



Where Clouds Live

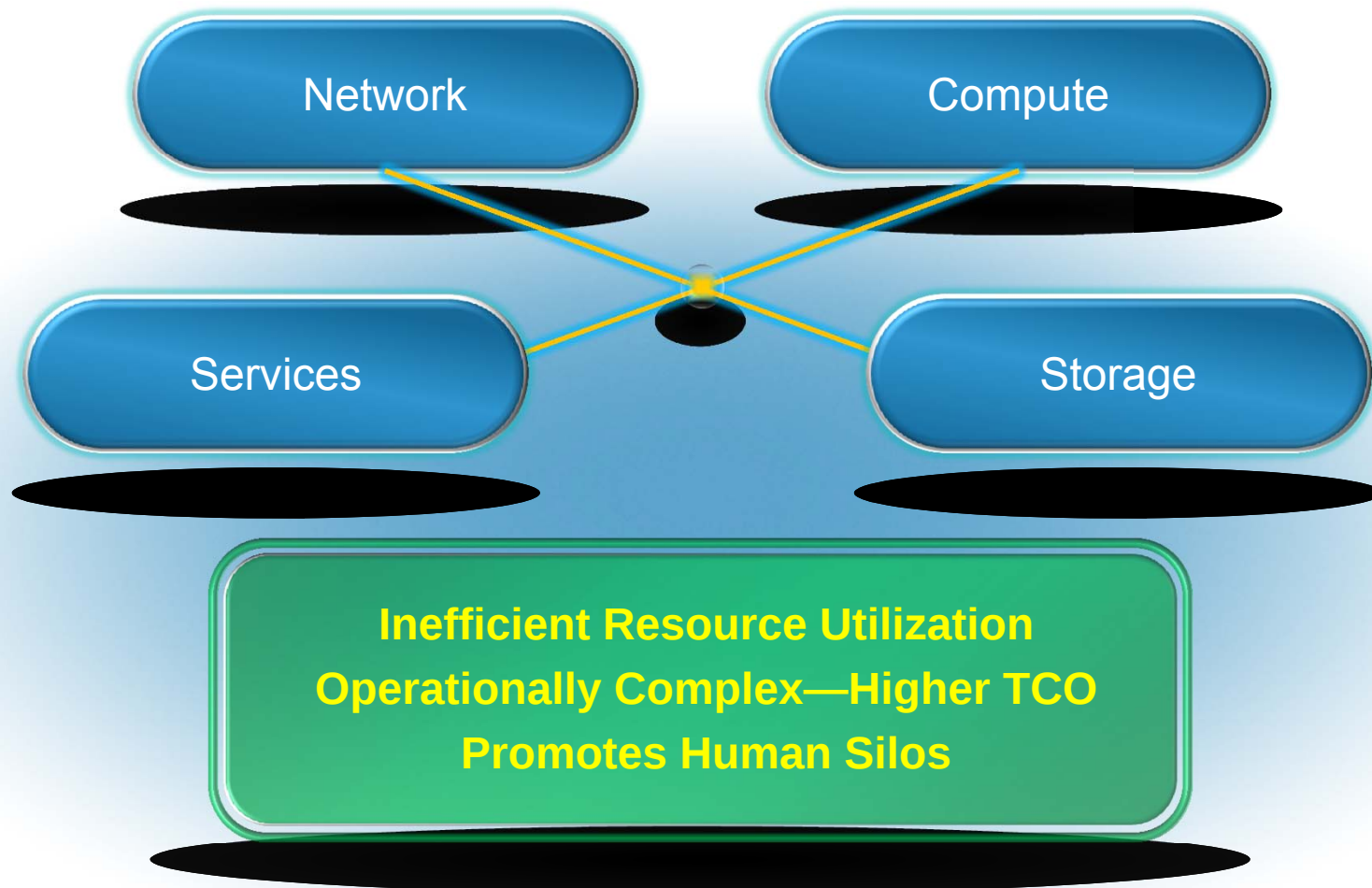
Mitesh Patel
SSEM – Architectures
Emerging Markets
24 Jan, 2012

Akash Pasricha
UCS Product Manger
Emerging Markets

Agenda

- Enabling Cloud
- Unified Network and Fabric
- Unified Computing
- Cloud Architectures

Traditional IT Silos

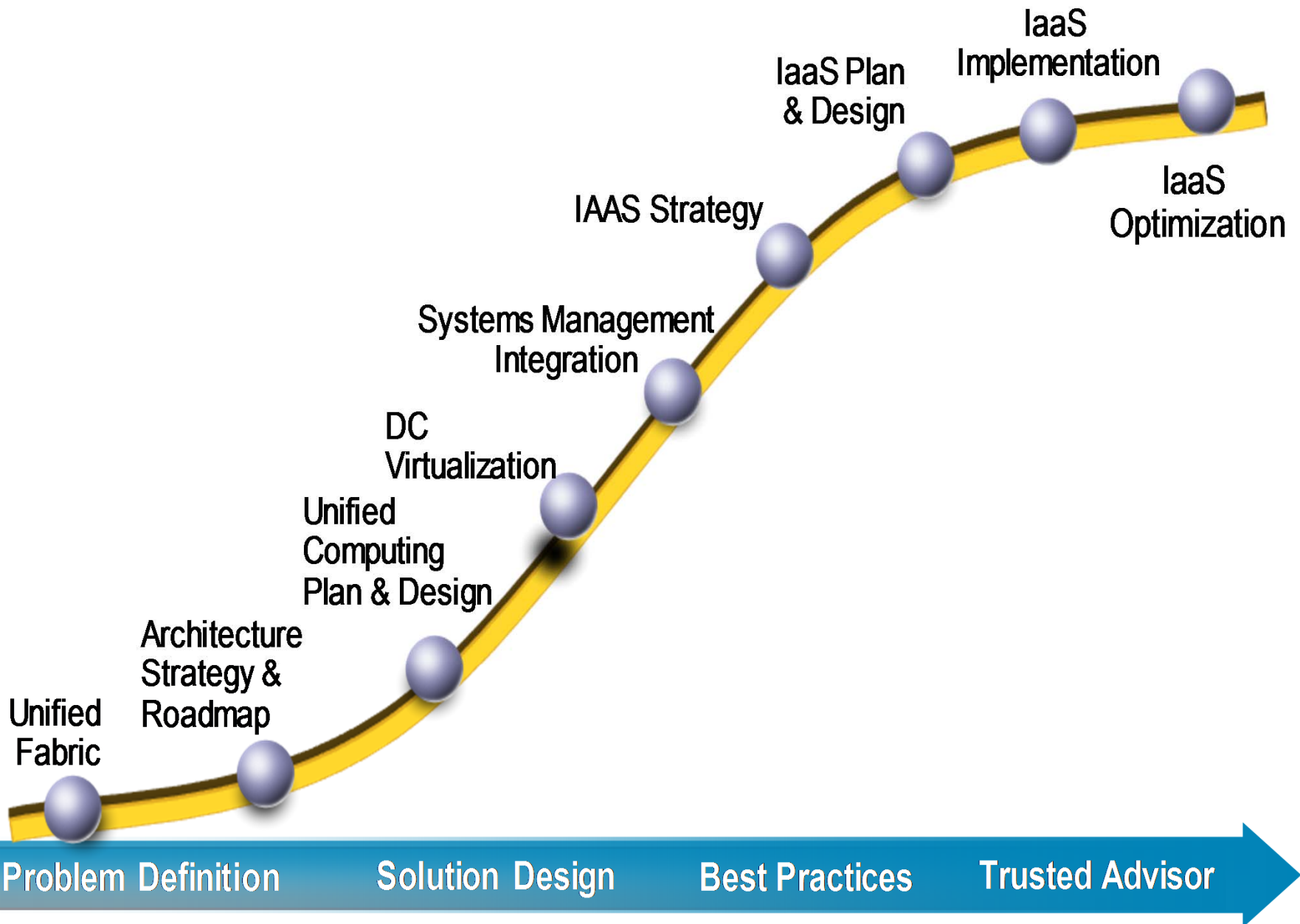


Architecture

Solution

Deployment

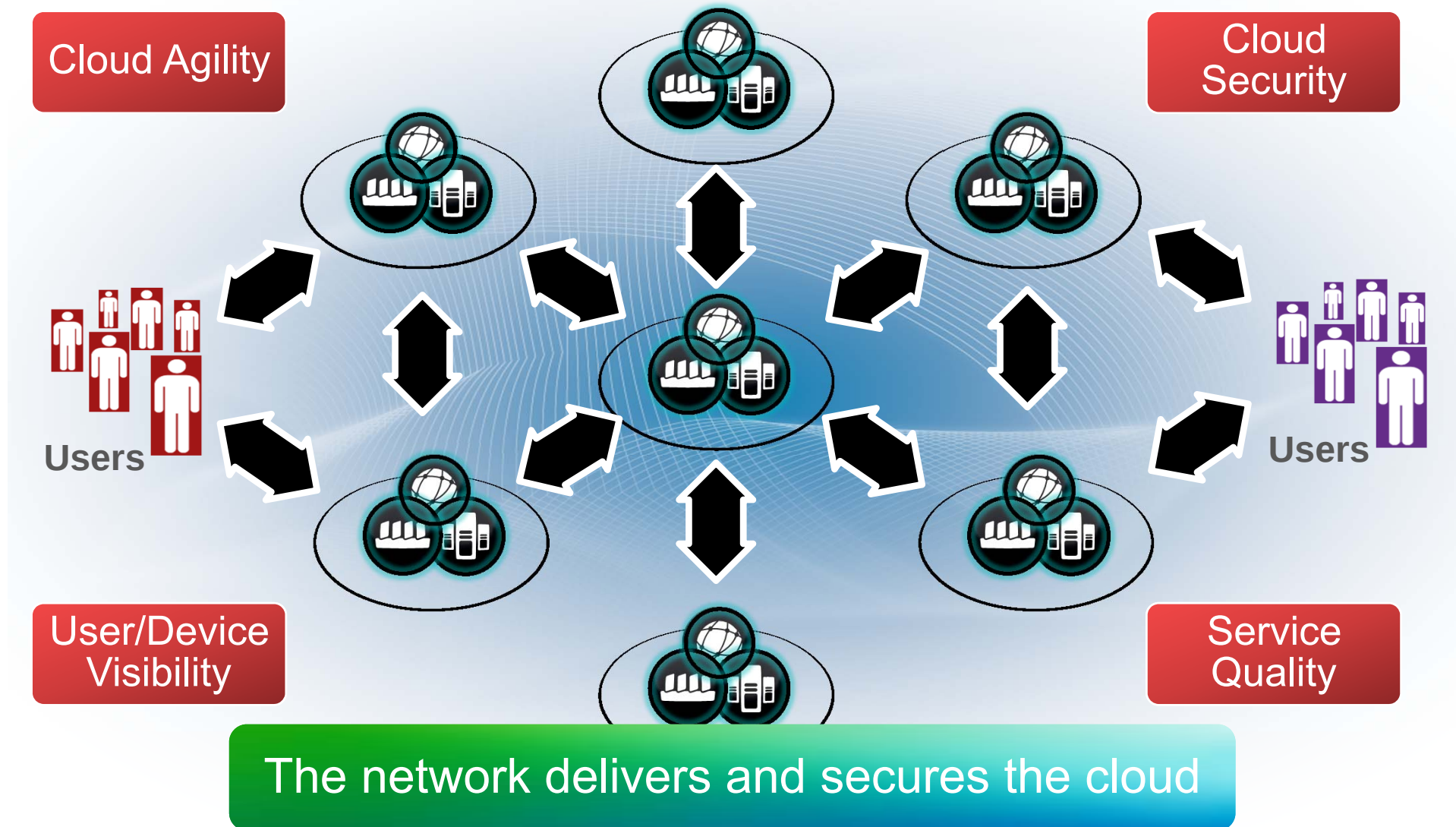
Business Value





Unified, Connected, Cloud-Aware Fabric

Enabling a World of Many Clouds



Cisco Data Center Fabric Vision



Flexible, High-Performance, Secure, Shared Infrastructure

Tightly Integrated Network, Storage, Compute and Application Services

Cisco Life cycle Services and Innovations that facilitate “enter anywhere, grow anywhere”

Open

- FabricPath/TRILL
- LISP
- 802.1Qbh
- XML
- FC/FCoE

Secure

- Roles-based access
- Cisco TrustSec
- Virtual Security Gateway

Integrated

- Network Convergence
- Unified Computing
- Integrated IaaS stacks (Vblock, FlexPod)

Resilient

- In Service Software upgrades
- NX-OS architecture
- Integrated WireShark

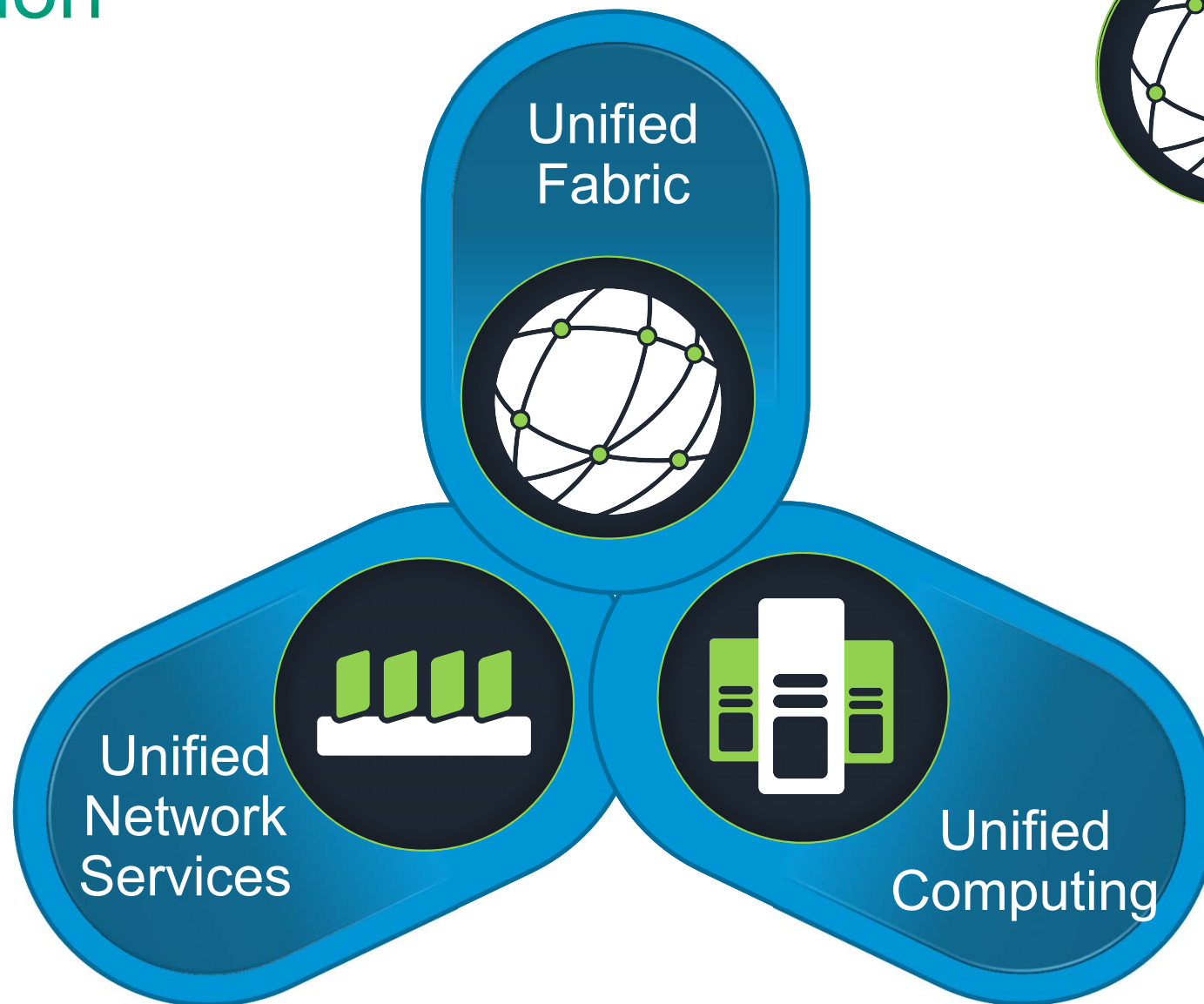
Flexible

- Topology Independent
- Architecture Independent
- Customer Choice

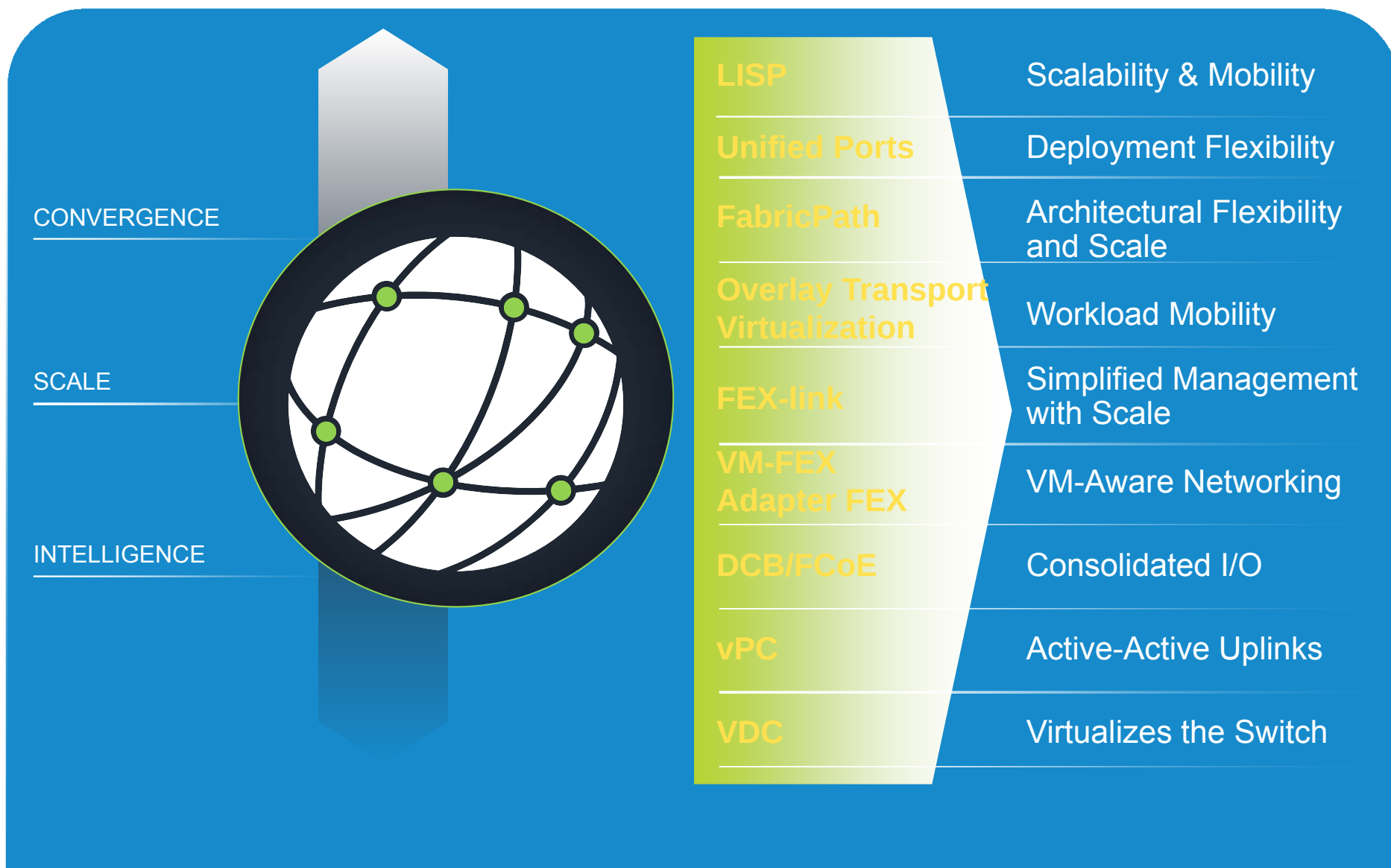
Scalable

- 1G → 100G
- 15,000 1GbE ports
- 10,000+ 10GbE ports
- 320 blades/system
- 1000+ VM/system
- Low latency

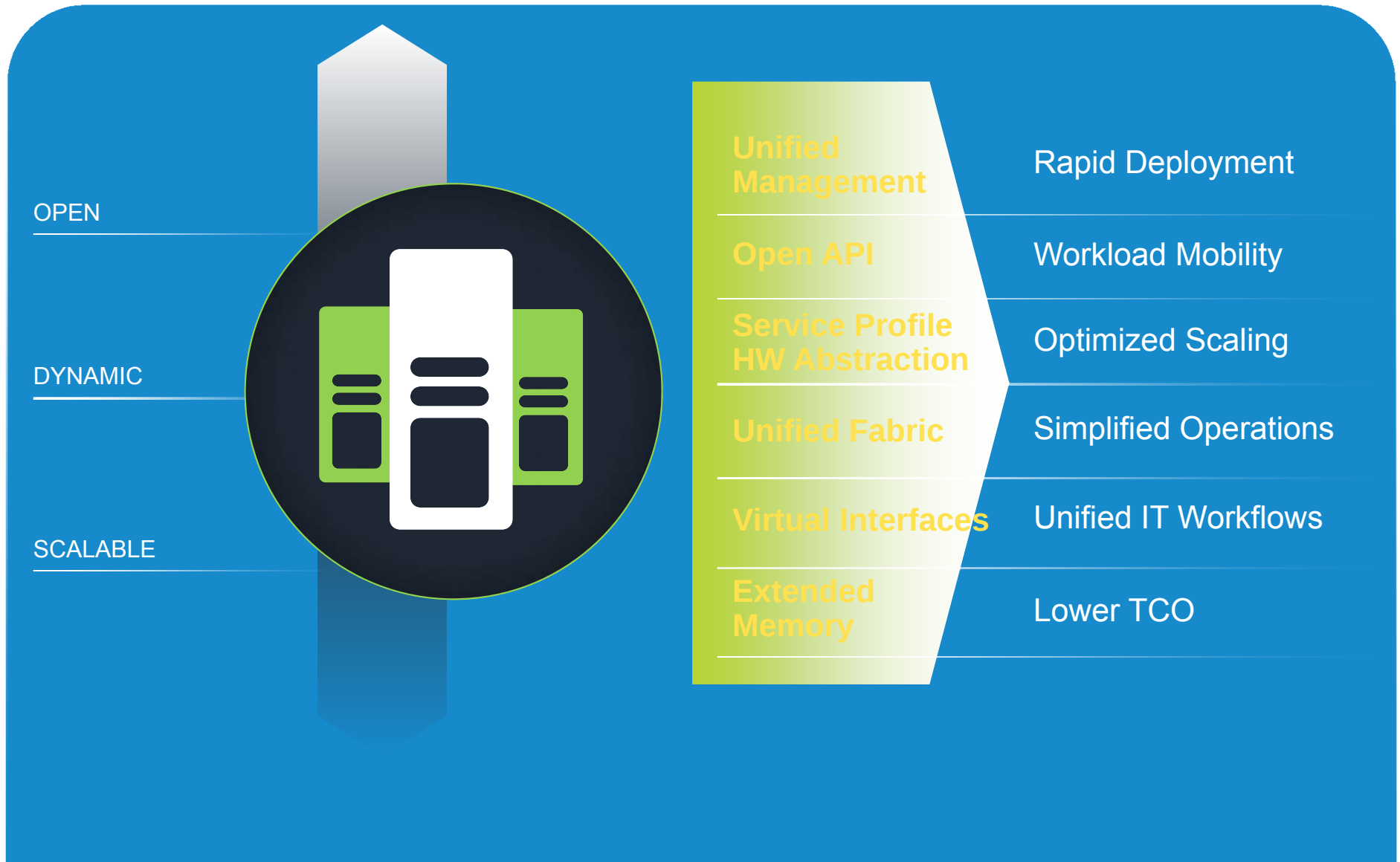
Cisco Data Center Fabric Vision



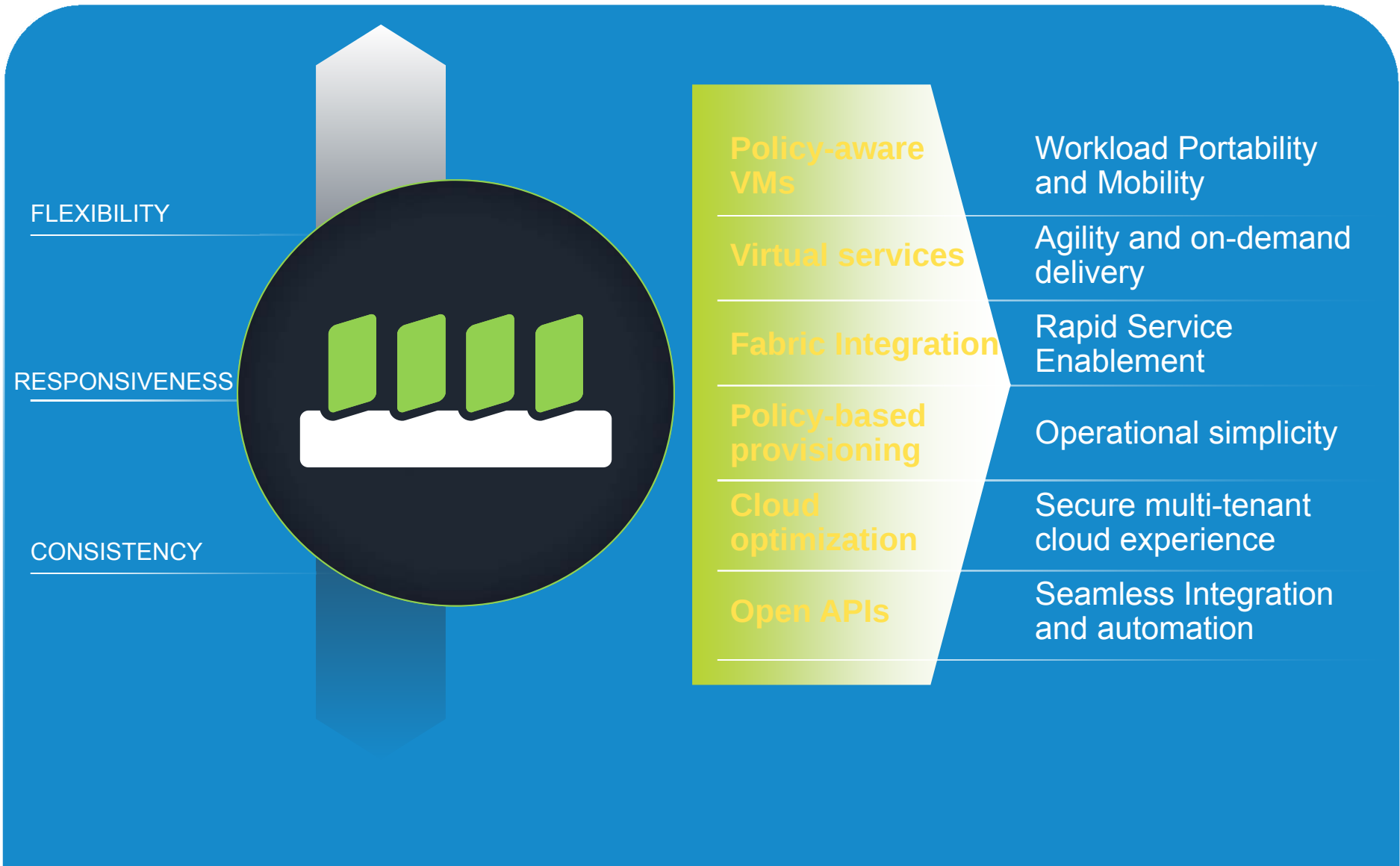
Cisco Unified Fabric



Cisco Unified Computing



Cisco Unified Network Services



Agenda

- Enabling Cloud
- Unified Network and Fabric
- Unified Computing
- Cloud Architectures

Software and System Innovations

**\$US 5B in
R&D / Year**

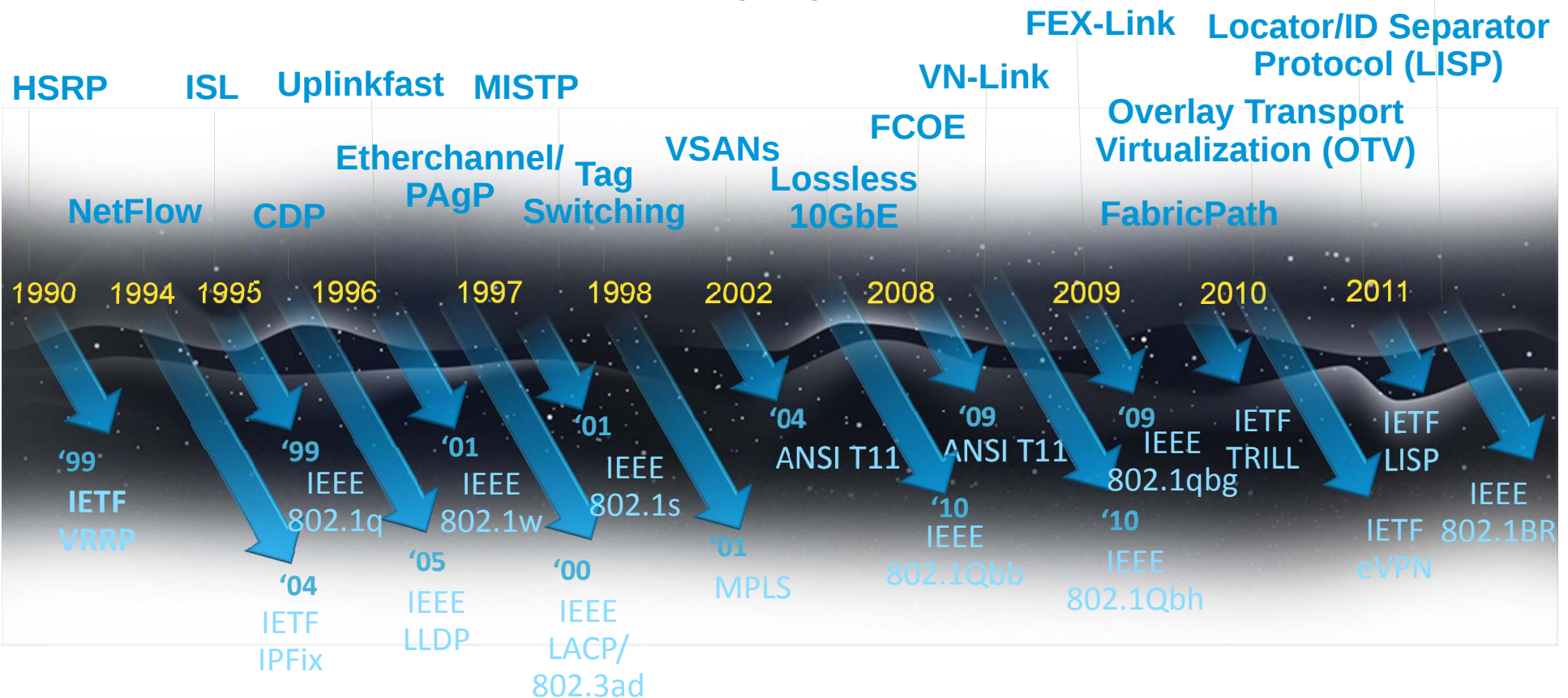
Hitless ISSU

Virtual Port
Channel (vPC)

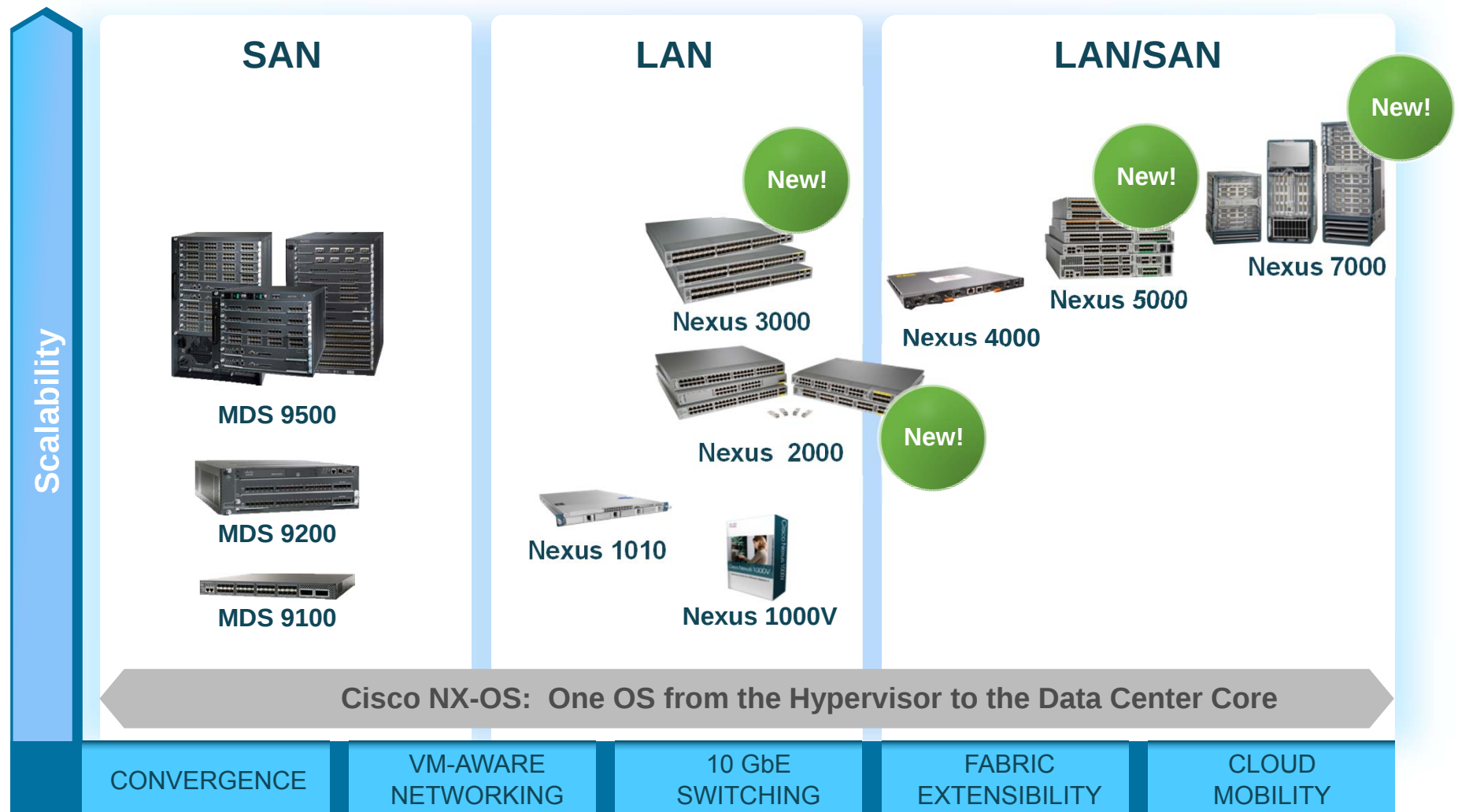
Virtual Device
Contexts (VDC)

Unified Port

Adapter FEX



Raising The Bar With New Cisco Unified Fabric Innovations



Cisco NX-OS

- Modular Network Operating System
- Industry's first LAN / SAN converged OS
- Designed for the Next Generation Data Center
- Standards-Based
- Resilient and Scalable
- Flexible and Efficient

L2/L3

- L2/L3 Feature Set
- Process Modularity
- Simple OS Upgrades
- FabricPath – Massive Scalability
- TrustSec; Security

NX-OS

- Storage I/O Acceleration
- Zero Packet Loss
- FCoE
- Data Center Bridging

- Cloud Centric Networking
- Device Virtualization
- Workload Mobility
- VM Awareness
- Secure Segmentation
- Open APIs

Cloud &
Virtualization

Cisco NX-OS: One OS from the Hypervisor to the Data Center Core

MDS

Nexus
7000

Nexus
5000

Nexus
4000

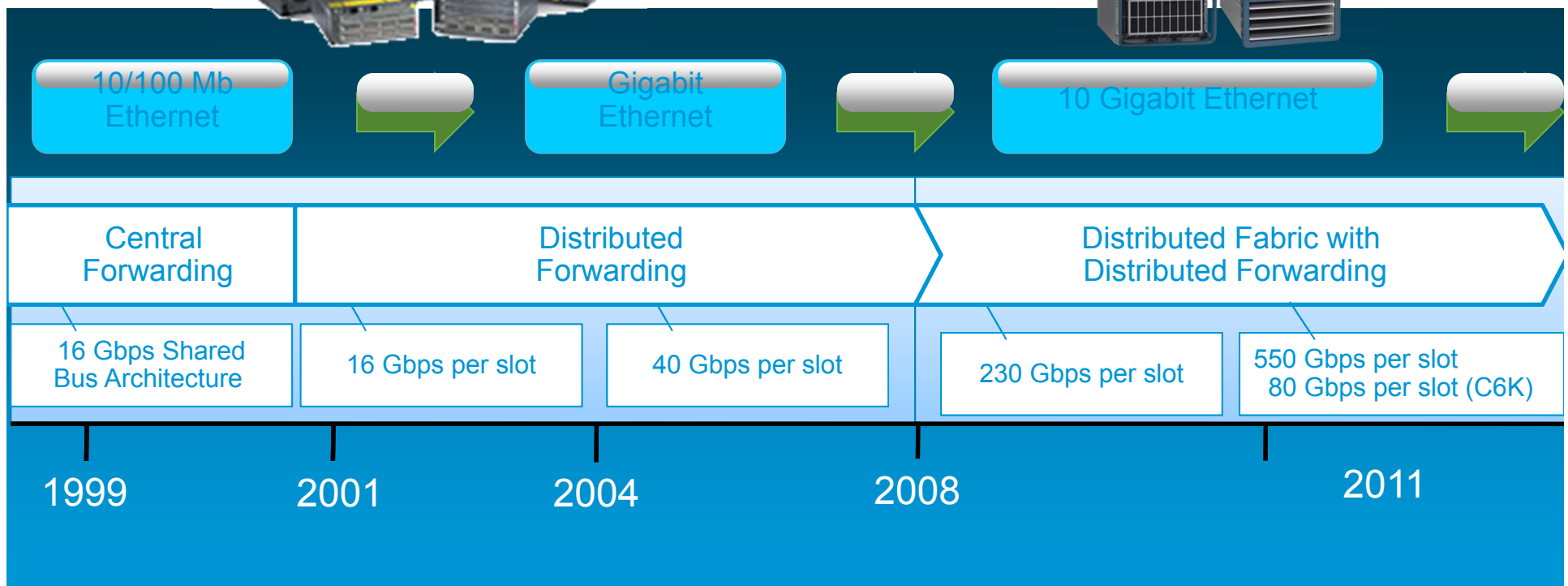
Nexus
2000

Nexus
1000V

Nexus
3000

Technology Transition Cycles

Nexus 7000 enables 1GE to 10GE Migration



Introducing The Second Generation Nexus 7000

Powered By NX-OS and Cisco ASICs

F2-Series Module



Wire rate 48 x
1GE/10GE ports
L2 and L3 Forwarding
FabricPath, FEX, FCoE
Less than 9W/port

Fabric2



550Gbps per slot
Supports all modules

High Performance Chassis



768 10GE line rate ports
40G/100G Ready



Performance And 10GE Density

Nexus 7000 Platform

Broad Range of Deployment Options

Nexus 7000 and NX-OS

9, 10 & 18 Slot versions
 15+ Terabit System
 Unified Fabric Ready
 Modern, Modular OS
 Device Virtualization
 Cisco TrustSec
 Continuous Operations



	Nexus 7009	Nexus 7010	Nexus 7018
	Shipping	Shipping	Shipping
Slots	7 I/O + 2 sup	8 I/O + 2 sup	16 I/O + 2 sup
Height	14 RU	21 RU	25 RU
BW / Slot Fab 1	N/A	230 Gig / slot	230 Gig / slot
BW / Slot Fab 2	550 Gig / Slot	550 Gig / slot	550 Gig / slot

New!
Oct '11

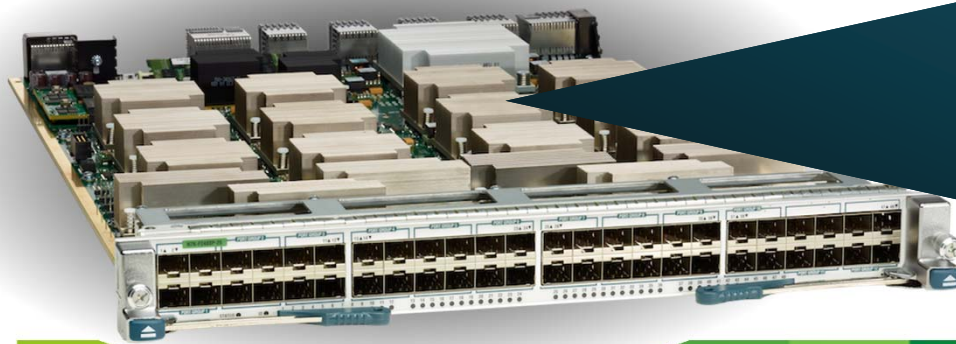
New!
Oct '11

Next Generation Nexus 7000

F2-Series Module

Customer Benefits

Performance	↔	48x 10GE ports line rate
Density	↔	Up to 768 10GE ports
Flexibility	↔	Dual Speed 1/10GE
Power Efficiency	↔	Less than 9W per port
Feature Richness	↔	Layer 2 and Layer 3
Scale + Reliability at L2	↔	FabricPath Support
Management Consolidation	↔	Nexus 2000 Support
Network Convergence	↔	FCoE *



F2
L2/L3 SoC
480G

M1 and F2 Comparison at a glance

Nexus 7000 Modules – Providing Deployment Options

M1-Series

●	Max of 8 10GE line rate ports
●	Full Layer2 and Layer3 Feature Set
●	Large FIB, ACLs, QoS Tables
●	MPLS
●	LISP * and OTV
●	FEX Support *
●	FabricPath
●	FCoE

F2-Series

●	48 1/10GE line rate ports
●	Full Layer2 and Layer3 Feature Set
●	Smaller FIB, ACLs, QoS Tables
●	MPLS
●	LISP and OTV
●	FEX Support
●	FabricPath
●	FCoE **

● Supported

● Unsupported

* Only on N7K-M132XP-12(L)

© 2010 Cisco and/or its affiliates. All rights reserved.

** Not Supported at FCS

Cisco Confidential

19

M1, F2 and F1 Detailed Comparison

Nexus 7000 Modules – Providing Deployment Options

	M1-Series	F2-Series	I40Vhulhv
Line Rate 10GbE Ports (18 slot)	128	768	845#Qd hu5 R qd ,
Power / Line Rate 10GbE Port	~ 80W/port	Less than 9W/port	£43Z 2sruw
Latency	~ 20 µs	< 6 µs	~ 5 µs
L2 Table	128K	16K – 192K *	16K – 256K *
VLANs	16K	4K	7N
IdeuIfSdwk	Qr	\hv	\hv
L3 IPv4	Yes - 128K/1M	Yes - 32K	Y b#P 4OI4#Erp e b q d w r q
L3 IPv6	Yes - 64K/300K	Yes - 16K	Y b#P 4OI4#Erp e b q d w r q
MPLS	Yes	No	Qr
YUIv2YUIv00h	\hv	\hv	Qr
OVS#log#R WY	\hv--	Qr	Qr
Netflow	Full/Sampled	Sampled (future)	Y b#P 4OI4#Erp e b q d w r q
ACL	64K – 128K	16K – 192K *	4N – 49N -
FEX	Yes**	Yes	Qr
FCoE	No	Yes (future)	\hv
Vdp hOYGF b q u r s h u d e b w	\hv# lk#40Vhulhv	R q d # lk#50Vhulhv	\hv# lk#40Vhulhv

** Supported on M132XP Modules only

* Depending on VLAN/Port and Policy/Port configuration

Expanding The Nexus 3000 Portfolio



	Nexus 3048	Nexus 3064	Nexus 3016
# Ports	48	64	16
Connectivity	100Mb/1GbE	1/10GbE	10/40GbE
L2/L3 wire-rate	✓	✓	✓
IEEE 1588 (PTP)	✓	✓	✓

Ideal For High Frequency Trading, Big Data/ Web 2.0

Sub-microsecond latency

40GbE wire-rate

Nexus 5596UP & 5548UP

Raising the Bar for DC Access!



- High density 1RU/2RU ToR Switches
- 10GE / 1GE / FCoE / 8G FC
- Reverse airflow / DC-power
- 1G support on all N5K ports



Innovations

- Unified Port capability
- Layer-3 support
- Increased FEX scale (24/L2)
- FCoE innovator (Multi-hop)
- Adapter-FEX
- Cisco FabricPath (post FCS)
- VM-FEX

Benefits / Use-cases

- Investment protection in action!
- Proven, resilient NX-OS, designs
- Low, predictable latency at scale

Lowest TCO for the Virtualized Datacenter

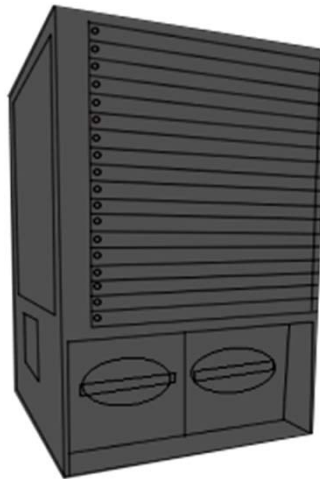
Cisco FEX-Link Architecture

Distributed High Density Switching System

Cisco Nexus® 5500



Cisco Nexus® 2000 FEX

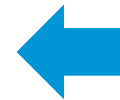


Distributed High Density
Edge Switching System
(up to 4096 virtual Ethernet
interfaces)

Cisco Nexus® 7000



Cisco Nexus® 2000 FEX



Distributed Data Centers

Building the Data Center Cloud

Distributed Data Center Goals

- Seamless workload mobility
- Distributed applications
- Pool and maximize global resources
- Business Continuity

Interconnect Challenges

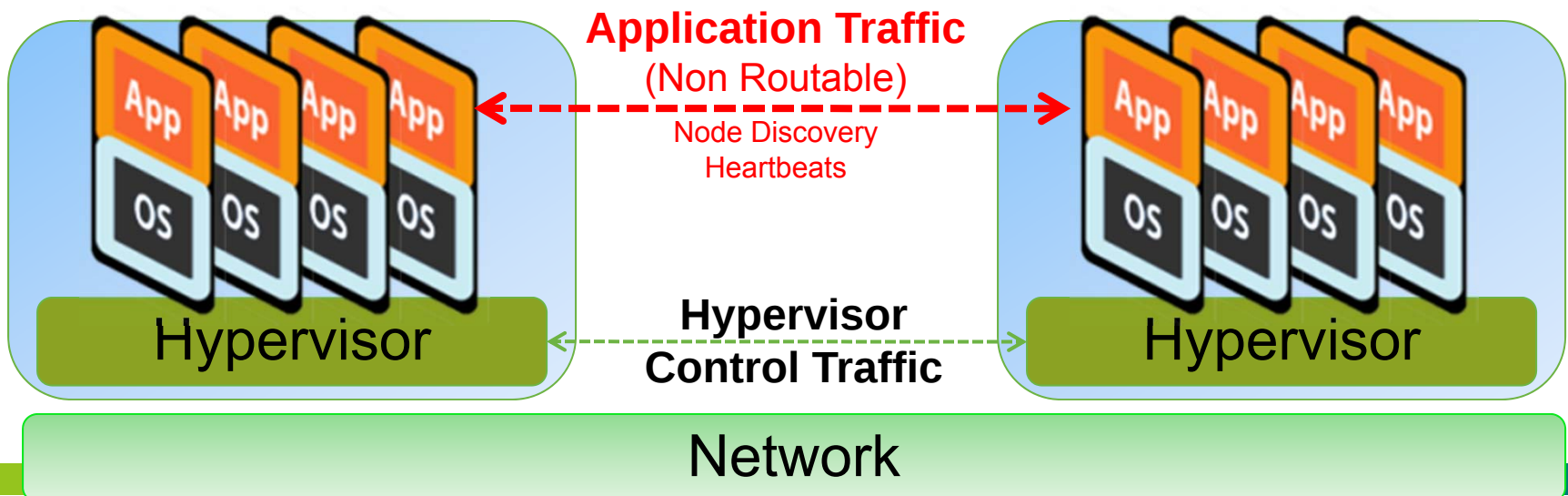
- Complex operations
- Transport dependant
- Bandwidth management
- Failure containment



Geographically Disperse
Data Centers

Why do we need LAN Extensions?

- Applications running in the VMs use non-routable traffic
e.g. Node Discovery & Heartbeats in clustered Applications
- With Virtualization, application members may be distributed across PODs/Data-centers
- Moving and distributing application members across locations should not break the application



Overlay Transport Virtualization (OTV)

- **Ethernet LAN Extension over any Network**

Works over dark fiber, MPLS, or IP

Multi-data center scalability

- **Simplified Configuration & Operation**

Seamless overlay - No network re-design

Single touch site configuration

- **High Resiliency**

Failure domain isolation

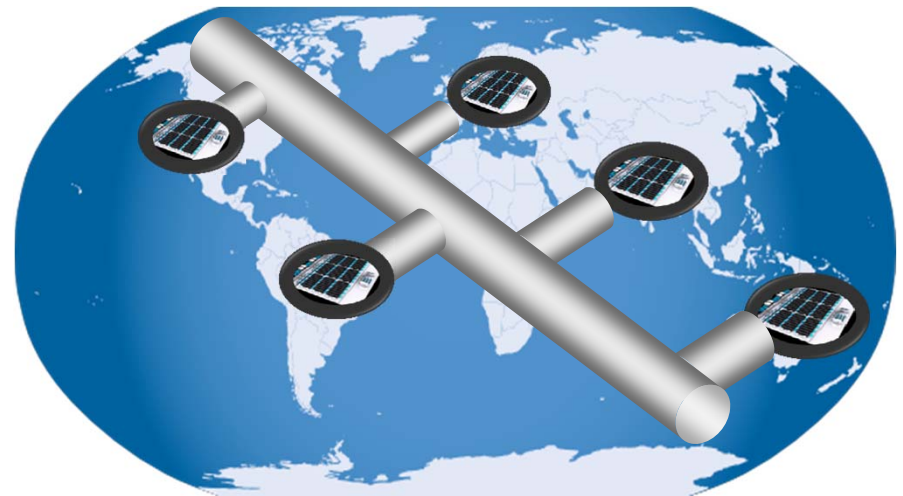
Seamless Multi-homing

- **Maximizes available bandwidth**

Automated multi-pathing

Optimal multicast replication

Many physical sites –
One logical Data Center



Any Workload, Anytime, Anywhere
Unleashing the full potential of compute virtualization

Location ID/Separation Protocol(LISP) Next Generation Networking Architecture

- Single network architecture delivers:
 - VM **Mobility** (topology independent addressing)
 - Security**: VPNs/Multi-tenancy
 - Route **Scalability** (on demand routing)
 - IPv6 enablement,
 - Routing Policy simplification

Benefits

- Services integrated in a single architecture
- Services can be offered across organizational boundaries (multiple providers)
- Very large scale
- Open model to integrate with cloud orchestrators



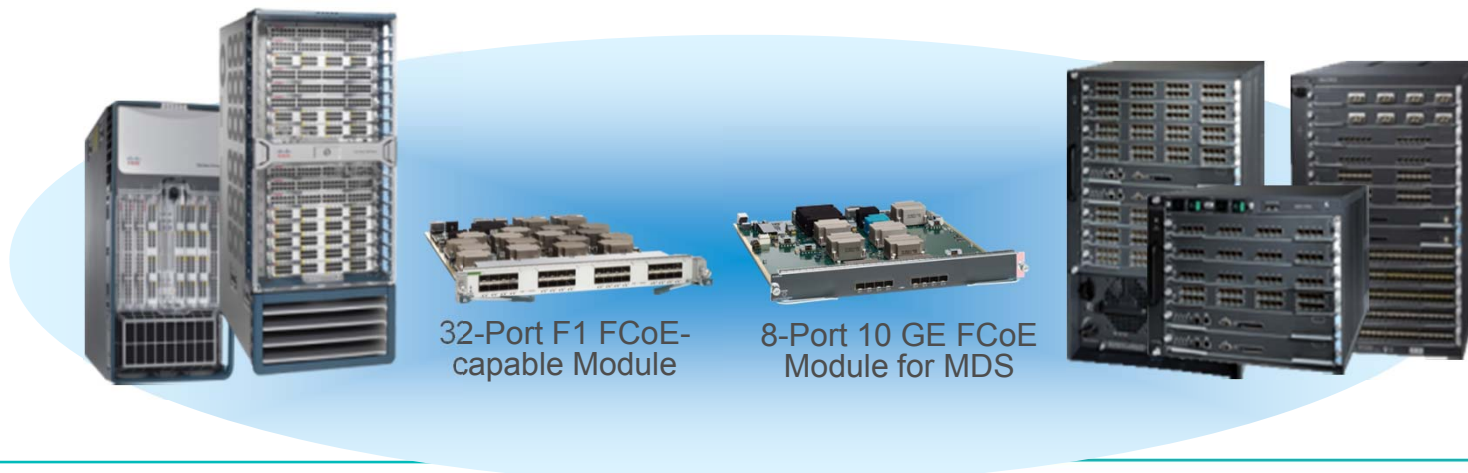
Use-cases

- DCI route optimization/mobility
- Workload Portability to Cloud
- Secure Multi-tenancy across organizations
- Rapid IPv6 Deployment
- Route scaling

Making the Network Cloud Ready

FCoE Director-Class Convergence

Available
NOW



Nexus 7000 FCoE

- Meets the HA requirements for mission critical SANs
- 32-Port F1 Module provides high density 1/10GE and/or 10GE FCoE ports
- Flexibility to support iSCSI, NAS, and FCoE
- N7K designed to scale beyond 15Tbps, 40G and 100G ready

MDS FCoE

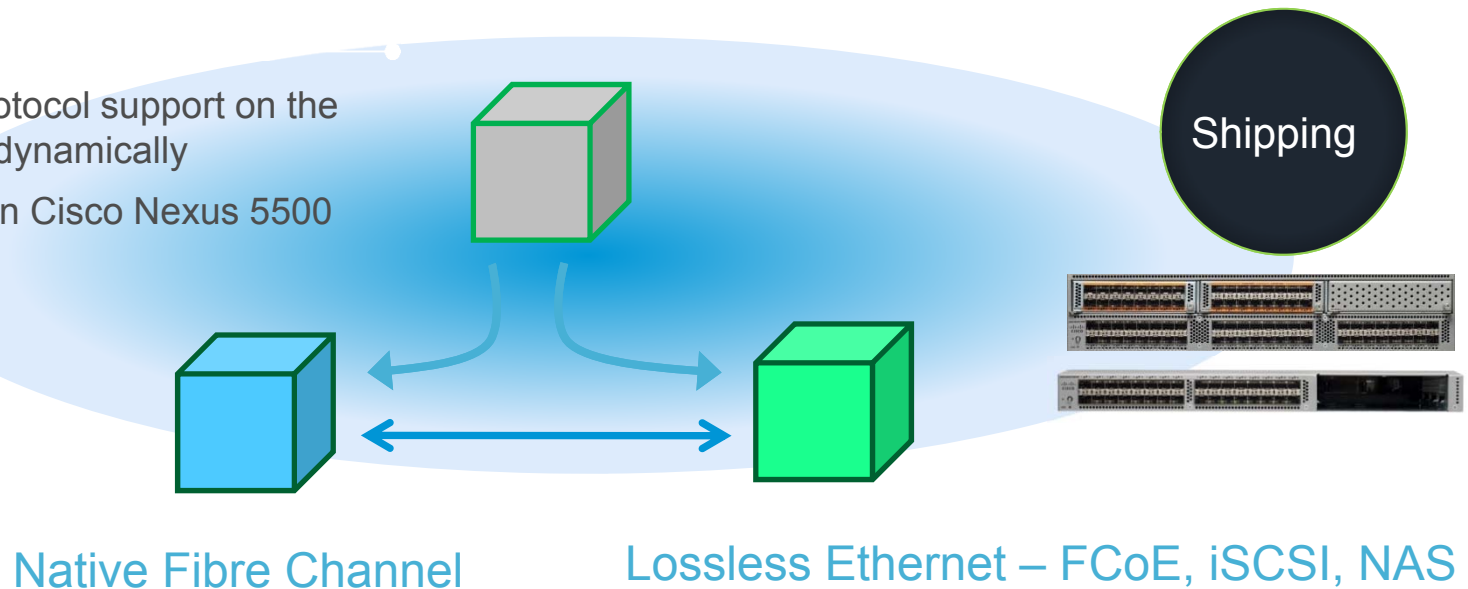
- 8-Port Line-rate MDS FCoE module preserves existing FC investment
- Bridge Converged Networks to FC SANs
- Enable storage services to Converged Networks
- Provide FC storage access to Nexus 7000

Enterprise Convergence

Unified Ports

Dynamic ports allocation: Lossless Ethernet or Fibre Channel

- Convert protocol support on the same port dynamically
- Available on Cisco Nexus 5500 series



Benefits

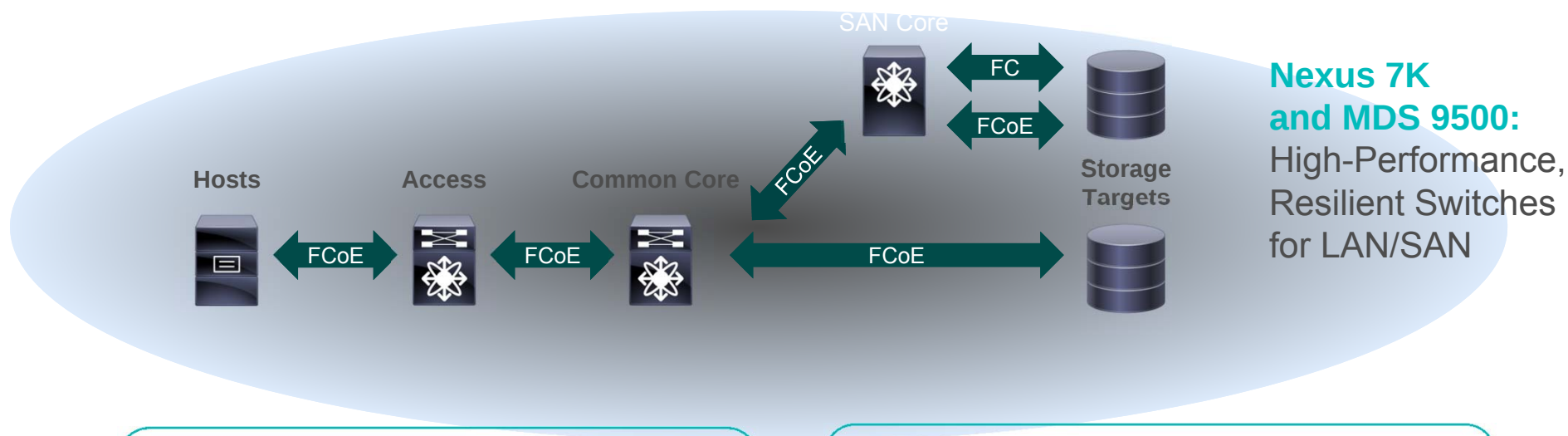
- Simplify switch purchase - remove ports ratio guess work
- Increase design flexibility
- Remove specific protocol bandwidth bottlenecks

Use-cases

- Flexible LAN & storage convergence based on business needs
- Service can be adjusted based on the demand for specific traffic

Extending Convergence Beyond Access Layer

Industry's First Director-Class Multi-hop FCoE



Features

Nexus 7000 FCoE:: Industry's highest performance Director-Class SAN platform

MDS 9500 FCoE support: Preserves investments in Fibre Channel SANs

Multi-hop FCoE support: Spans Nexus 5000, Nexus 7000, and MDS 9500.



Benefits

Wire once flexibility

Up to 45% access layer CapEx savings

492% ROI for converged networks

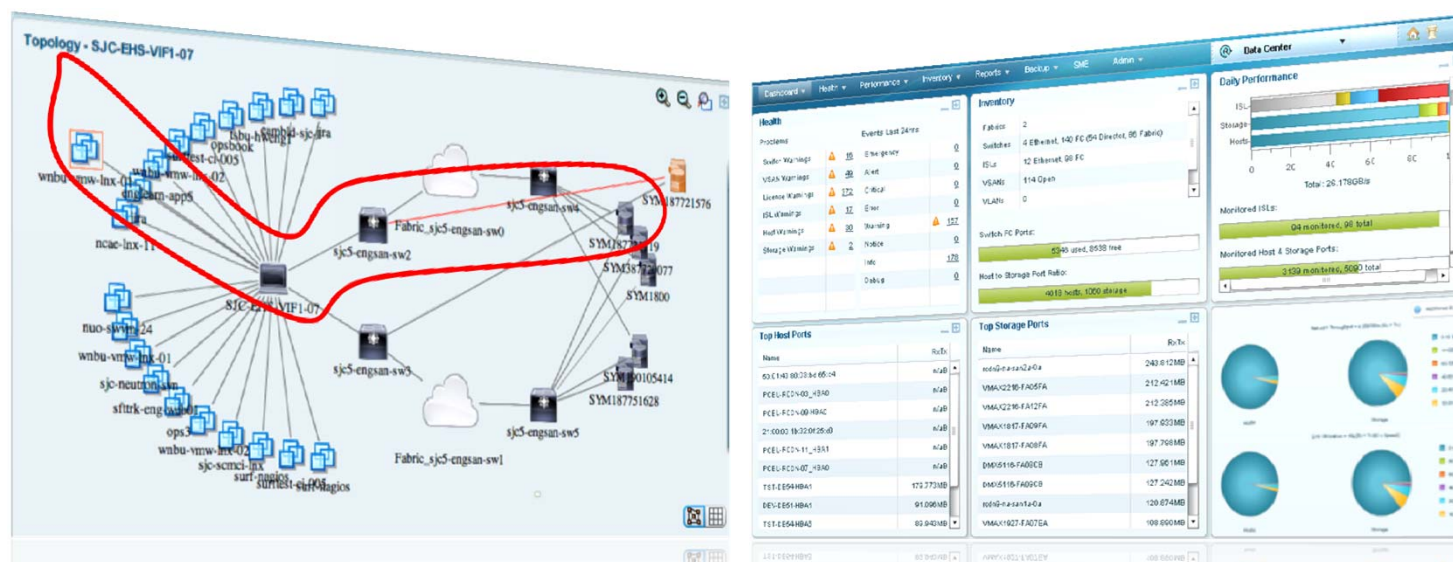
Seamlessly integrate converged networks with existing MDS FC SANs

Delivering Highly Scalable End-to-End Convergence

Converged DC Network Management

Single Pane of Glass Visibility Across LAN & SAN

Available
Now



Features

Converged management of Data Center SAN & LAN

- Data Center dashboards & topology views
- Proactive monitoring and issue diagnostics
- Performance & Capacity monitoring

VMPATH(VM-Network-Storage) analytics to simplify troubleshooting

Unified Fabric Automation(Templates based provisioning)

Benefits

Reduces TCO of Cisco DC solutions with a single point of management for SAN & LAN

Simplifies operational management of virtualized data centers

Simplifies deployment of innovative NX-OS features

Enables easy integration into customer OSS/BSS via APIs & dashboard portals.

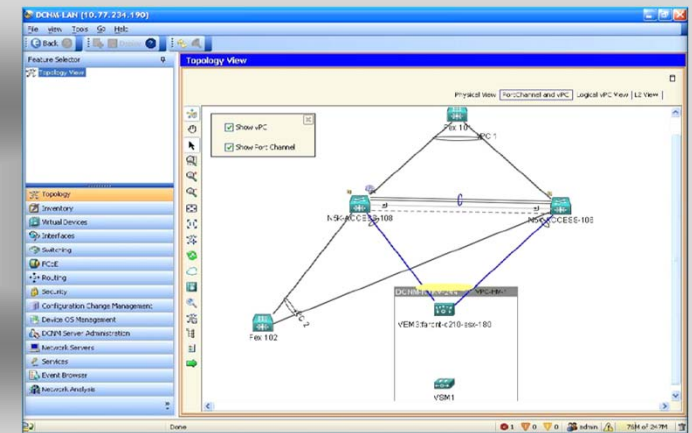
Unprecedented Visibility for Converged Data Centers

Converged Cisco Data Center Network Manager

Cisco Prime Data Center



Fault Management
Resource Management
Change Management
Provisioning/Configuration
API Integration
Security RBAC



UNIFIED FABRIC



MDS



NEXUS CORE



NEXUS ACCESS

FCoE

OTV

SME

VPC

IOA

VDC

DMM

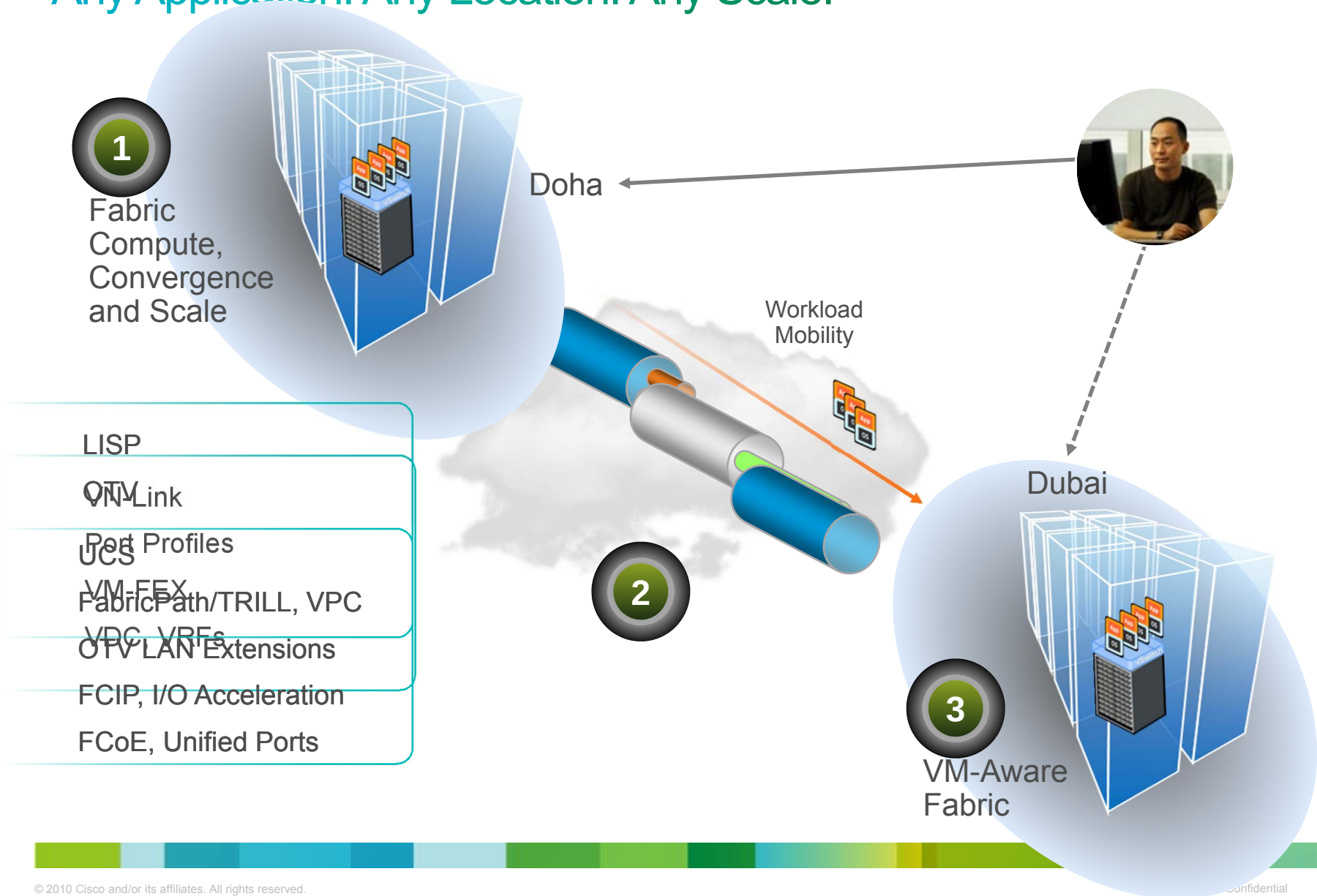
FABRICPATH

Storage

Network

Bringing it all together: Cloud-Ready

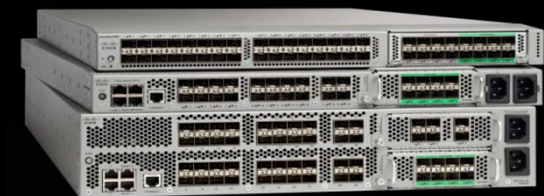
Any Application. Any Location. Any Scale.



Cisco Unified Fabric

Nexus Customer Traction

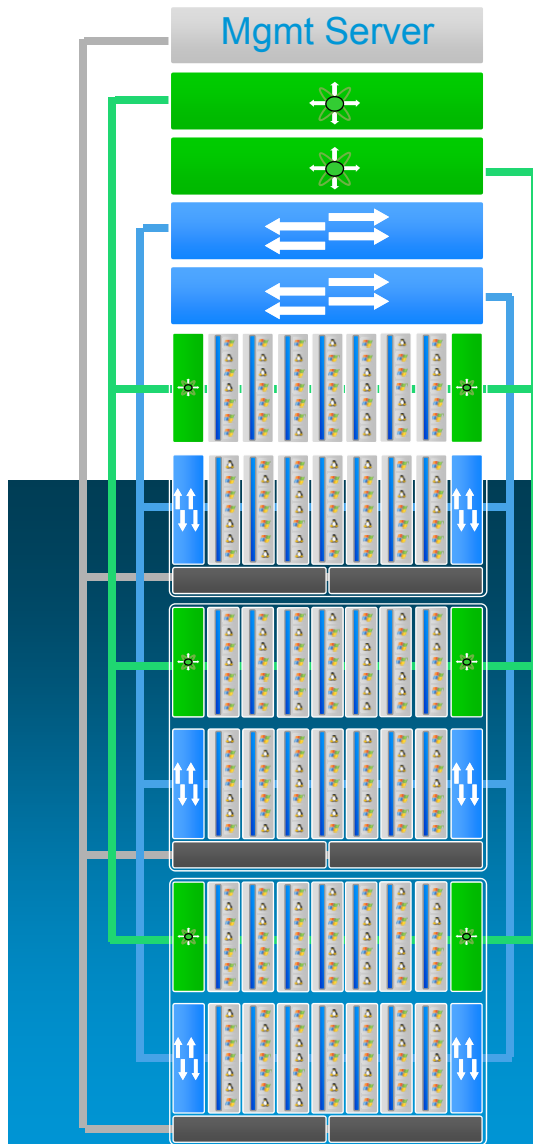
- 5500+ N7K customers
- 5,700+ N5K/2K customers
- \$3 Billion+ Nexus Family install base
- 18,000+ Nexus 7000
- 50,000+ Nexus 5000
- 100,000+ Nexus 2000
- 73% 10 GE port share
- 75% 10 GE Revenue share
- 500+ FabricPath
- 1200+ OTV customers



Agenda

- Enabling Cloud
- Unified Network and Fabric
- Unified Computing
- Cloud Architectures

Server Deployments Today



Over the past 10 years

- More cores, more memory
- Proliferation of servers & switches
- More switches per server
- Management applied, not integrated

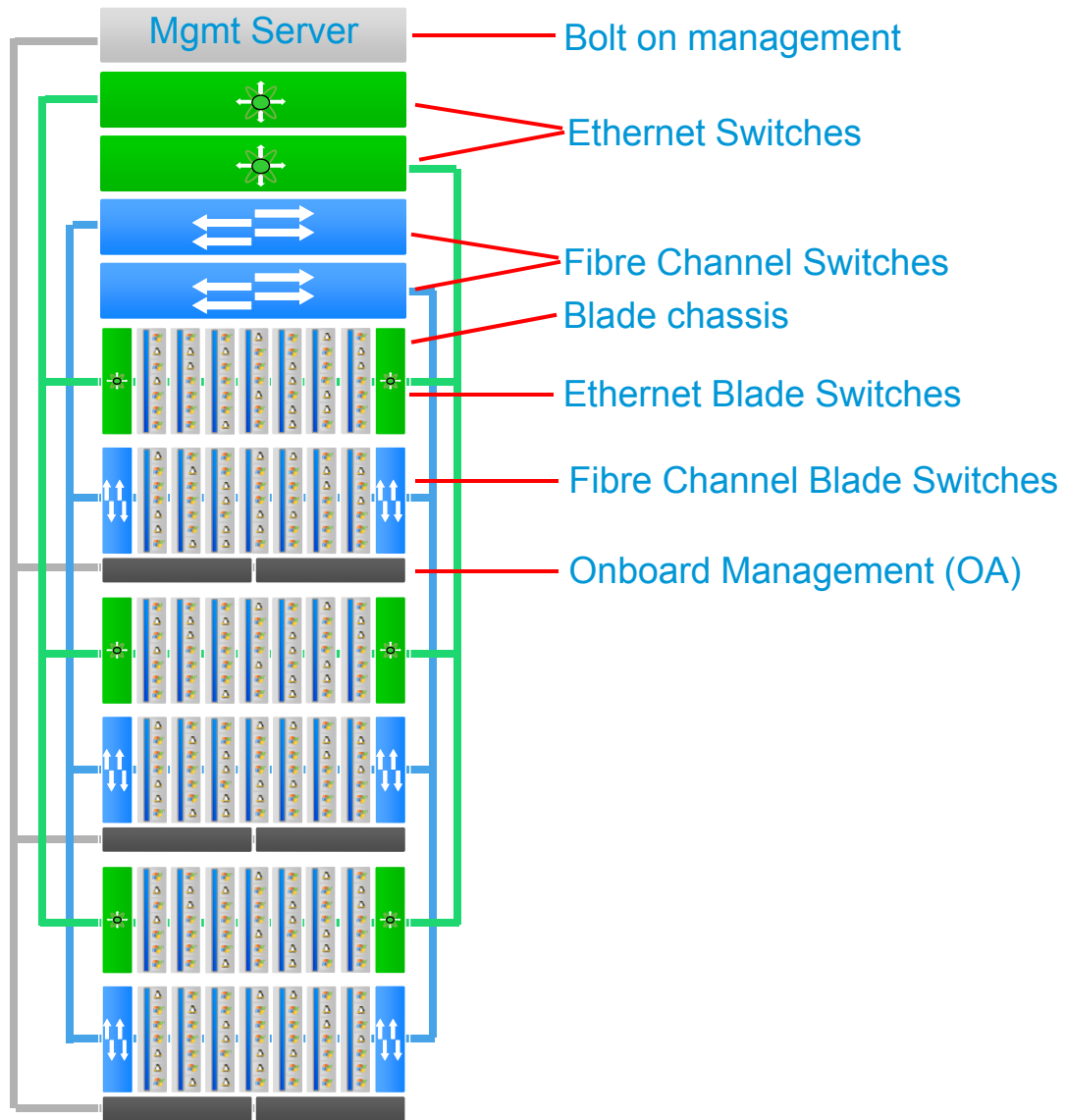
An “accidental” architecture

- Evolved by default vs planned design

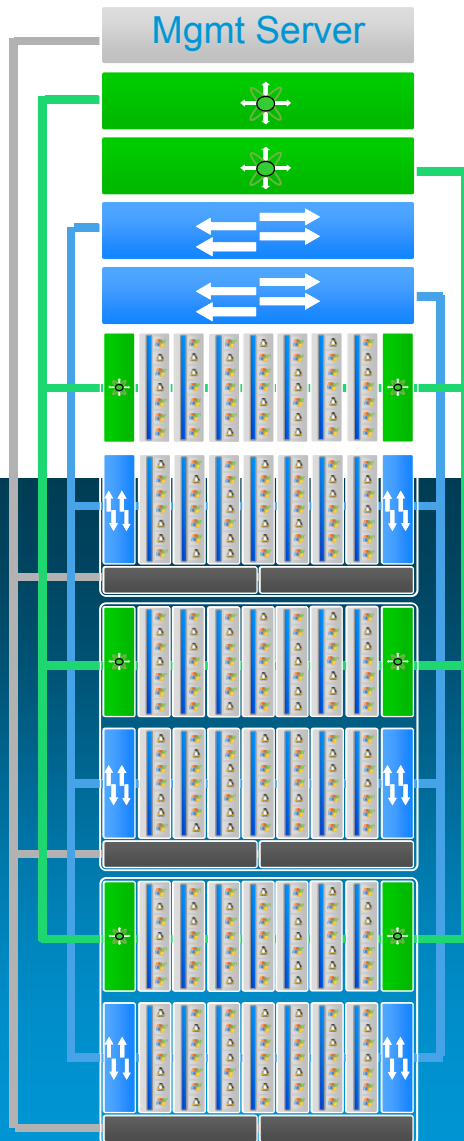
Result: Complexity

- Many points of management
- Difficult to maintain policy coherence
- Difficult to secure
- Difficult to scale

Blade Server Deployments Today



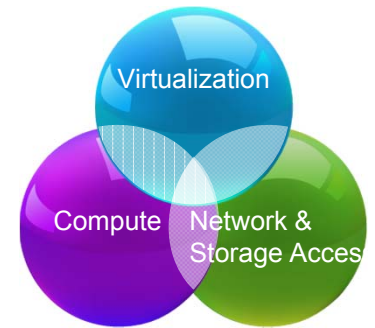
Our Solution



- Unify fabrics
- Embed management
- Optimize virtualization
- Remove unnecessary switches, adapters and management modules
- Less than 1/3rd the support infrastructure for a given workload



Unified Computing System



- A single system that encompasses:

Network: Unified fabric

Compute: Industry standard x86

Virtualization optimized

- Unified management model

Dynamic resource provisioning

- Efficient Scale

Cisco network scale and services

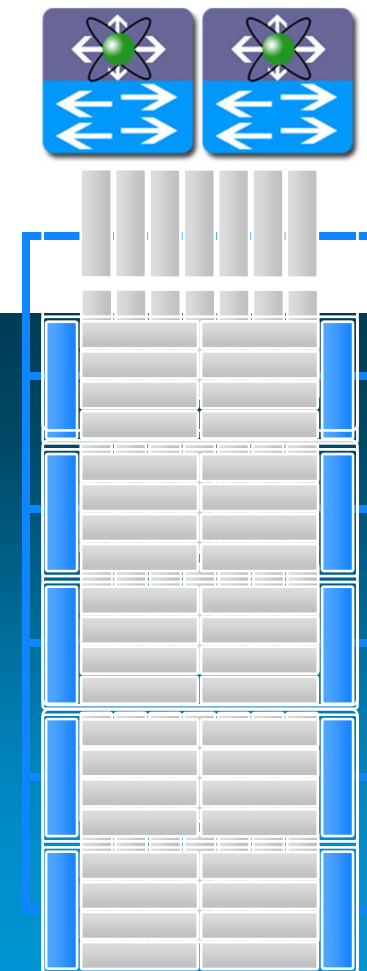
Fewer servers with more memory

- Lower cost

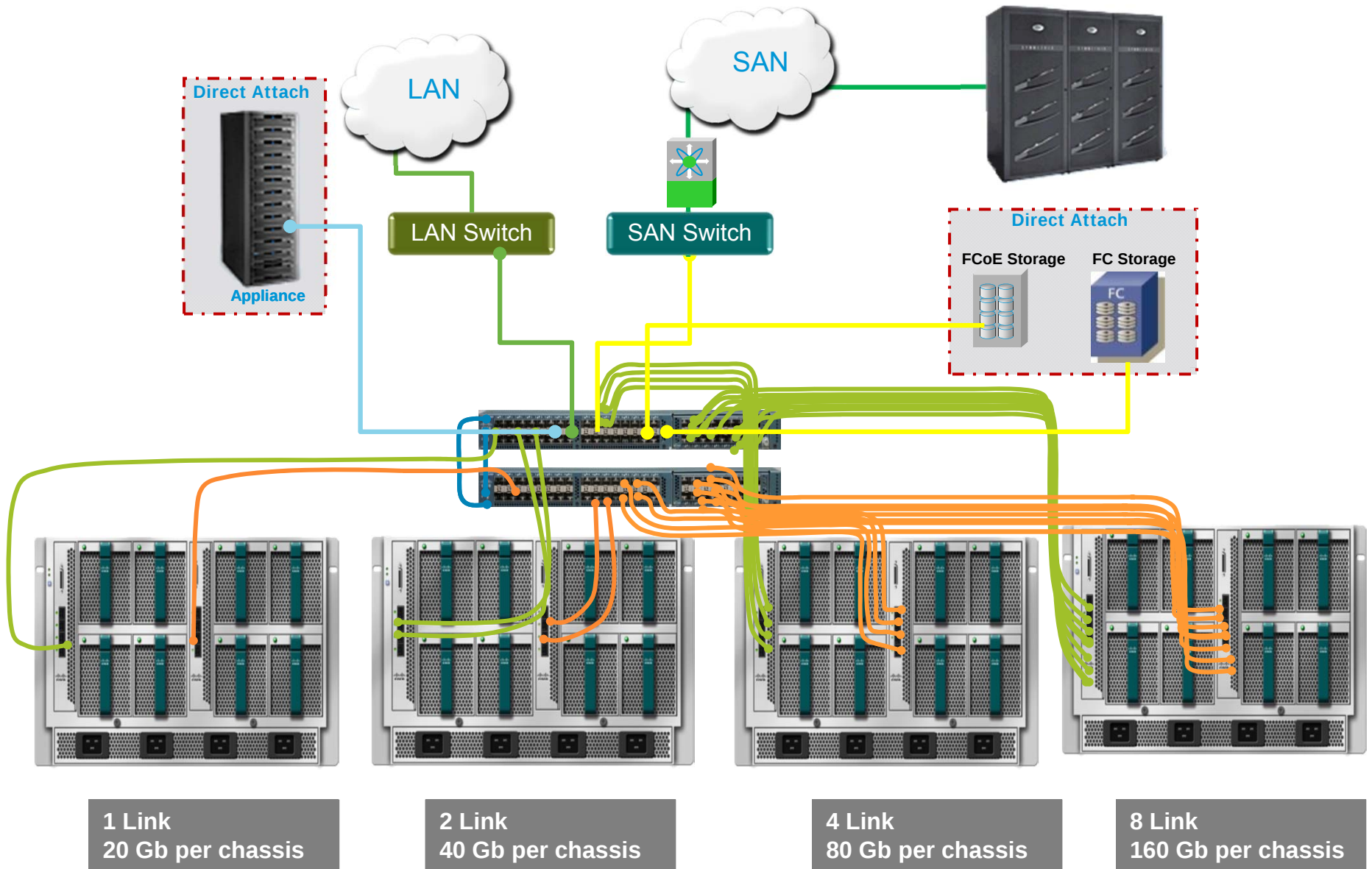
Fewer servers, switches, adapters, cables

Lower power consumption

Fewer points of management



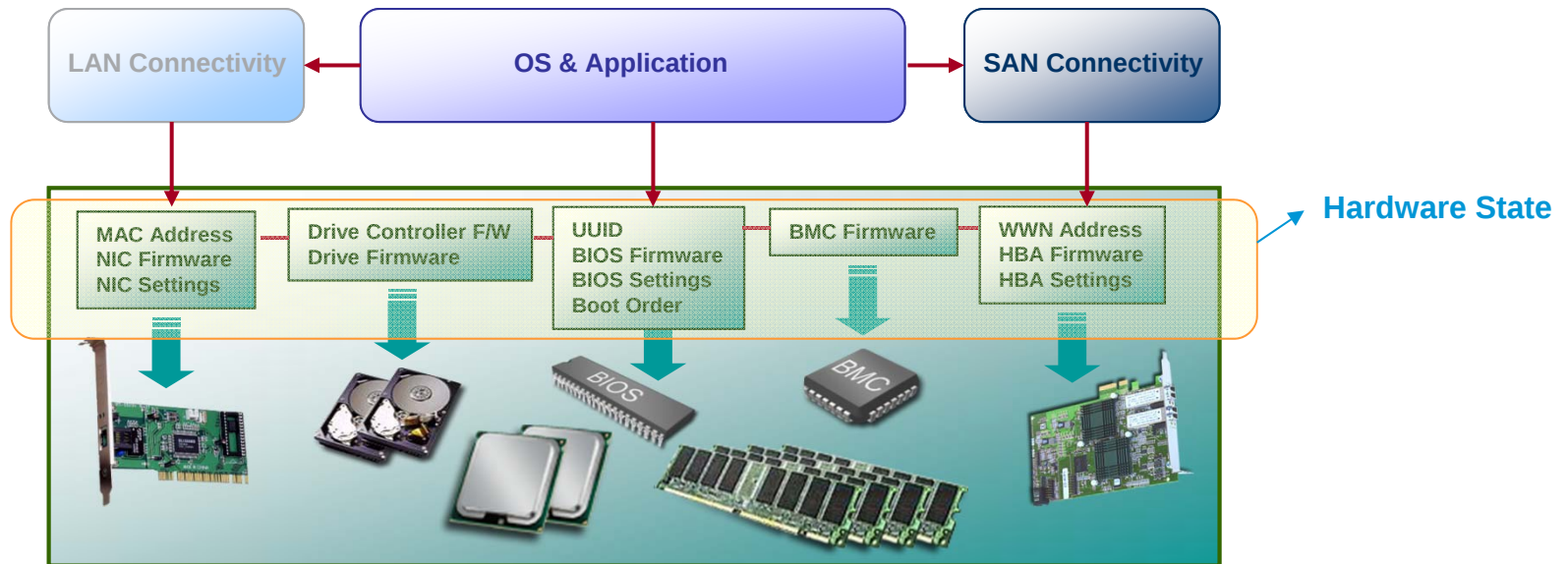
Wire for Bandwidth, Not Connectivity



Learn. Connect.
Collaborate. *together.*

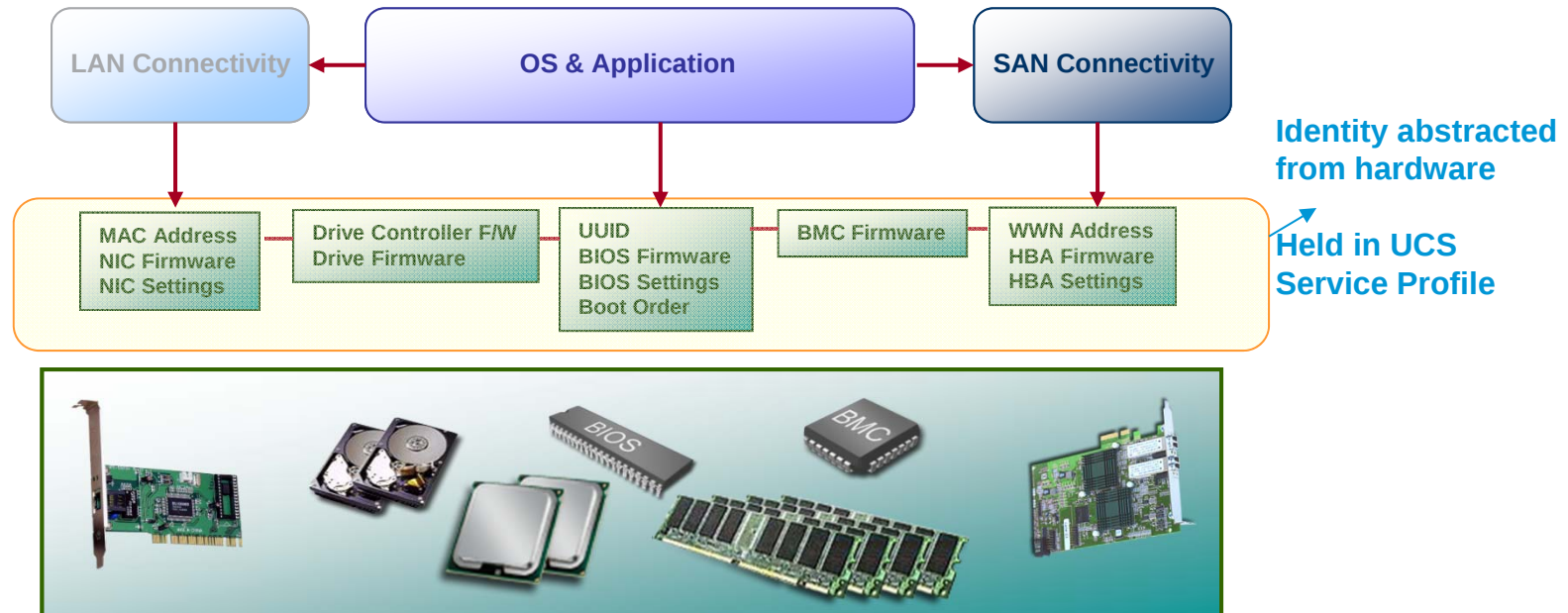
Service Profiles

Traditional Paradigm for Server Identity



- Today, server identity or “state” is embedded in the physical hardware
e.g., MAC & WWN addresses burned into adapters, boot settings in BIOS
- Server connectivity to LAN & SAN is tied to physical adapters and access ports
e.g., Access port on LAN defines VLAN, SAN zoning and LUN masking done on HBA WWN

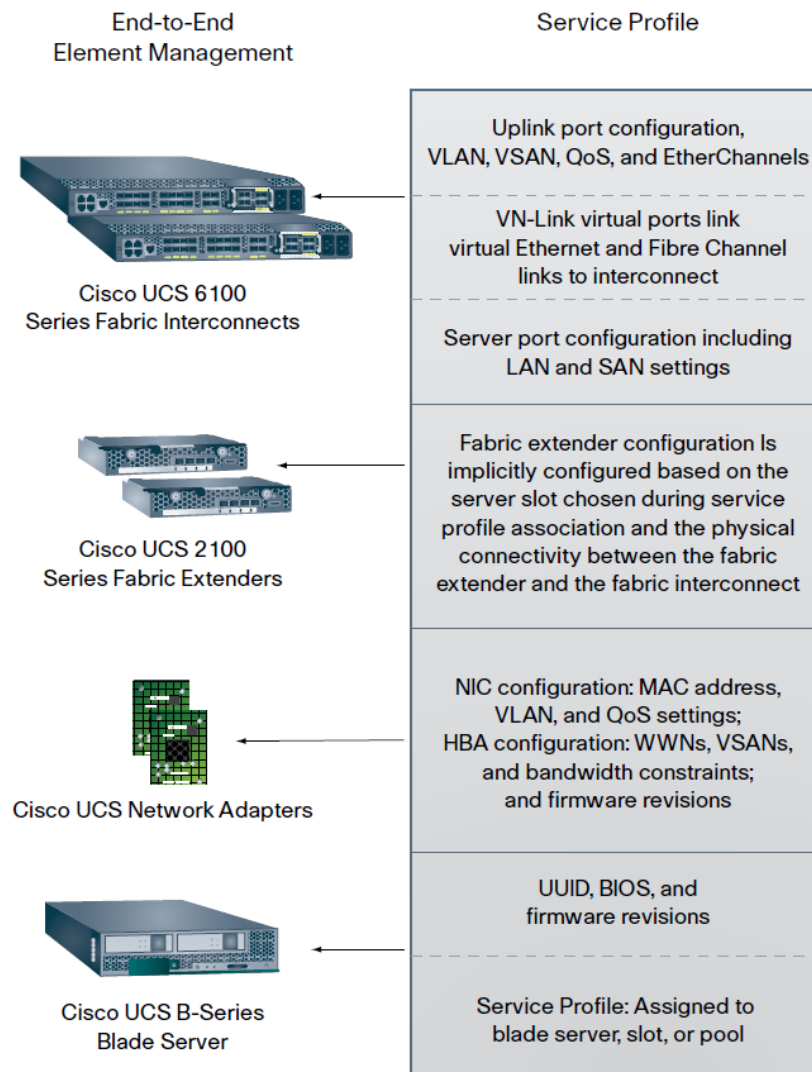
Hardware “State” Abstraction



- Abstracts the firmware, addresses and parameter settings from server hardware
- *Physical servers become interchangeable hardware components (“stateless”)*
- *Service Profile can be assigned to Server Blade, Server Pool or Chassis slot*

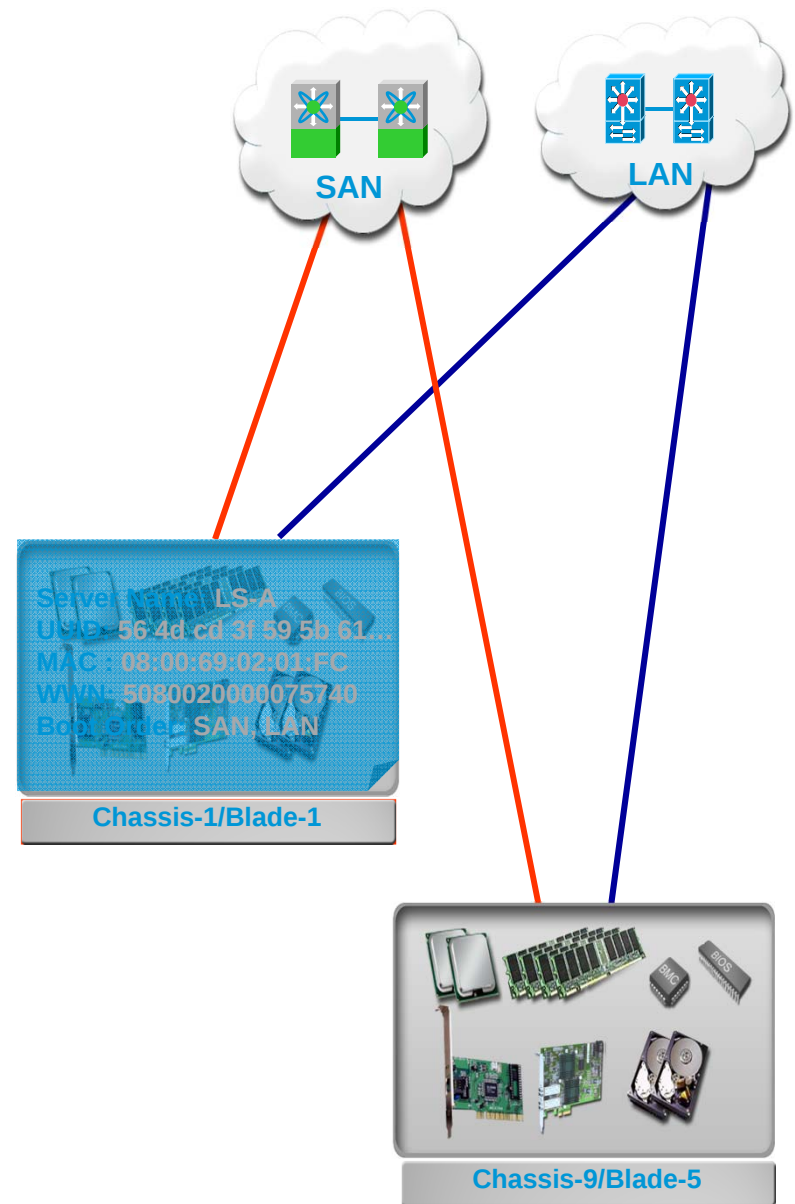
• *LAN and SAN connectivity “follow” the server, settings are part of Service Profile*

Service Profiles configure the full UCS hardware stack



Stateless Computing

- **Server identity no longer has to be tied to physical server hardware**
 - *Service Profiles provide identity*
 - *Seamless server mobility*
 - *Stateless blades*
- **Boot over network (LAN or SAN)**
 - *Boot order and boot devices are part of the pre-defined logical server profile*
 - *On-board disks can be used for temp, swap, etc.*
- **Dynamic provisioning**
 - *Complete infrastructure repurposing*
 - *Use cases: Migration, DR, Maintenance, Capacity Tuning*
 - *Integrated with 3rd party tools*



Full Hardware Abstraction & Service

vmhost-cluster1-1
12345678-ABCD-9876-5432-ABCDEF123456
ESX4-1 – Host in Cluster 1

vNIC0 first, then vNIC1, then VHBA.....

VMware-Static-NIC-Policy

Switch A

SwitchA-pingroupA

Disabled

VLAN 100

00:25:B5:00:01:01

No

VMware-QoS-policy

Switch B

SwitchB-pingroupA

Disabled

VLAN 100

00:25:B5:00:01:02

No

VMware-QoS-policy

101_Policy, 102_Policy, 103_Policy...

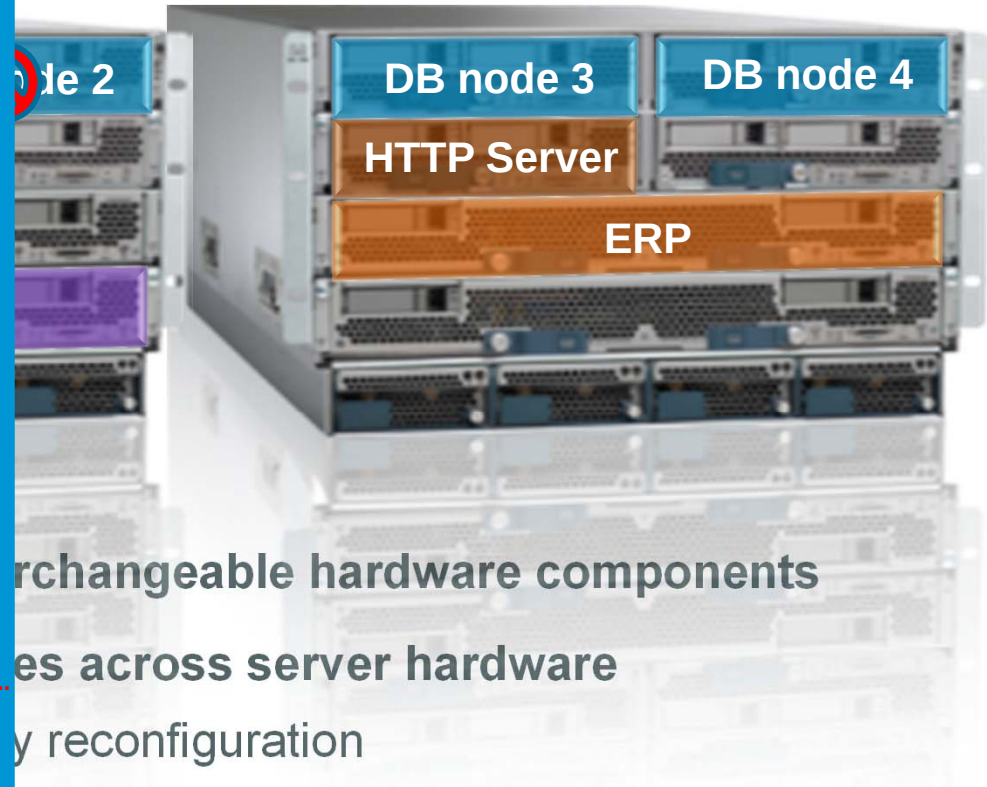
VM vNIC tied to Port-Group:

•101_Policy, 102_Policy, 103_Policy, etc.

RAID1

Scrub local disks only

situation demands



Interchangeable hardware components

Services across server hardware

Dynamic reconfiguration

Adaptation on changing workloads

Replace components or upgrade hardware as

Full Hardware Abstraction & Service

Pr
Ad

vmhost-cluster1-1
12345678-ABCD-9876-5432-ABCDEF123456
ESX4-1 – Host in Cluster 1

vNIC0 first, then vNIC1, then vHBA.....
VMware-Static-NIC-Policy

Switch A

SwitchA-pingroupA

Disabled

VLAN 100

00:25:B5:00:01:01

No

VMware-QoS-policy

Switch B

SwitchB-pingroupA

Disabled

VLAN 100

00:25:B5:00:01:02

No

VMware-QoS-policy

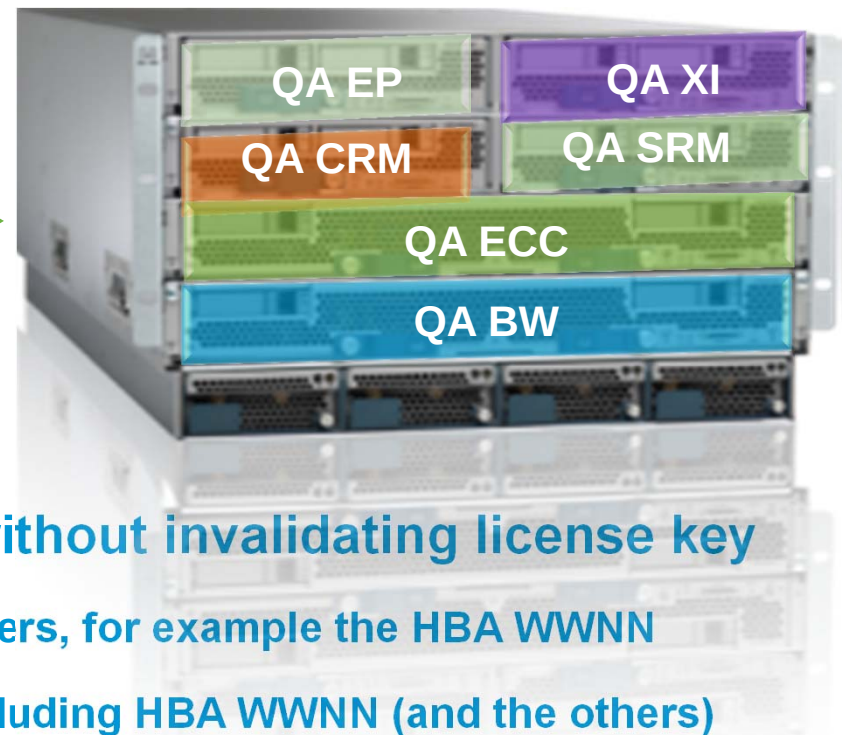
101_Policy, 102_Policy, 103_Policy...

VM vNIC tied to Port-Group:

101_Policy, 102_Policy, 103_Policy, etc.

RAID1

Scrub local disks only



Ena

• SA

• UC

• Ex

nces without invalidating license key

parameters, for example the HBA WWNN

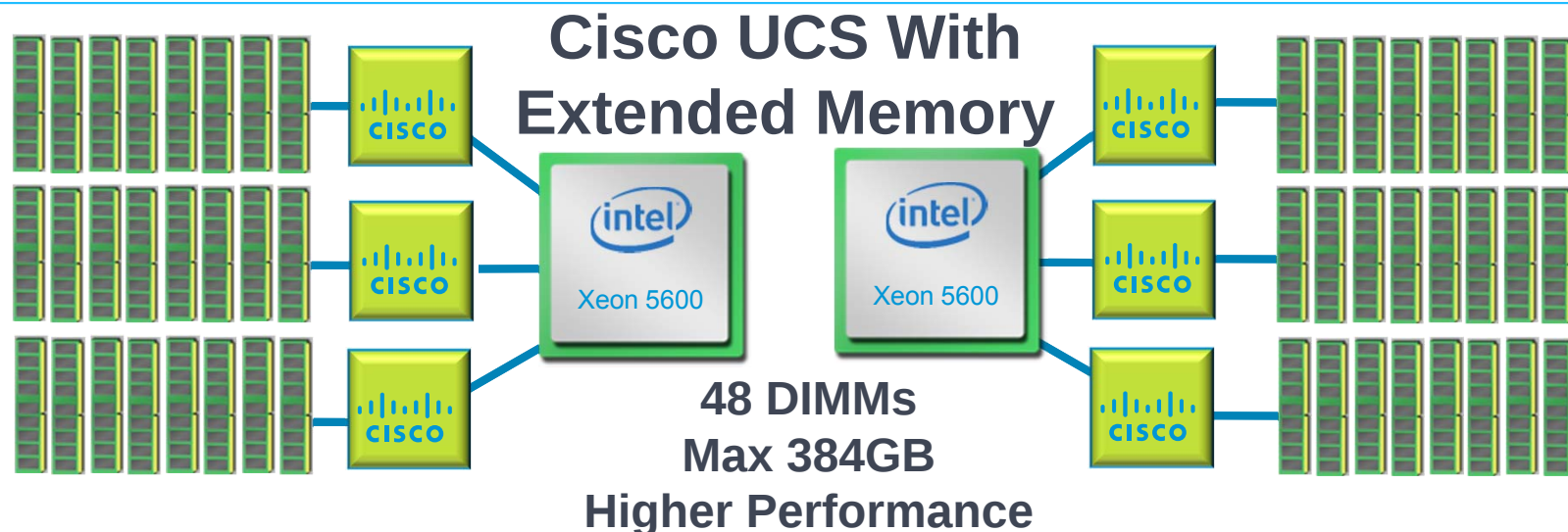
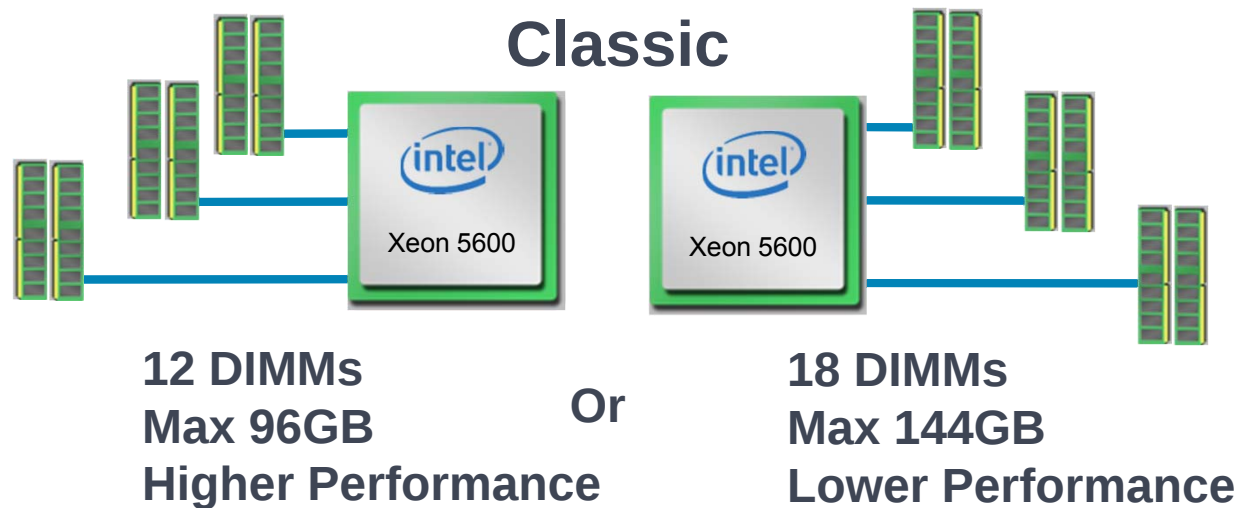
utes, including HBA WWNN (and the others)

straction resolves application dependencies

pts to make cluster SAP “aware”

no need for cluster software to grant HW availability

Optimizing Memory for Desktop Virtualization

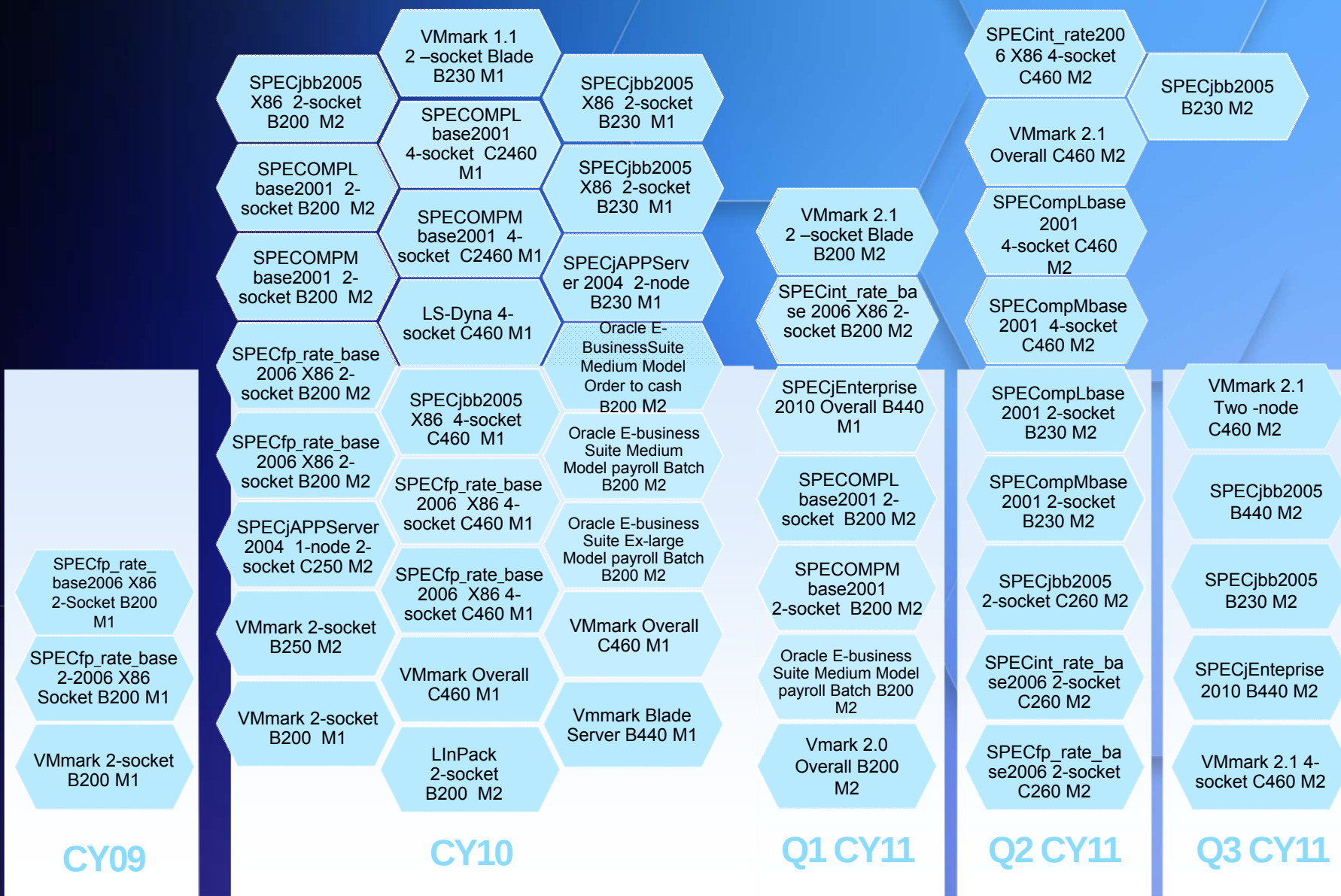


UCS Differentiators

- **Unified and Embedded Management**
Simplify setup, increase control, lower costs, easier to scale, fewer tools
- **Tight Integration with Systems Management**
Open XML API, tight integration with existing management tools
- **Unified Fabric**
Increased workload agility, lower costs, better resource utilization
- **Hardware State Abstraction – Service Profiles**
Higher productivity, lower costs, consistent operation, accelerated provisioning
- **Virtualized Adapters**
Higher workload agility, better VM performance, single adapter platform
- **Extended Memory Technology**
Higher memory density, lower cost memory

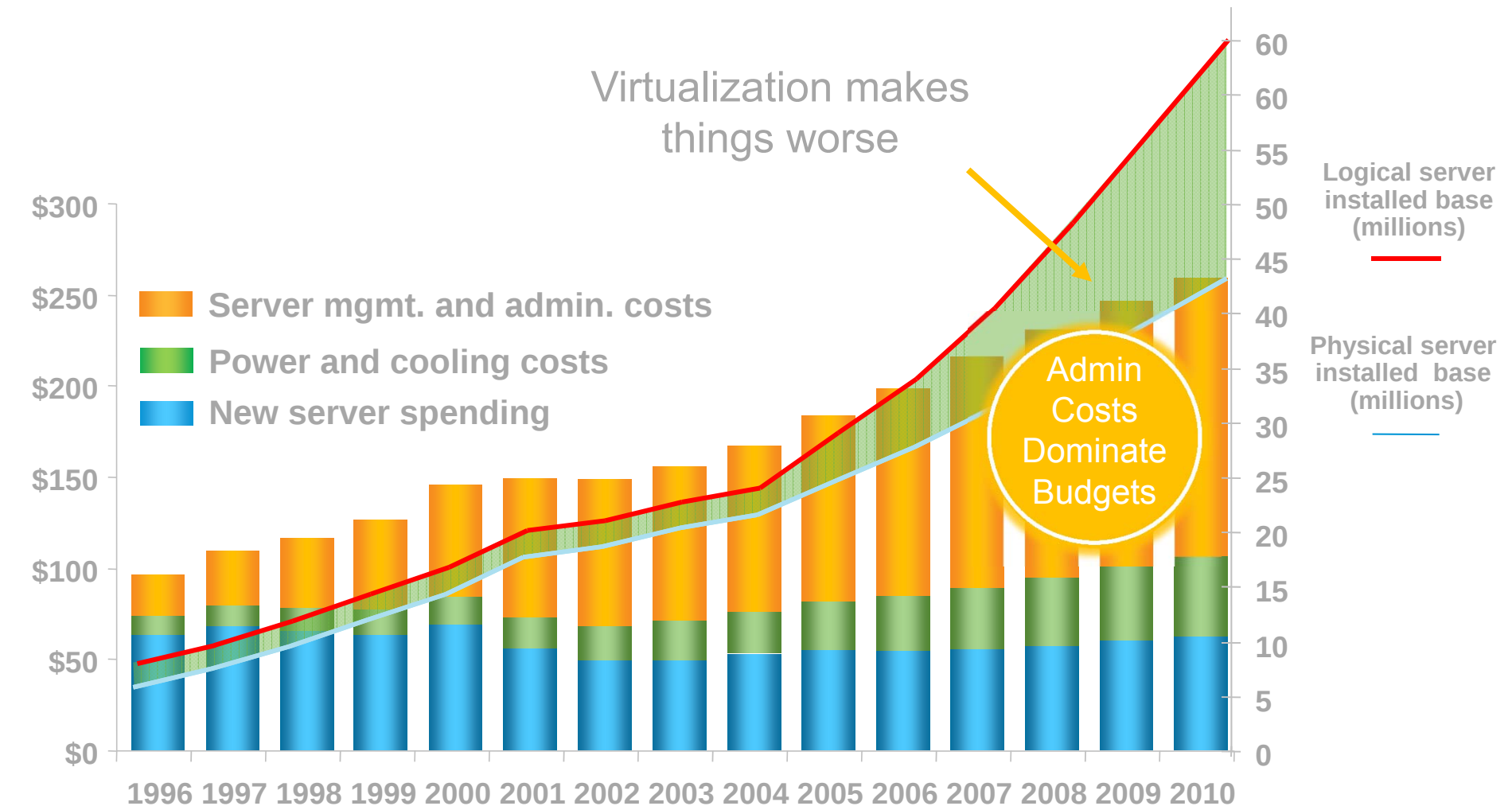
Cisco UCS Performance Records

Two Years - 50 World Records & Counting



Impact on the Data Center

Operations & Maintenance Now ~80% of IT Budgets and Growing

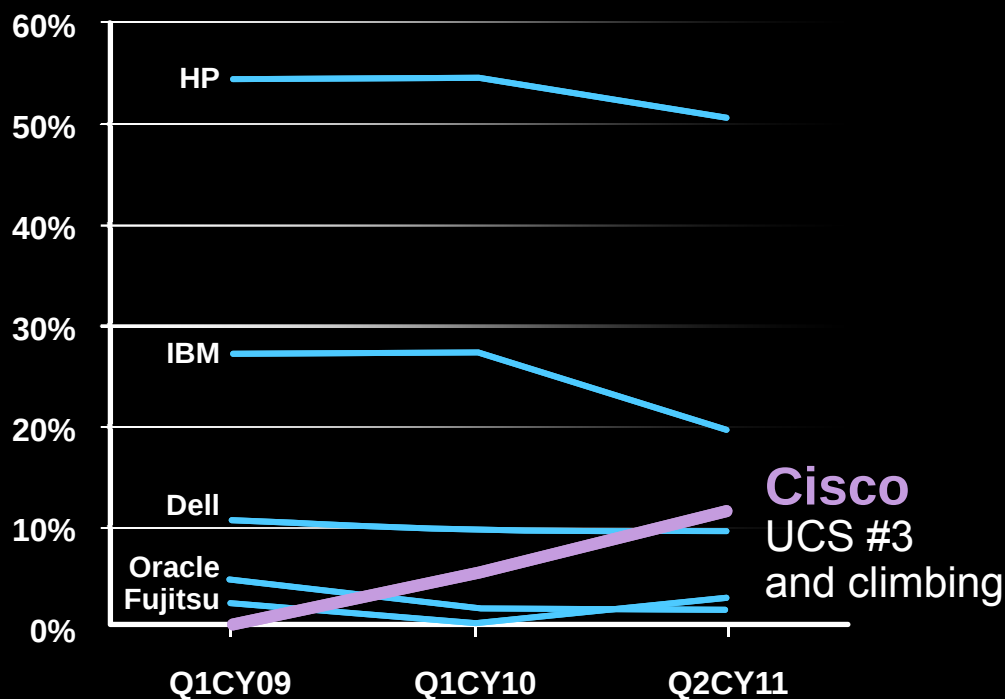


Source: IDC



They Said It Couldn't Be Done

X86 Server Blade Market Share



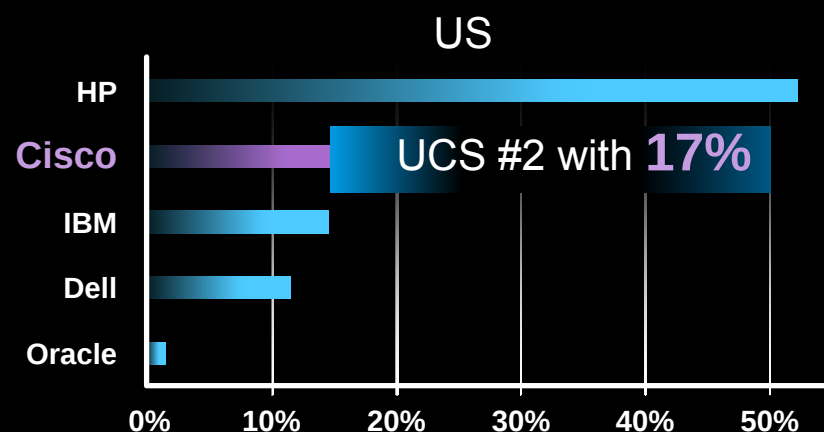
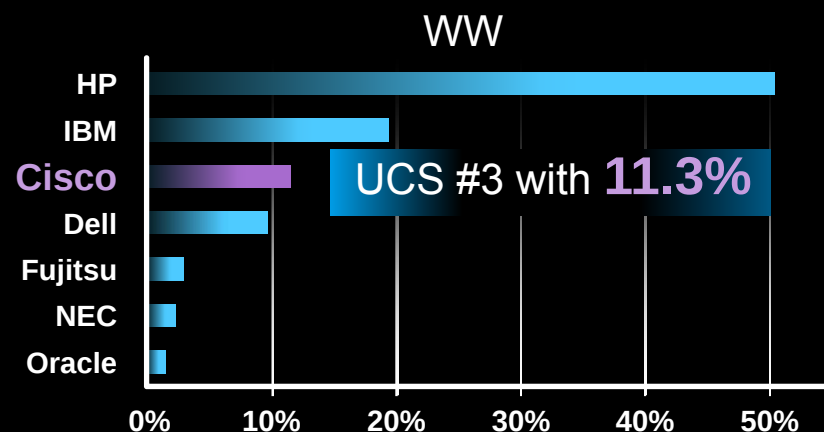
Market appetite for innovation fuels UCS growth

- UCS impacting growth of established vendors like HP
- Legacy offerings flat-lining or in decline
- Cisco growth out-pacing the market
- Customers have shifted over **11.0%** of the global x86 blade server market to Cisco and **17.0%** in the US

Demand for data center innovation has vaulted Cisco Unified Computing System (UCS) to the #3 leader in the fast growing segment of the x86 server market

Customers Have Spoken

X86 Server Blade Market Share
Q2 CY2011

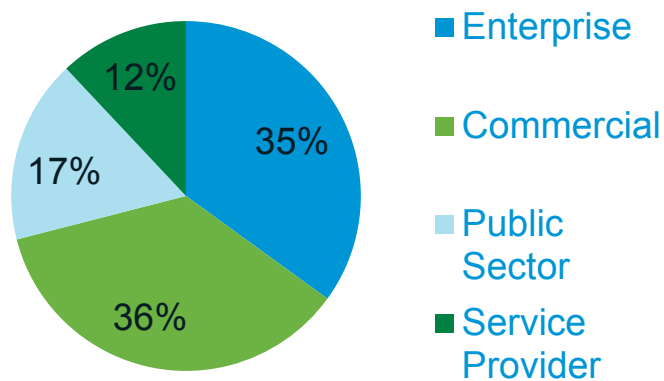


UCS After Two Short Years

- UCS momentum is fueled by game-changing innovation; Cisco is quickly passing established players¹
- Blade servers are the fastest growing segment of the x86 computing market²

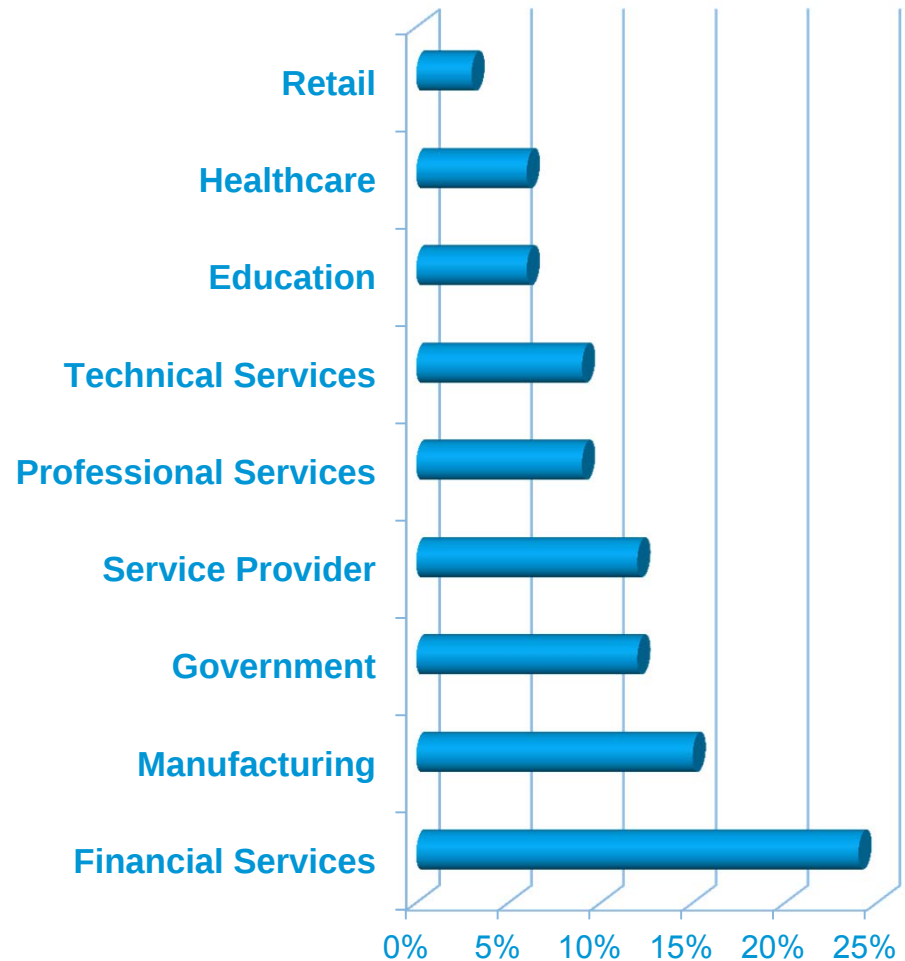
Cisco UCS Deployments

Market Segments



Leading Deployed Applications

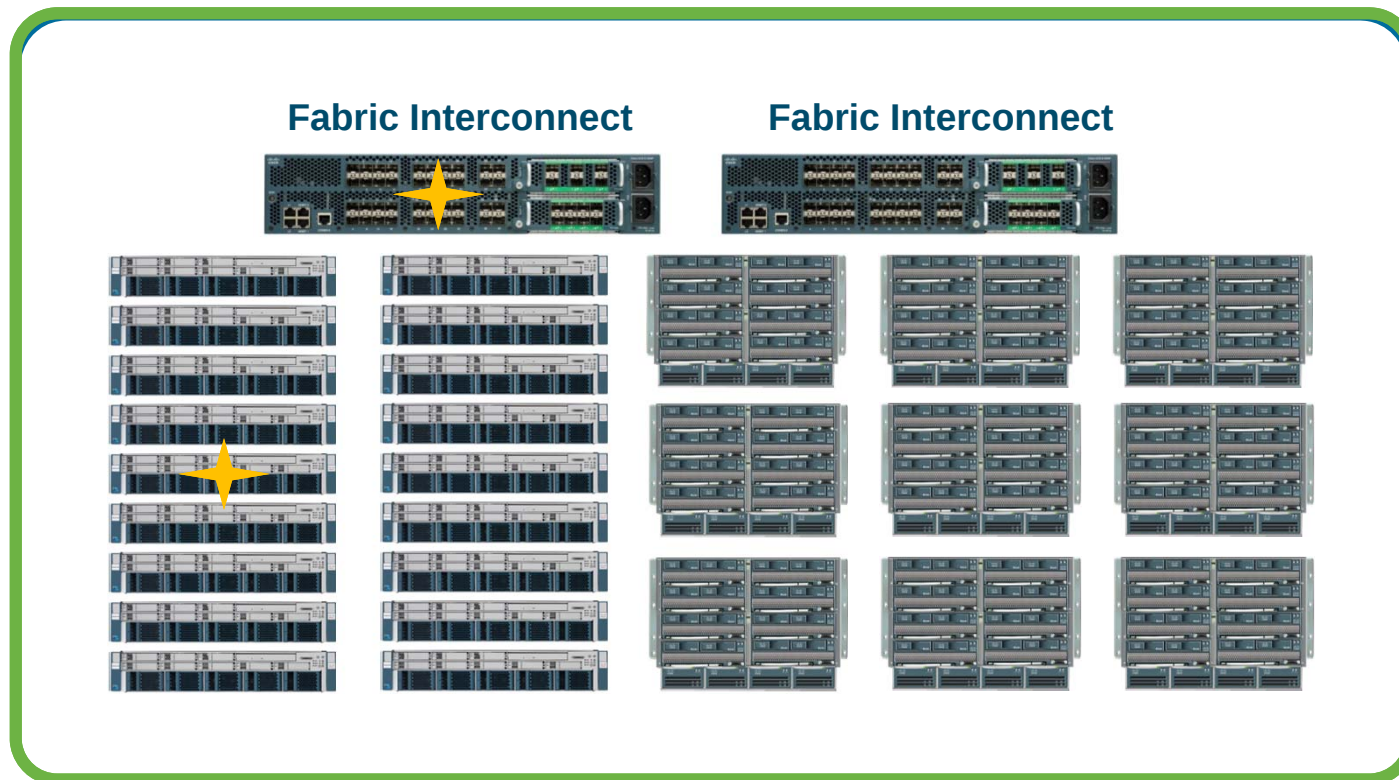
- Oracle RAC, E-Business Suite
- SAP, Siebel, SAS
- Microsoft Exchange, SQL Server
- Virtualization: VMWare, Microsoft, Citrix, RedHat, Oracle
- VDI: Citrix, VMWare



Goal: Form Factor Independence

Stateless computing

- Already Available in Blades
- Coming Soon to Rackmount servers



UCS Rackmount Servers



	C22 M3	C24 M3	C220 M3	C240 M3	C260 M2	C420 M3	C460 M2
RU	1	2	1	2	2	2	4
Cores	16	16	16	16	20	32	40
DIMMs	12	12	16	24	64	48	64
Max GB	192GB	192GB	512GB	768GB	1TB	1.5TB	512GB
Disk	8 x 2.5" or 4 x 3.5"	24 x 2.5" or 12 x 3.5"	8 x 2.5" or 4 x 3.5"	24 x 2.5" or 12 x 3.5"	16 x 2.5"	16 x 2.5"	16 x 2.5"
LoM	2 x 1Gb	4 x 1Gb	2 x 1Gb	4 x 1Gb	2 x 1Gb + 2 x 10Gb	2 x 10Gb	2 x 1Gb + 2 x 10Gb
PCIe Slots	2 x PCIe	5 x PCIe	2 x PCIe 3.0	5 x PCIe 3.0	6 x PCIe 2.0	6 x PCIe 3.0	10 x PCIe 2.0
Internal Storage	USB Port	USB Port	USB Port FlexFlash	USB Port FlexFlash	USB Port FlexFlash	USB Port FlexFlash	eUSB

Technology Evolution

Simplify The Data Center

Disk Drive



Storage Array



- System Administrators used to manage each disk drive
- The Storage Array fundamentally changed the focus
- No one cares how many disk drives they have: storage matters

Technology Evolution

Simplify The Data Center
Server



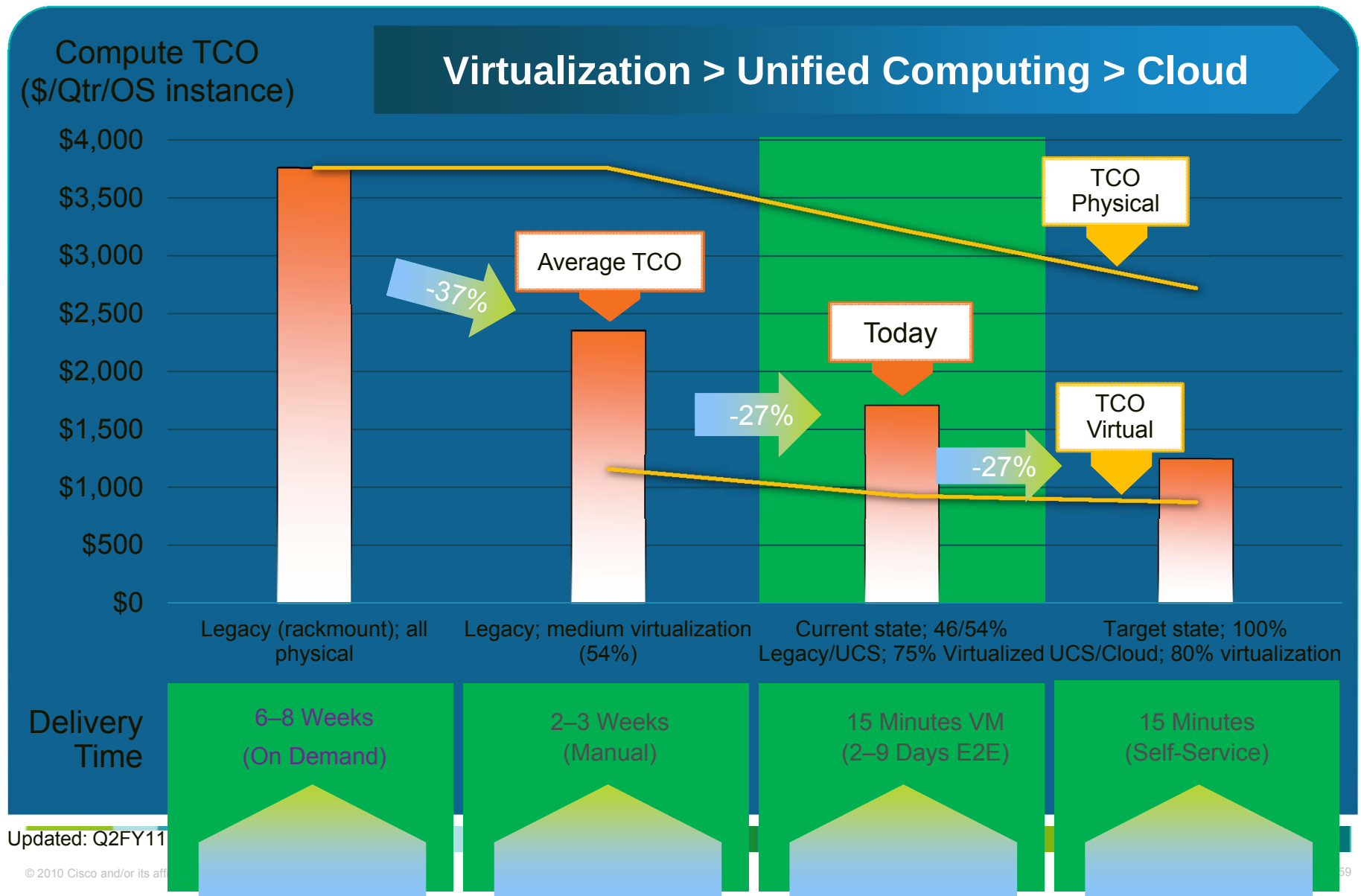
Unified Computing System



- System Administrators have to manage each server
- Unified Computing changes the focus
- No one should care how many servers they have:
Computing matters

Cloud Brings Agility and Cost Benefits

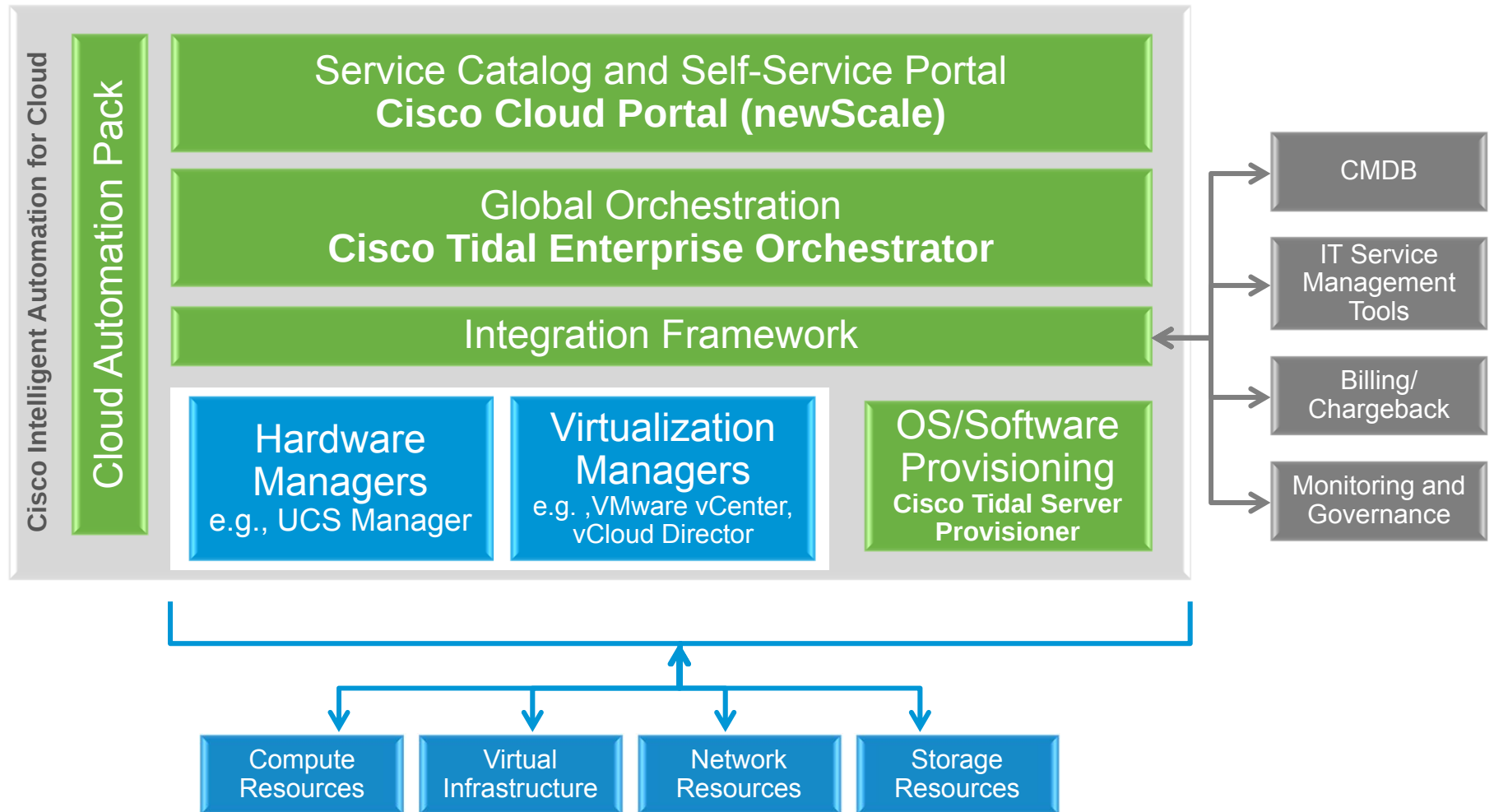
Cisco IT Journey to the IaaS Cloud



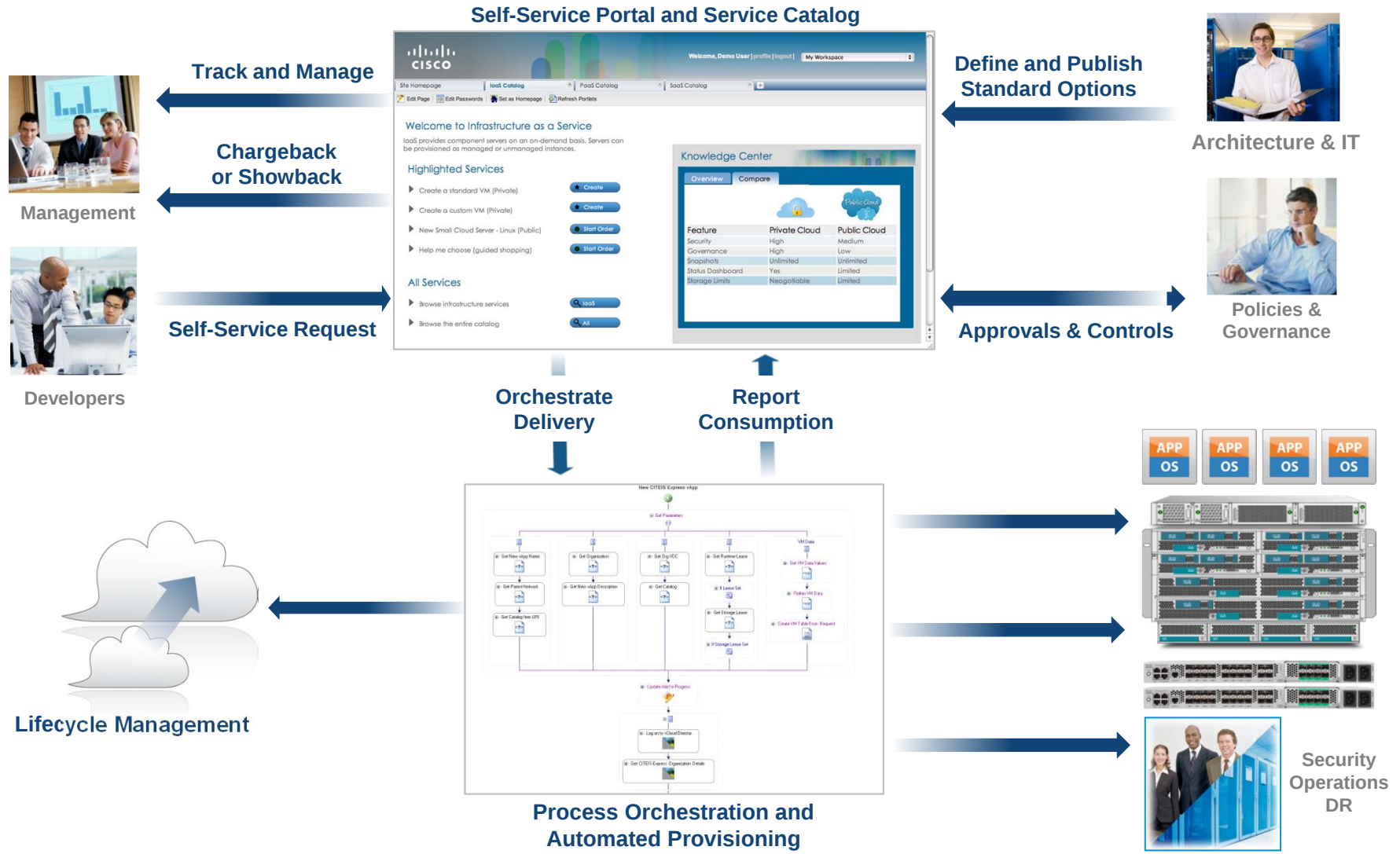
Learn. Connect.
Collaborate. *together.*

Cisco Intelligent Automation for Cloud (CIAC)

Cisco Intelligent Automation for Cloud



Cisco Intelligent Automation for Cloud



Service Portal for Cloud Administrators

The screenshot displays the ACME Cloud Service Portal interface. At the top, the header includes the ACME logo, the text "Cloud Service Portal", and user information for "Terry Admin" with links for profile, help, and logout. A "Module Selection" dropdown menu is also present. Below the header, a navigation bar shows tabs for "My ES", "My Cloud", and "My Services", with "My Cloud" currently selected. A secondary bar contains "Add Content" and "Page Settings" options.

The main content area is divided into several modules:

- vApps**: A table showing the status of virtual applications.
- Storage**: A table detailing service levels, actual usage, capacity, and remaining space.
- IP Address Resource Pool**: A table mapping IP ranges to their reserved purposes.
- Manage Users**: A section with links for user management tasks.
- Common Data Center Services**: A section with links for requesting various services.
- Manage Policies**: A section with links for managing system policies.
- Zenoss Monitoring Data**: A graph showing CPU usage and reserved capacity over time.
- Browse Data Center Services**: A carousel showing available services like SQL Database Hosting and Application Hosting Linux.

Name	Requested	Running
Template A	3	1
Template B	8	8
Template C	5	4
Template D	7	2

Service Levels	Actual	Capacity	Remaining
Platinum	50GB	100GB	50GB
Gold	150GB	100GB	50GB
Silver	150GB	300GB	150GB
Bronze	200GB	300GB	100GB

IP Range	Reserved for
195.168.10.100 – 10.150	Development
195.168.10.151 – 10.200	Test
195.168.10.201 – 10.250	Development
198.172.10.151 – 10.161	Production

Manage Users

- [Create User](#)
- [Assign or Change Roles](#)
- [Change an Approval Flow](#)
- [Manage Contracts](#)

Common Data Center Services

- [Request Compute](#)
- [Request Additional Storage](#)
- [Request Available Capacity](#)
- [Configure Virtual LAN](#)

Manage Policies

- [Manage Host System Policy](#)
- [Review General System Policies](#)
- [Request Policy Change](#)
- [Manage IP Address Pool](#)

Zenoss Monitoring Data

Graph showing CPU Usage (green) and CPU Reserved Capacity (blue) over time. The x-axis spans from Tuesday 12:00 to Wednesday 11:11:57. The y-axis represents usage in GB, ranging from 2.0 to 5.0. Summary statistics: cur: 1.74G, avg: 1.91G, max: 4.67G.

Browse Data Center Services

SQL Database Hosting | Application Hosting Linux

Service Portal for Cloud Administrators

Manage Cloud Page

newScale RequestCenter Portal

Giridhar Padmanabh
My Workspace

profile | logout | help

Manage Cloud
Site Homepage

Edit Page | Edit Passwords | Set As Home Page | Refresh Portlets

System Wide Alerts

Category	Title	AnnouncementText
	System Outage	Instance Termination PROD_LDK_947 1/1/11 at 12:00am CT
	Maintenance Window	Maintenance Windows changed from

VM Consumption

Name	Current CPUs	Allowed CPUs
Capacity Test	4	8
Test VMs	7	12
Development VMs	5	10
ERP Refresh Project	16	20

VM Monitoring (Zenoss)

Back
Forward

My Data Center Services

Top Description	Service URL	Description
	Standard Test Env	This service allows you to request a test environment for a variety of purposes (i.e. load testing, user acceptance, etc.).
	Development Staff	Order additional staff on a temporary basis for your project needs

Storage Capacity

Integration Agents

Agenda

- Enabling Cloud
- Unified Network and Fabric
- Unified Computing
- Cloud Architectures



VCE

Learn. Connect.
Collaborate. *together.*

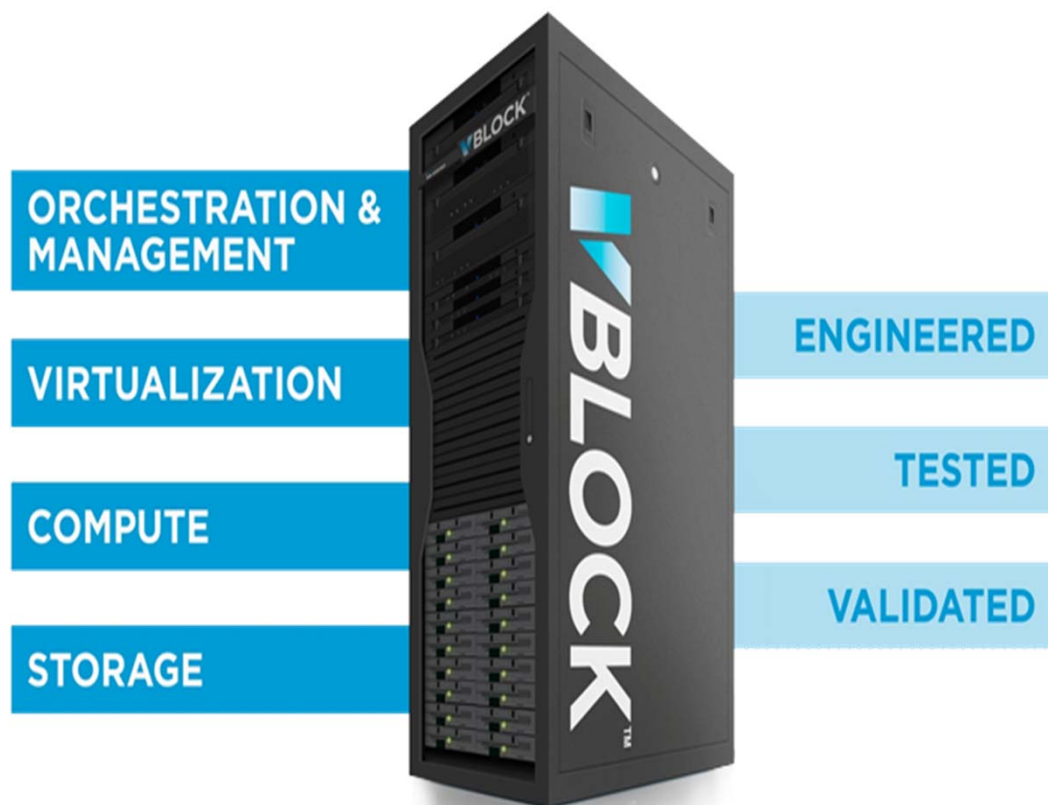
A NEW WAY TO DELIVER IT

Vblock™ Infrastructure Platforms

- Management and Orchestration: Unified Infrastructure Manager (UIM) framework
- Virtualization: VMware
- Compute: Cisco UCS
- Network: Cisco Nexus and MDS switching
- Storage: EMC Symmetrix VMAX or Unified

Solutions and Services

- Accelerate time to value of business applications
- Seamless Support



SIMPLIFYING THE DATA CENTER DEPLOYMENT



Before

90-120 Days Order to “Production”



Receive Components



Staging



Integration & Test



Program & Provision

VCE

~30 Days Order to “Production”



... and Post-Production
Operational Simplicity

SIMPLIFYING THE DATA CENTER DEPLOYMENT



Before



VCE

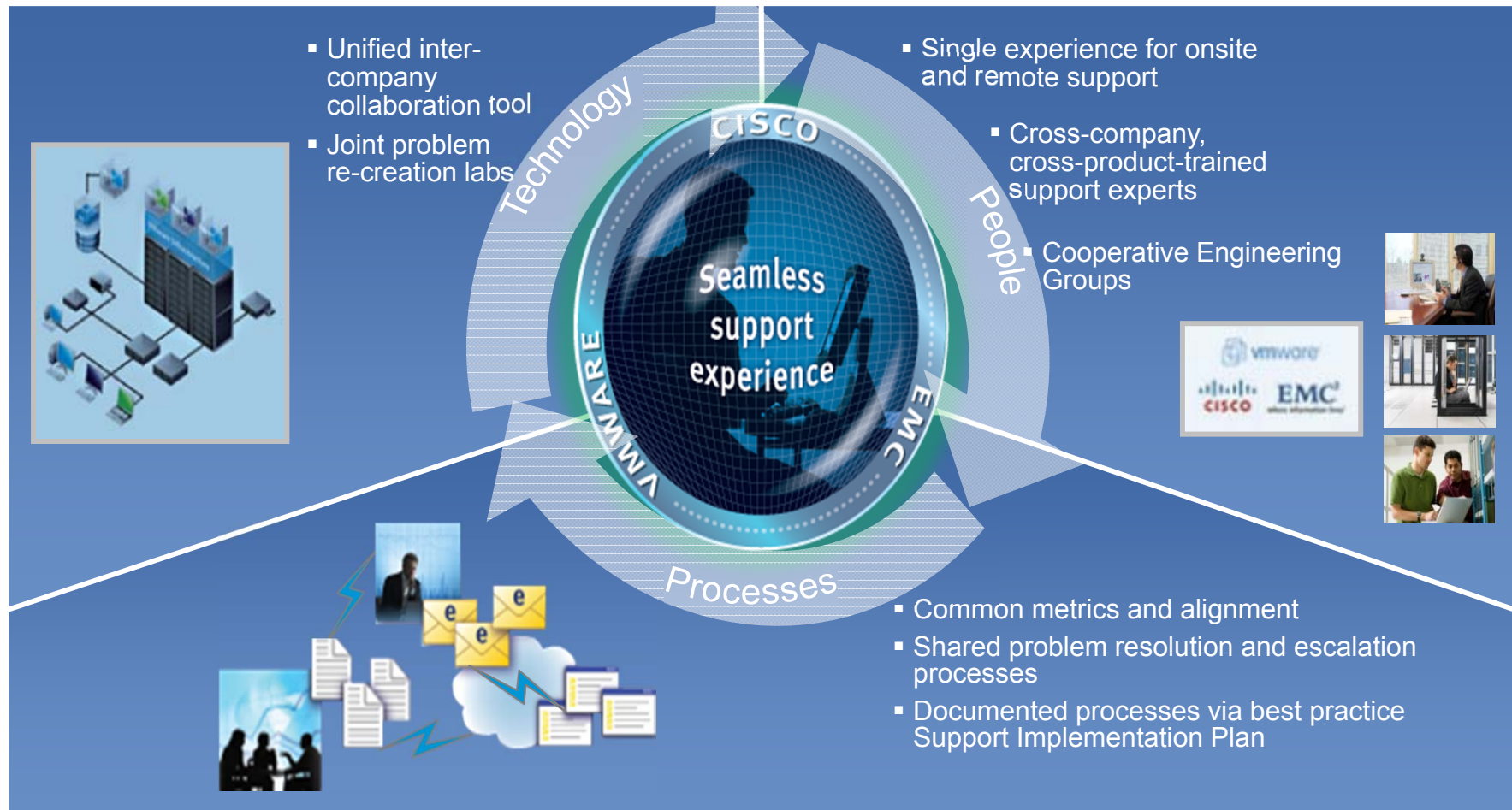


Seamless
Support

VBLOCK SEAMLESS SUPPORT EXPERIENCE

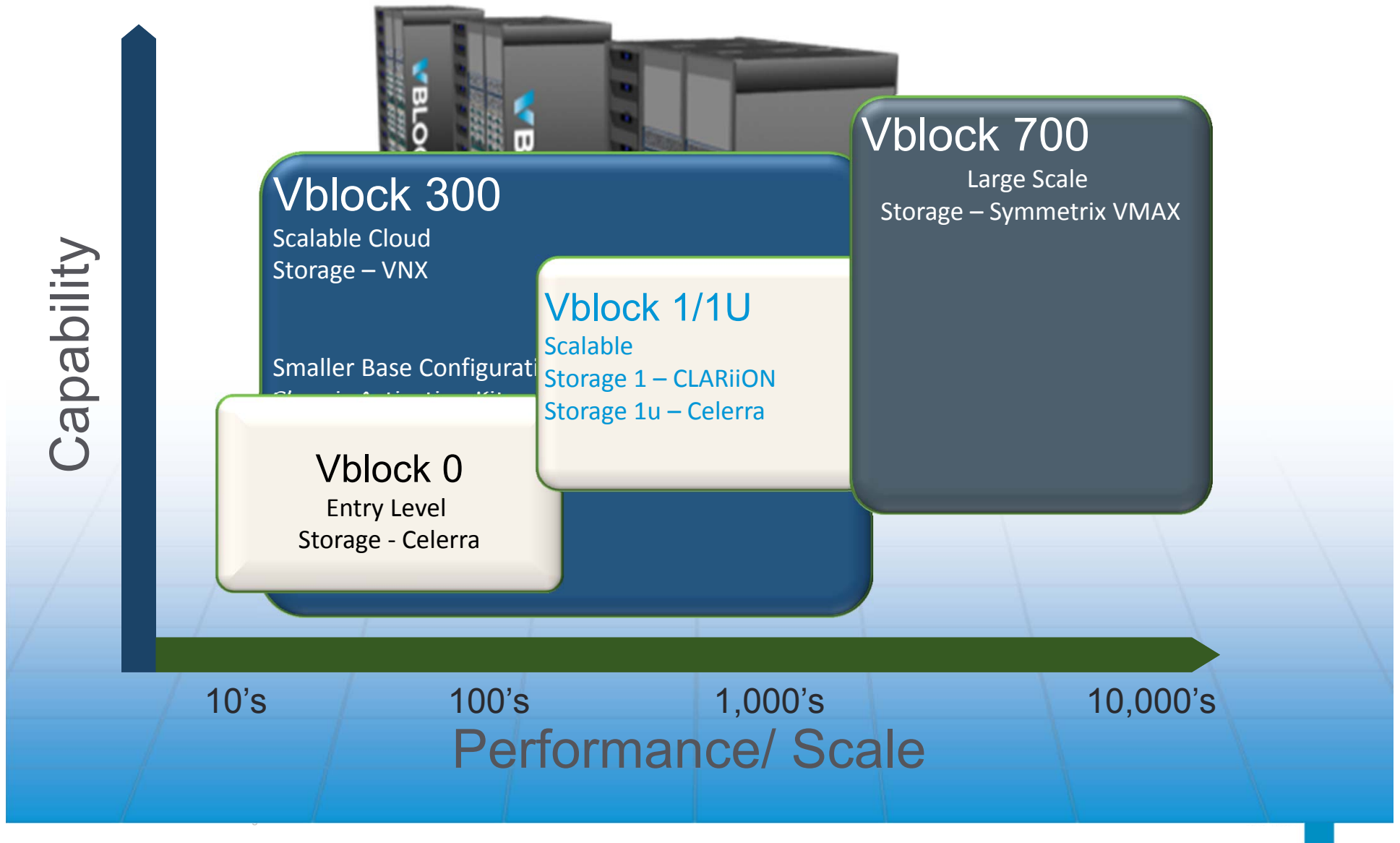


Enabling Pervasive Virtualization and Private Cloud

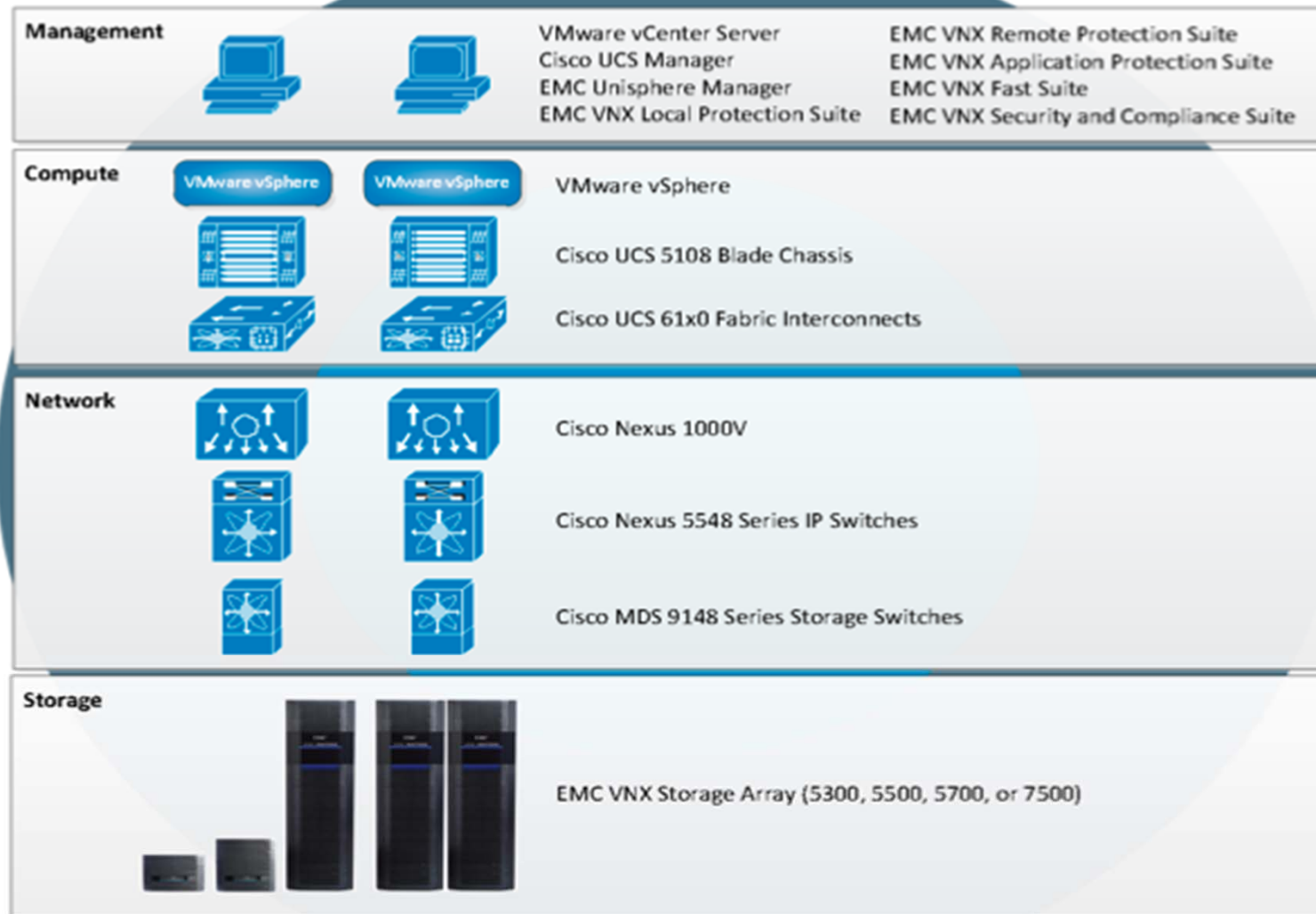




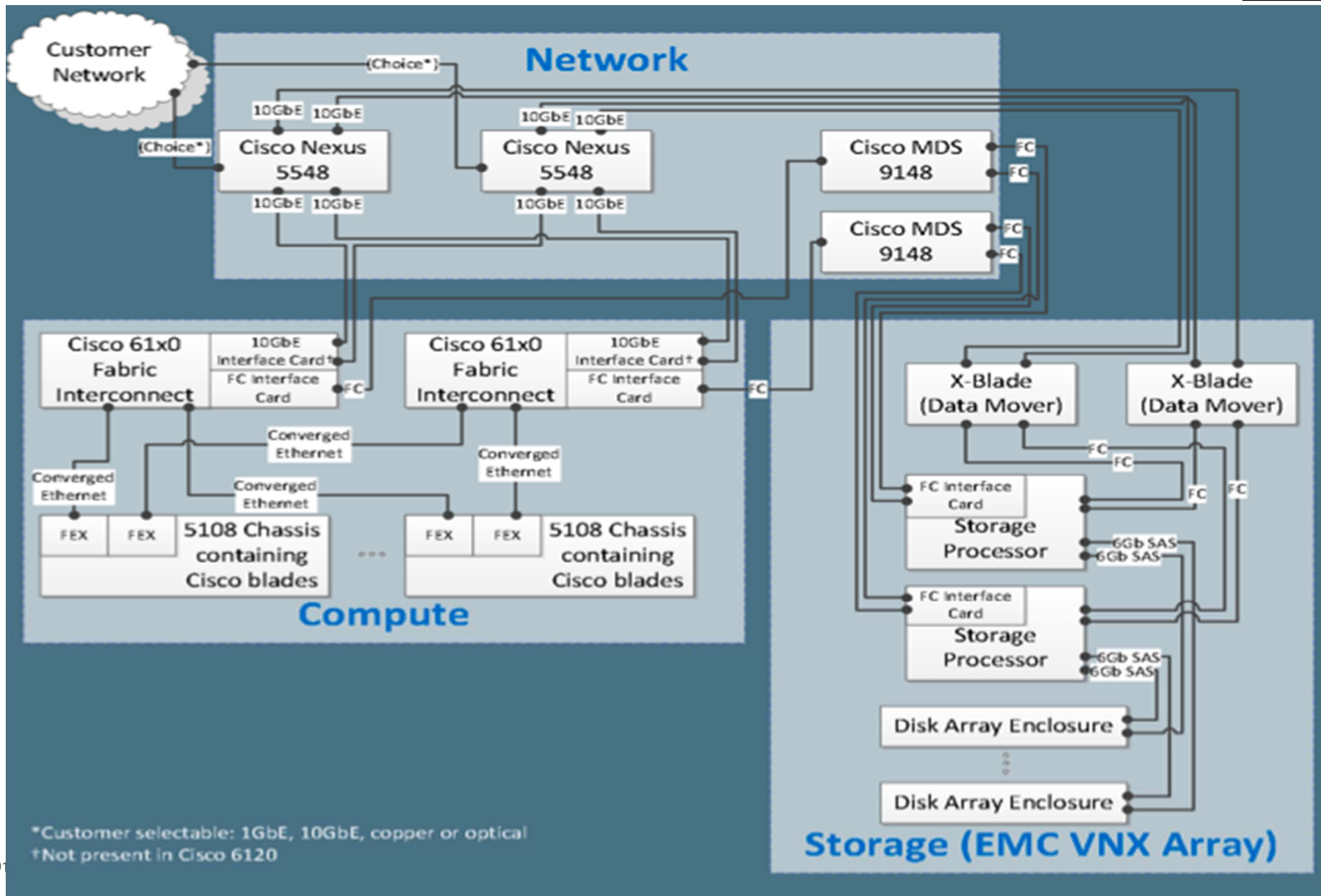
VBLOCK PLATFORM SERIES



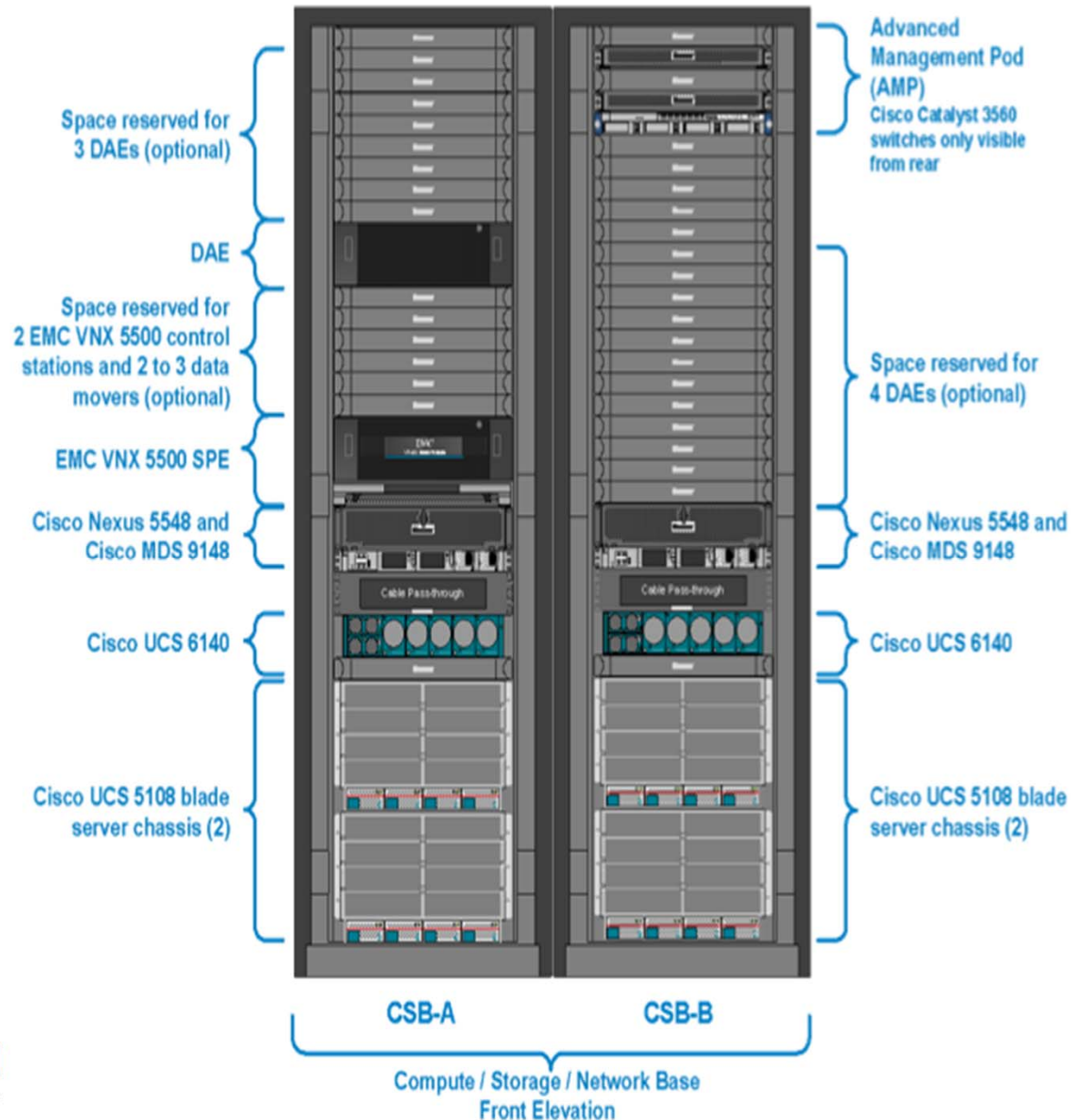
VBLOCK ARCHITECTURE



VBLOCK 300 SERIES CONNECTIVITY



VBLOCK 300 FX BASE CONFIGURATION



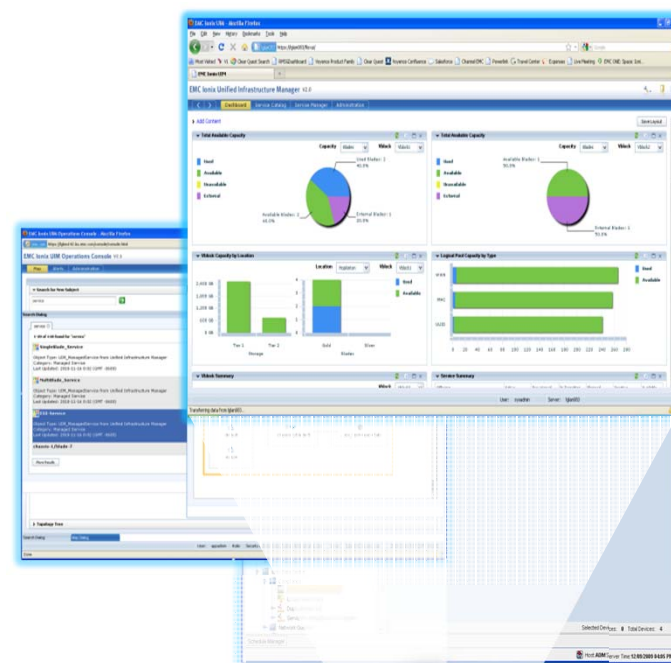
MANAGEMENT FOOTPRINT

Catalog of Domain Managers
Unified Vblock Management
Ionix Unified Infrastructure Manager Advanced Management POD (AMP)
Virtualization Management
VMware vCenter 4.x Suite
Virtualization Data Center OS
VMware vSphere 4.x Enterprise Plus
Compute Management
Cisco UCS Manager
Network Management
Cisco Fabric Manger / Data Center Network Manager (optional)
Storage Management
EMC Unisphere (Vblock 1u, 1, 300) / EMC Symmetrix Management Console (Vblock 700)



UNIFIED INFRASTRUCTURE MANAGER v2.1

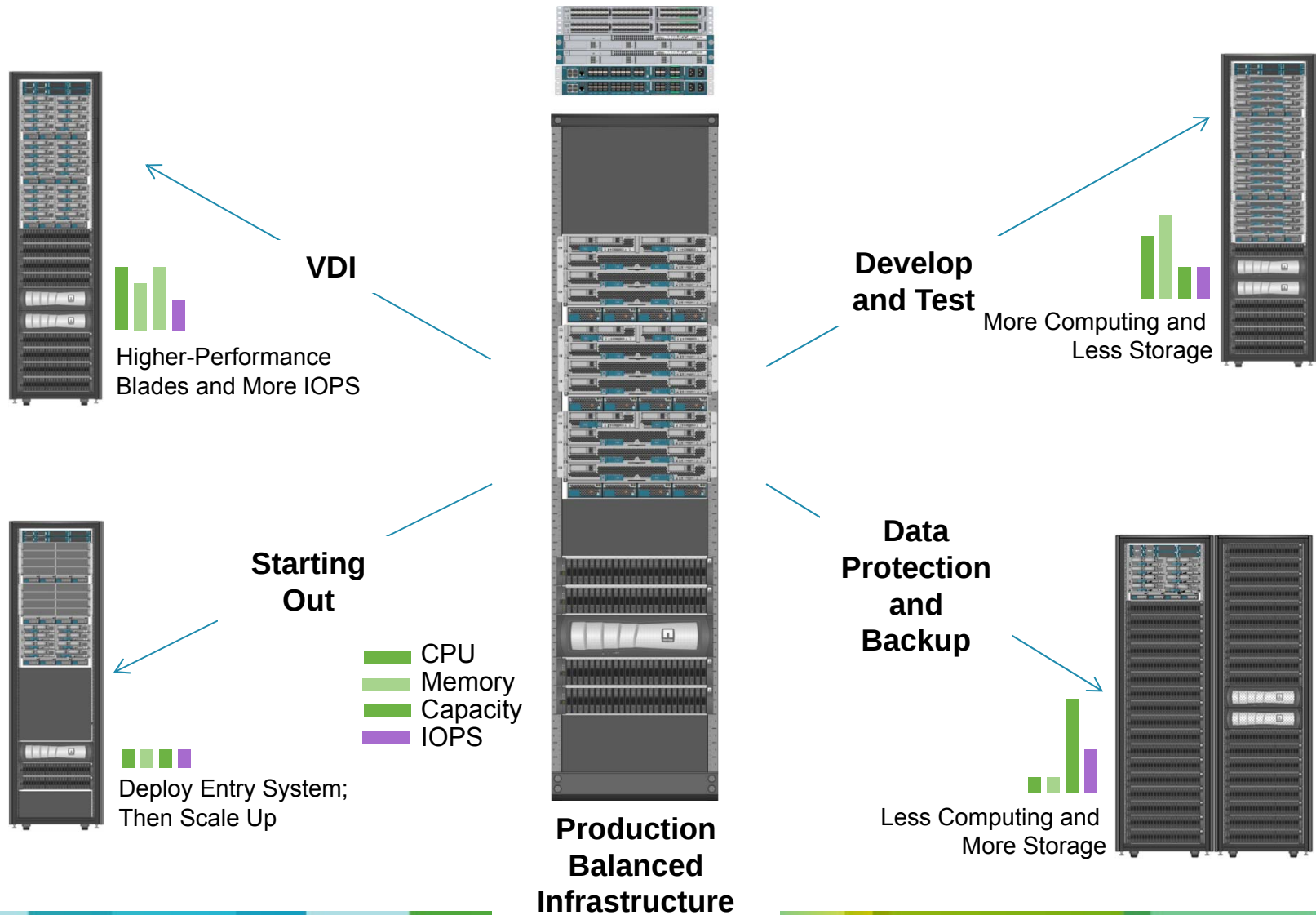
- Manages across multiple Vblock infrastructure estates
- Ensures compliance with Vblock platform configuration guidelines and enforcement of change management discipline
- Configures and provisions
 - Virtual Network access
 - Virtual Storage connectivity and capacity
 - Stateless Compute profiles
- Eliminates need for multiple server, network & storage configuration tools
- Streamlines integration requirements with 3rd party IT Service Management environments



Learn. Connect.
Collaborate. *together.*

Flexpod

Flex with Confidence Validated Infrastructure



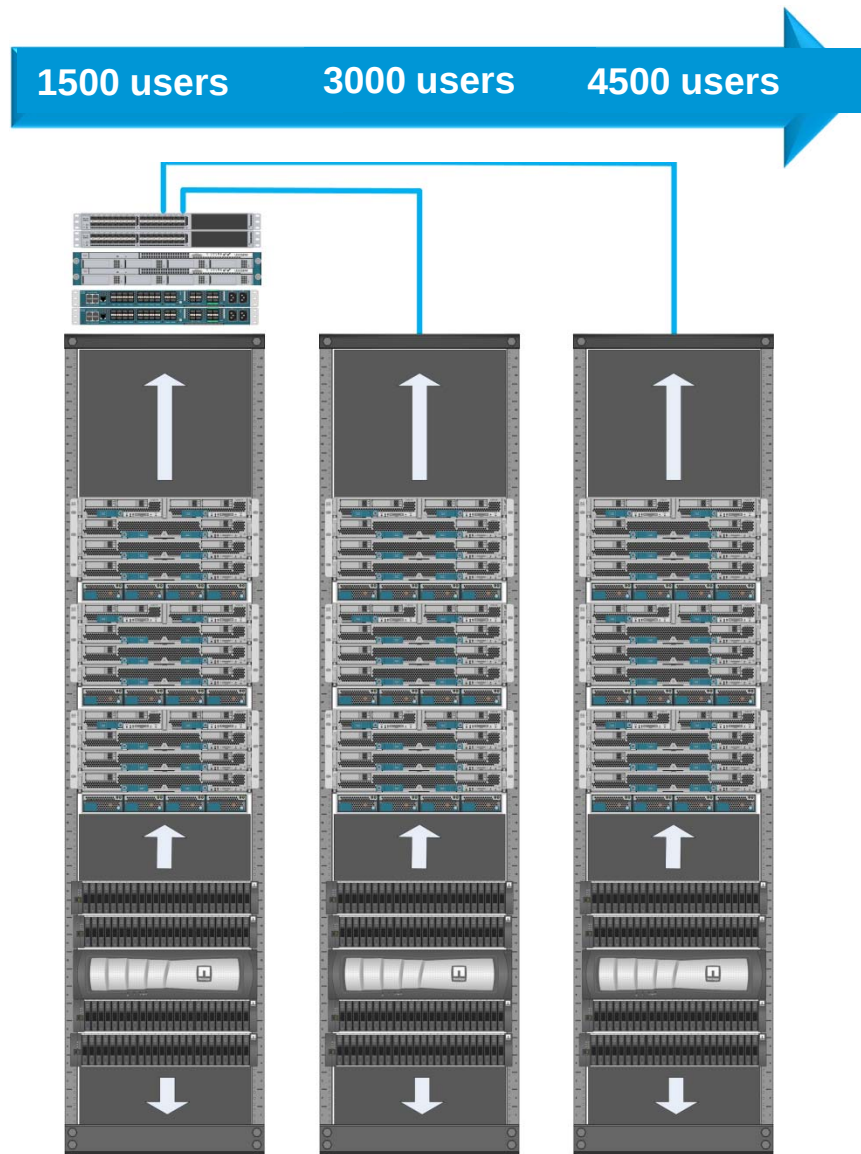
Scale Out with FlexPod™ Solution

- **Scale out with standard and proven configurations**

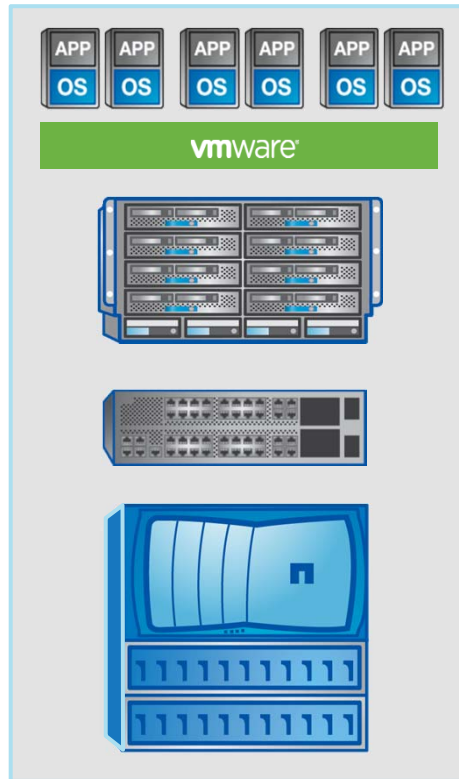
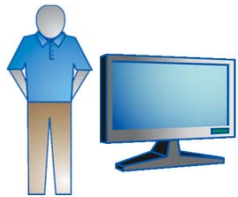
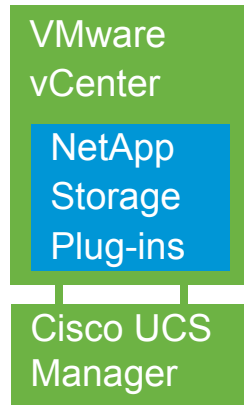
- Predictable and highly efficient
 - Capacity and performance
 - Floor space, power, and cooling
- Or scale up within a FlexPod

- **Benefits**

- Reduce effort for architecture, design, deployment, and testing
- Reduce infrastructure deployment cycle time by up to 50%
- Manage resource pools, not individual systems
 - Storage, computing, and networking



Centralized Management with FlexPod™



VMware® vCenter™

- Automated workflows
- Scalable, extensible platform

Cisco® UCS Platform

- Embedded unified management
- Integrated with VMware vCenter

NetApp OnCommand®

- Manager suite: Automate, analyze, and control
- Integration with VMware vCenter Server
- Enables server administrators to perform storage tasks

Extensible Open Management



FlexPod™ Unique Features

- **Unified Architecture**

A single unified multiprotocol storage architecture vs. multiple incompatible systems that scales up or out without any architectural changes

Pre-validated architecture with agility to add SMT and vShield Zones on top of FlexPod and run four applications simultaneously

“One wire strategy” based on 10 GbE and FCoE

- **Efficiencies**

Built-in efficiencies such as dedupe and thin-provisioning features that help lower cost and increase ROI; Rapid cloning technology deploys thousands of virtual machines within minutes

MultiStore capabilities to manage and secure enterprise storage for multi-tenant infrastructure

Additional efficiencies with Snapshot, Flash Cache and FlexClone at array level

50% storage savings guarantee for VMware

- **Investment Protection**

Integrates with current equipment – no new CAPEX

Scale with faster controllers with existing storage trays



The logo consists of the letters 'VXI' in a bold, sans-serif font. The 'V' and 'X' are a light teal color, while the 'I' is a darker teal. The letters are slightly shadowed, giving them a 3D appearance as if they are floating above the blue background.

VXI

Learn. Connect.
Collaborate. *together.*

Desktop Virtualization & VXI: *Transforming the Virtual Desktop*

Desktop Virtualization

Suite of Technologies

- Desktop Streaming
- Application Virtualization
- Terminal Services

VDI

Virtual Desktop
Infrastructure

Industry Terms for VDI:

- Gartner: "Hosted Virtual Desktop"
- IDC: "Centralized Virtual Desktop"



- End-to-End Architecture
- Supporting Rich Media /UC
- Enhanced Security
- Application Acceleration
- POE / Energy Wise



**Cisco
VXI**

Cisco Data Center Desktop Virtualisation Solution

Simplified Deployment

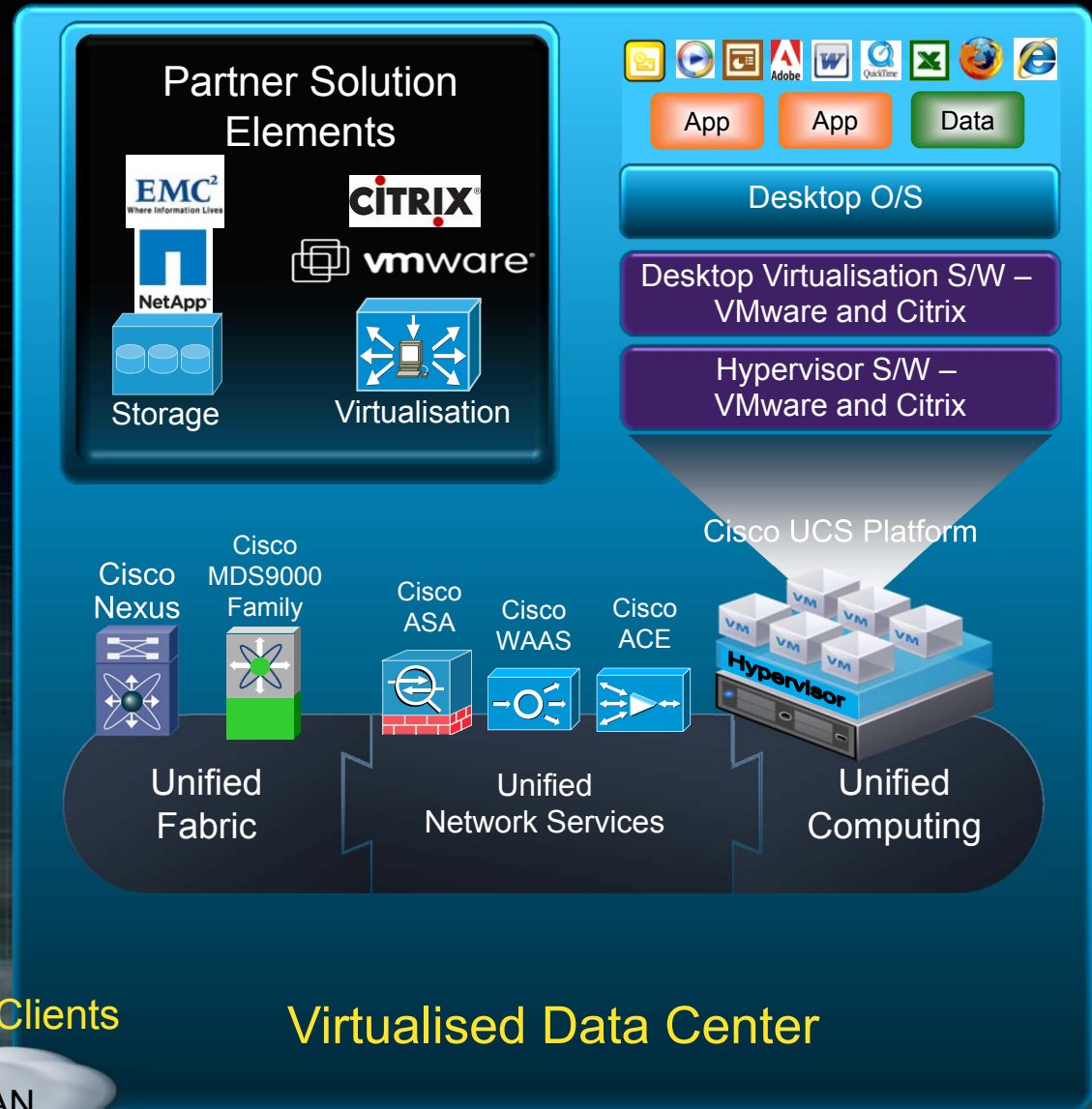
- Cisco Validated Designs:
 - Offered with both Citrix XenDesktop and VMware View
 - Support for both EMC and NetApp Storage
- UCS Service Profiles: Simplified Deployment and Scale
- Desktop Virtualisation Services

Lower Cost

- 60% greater density of virtual desktops per server blade
- 1/3 cost of networking infrastructure
- Over ~20% savings per seat vs. competitors

Improved User Experience

- Bandwidth optimisation and Rich Media acceleration

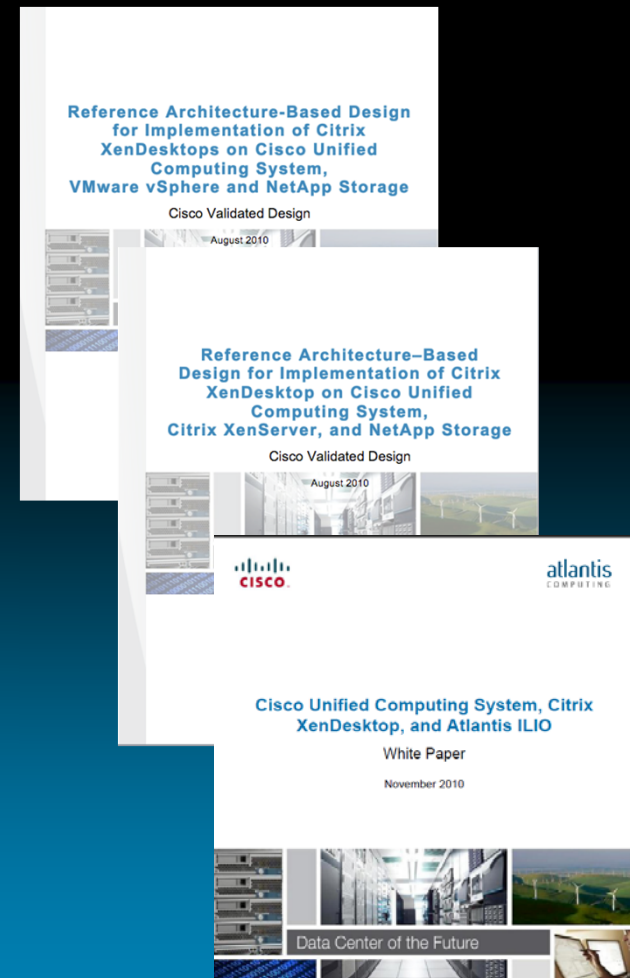


Cisco Validated Designs

New Validated Designs for Desktop Virtualization

1. Cisco UCS, Citrix XenServer and XenDesktop, and NetApp Storage
2. Cisco UCS, VMware vSphere, Citrix XenDesktop, and NetApp Storage
3. Cisco UCS, VMware vSphere, VMware View 4.5 and NetApp Storage
4. Cisco UCS, VMware vSphere, VMware View 4.5 and EMC Storage
5. Cisco UCS, Citrix XenDesktop, Atlantis ILIO and NetApp Storage

Available at Cisco.com/go/vdi



Thank you.



Follow us



facebook.com/CiscoMiddleEast



twitter.com/CiscoMiddleEast

