cisco

TOMORROW
starts here.

Cisco Connect

Cisco Data Center Portfolio Update

B-DC-30-B

Michał Skiba – Product Manager

Jacob Van Ewyk – Product Manager

House Keeping Notes – Wednesday April 16, 2014

Thank you for attending Cisco Connect Toronto 2014, here are a few housekeeping notes to ensure we all enjoy the session today.

- Please ensure your cellphones are set on silent to ensure no one is disturbed during the session
- Please hold all questions until the end of these session to ensure all material is covered

Complete Your Paper Session Evaluation – Wednesday April 16

Give us your feedback and you could win 1 of 2 fabulous prizes in a random draw.

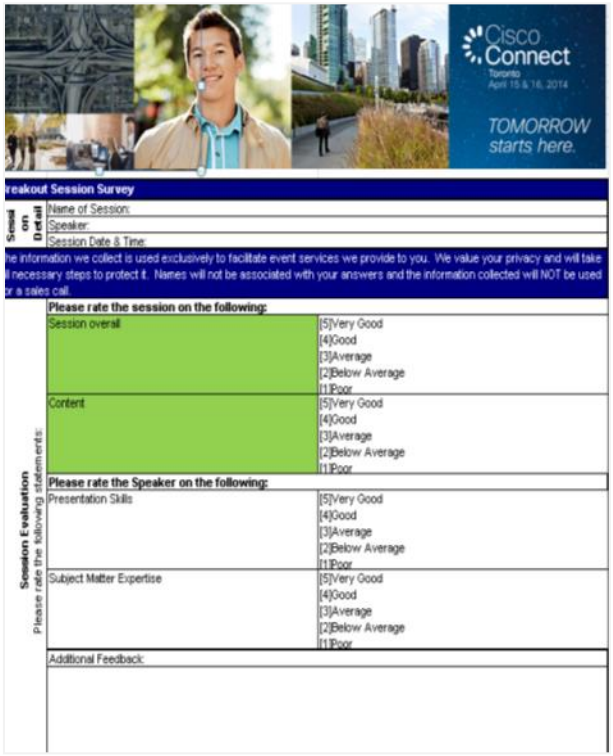
Complete and return your paper evaluation form to the Room Attendant at the end of the session.

Winners will be announced today at the end of the session. *You must be present to win!*

Please visit the Concierge desk to pick up your prize redemption slip.

plantronics

Visit them at BOOTH# 407




Data Center Trends

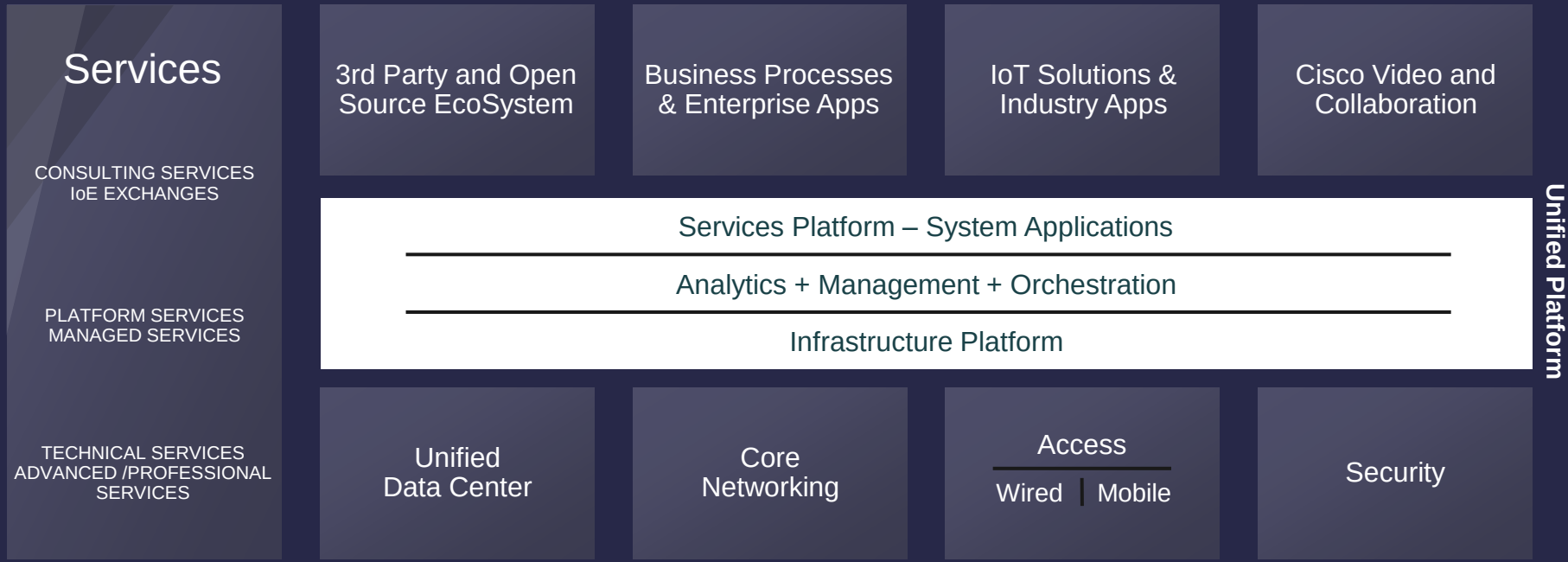
Cisco's vision and advantage

Services & Solutions

Technology

Biz Models & Capabilities

Model for Next Generation IT



Model for Next Generation IT

Expanding DC and Cloud Networking Portfolio

NEW!

OPEN
APIs/ Open Source/ Application Policy Model

HIGH PERFORMANCE FABRIC
1/10/40/100 GE

SCALABLE SECURE SEGMENTATION
VXLAN

55K+ NX-OS customers

17K+ FEX customers

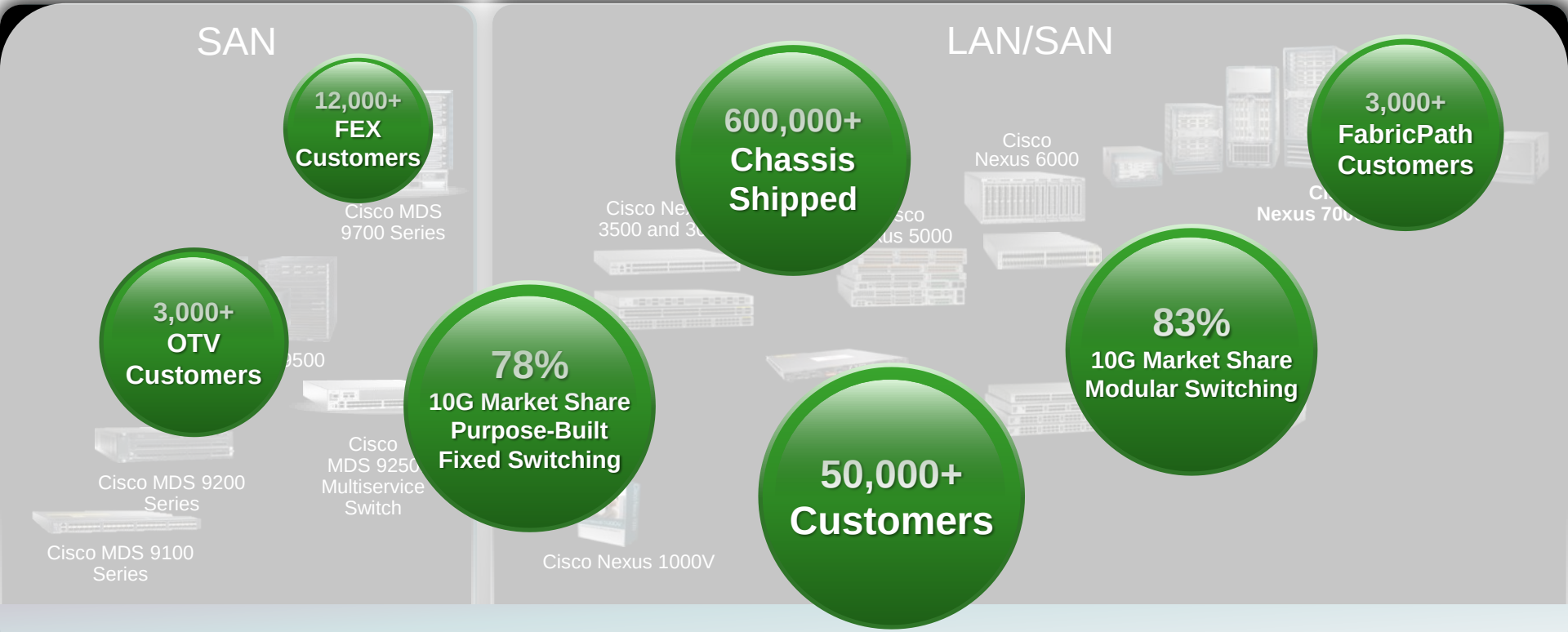
8.5K+ Nexus 1KV customers

3K+ Fabric Path customers

DELIVERING TO YOUR DATA CENTER NEEDS

Resilient, Scalable Fabric	Workload Mobility Within/ Across DCs	LAN/SAN Convergence	Operational Efficiency—P-V-C	Architectural Flexibility

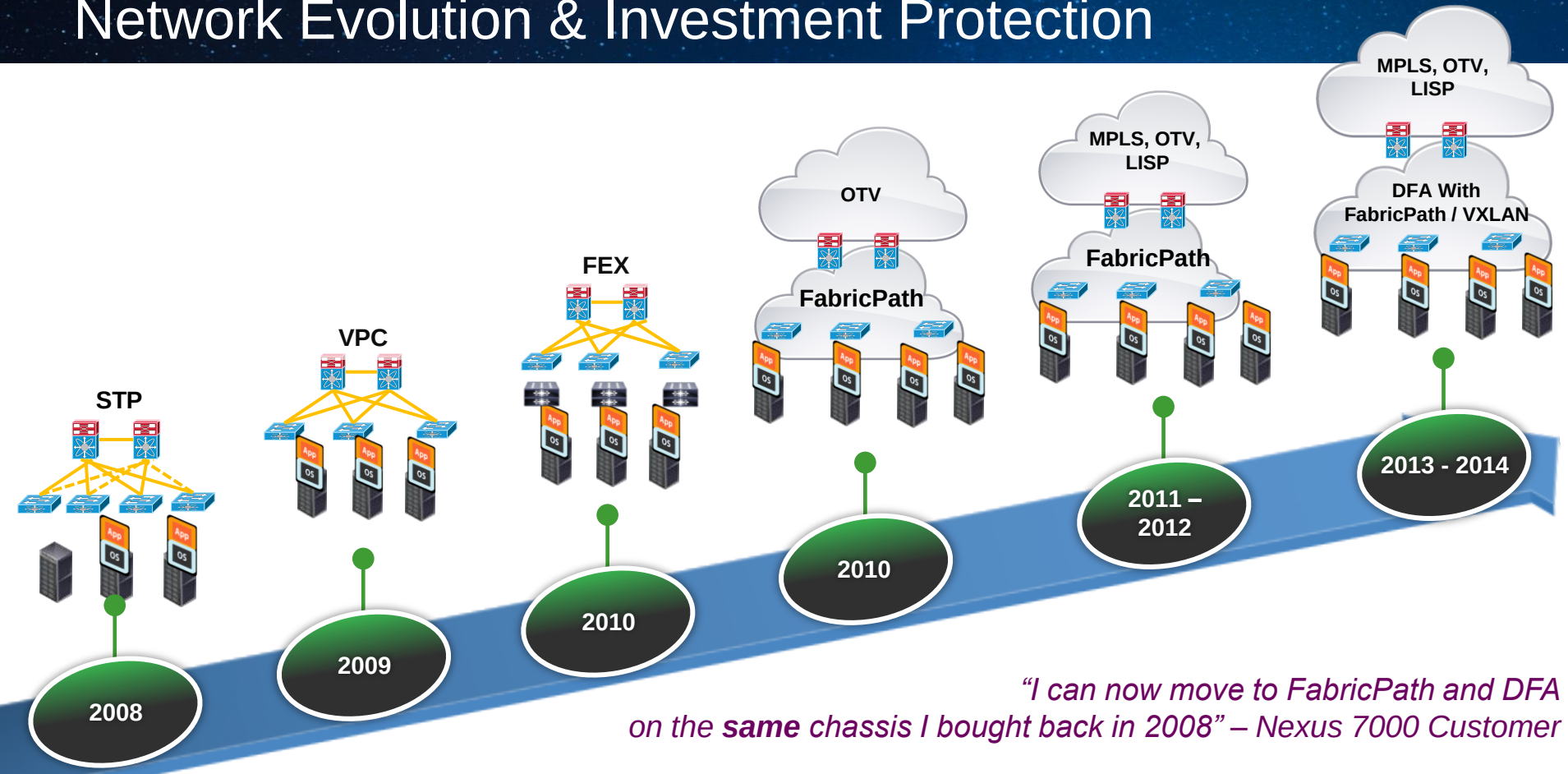
N2K – N7K Switching Portfolio Adoption
Cisco Unified Fabric Switching Innovations



CISCO NX-OS: From Hypervisor to Core CISCO DCNM: Single Pane of Management

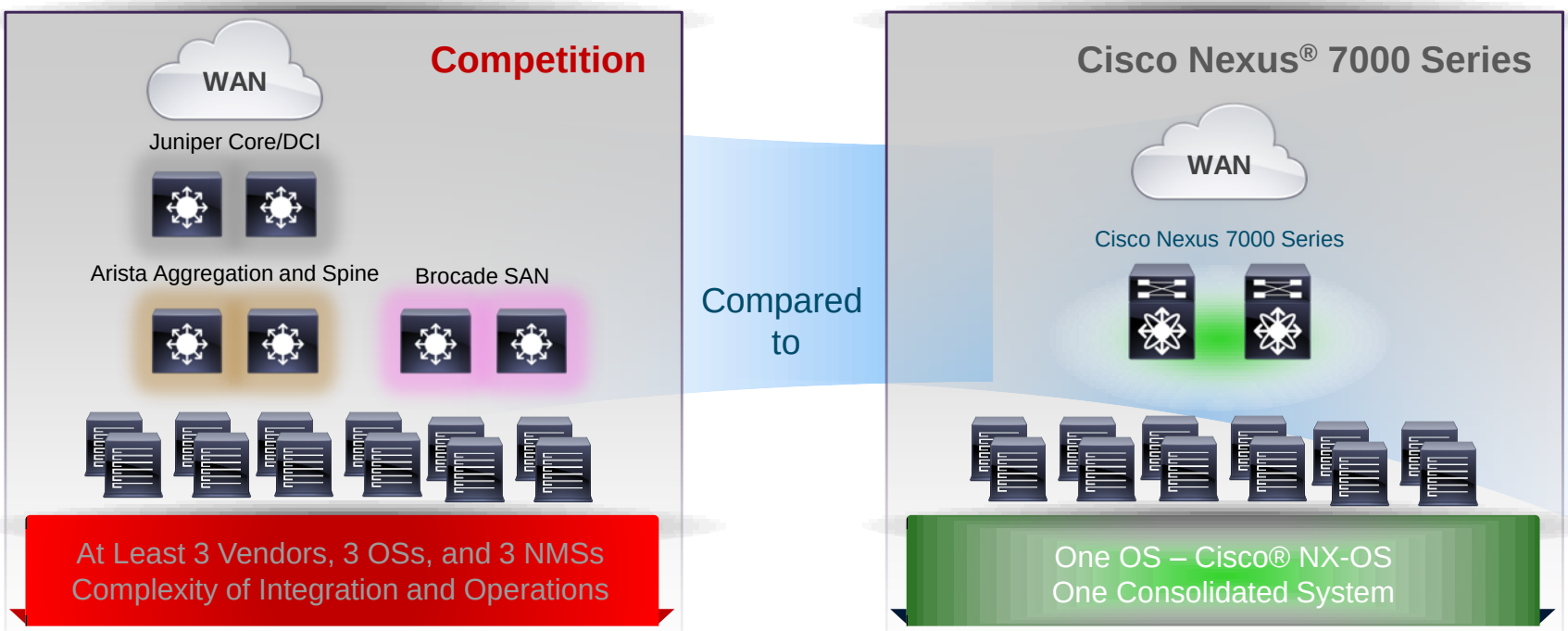

Nexus Switching Portfolio

Network Evolution & Investment Protection



*"I can now move to FabricPath and DFA on the **same** chassis I bought back in 2008" – Nexus 7000 Customer*

Nexus 7000 Series: Simplicity & Lower TCO



Lower TCO Through Simplicity: One Module, Many Roles

Extending The Cisco Nexus 7000 Series

9,000+ Customers

45,000+ Chassis

8 Million+ Ports Shipped

Cisco Nexus® 7000 Series

Cisco Nexus 7000 Series Switches

Cisco Nexus F3-Series Modules

NEW

Cisco Nexus 7700 Platform Switches

NEW

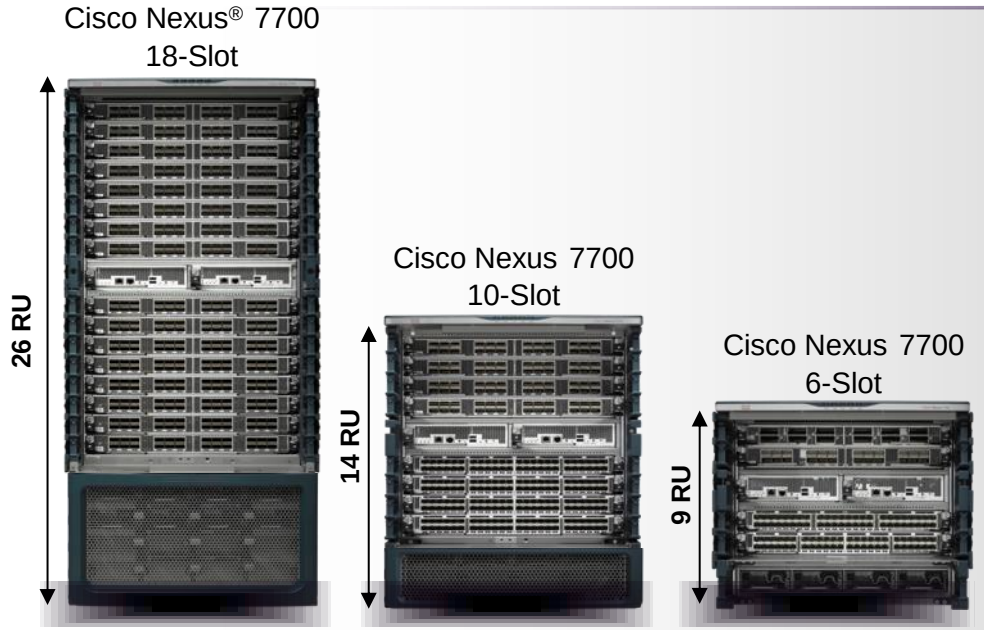
Common **Cisco® NX-OS**

Common **Fabric Architecture**

Common **Cisco's Custom Silicon**

Industry's Most Proven Data Center Switching Platform

Cisco Nexus 7700 Series Switches



	Nexus 7718	Nexus 7710	Nexus 7706
Application	Large Spine/Core	Spine/Core/Agg/DCI	Small Core/Agg/DCI
1/10G density	768	384	192
40/100G density	384/192	192/96	96/48

Fabric **BANDWIDTH**

1.32 Tbps

Smaller **FOOTPRINT**

33% more compact

Environmental **EFFICIENCY**

True front-to-back airflow

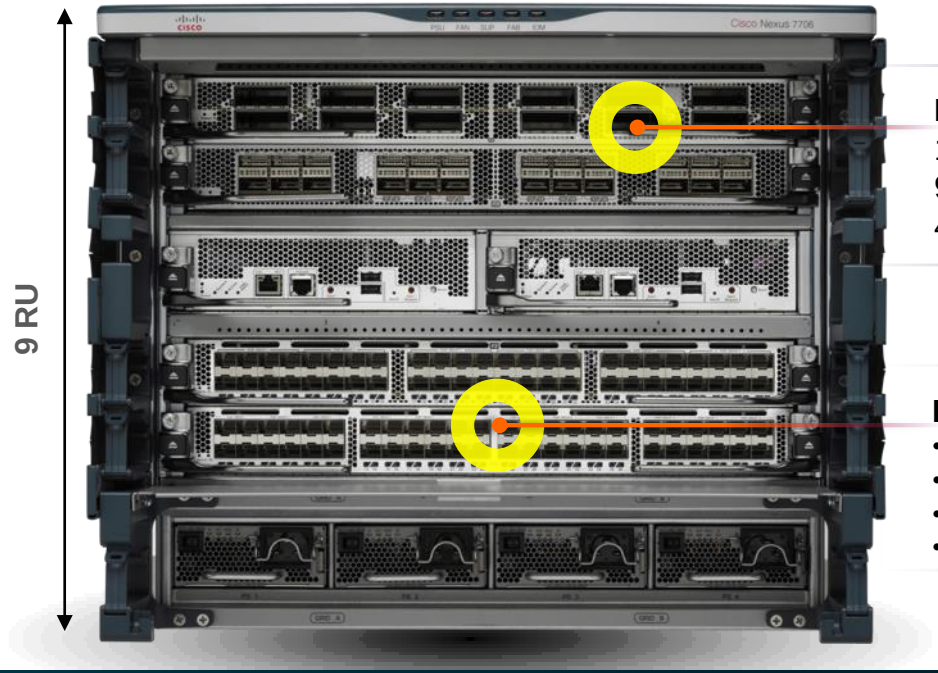
Cisco Nexus 7706 & F3 Modules

Front-to-Back Airflow

2 Supervisors

4 I/O Modules

4 3-kW Power Supplies

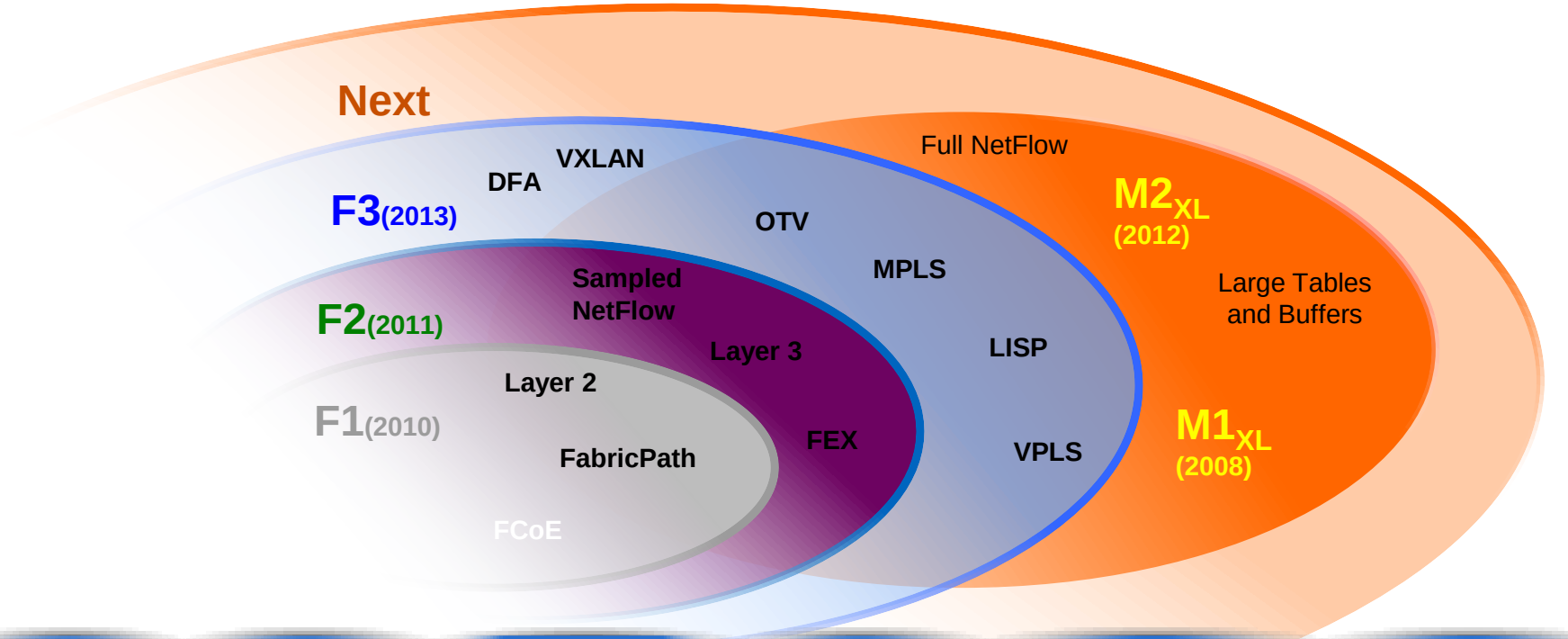


Maximum Density
192 x 10-Gbps Ports or
96 x 40-Gbps Ports or
48 x 100-Gbps Ports

Example of Configuration:
- Redundant Sups
- Slot 1: F3-40 (**24 40G Ports**)
- Slot 2 and 3: F3-10 (**96 10G Ports**)
- Slot 4: Ready for **Future Growth**

✓ VDC	✓ Scalability	✓ High Availability	✓ ISSU
✓ VPC	✓ FEX	✓ FabricPath	✓ DFA
✓ MPLS	✓ OTV/LISP	✓ VXLAN	✓ FCoE

Cisco Nexus I/O Module Evolution

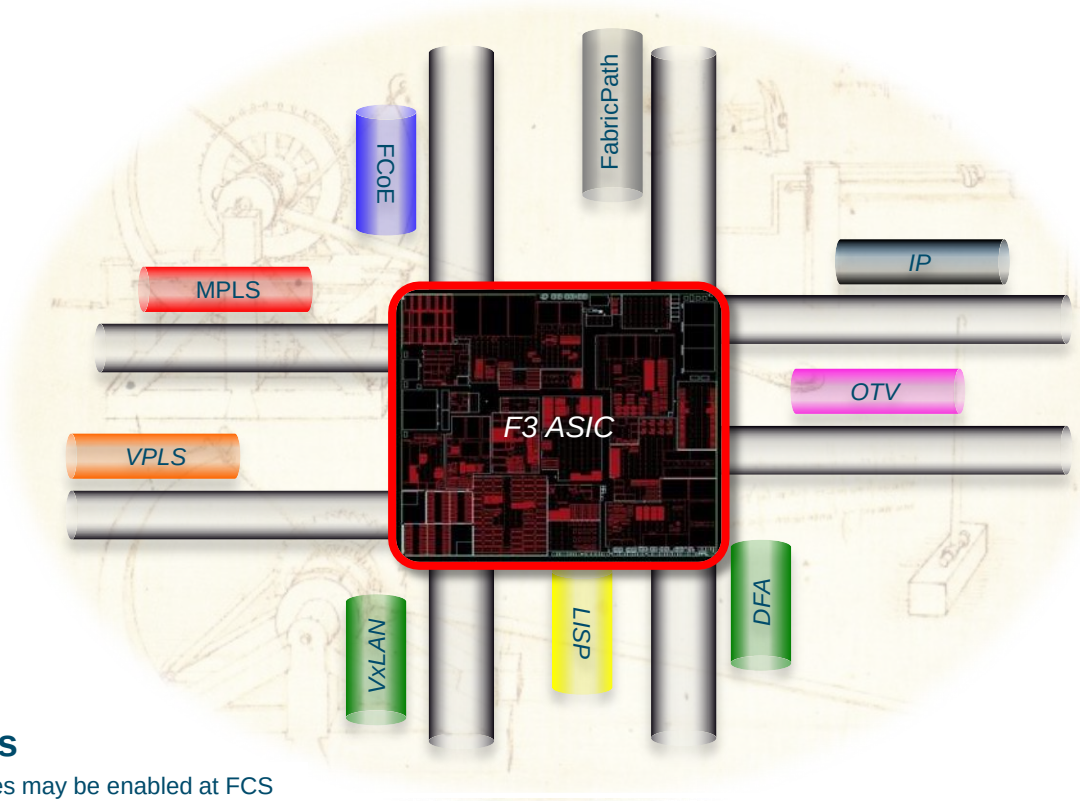


- Cisco Catalyst® Heritage
- Layer 2 Multipath
- FCoE
- Adding Layer 3
- 10-Gbps Highest Scale
- Introducing 40 and 100 Gbps
- 40 and 100 Gbps at Scale
- M-Series Feature Parity
- Converged Architecture and Scale

F3 Modules: Flexibility & Simplification

Extensive Packet Manipulation* :

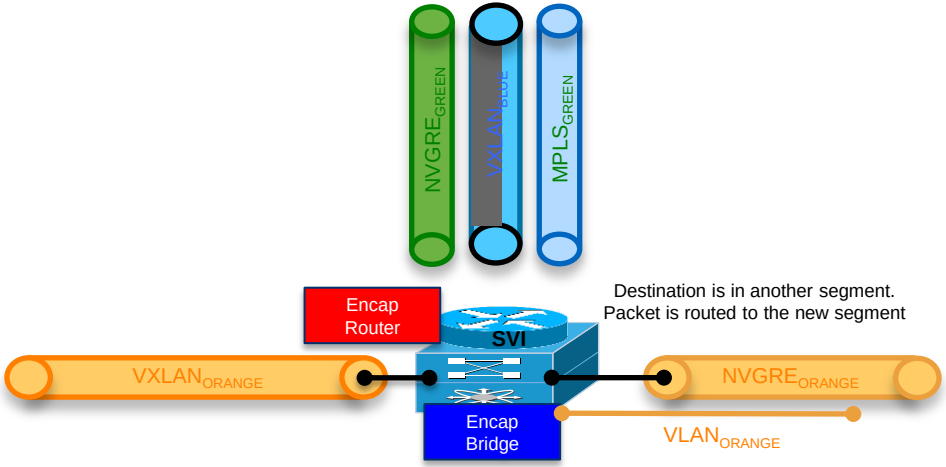
- FabricPath and DFA Support
  - Next-Gen Multi-Tenant Fabrics
- OTV, LISP and VxLAN
  - Hardware Overlays for Mobility and Virtualization
- MPLS (Layer 2 and Layer 3 VPNs)
  - High Performance MPLS deployments
- FCoE
  - Converged Network Infrastructure
- Classic Layer2 and Layer3
  - **Innovation but also core functionalities**



* Not all features may be enabled at FCS

F3 Module: A Multi-Encapsulation Gateway

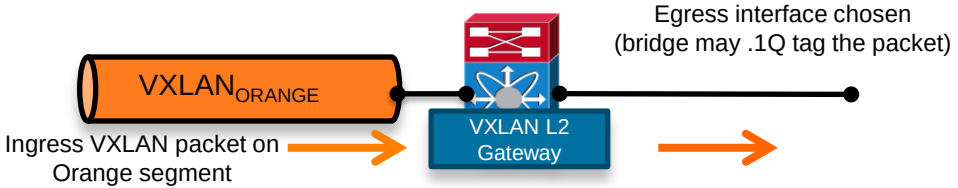
- Multi-encapsulation Gateway:
  - VXLAN, NVGRE, MPLS, LISP, VLAN, OTV
- Bridging (L2 Gateway)
- Routing (L3 Gateway)



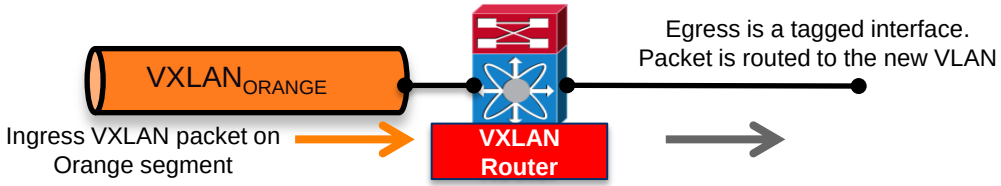
- Multiple TEPs in independent VRFs
- Nesting of IP overlays into MPLS VPNs
- Available across the product line

VxLAN Support

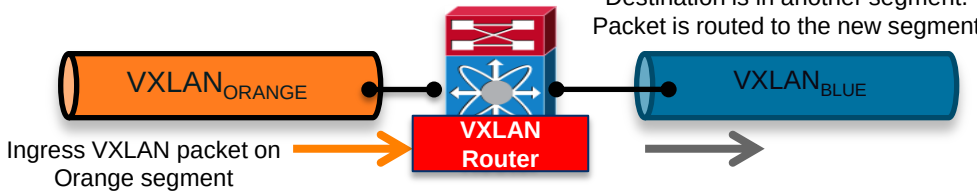
VXLAN to VLAN Bridging
(L2 Gateway)



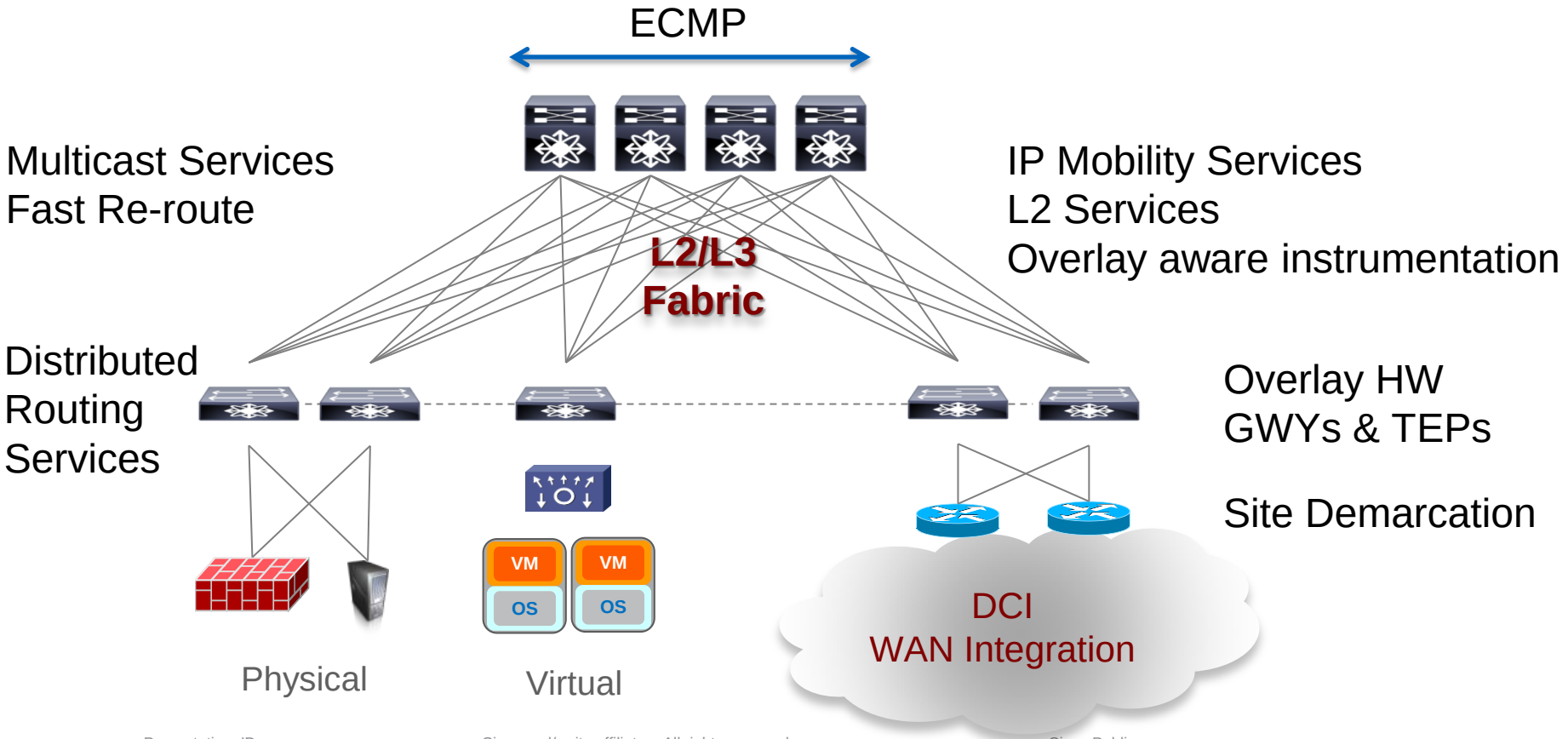
VXLAN to VLAN Routing
(L3 Gateway)



VXLAN to VXLAN Routing
(L3 Gateway)



Fabric Relevance to a Hybrid Overlay



Cisco Nexus 5600 & 6000

40G Innovations

Nexus 6000

High 40G Density
Low Latency
100G Uplinks

10G Innovations

Nexus 5600

High 10G Density
Low Latency
40G Uplinks

Nexus 5500

Flexibility
10G Uplinks

Nexus 5010/ 5020

Highest Density

Fabric Innovations | Programmability

VXLAN | Network Visibility

LAN/SAN Convergence | FabricPath

FEX Architecture

- **20K+** Customers Over 5 Years
- **25M+** Ports Shipped
- **125K+** Chassis Shipped
- **75%+** Market Share*

CUSTOMER VALUE

CISCO INNOVATION

Nexus 5600: Next Generation Nexus 5500

Nexus 5600

Nexus 5500

VXLAN – Bridging & Routing

Dynamic Fabric Automation

40G Uplinks

Programmability

Network Visibility

Lower End-to-end Latency

Line Rate L3

Bigger buffers and tables

Unified Ports

FEX Architecture

FabricPath

FCoE

- **75%** Market Share*
- **25 Million** Ports Shipped
- **20,000+** Customers
- **125K+** Chassis till date

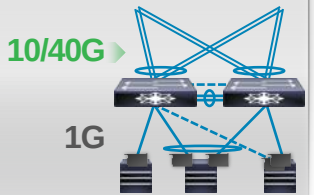
Next Generation Nexus 5K

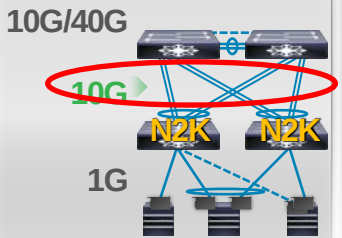
Nexus 5672UP & 56128P

Nexus 5600 & 6000 Use Cases

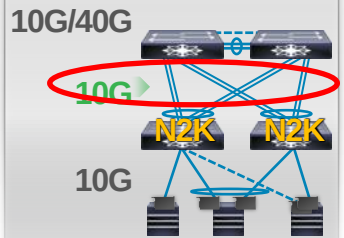
	10G Use Cases			40G Use Cases
	10G ToR	1G FEX Agg	10G FEX Agg (10G Uplink)	10G FEX Agg (40G Uplink)
Server Connectivity	10G	1G	10G	10G
FEX to Parent	n/a	10G	10G	40G
Parent Uplink to Next Layer	n/a	10G/40G	10G/40G	40G/100G

FEX

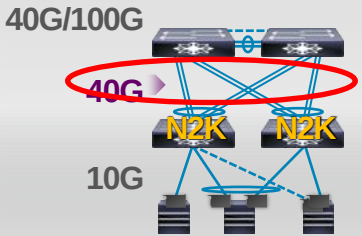




N2K: 2248



N2K: 2232



N2K: 2248PQ

SOLUTION
Nexus 5500, 5600

SOLUTION
Nexus 6000

Nexus 2000

Indicates Lead Product

2014

2013

2012

100M/1G FEX

1/10G FEX

N2348UP
48 port 1/10G UP
6 port QSFP

N2348T
48 port 1/10G BaseT
6 port QSFP

N2332T
32 port 1/10G BaseT
8p SFP+

N2348FC
48 port 16G FC
6p QSFP

N2K-C2248PQ
48 port 1/10G FEX SFP+ 4xQSFP

N2K-C2248TP-E-1GE
Expanded Memory FEX

N2K-C2232TM-E-10GE
RJ45 downlinks

Blade FEX

B22 FEX
1/10G FEX for
HP Blade Servers
FTS Blade servers
Dell Blade Servers
IBM Blade Servers

Indicates Planning

Indicates Radar

40G BiDi Optics

Technology

12-fiber MPO **Duplex LC**

Value Proposition

- Utilize existing duplex fiber commonly deployed in 10G environment today
- Reduce 40G transition cost by eliminating the need to upgrade fiber plant
- 75% average savings over parallel fiber for new deployments

Support

Platform	Support Release and Timeframe
Nexus 7000 M2 40G Module	**6.2(6)** Q4CY13
Nexus 7000/7700 F3 40G Module	**6.2(6)** Q4CY13

Unified Computing System (UCS)

Cisco Unified Computing System

Fastest Growing Product in the Market

30,000+ UNIQUE UCS CUSTOMERS [2]

#2 WW market share in x86 blades [1]

$2B + UCS Annualized Revenue Run Rate [2]

Top 5 Server Vendor [1]

More than **75%** of all **Fortune 500** customers have invested in UCS

3,600+ UCS CHANNEL PARTNERS

90 world record performance benchmarks to date

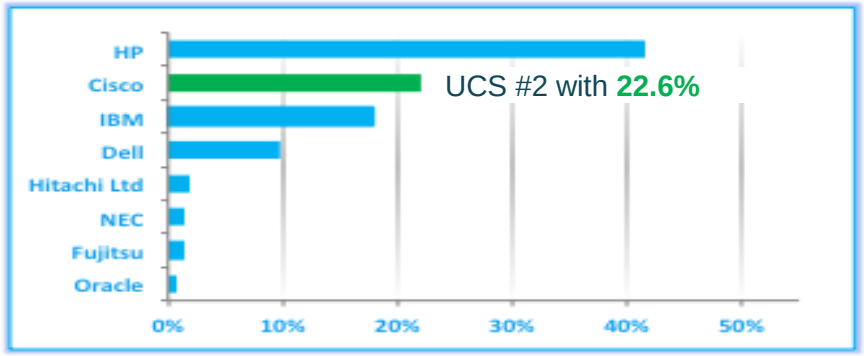
Source: [1] IDC Worldwide Quarterly Server Tracker, Q4 2013, February 2014, Revenue Share

Source: [2] As of Cisco Q3FY13 earnings results

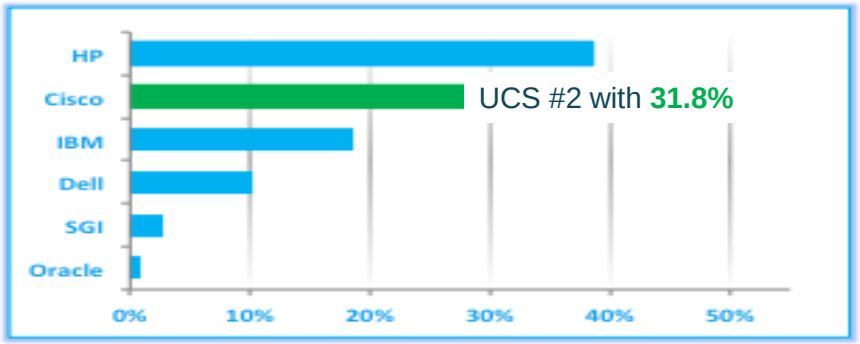
Customers Have Spoken

X86 Server Blade Market Share, Q4CY13[1]

Worldwide



Americas



Source: [1] IDC Worldwide Quarterly Server Tracker, Q4 2013, February 2014, Revenue Share

- **UCS momentum is fueled by game-changing innovation; Cisco is quickly passing established players**
- **UCS x86 Blade servers revenue grew 46% Y/Y in Q4CY13[1]**

UCS #2 in Only Four Years

- **Maintained #2 in Americas (31.8%), #2 in N. America (31.8%) and #2 in the US (32.1%)[1]**
- **Maintained #2 worldwide in x86 Blades with 22.6%**

Cisco Unified Computing System

A Differentiated/Revolutionary Approach

Simpler Architecture

- Networking with fewer components
- Lower cost and easier scaling
- Fewer Management Touch Points

Higher Performance

- Brings out the best of x86 architecture
- Optimized Resource Utilization for Compute, Networking and Management

Faster, More Flexible

- Automated Deployment / Provisioning
- Unification leads to reduced Complexity
- Management via a single interface

No Compromises

- No Trade-offs for Function
- Enhanced Design Capability
- Designed for the Future, Today
- Better TCO / ROI

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

Legacy Infrastructure and Management

Legacy Infrastructure Designs

- Infrastructures designed separately – not as a unified system
- Marketed as “converged”, but really management layers on top of multiple infrastructure silos
- Sprawling patchwork of tools, agents and management points

Complexity Drives Up Management Costs

- Rigid models to upgrade and maintain system-level designs
- Multiple tools means multiple points of configuration
- Brittle design with complex inter-dependencies

Eliminating Silos – Fabric Centric Architecture – Single Point of Mgmt.

CISCO UCS
UNIFIED by DESIGN

Traditional Element Configuration

Storage SME | Server SME | Network SME

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

- 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

Compute, LAN, SAN Seamlessly Through Software

- RAID settings
- Disk scrub actions

UCS Service Profiles
Configuration Portability

SIM Card

Identity for a Phone

Service Profile

Identity for a Server

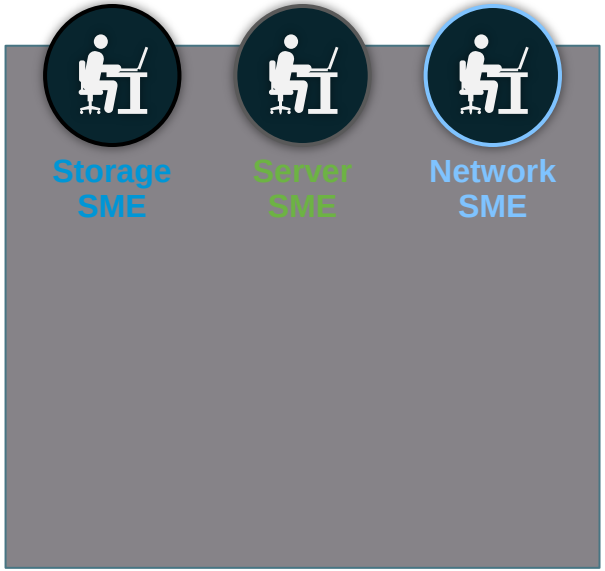
UCS Service Profile

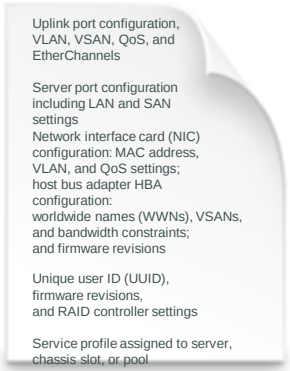
Unified Device Management

- Network Policy
- Storage Policy
- Server Policy

UCS: Embedded Automation

Integrated, Policy-Based Infrastructure Management





1. Subject Matter Expert Define Policies
2. Policies Used to Create Service Profile Templates
3. Service Profile Templates Create Service Profiles
4. Associating Service Profiles with Hardware Configures Servers Automatically

UCS: Programmable Infrastructure

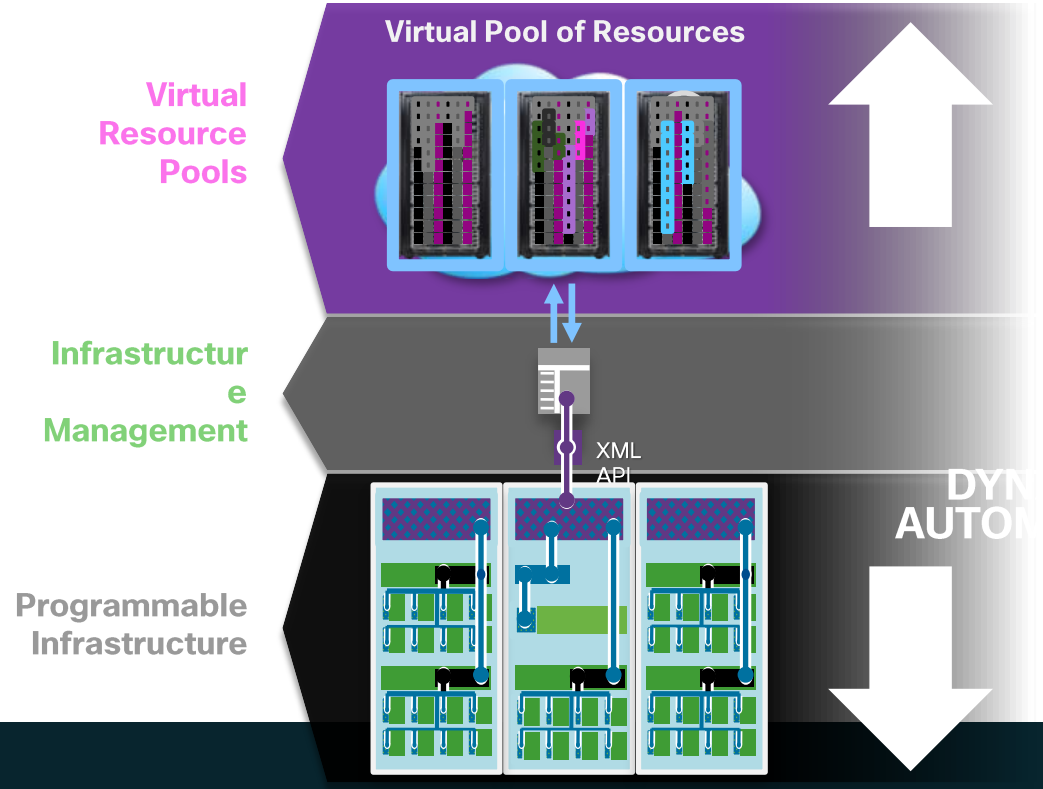
Extends Abstraction Beyond the Hypervisor to System Elements

Infrastructure Automation Through API and Policy

Truly Elastic

Fully Orchestrated

Workload Defined

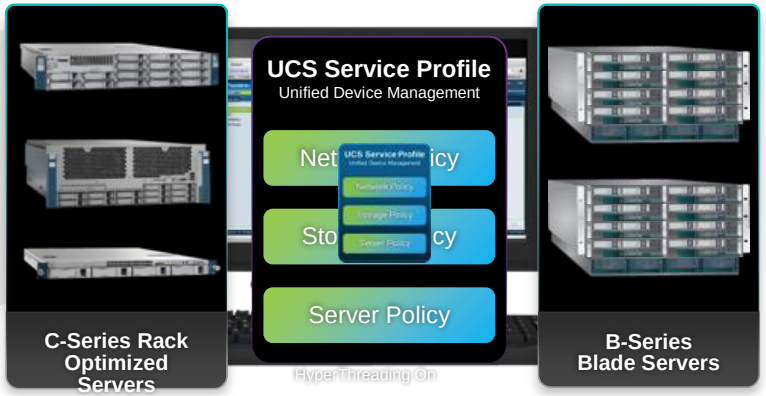


Unified Management

Blade and Rack Servers Managed a Cohesive Resource Pool

UNIFIED MANAGEMENT
A SINGLE UNIFIED SYSTEM
FOR BLADE AND RACK
SERVERS

UCS Manager



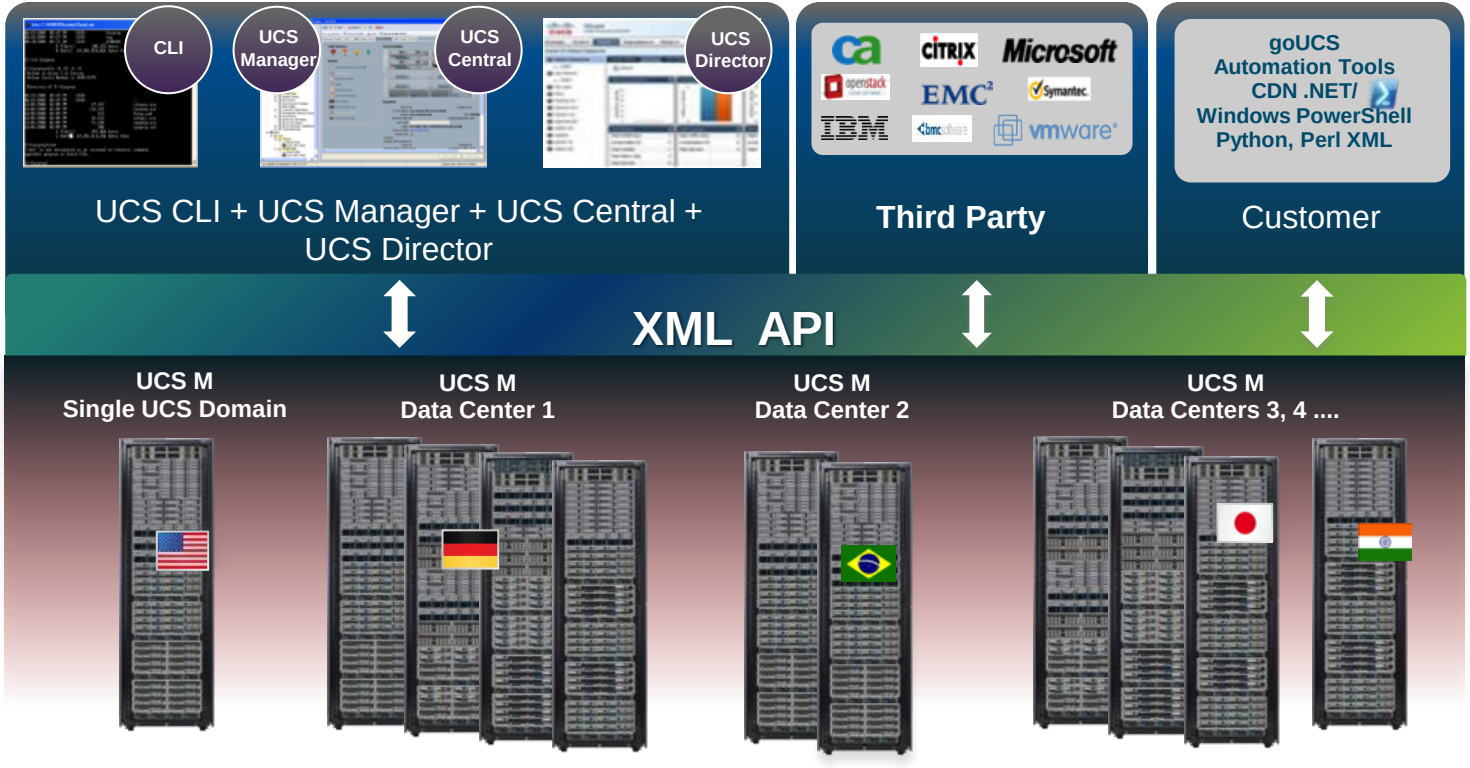
A Major Market Transformation in Unified Server Management

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

Add Capacity Without Complexity

UCS Is Redefining Server Management

10,000 UCS SERVERS — Monitor and Manage Seamlessly



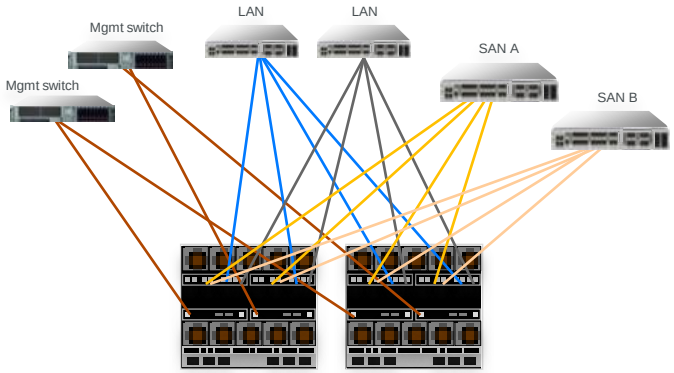
- Blade and Rack Servers in the same domain – Form Factor Agnostic
- Standards-based XML API presents bidirectional single interface to entire solution
- UCS offers the customers the broadest choice of Cisco or 3rd party management tools

Simpler Architecture

Fewer Management Touch Points

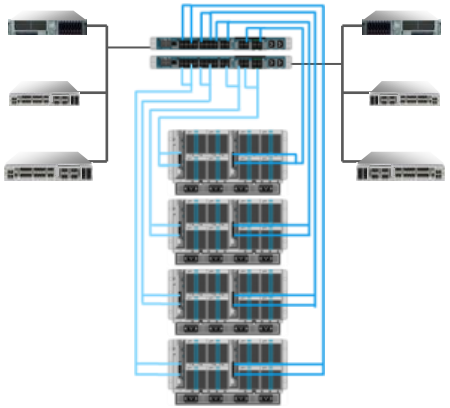
32 blades – 2 x HP c7000

Fabric Interconnects	0
Intra Chassis Switches	4
Chassis Mgmt Module	4
Total Mgmt Points	**8**



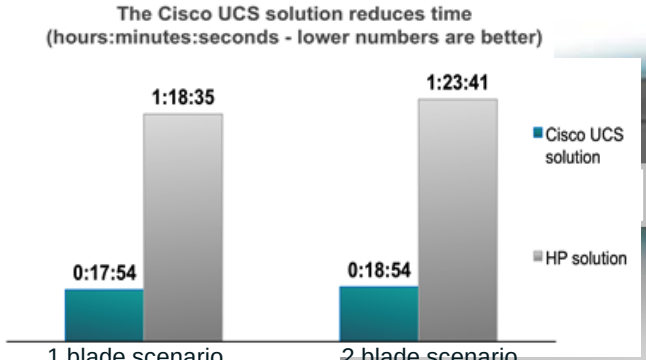
32 blades – 4 x Cisco UCS

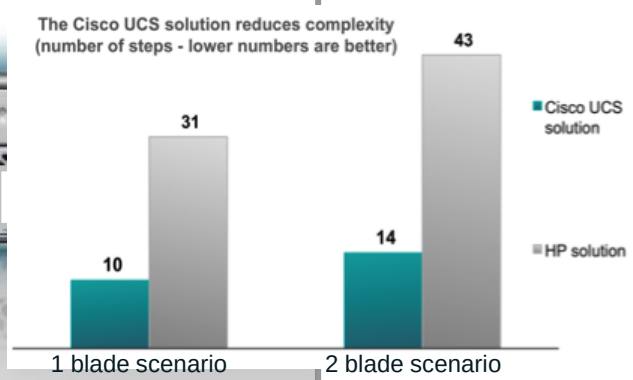
Fabric Interconnects	2
Intra Chassis Switches	0
Chassis Mgmt Module	0
Total Mgmt Points	**1**



Faster, More Flexible - UCS Fast Automated Deployment

Add blades 77% faster





with 67% fewer steps

Cisco® UCS B200 M3 Blade Servers vs. HP BL460c Gen8 Servers

Read the White Paper
http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns944/ucs77_faster_v_hp_for_blade_deployment.pdf

Watch the Video
http://www.youtube.com/watch?v=bSSQfNt7SFk

Cisco UCS - Model-based Management with Faster Deployment
More Automation - Fewer Touches Reduces Errors

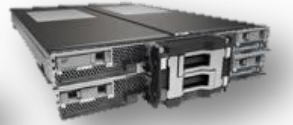
Reducing Physical Infrastructure: Servers

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

	Scale Out	Enterprise Performance	Intensive/Mission Critical
Rack	 UCS C24 M3 Entry, Expandable Rack Server for Storage Intensive Workloads	 UCS C240 M3 Ideal Platform for Big Data, ERP, and Database Applications	 UCS C460 M4 Mission-Critical, 4-Socket Server for Large, CPU-Intensive Applications
	 UCS C22 M3 Entry Rack Server for Distributed and Web Infrastructure Applications	 UCS C220 M3 Versatile, General Purpose Enterprise Infrastructure, and Application Server	
Blade	 UCS B22 M3 Entry Blade Server for IT Infrastructure and Web Applications	 UCS B200 M3 Optimal Choice for VDI, Private Cloud, or Dense Virtualization/ Consolidation Workloads	 UCS B420 M3 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 UCS Captures 6 World-Record Performance Results with Intel® Xeon® processor E7 v2 Family

#1 Cisco UCS Server E7- v2 Benchmarks

Two-socket Two-node Record VMware® VMmark® 2.5.1 19.18@16 Tiles[1]	B260 M4
Two-socket Record SPECint_rate_base2006 1170 base score	B260 M4
Two-Socket Record SPECfp_rate_base2006 865 base score	B260 M4
Two-Socket Record SPECompG_base2012 8.91 base score, 9.66 peak	B260 M4
Four-socket Record SPECint_rate_base2006 2320 base score	C460 M4
Four-Socket Record SPECompG_base2012 17.9 base score	C460 M4

[1] http://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-b260-m4-blade-server/vmmark_b260m4_140212.pdf

Based on results posted at www.spec.org, www.vmmark.com and www.cisco.com/go/UCSatWork as of 02/18/2014

Cisco UCS Performance: 90 Records

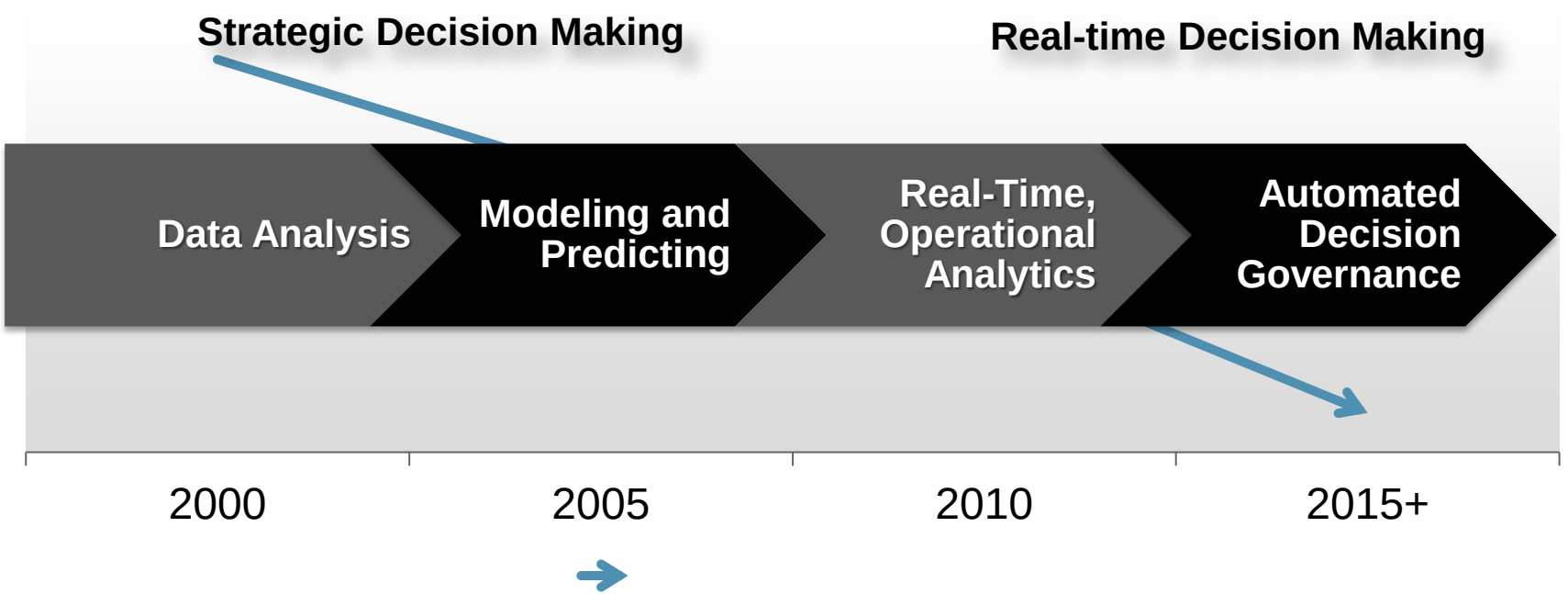
A History of World Record Performance on Industry Standard Benchmarks

Best CPU Performance	SPECfp_rate_base 2006 X86 2-socket B200 M1	SPECfp_rate_base 2006 2-socke C260 M2	SPECint_rate_base 2006 X86 2-socket B200 M2	SPECint_rate_base2 006 X86 4-socket C460 M1	SPECfp_base2 006 X86 2-socket C220 M3	SPECfp_rate_base20 06 X86 2-socket B200 M3	**SPECint®_rate_base 2006 2-socket B260 M4**	
	SPECint_rate_base 2006 X86 2-socket B200 M2	SPECfp_rate_base 2006 X86 2-socket B200 M2	SPECint_rate 2006 X86 4-socket C460 M2	SPECfp_rate_base 2006 X86 2-socket C220 M3	SPECint_rate_base 2006 X86 2-socket C220 M3	SPECint®_base 2006 X86 2-socket C220M3	**SPECfp_rate_base 2006 2-socket B260 M4**	
	SPECint_rate_base 2006 X86 2-socket B200 M1	SPECint_rate_base 2006 2-socket C260 M2	SPECfp_rate_base 2006 X86 4-socket C460 M1	SPECint_rate_base 2006 X86 2-socket C220 M3	SPECfp_rate_base20 06 X86 4-socket C420 M3	SPECfp_rate_base20 06 X86 2-socket C220 M3	**SPECint®_rate_base 2006 4-socket C460 M4**	
Best Virtualization & Cloud Performance	VMmark 1.x 2-socket B200 M1	VMmark 1.x 2-socket B250 M2	VMmark 2.1 4-socket C460 M2	VMmark 2.1 Overall C460 M2	VMmark 2.1 Two-node 2-socket B200 M3	VMware View Planner 2-socket B200 M3		
	VMmark 1.x Overall C460 M1	VMmark 1.x 2 -socket Blade B230 M1	VMmark 1.x Overall C460 M1	VMmark 2.1 Two-node 4-socket C460 M2	VMmark 2.1 Eight-node 2-socket B200 M3	**VMmark 2.5.1 Two-node 2-socket B260 M4**		
	VMmark 1.x Blade Server B440 M1	VMmark 1.x 2-socket B200 M1	VMmark 2.1 2-socket Blade B200 M2	VMmark 2.0 Overall B200 M2	VMmark 2.5 Two-node 2-socket C240 M3			
Best Database Performance	TPC-H 1000GB Microsoft SQL Server C460 M2	TPC-C Oracle DB 11g & OEL C250 M2	TPC-H 100GB VectorWise C250 M2	TPC-H 300GB VectorWise C250 M2	TPC-C Oracle 11g C240 M3	TPC-H 3000GB Price/Performance X86 Single- node C420 M3		
Best Enterprise Application Performance	Oracle E-Business Suite Ex-large Model Payroll Batch B200 M2	Oracle E-Business Suite Medium Model Order-to-Cash B200 M2	Oracle E-Business Suite Xtra Large Model Payroll Batch B230 M2	Oracle E-Business Suite Xtra Large Model Payroll B200 M3	Oracle E-Business Suite XL Model Payroll B200 M3	Oracle E-Business Suite Large Model Order-To-Cash B200 M3	Oracle E-Business Suite Large Model Order-To-Cash B200 M3	
	Oracle E-Business Suite Medium Model Payroll Batch B200 M2	Oracle E-Business Suite Medium Model Payroll Batch B200 M2	Oracle E-Business Suite Large Model Order-to-Cash B200 M3	SPECjEnterprise2010 Overall B440 M1	SPECjEnteprise2010 2-node B440 M2	Oracle E-Business Suite XL Model Payroll B200 M3	Oracle E-Business Suite XL model payroll B200 M3	
Best Enterprise Middleware Performance	SPECjAppServer 2004 1-node 2-socket C250 M2	SPECjbb2005 X86 2-socket B200 M2	SPECjbb2005 X86 4-socket C460 M1	SPECjAppServer2004 2-node B230 M1	SPECjbb2005 X86 2-socket B230 M1	SPECjbb2005 X86 2-socket C220 M3	SPECjbb2005 X86 2-socket C220 M3	SPECjbb2013 MultiJVM X86 2-socket C240 M3
	SPECjbb2005 X86 2-socket B230 M1	SPECjbb2005 2-socket C260 M2	SPECjbb2005 2-socket B230 M2	SPECjbb2005 2-socket B230 M2	SPECjbb2005 4-socket B440 M2	SPECjbb2013 X86 2-socket C220 M3	SPECjbb2013 MultiJVM X86 2-socket B200 M3	
Best HPC Performance	SPECompMbase 2001 2-socket B200 M2	SPECompLbase 2001 2-socket B200 M2	LinPack 2-socket B200 M2	LS-Dyna 4-socket C460 M1	SPECompMbase 2001 4-socket C460 M1	SPECompMbase 2001 4-socket C460 M1	SPECompMbase 2001 2-socket C240 M3	SPEComp® G_base2012 2-socket C240 M3	**SPEComp® G_base2012 2-socket B260 M4**
	SPECompMbase 2001 2-socket B200 M2	SPECompLbase 2001 2-socket B200 M2	SPECompMbase 2001 2-socket B230 M2	SPECompLbase 2001 2-socket B230 M2	SPECompMbase 2001 4-socket C460 M2	SPECompMbase 2001 4-socket C460 M2	SPECompLbase 2001 2-socket C220 M3	**SPEComp® G_base2012 4-socket C460 M4**	

Data Acceleration

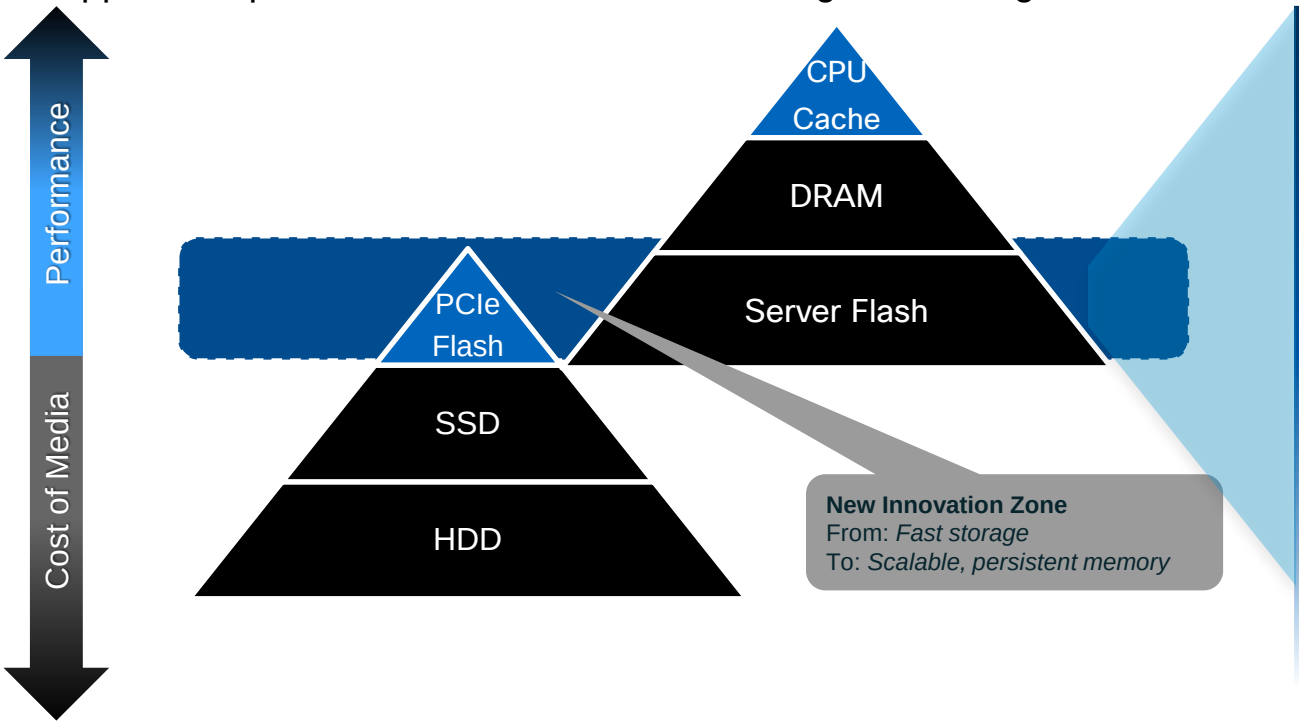
Decision Time Has Shifted

From Days & Hours to Minutes & Seconds to Real-time



Bringing Data Acceleration to the Computing Domain

Application performance acceleration is moving from storage to server tier with solid-state memory



UCS + Cisco UCS Invicta

- Brings scalable solid-state acceleration closer to the application
- Drives greater application performance for business workloads: Big Data, database, etc.
- Seamlessly fits into UCS eco-systems

Cisco UCS Invicta Series

UCS Invicta Scaling System

First release:

Up to 1.3 Million IOPS
Up to 13.2 GB/s Bandwidth
Up to 240TB RAW

UCS Invicta Appliance

First release:

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

- ✓ Scalability
- ✓ Modularity
- ✓ Application Acceleration
- ✓ Data Optimization
- ✓ Multiple Workloads
- ✓ Tuning-Free Performance

Using Invicta OS 5.1.0

UCS Ecosystem

UCS Solution Ecosystem

Vertical Solution Focus


Healthcare


Financial Services


Manufacturing


Retail

Applications

Enterprise Apps	Databases	Business Analytics/ Big Data	Virtual Desktop
ORACLE E-BUSINESS SUITE, JD EDWARDS, PeopleSoft, SAP, SharePoint, Exchange, SIEBEL	ORACLE, SQL Server, MySQL	SAP, SQL Server 2008, Greenplum, HANA & BWA, hadoop, sas, cloudera, ParAccel	CITRIX, vmware, Microsoft

Management

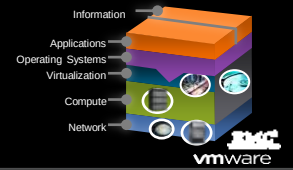
cisco, bmcsoftware, Microsoft, vmware, EMC, solarwinds, DynamicOps, ca, cloupia, Symantec, IBM, hp, CITRIX, Zenoss, COMPUWARE

Operating System and Hypervisor

Windows Server 2008 Hyper-V, Windows Server 2008 R2, suse, redhat, CITRIX, vmware, ORACLE SOLARIS, ORACLE

Integrated Solutions

VBLOCK



VSPEX

FLEXPOD

RISC Migration

Cisco's Building Relationships

- Cisco and SAP deliver first HANA references (Medtronic, Maple Leaf)
- Cisco IT one of first major tech firms to deploy SAP HANA internally

- Cisco delivers deep integration between Microsoft System Center and UCSM
- Delivers three levels of Fast Track private cloud solutions
- Companies driving joint GTM with top partners

- Oracle announces #1 benchmarks on Cisco UCS in 2010, 2011
- Oracle taps Cisco as first validated partner for NoSQL big data solution
- John Chambers delivers #1 rated keynote at Oracle OpenWorld

- Cisco works with NetApp with FlexPod. FlexPod Premium Partners; Over 1000 customers worldwide

- Cisco works with EMC on VSPEX and VCE on Vblocks to deliver reference architectures and fully integrated solutions

- RHEV integrated with UCS VM-FEX: Open source virtual networking
- Red Hat Storage on C-Series

- XenDesktop and XenServer performance and density with UCS
- Public and private cloud solutions with UCS and CloudPlatform deployed globally in enterprise and service provider data centers

Cisco and EMC: Three Paths to Address Customer Needs

Build Your Own

- SAP HANA Solution
- Oracle DB/App Solution
- Data Warehousing Solutions

Best-of-Breed
Infrastructure Components

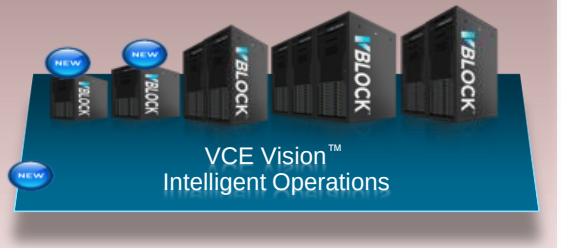
VSPEX

SMB Server Virtualization	500 and 199 VM Configs
Midrange Server Virtualization	125 and 250 VM Configs
Midrange End User Computing	XenDesktop and VMware View and Configs (500 to 2000 Seats)

Proven Infrastructure

Vblock

- System 100: Branch Office
- System 200: Midmarket
- System 320/720: DC/SP

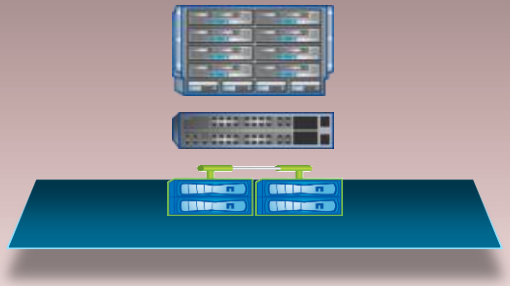


Converged Infrastructure

FlexPod Evolution

FlexPod

- Validated Reference Architectures for Virtual Infrastructure and VDI
- Oracle Database and Applications



FlexPod Data Center (N5K)

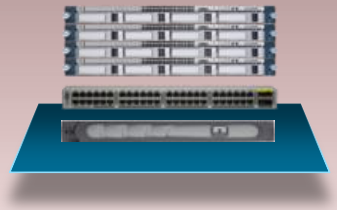
Launched in 2010

Midmarket for Virtualized Infrastructure

FlexPod Express

Designed for:

- SMB and Midrange Server
- Virtualization
- Branch Office



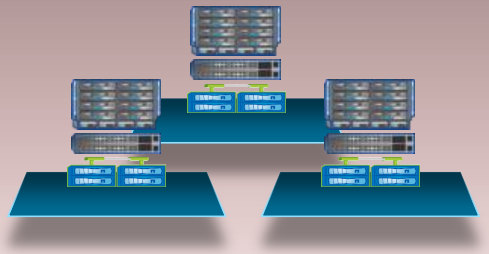
ExpressPod

Launched in 2012

SMB and Midsized Companies

FlexPod at Scale

- Multisite Solution for Business Continuity
- Nexus 7K Option for Larger DC
- Scale and Service Provider Segments



FlexPod Multisite

Multisite and Large Data Centers

Uniquely Cisco: Enterprise Applications

Enablers

Seamless Scale

No Single Point of Failure

Top Performance

Bare Metal or Virtualized

Focus Areas

Oracle Database, Apps, and Middleware

SAP Business Suite (ERP, CRM, etc.)

Microsoft SQL, Exchange, SharePoint

Cisco’s Approach With Big Data

Uniquely Cisco

- Architecture: Modular architecture common across different domains
- Management: Simplified and centralized management across domains
- Performance: Industry-leading performance and scalability with UCS
  rack-mount servers and 10G flexible networking
- Time to value: Rapid, consistent deployment with reduced risk
- Support: Enterprise-class service
  and support

Consumption Options

1. Big data bundles
2. Joint “NOSH” solution with NetApp
3. Exclusive with Oracle NoSQL
4. RA/papers with key partners

Cisco Provides Foundation for IaaS

Today's Infrastructure:
Admins With CLI/ GUI

Tomorrow's Infrastructure:
Programmers and APIs

Client

Portal and Service Catalog

Business Support Systems

- Chargeback
- Asset Tracking

Infrastructure-as-a- Service Business Logic

Operational Support Systems

- Monitoring
- Config/Compliance
- Provisioning
- Performance Mgmt

Compute and Access Layer

Core Network, WAN, Network Services

Storage Arrays

UCS Driving Business Value for Customers

Reduced end of game processes from **hours to 15 minutes**, saving on payroll costs

Seattle Children's HOSPITAL • RESEARCH • FOUNDATION

Saved each clinician at least **45 minutes** per day through fast application performance

ING

Reduced provisioning times from **12 weeks to 10 minutes** in Australia

slumberland FURNITURE

Reduced management costs per server from **$1574 to $80** and the efficiencies provided by UCS freed up **10 hours weekly, per person**

EPIC GAMES

reduced the time to provision new servers from **two to three days to just minutes**

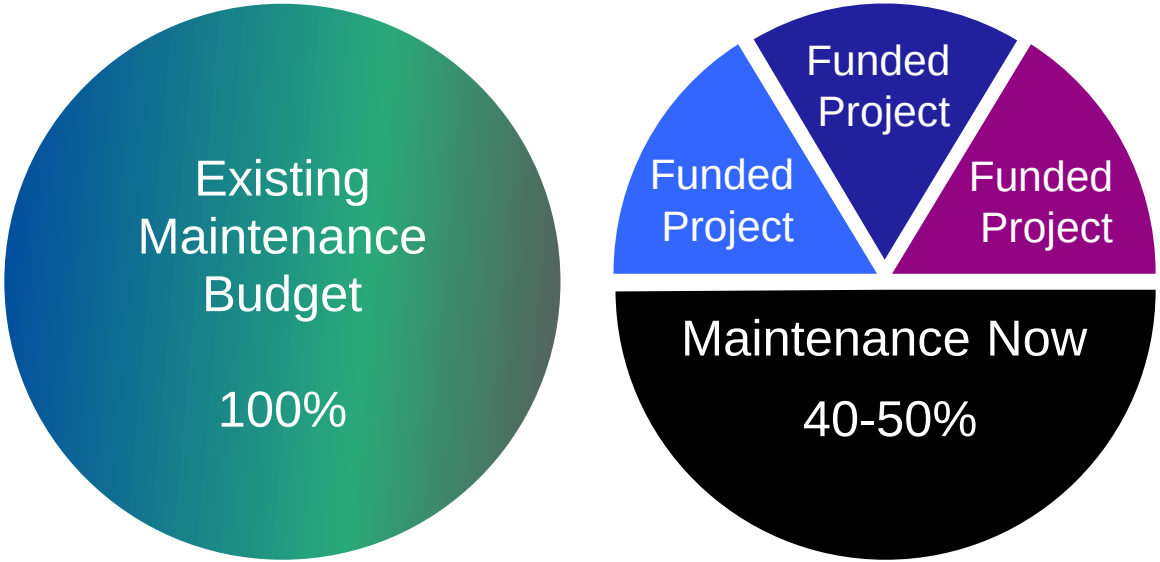
Cisco Unified Computing System

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 &virtual
Server Innovations	Superior price/performance and IT productivity for lower cost of computing

Cisco Unified Computing System (UCS)

Changing the Economics of the Data Center



NEW **No Additional Budget**

TCO/ROI Advisor: http://www.cisco.com/en/US/solutions/ns340/ns517/ns224/tools/data_center_value_zone.html#~Overview


Questions?


Thank you


CISCO
TM