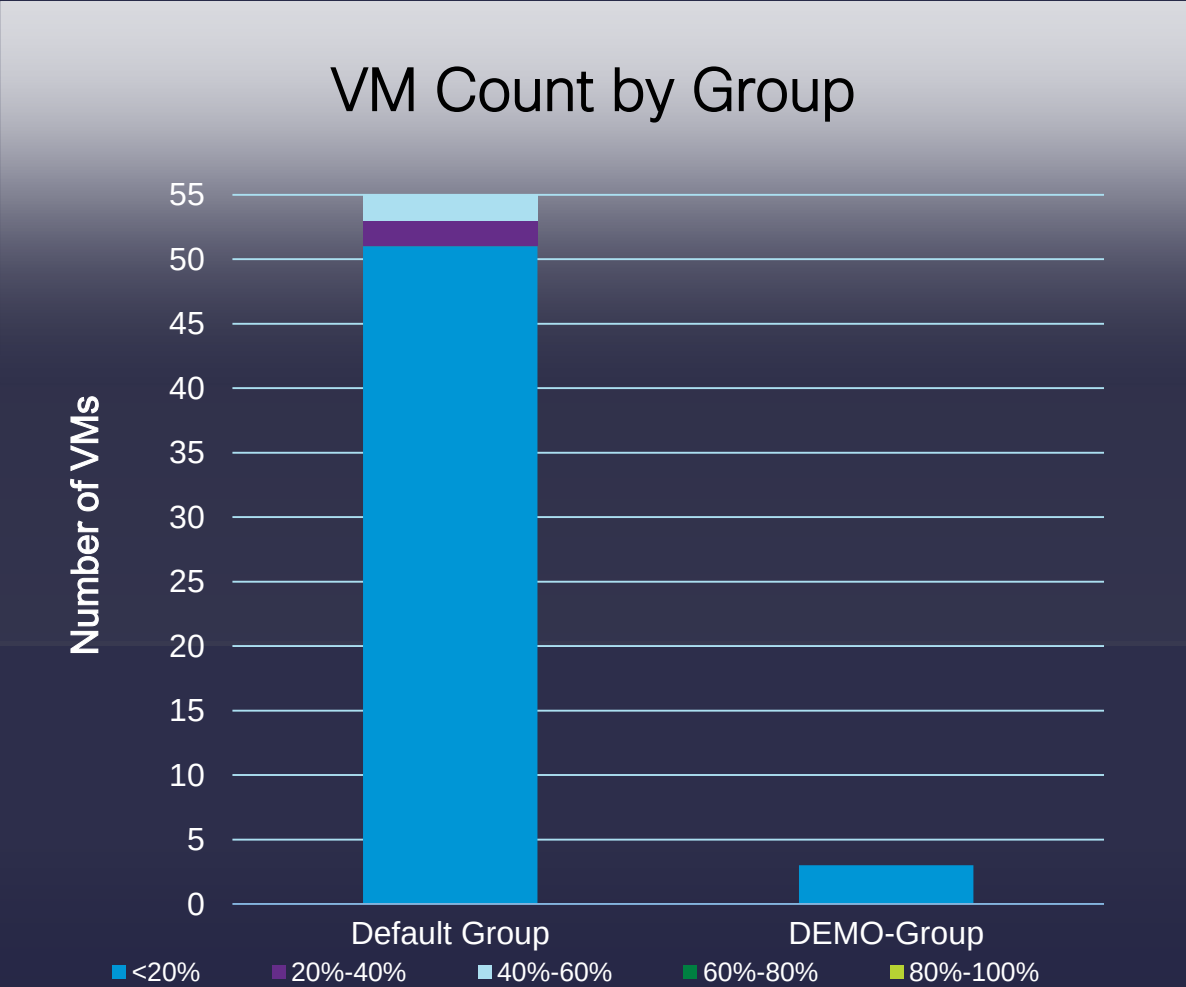


Administrator's Dashboard

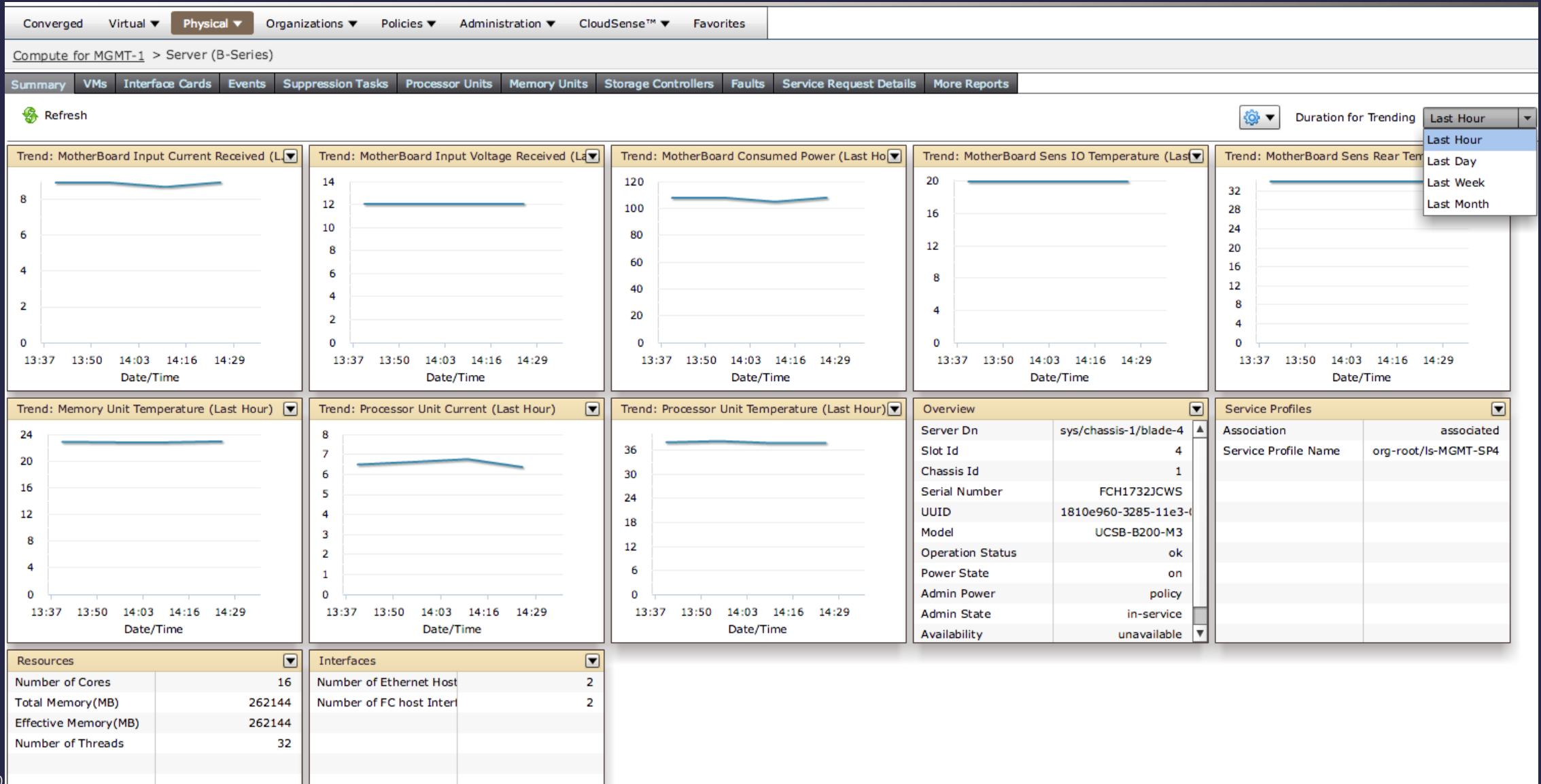


- Rapid configuration and monitoring
- Customizable view
- Quick status across critical components

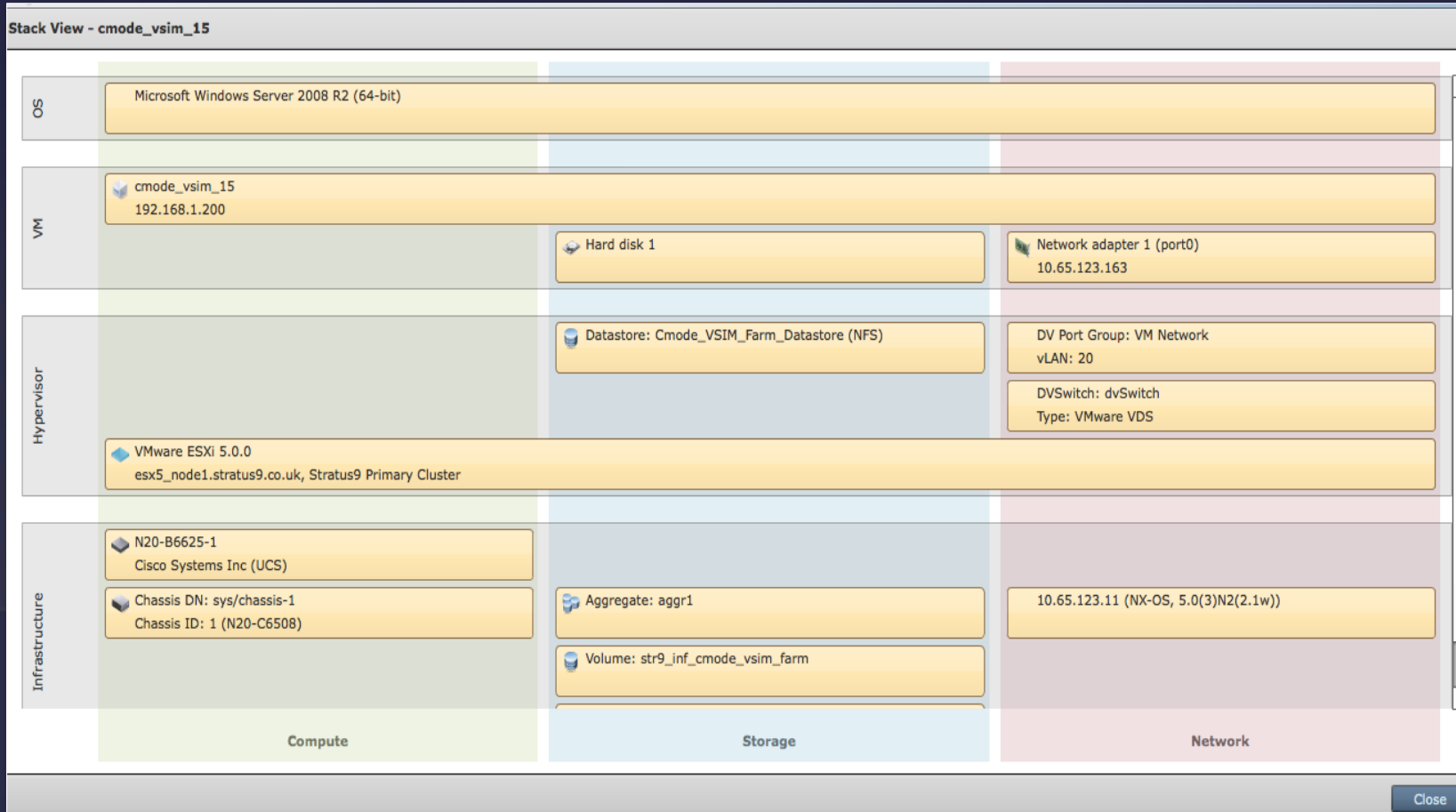
Rapid Detection and Resolution: Utilization Reports



UCS On-Demand Trend Data



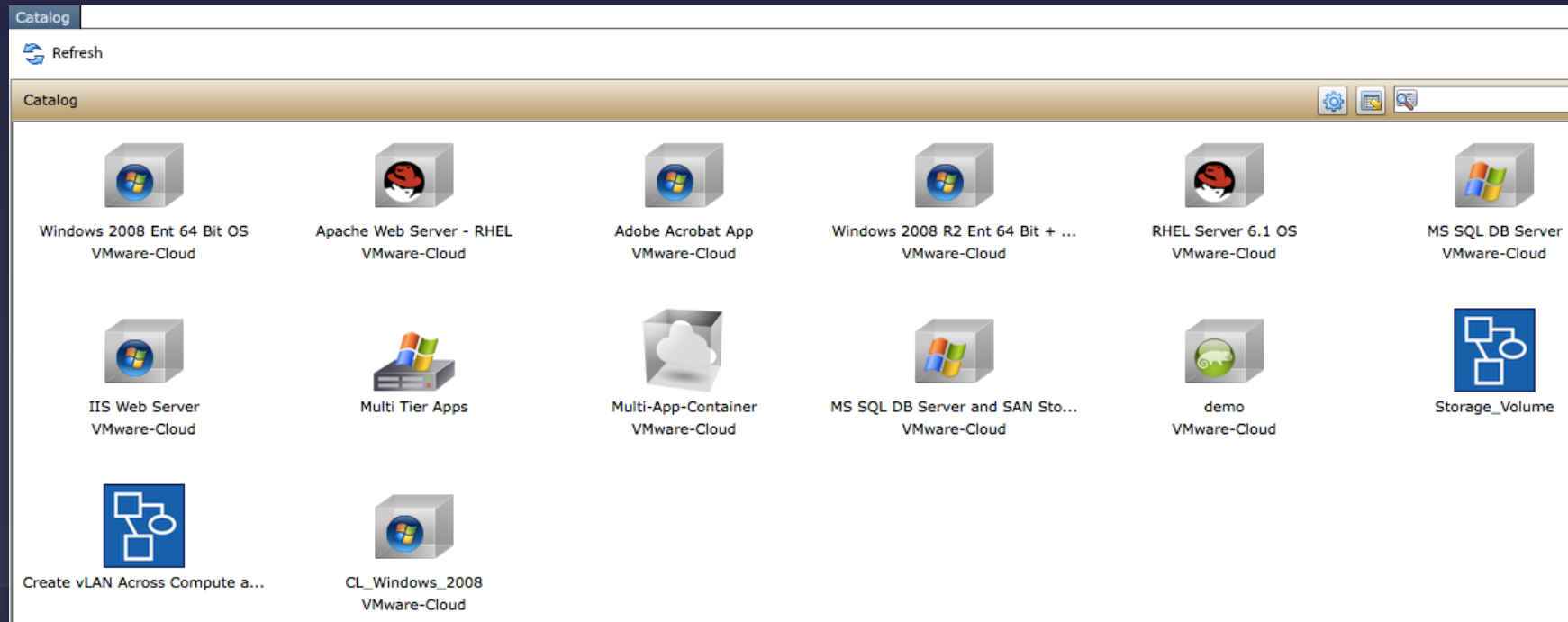
Converged Infrastructure View



Rapidly View Converged Infrastructure Stacks

Self-Service Infrastructure Catalog

Technical User Perspective



- Self-serve provisioning of IT infrastructure
- Role-based access for technical users

Next Steps



- Engage with your partner and/or Cisco
 - See a management demo
 - Get a more in-depth product update
 - Ask for comparative configuration
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 - Includes all the server parts to get started
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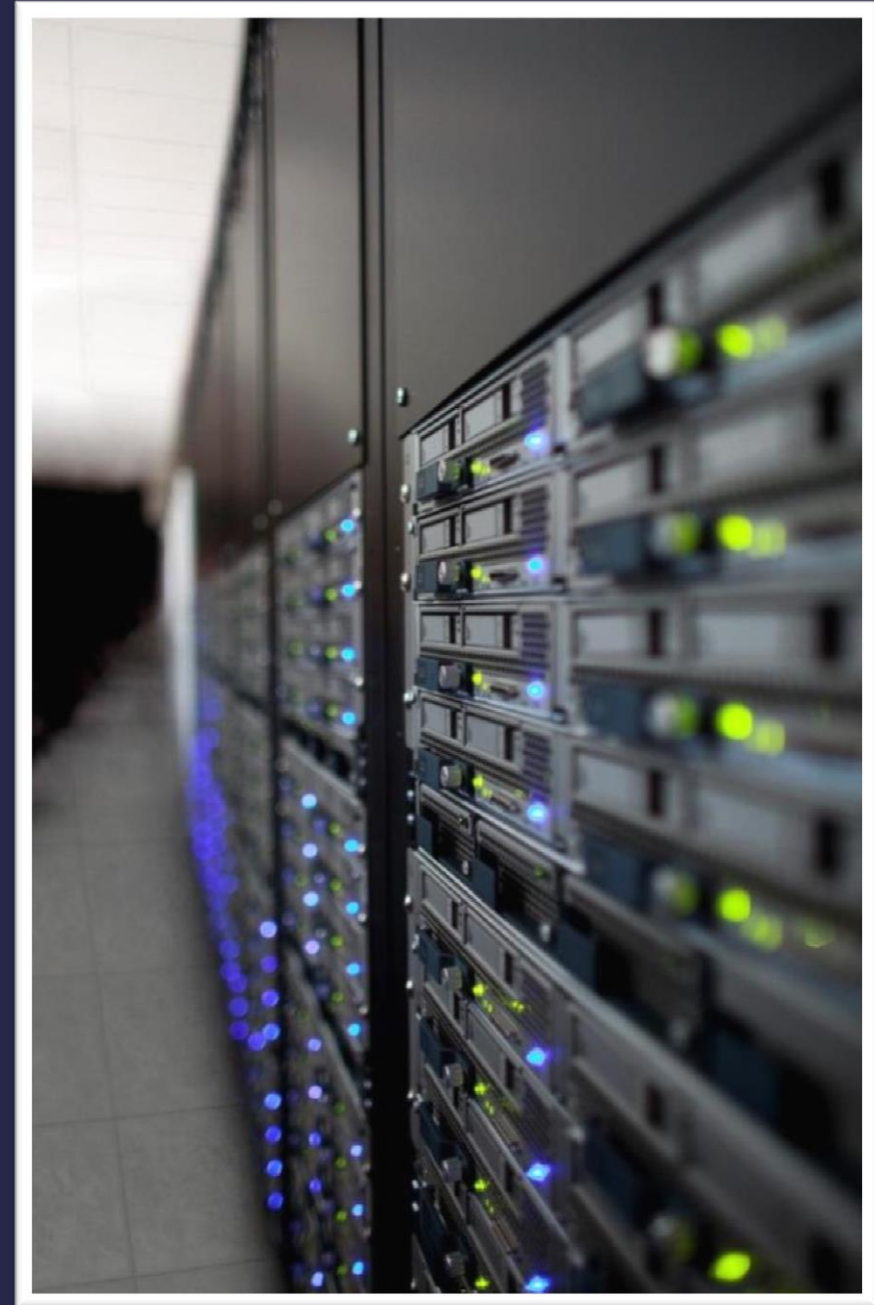
UCS Overview

UCS Mini

UCS Update

UCS Management

Conclusion



Thank you.

