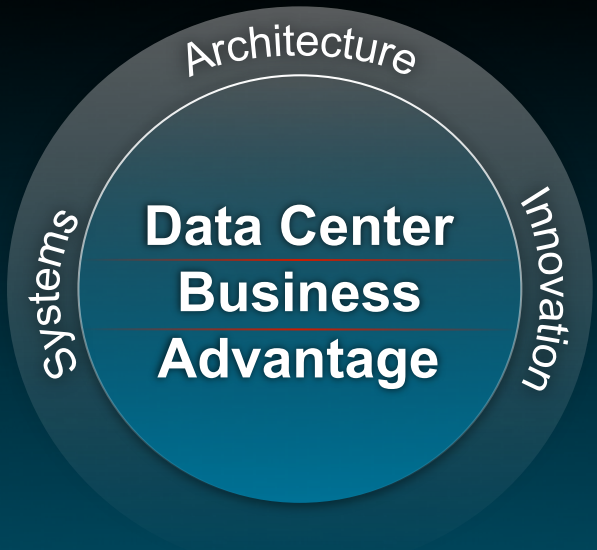
Nexus 5000 and 2000 Series

Prashant Gandhi
Product Management
Server Access and Virtualization BU



Agenda

8:40 – 9:00	Welcome & Registration
9:00 – 9:45	**The Data Center Journey to Virtualization and Cloud**
	Cisco Data Center Business Advantage
9:45 – 10:30	**Unified Network Services -** Consistency, Flexibility, Simplification
	New Virtual Security Gateway with the Nexus 1000V & virtual WAAS solutions
10:30 – 10h45	Case Study Video & Coffee Break
10:45 – 12:40	**Unified Fabric – Building the Network for Cloud ready Data Centers**
	New Nexus 5500 and Nexus 7K innovations
12:40 – 13:30	Lunch buffet
13:30 – 15:00	**Scaling the DC Architecture: be ready for the evolution to Cloud**
	Network design, Fabric Path, Multi-hop FCoE and OTV
15:00 – 15h15	Coffee Break
15:50 – 16:45	**Addressing Server Access Networking challenges**
	Physical Server Networking & Virtual Server Networking considerations
16:45	Closing

Business & Strategy

Technical Design

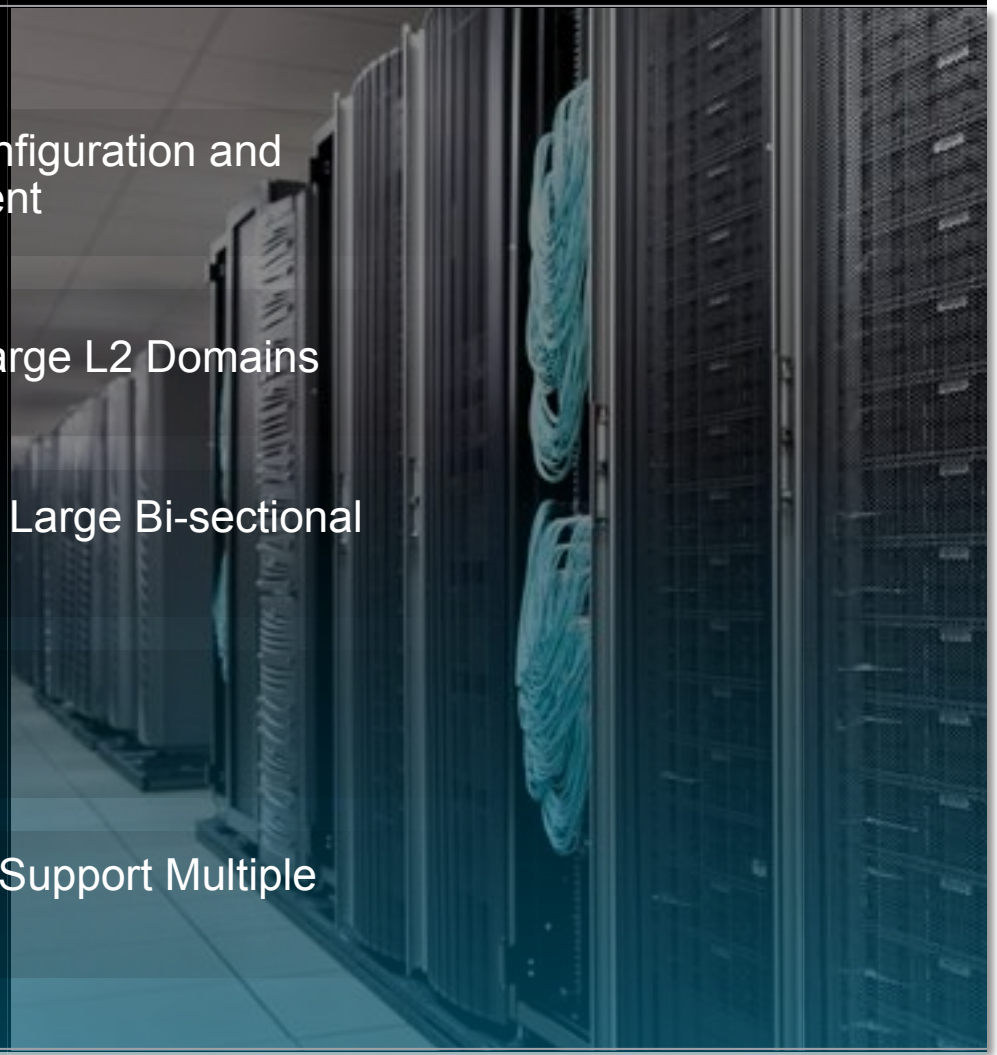
Disclaimer

Some of the products and features described herein remain in varying stages of development and will be offered on a when-and-if-available basis. The information in this Seminar is subject to change at the sole discretion of Cisco, and Cisco will have no liability for delay in the delivery or failure to deliver any of the products or features set forth in this document.

How the Data Center Must Adapt

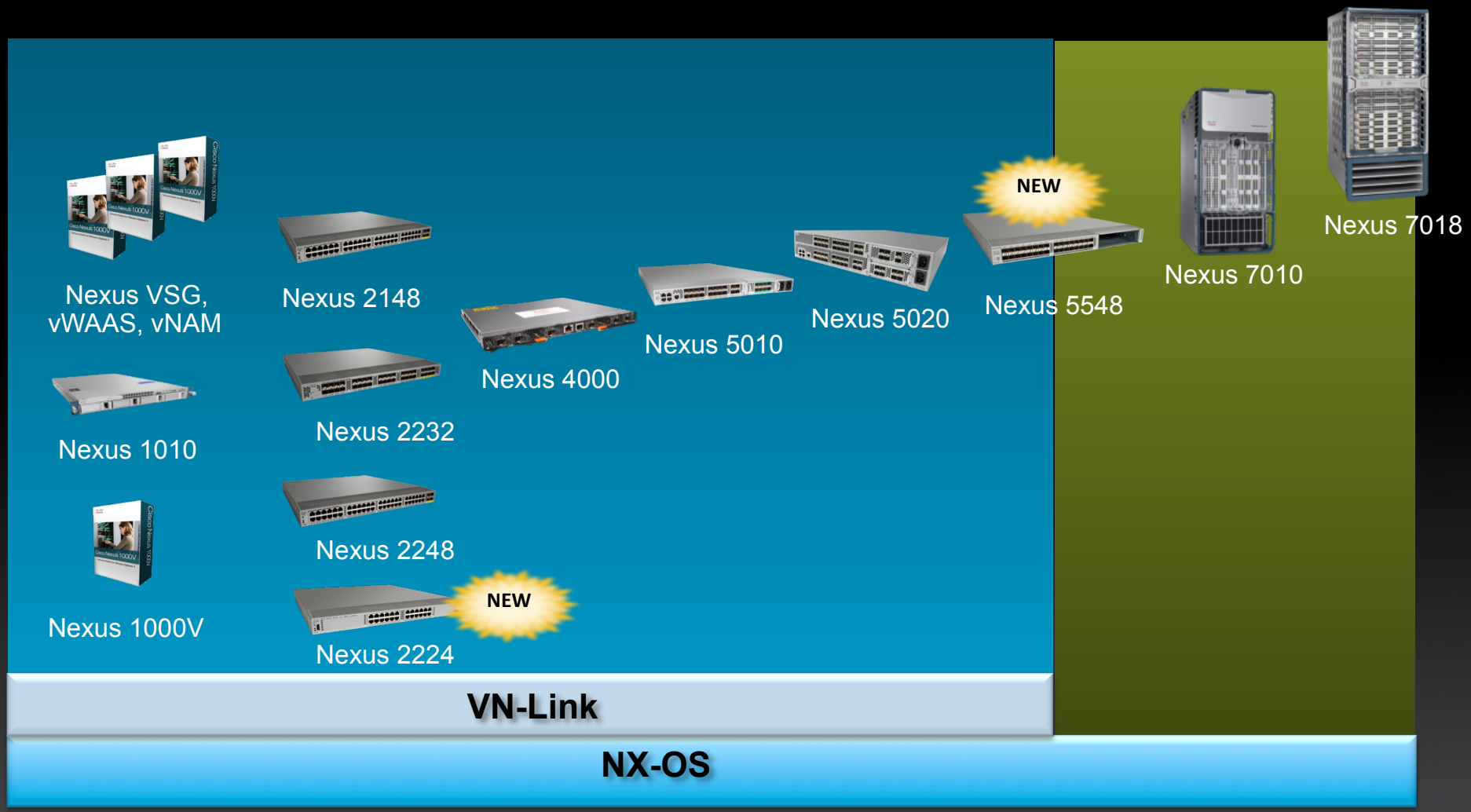
Five Architectural Attributes That Impact TCO

Simplicity	Easy Deployment, Configuration and Consistent Management
Scale	Massive Scalability, Large L2 Domains
Performance	Deterministic Latency, Large Bi-sectional Bandwidth as Needed
Resiliency	High Availability
Flexibility	Single Architecture to Support Multiple Deployment Models



Cisco Nexus Data Center Portfolio

Industry Leading Technologies and Solutions



Cisco Nexus Switch Portfolio

Customer Traction

- Over 3000 customers have deployed Nexus switches in their datacenters
- Over 2.5 million 1 Gigabit Ethernet ports sold
- Over 1 million 10 Gigabit Ethernet ports sold
- Over 30% FCoE Attach Rate
- Worldwide customer base
- Enterprise, Mid-market, Service provider, and Public Sector

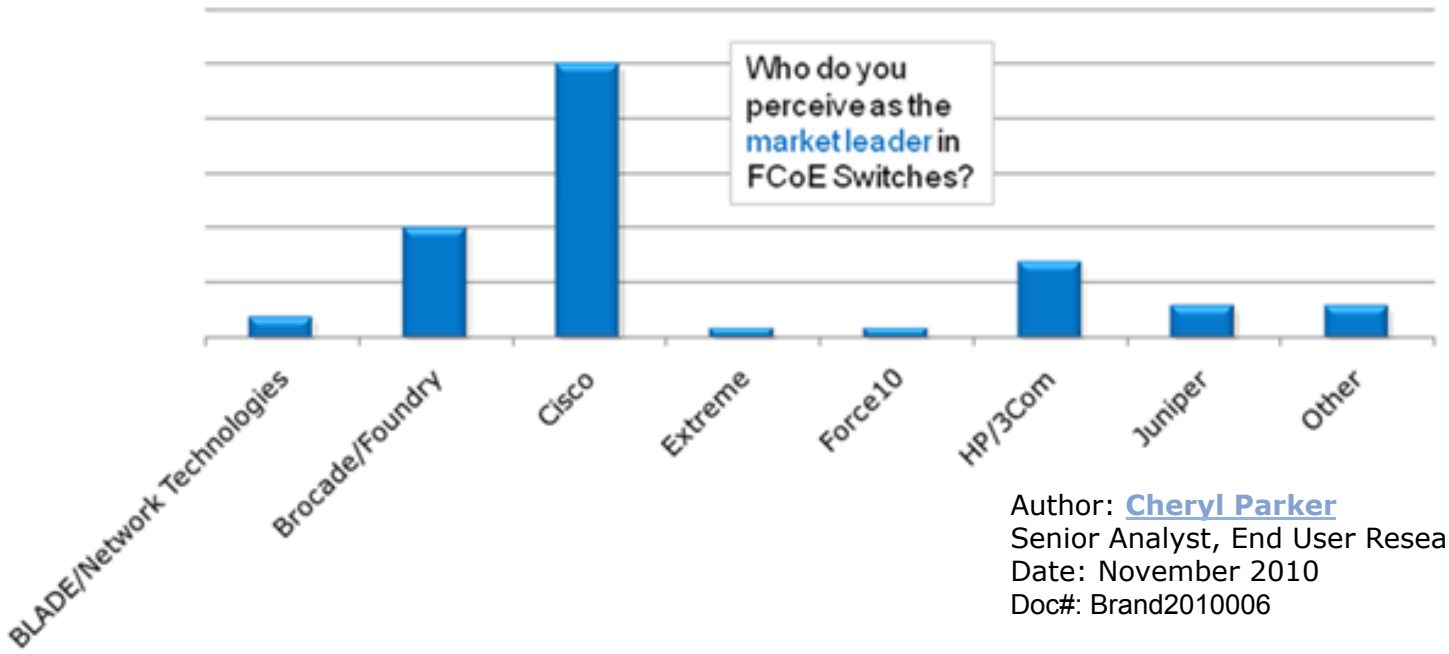
Continued Success Stories with Cisco Nexus Switches

Cisco FCoE Leadership

Market Leader

FCoE Switch Brand Leader Survey: November 2010

ITBRAND PULSE MARKET LEADER
FCoE Switches
November 2010



Author: Cheryl Parker
Senior Analyst, End User Research
Date: November 2010
Doc#: Brand2010006

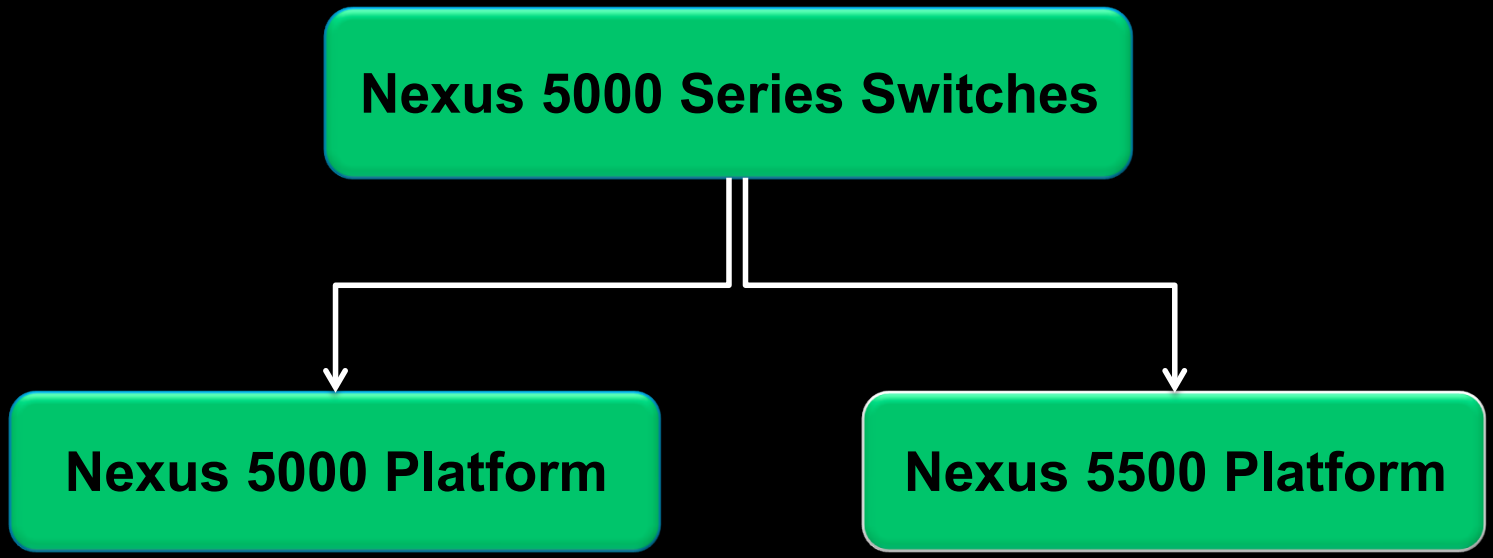
Price: $2,950

ITBRAND PULSE

2

Nexus 5000 Series

Switch Product Hierarchy



- Nexus 5010
- Nexus 5020

- Nexus 5548
- More to Come !!

Infrastructure Simplicity

ONE platform for all Server-Access switching needs

Device Consolidation
Common platform for
LAN / SAN / HPC needs

Pay As You Grow!
Flexible port configurations

Unified Ports
1GE, Lossless 10GE,
FCoE, 1/2/4/8G FC

Industry-leading density in
1RU form-factor
48 10GE ports in 1RU

FEX support:
100M/1000M BaseT,
1/10G SFP, 1/10G BaseT

Low power / Cooling
< 7W/port

Cisco Nexus 5000 Series Switches

Cisco Nexus 5548 Switch

Cisco Nexus 5020Switch

Cisco Nexus 5010 Switch

40GEReady

Back-to-Front &
Front-to-Back Airflow

50% Reduction
in Management Points &
Cabling Costs

Build Highly Scalable PODs
Beyond 640 10GE ports or
960 GE ports

Data Center Access Switching Family Overview

Nexus 5000 Series Switches and Fabric Extenders

InfoWorld 2009 TECHNOLOGY OF THE YEAR AWARDS

Nexus 5020

56-port Layer 2 Switch
- 40 fixed ports 10GE/FCoE/DCB
- 2 Expansion Module Slots

Nexus 5010

28-port Layer 2 Switch
- 20 fixed ports 10GE/FCoE/DCB
- 1 Expansion Module Slot

Nexus 5548

NEW !!

48-port Switch
- 32 fixed ports 1/10GE/FCoE/DCB
- 1 Expansion Module Slot

Ethernet
6 ports 10GbE, FCoE, DCB

Ethernet + FC
- 4 Ports 10GbE, FCoE, DCB
- 4 ports 1/2/4G FC

Fibre Channel
8 ports 1/2/4G FC

Fibre Channel
6 ports 2/4/8G FC

NEW !!

Ethernet
16 ports 1/10GbE, FCoE, DCB

Ethernet + FC
- 8Ports 1/10GbE, FCoE, DCB
- 8ports 1/2/4/8GFC

Fabric Extenders

Virtual Line Cards

Nexus® 2232 FEX

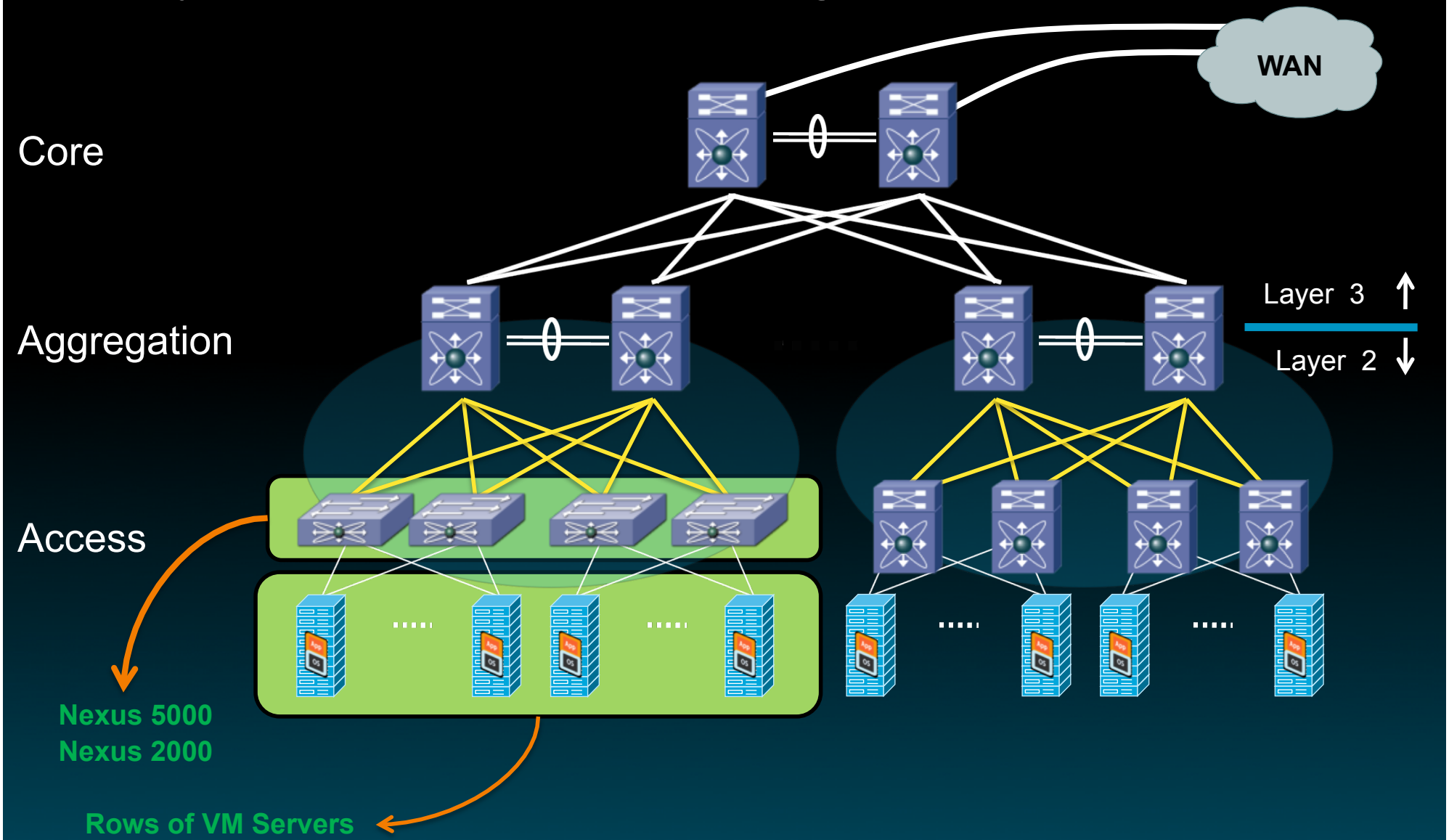
32x 10 GE Data Center Bridging (DCB)/FCoE
8x 10 GE DCB/FCoE uplinks

Nexus 2248 FEX

48 Fixed 100M/1GbE ports
4 Fixed 10GbE uplinks

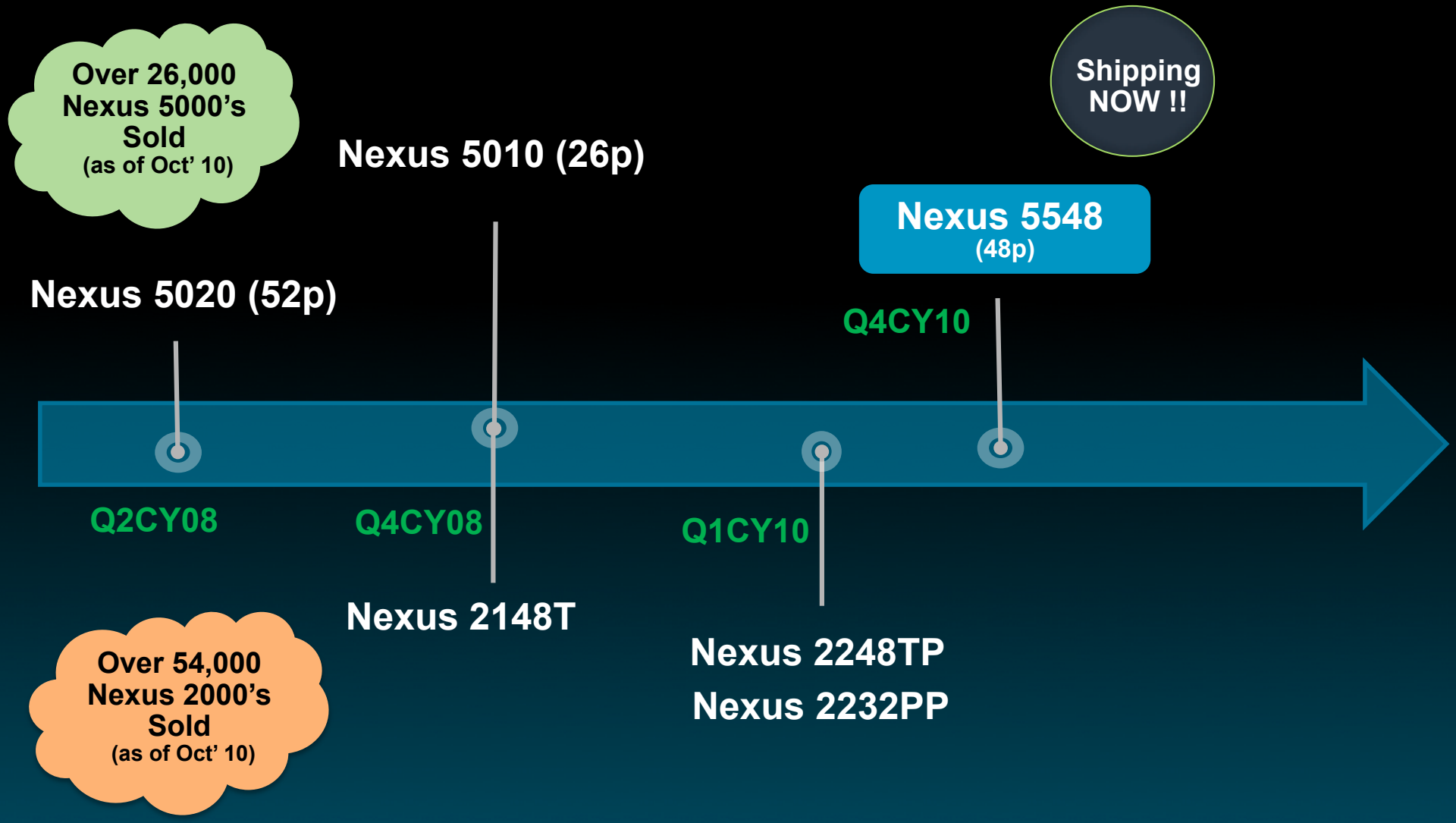
Cisco® Data Center Network Manager (DCNM) and Fabric Manager

Typical Data Center Design



Cisco Nexus 5000 & Nexus 2000

Market Momentum and Evolution



Nexus 5500 Use Cases

A Versatile Unified (Ethernet & Storage) Platform

Ethernet

Storage

1 **Enterprise Data Center Access**

2 **LAN and SAN Convergence**

3 **Mid-Market Data Center Aggregation**

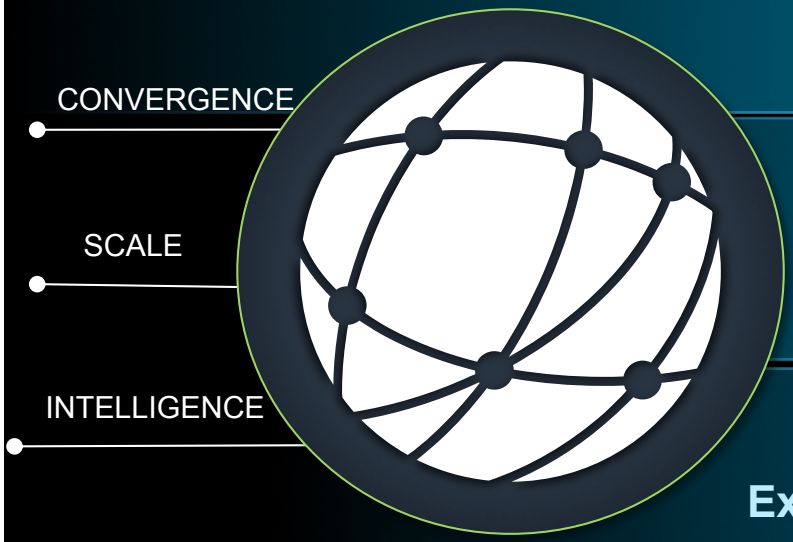
NEW Market !!

4 **High-Density Native FC**

NEW Market !!

Unified Fabric & Unified Network Services

Keys to the Next Generation Data Centers



	Cisco Innovations
VM Proliferation & Performance Scaling **Granular Policy Enforcement** Flexible, Automated, Consistent	**Nexus 1000V** **VN-Link** **Virtual Network Services**
Workload Mobility **Large L2 DC Domains** Scalable, Secure, Plug&Play	**Virtual Port Channel (VPC)** **Layer 3** **Fabric Path/TRILL**
Disaster Recovery & DCI **Extended DC Interconnections** Optimal bandwidth, Resiliency	**OTV** **LISP**
Operational Efficiency & Cost Optimization **Converged Architectures** Data, Storage, Unified Access	**FCoE / DCB** **FEX-Link** **Unified Ports**

Nexus 5000 and Fabric Extenders
Delivering an Unique Architecture

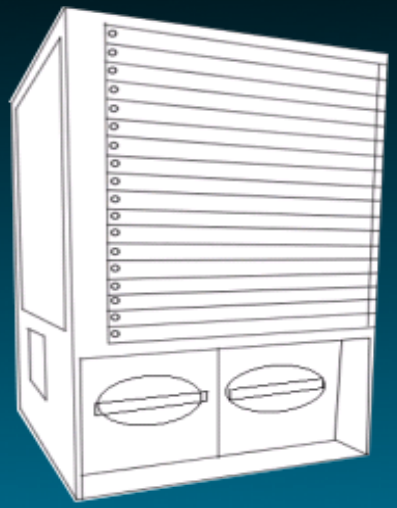
Nexus 5000 Parent Switch

+

Cisco Nexus® 2000 FEX

=

Distributed Modular System

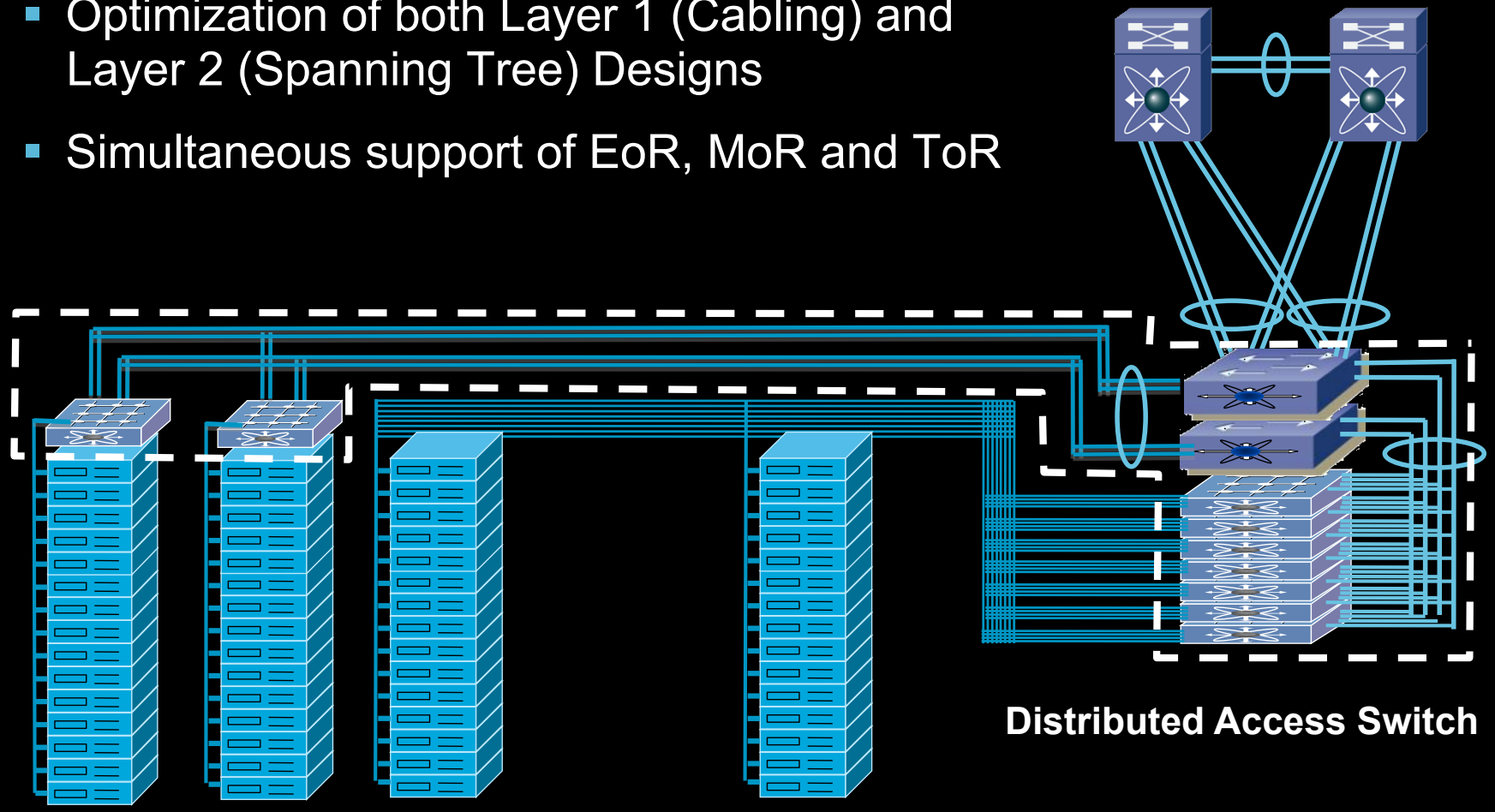


- Nexus 5000 + FEX combines logically as a Distributed Modular System
- Nexus 2000 FEX is a Virtual Line Card to the Nexus 5000
- Nexus 5000 maintains all management & configuration
- No Spanning Tree between FEX& Nexus 5000

Nexus 5000 and Fabric Extenders

Ease of Insertion into Existing Environments

- Optimization of both Layer 1 (Cabling) and Layer 2 (Spanning Tree) Designs
- Simultaneous support of EoR, MoR and ToR

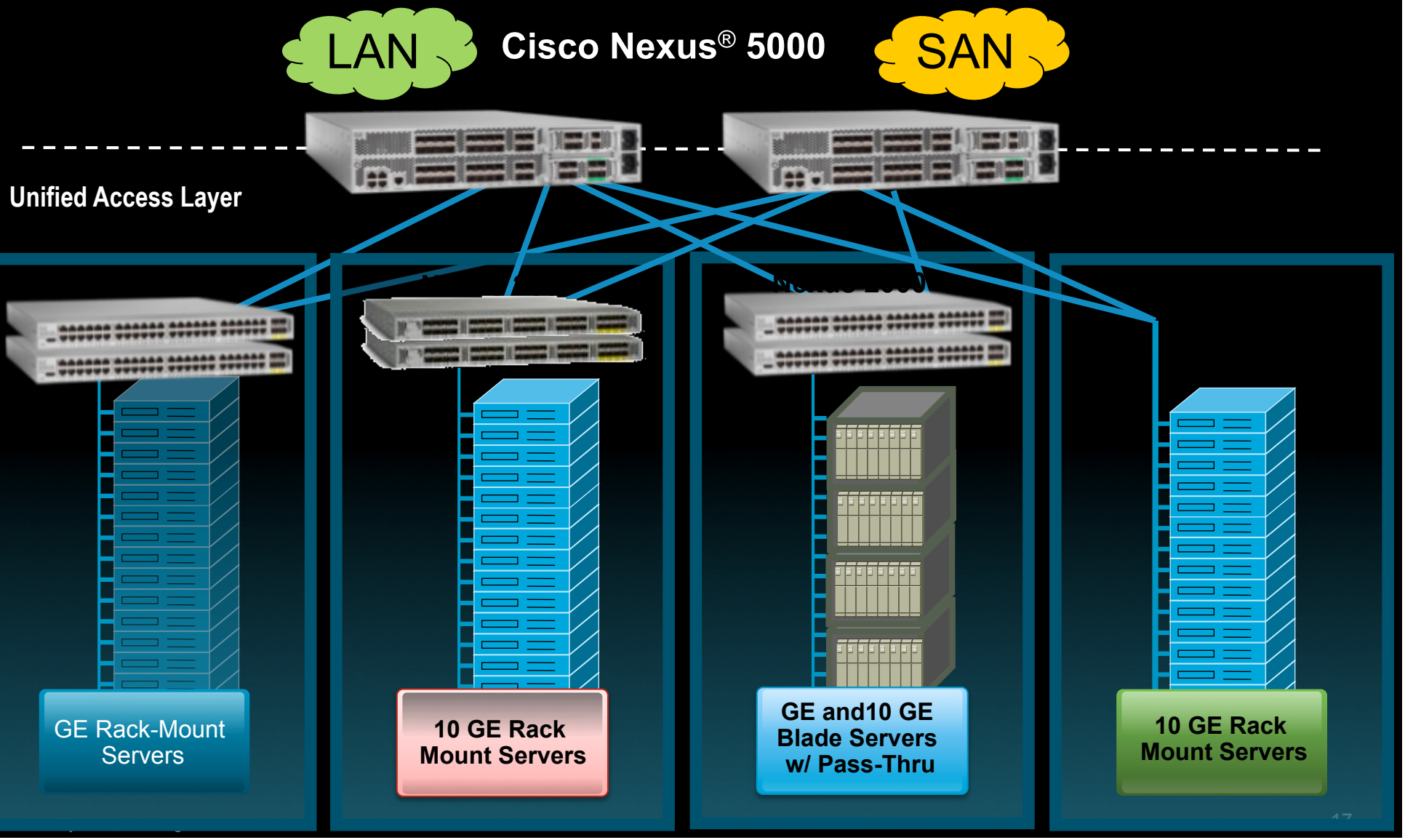


Distributed Access Switch

Combination of EoR and ToR cabling

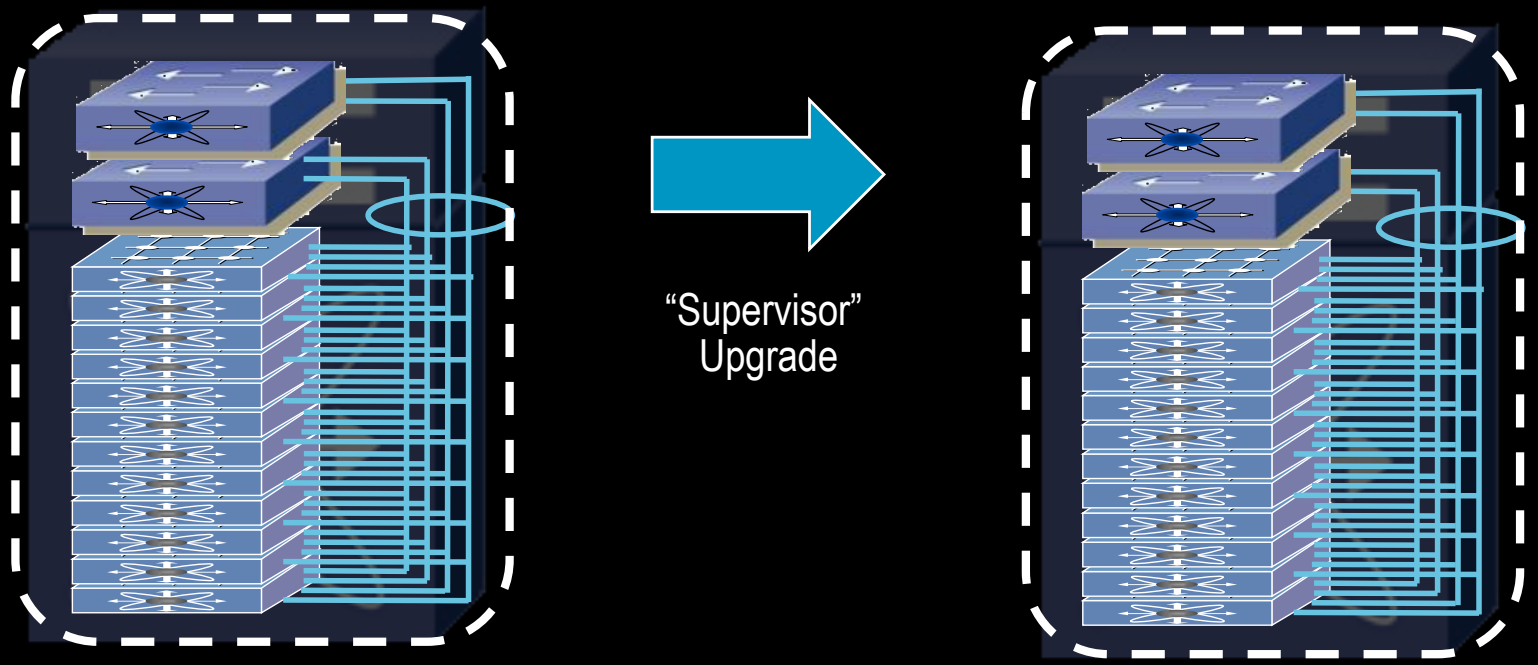
Nexus 5000 and Fabric Extenders

Versatility and Flexibility



Nexus 5000 and Fabric Extenders
Upgrading the Supervisors

- Nexus 5000/5500 parent switch provides the forwarding functionality for the Virtualized Access Switch
- Upgrading the Nexus 5000 to Nexus 5500 parent switch upgrades the capabilities of the entire virtualized access switch

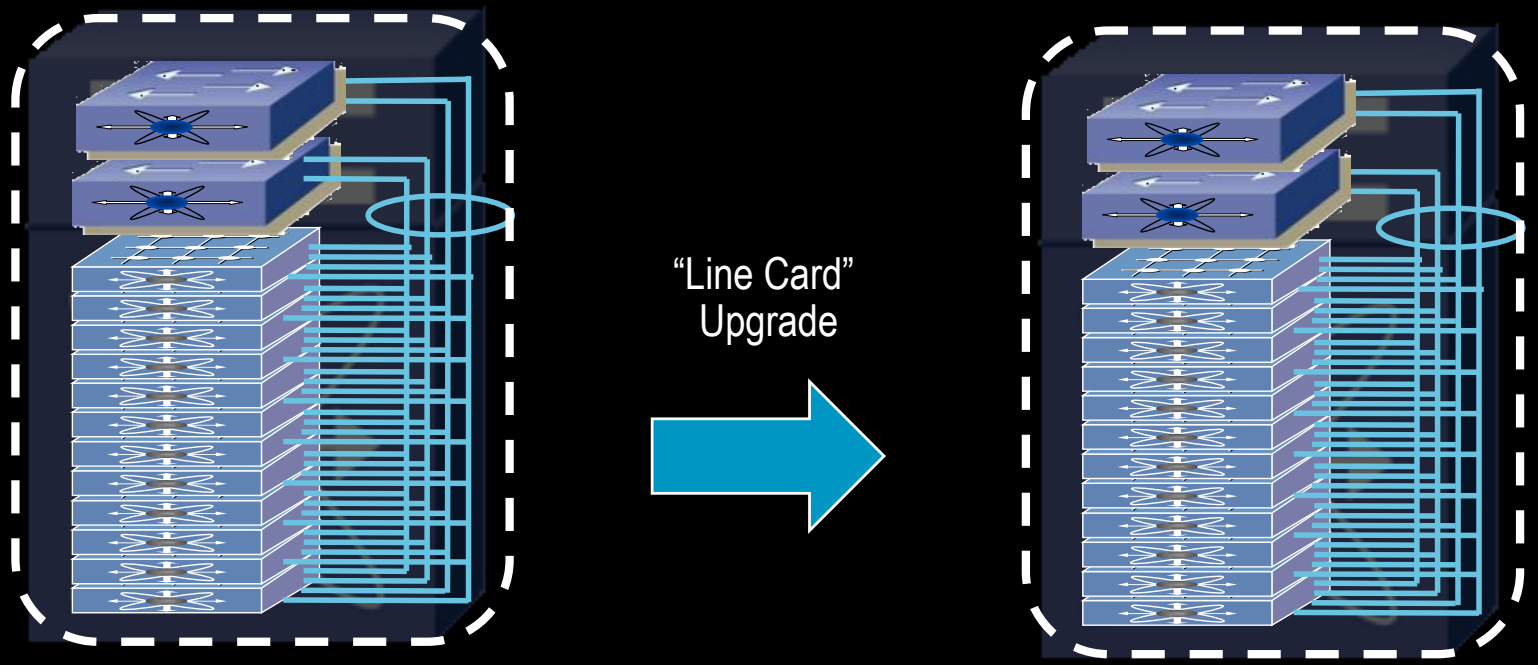


Nexus 5000 Parent Switch
DCB, Ethernet, FCoE, FC

Nexus 5500 Parent Switch
DCB, Ethernet, FC, FCoE, Layer 3, FabricPath

Nexus 5000 and Fabric Extenders
Upgrading the Linecards

- Virtualized Access Switch provides for additional flexibility for end station migration
- Addition or replacement of Nexus 2000 upgrades the 'line cards' for the virtualized switch



Nexus 5000 Parent Switch
DCB, Ethernet, FCoE, FC

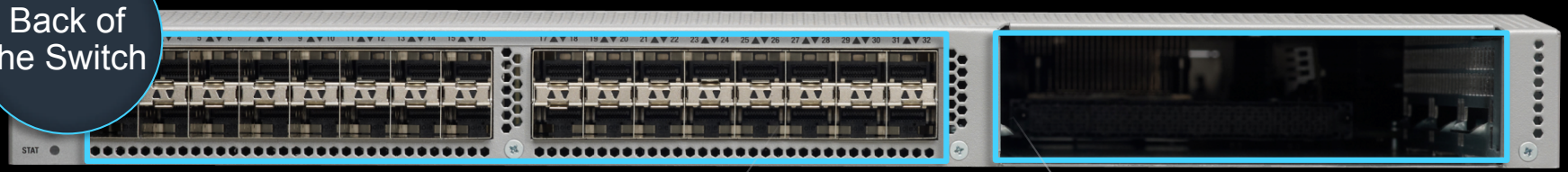
Nexus 5500 Parent Switch
DCB, Ethernet, FC, FCoE, Layer 3, FabricPath

Cisco Nexus 5548P Switch

Switch Front and Back View

Shipping NOW !!

Back of the Switch



Expansion Modules (GEM2

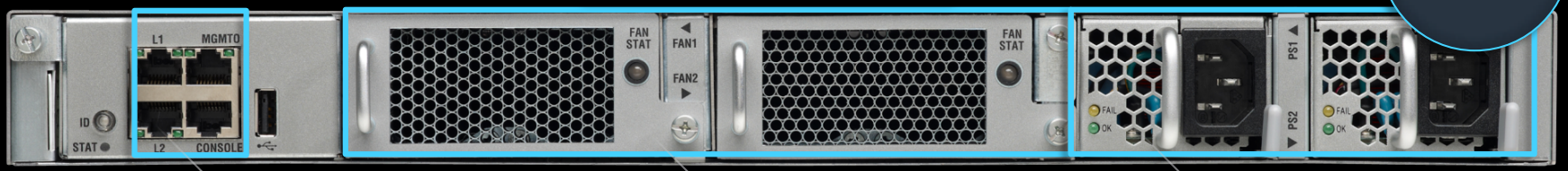
32 Fixed SFP+ Ports
Line Rate
Hardware Capable of 1/10 Gigabit Ethernet *
Traditional Ethernet or Fibre Channel over Ethernet

16p SFP+ Ethernet Ports
8p Eth + 8p Native FC

** 1G Support available in Q1CY11*

Front to Back Airflow

Front of the Switch



Mgmt 0, Console, USB

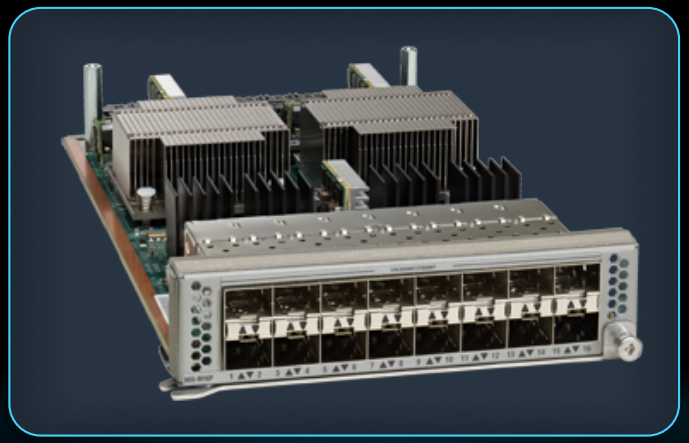
Redundant Fan Modules

Redundant 750W AC Power Supplies

Generic Expansion Modules

Multiple Port Scalable Modules

Shipping NOW !!

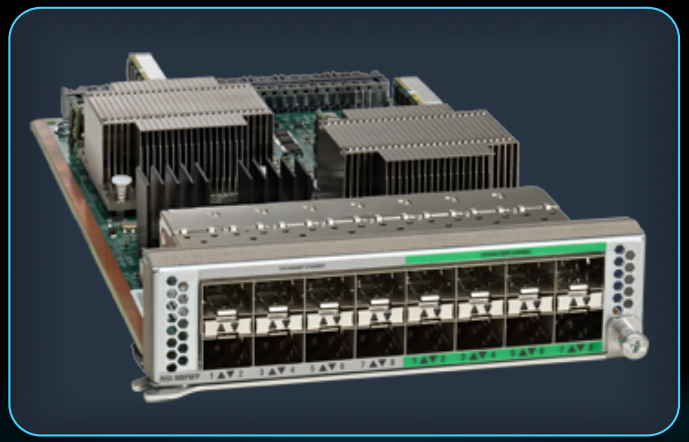


N55-M16P

16p SFP+ Ethernet Ports

All Ethernet Ports hardware capable of 1/10 Gigabit Ethernet *

** 1G Support available in Q1CY11*



N55-M8P8FP

8p SFP+ Ethernet Ports

8p Native FC Ports 8/4/2/1G

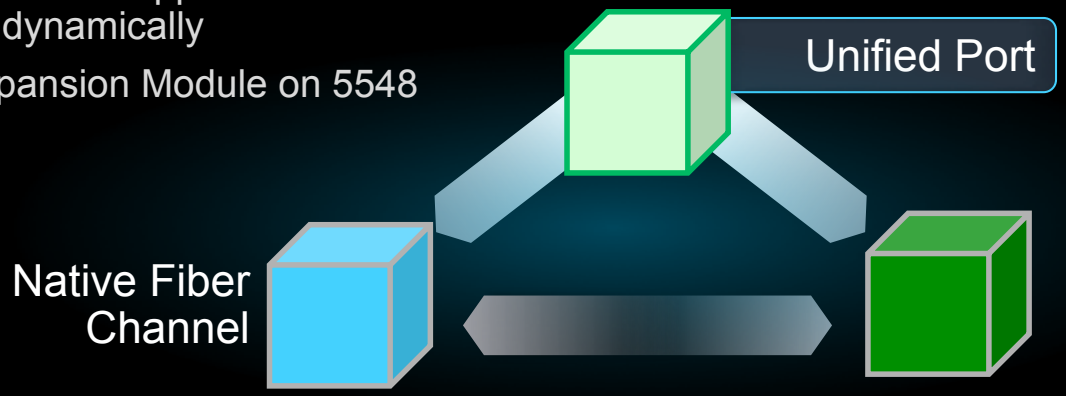
All Ethernet Ports hardware capable of 1/10 Gigabit Ethernet *

** 1G Support available in Q1CY11*

Unified Ports

Dynamic Ports Allocation: Lossless Ethernet or Fiber Channel

- Convert protocol support on the same port dynamically
- 16 port Expansion Module on 5548



Available Q1CY11

Benefits

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

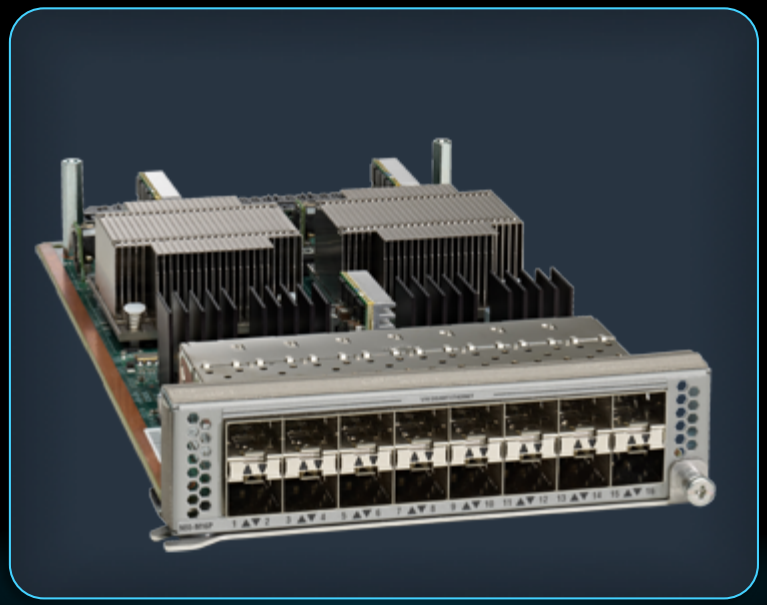
Use-cases

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

Generic Expansion Modules

Unified Port Scalable Modules

Available Q1CY11



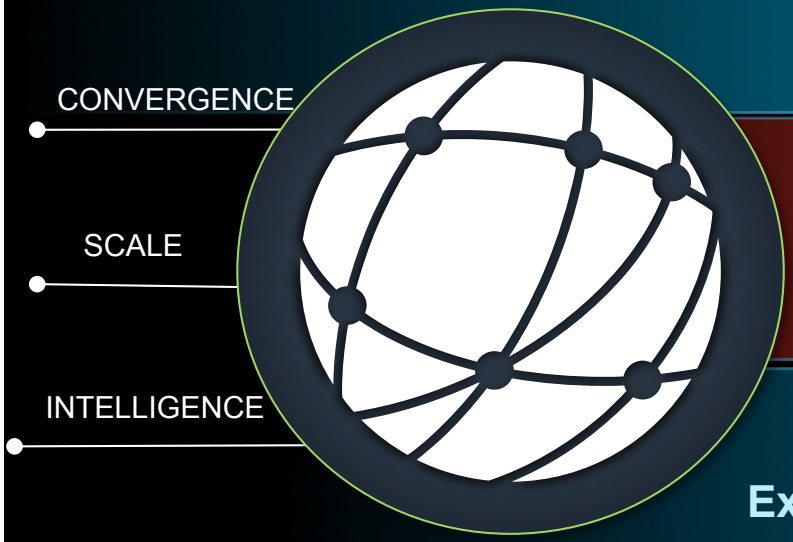
N55-M16UP

- 16 “Unified Ports”
- Ports can be configured as either Ethernet or Native FC Ports
- Ethernet operations at 1/10 Gigabit Ethernet
- Fibre Channel operations at 8/4/2/1G
- Uses existing Ethernet SFP+ and Cisco 8/4/2G and 4/2/1G FC Optics

Flexibility AND Simplicity

Unified Fabric & Unified Network Services

Keys to the Next Generation Data Centers



Cisco Innovations

VM Proliferation & Performance Scaling

Granular Policy Enforcement
Flexible, Automated, Consistent

- N1KV
- VNlink
- Virtual Network Service

Workload Mobility

Large L2 DC Domains
Scalable, Secure, Plug&Play

- Virtual Port Channel (VPC)
- Layer 3
- Fabric Path/TRILL

Disaster Recovery & DCI

Extended DC Interconnections
Optimal bandwidth, Resiliency

- OTV
- LISP

Operational Efficiency & Cost Optimization

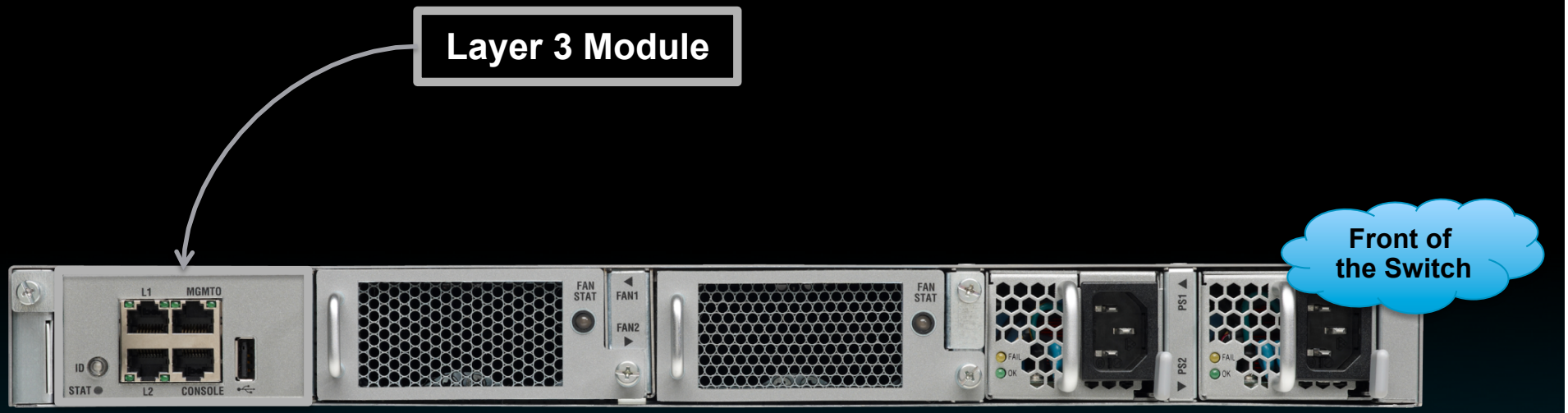
Converged Architectures
Data, Storage, Unified Access

- FCoE / DCB
- FEXlink
- Unified Ports

Layer 3 on Nexus 5548P

Flexibility, Choice, and Future-Proofing

Available Q1CY11



N55-D160L3

- **Field Replaceable Module**
- **In-Rack Upgradeability**
- **No Un-mounting Required**

Flexibility

Choice

Future Proofing

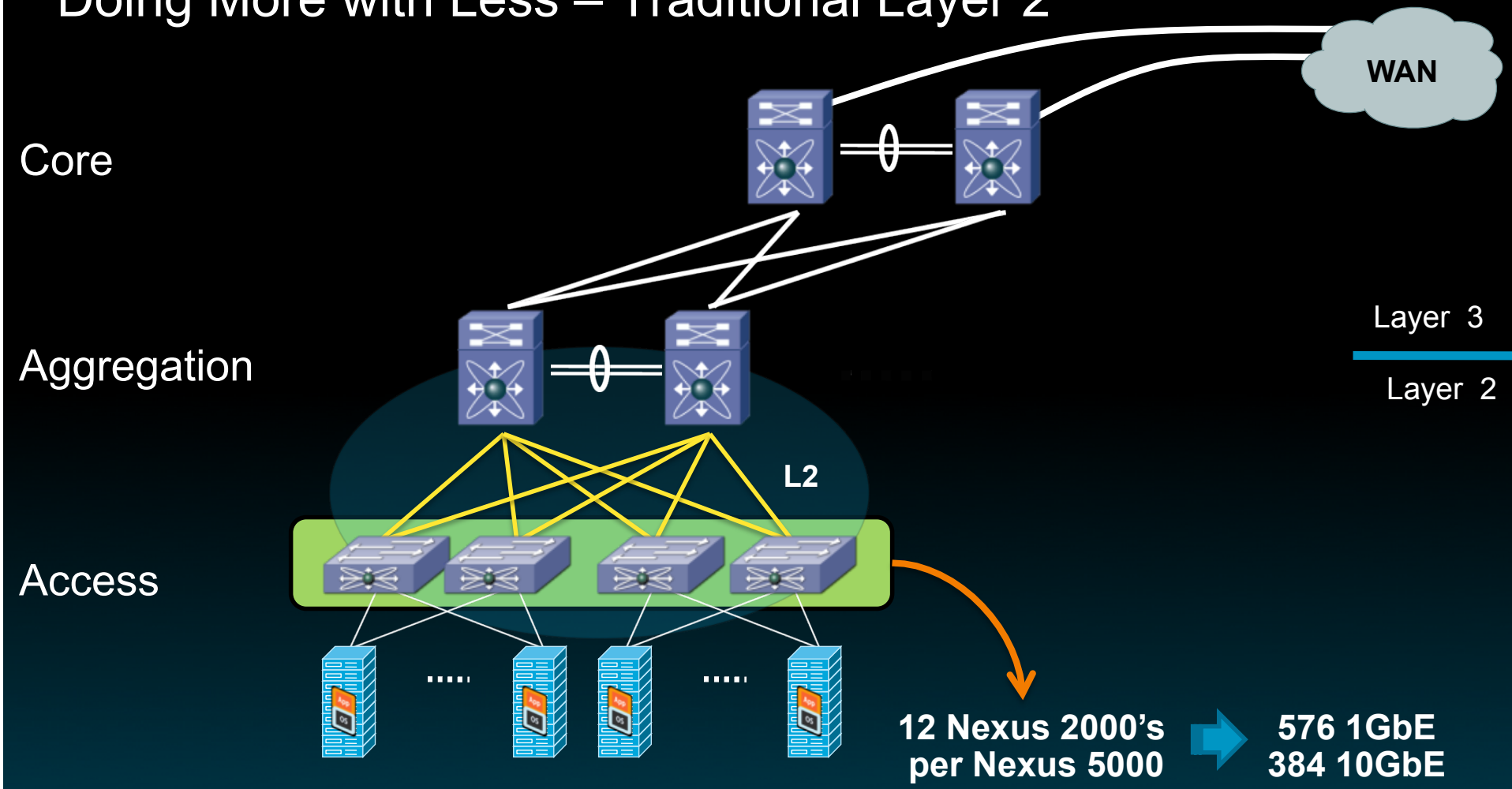
Nexus 5500 Platform
Layer 3 Features

Q1'CY11

Layer 3 Feature Support	* Post FCS Support
Interfaces: Routed, SVI, port-channel	Up to 16K IPv4 /32 Host Routing Table
16-way L3 ECMP	8K IPv4LPM Routing Table
IPv4 Routing: Static, RIPv2, OSPFv2, EIGRP, BGP	IPv6 Routing: OSPFv3, RIP-NG, EIGRP*
Policy-based Routing (PBR)*	IGMP v1, v2, v3; PIM
HSRP, VRRP, GLBP*	4K L3 IP Multicast groups
RACL	VRF-Lite (IP VPNs)
Unicast RPF (uRPF)	Bcast/Mcast suppression
BiDirectional Forward Detection (BFD)*	QoS marking, scheduling and policing (MQC)

Nexus 5000 Series Design Options

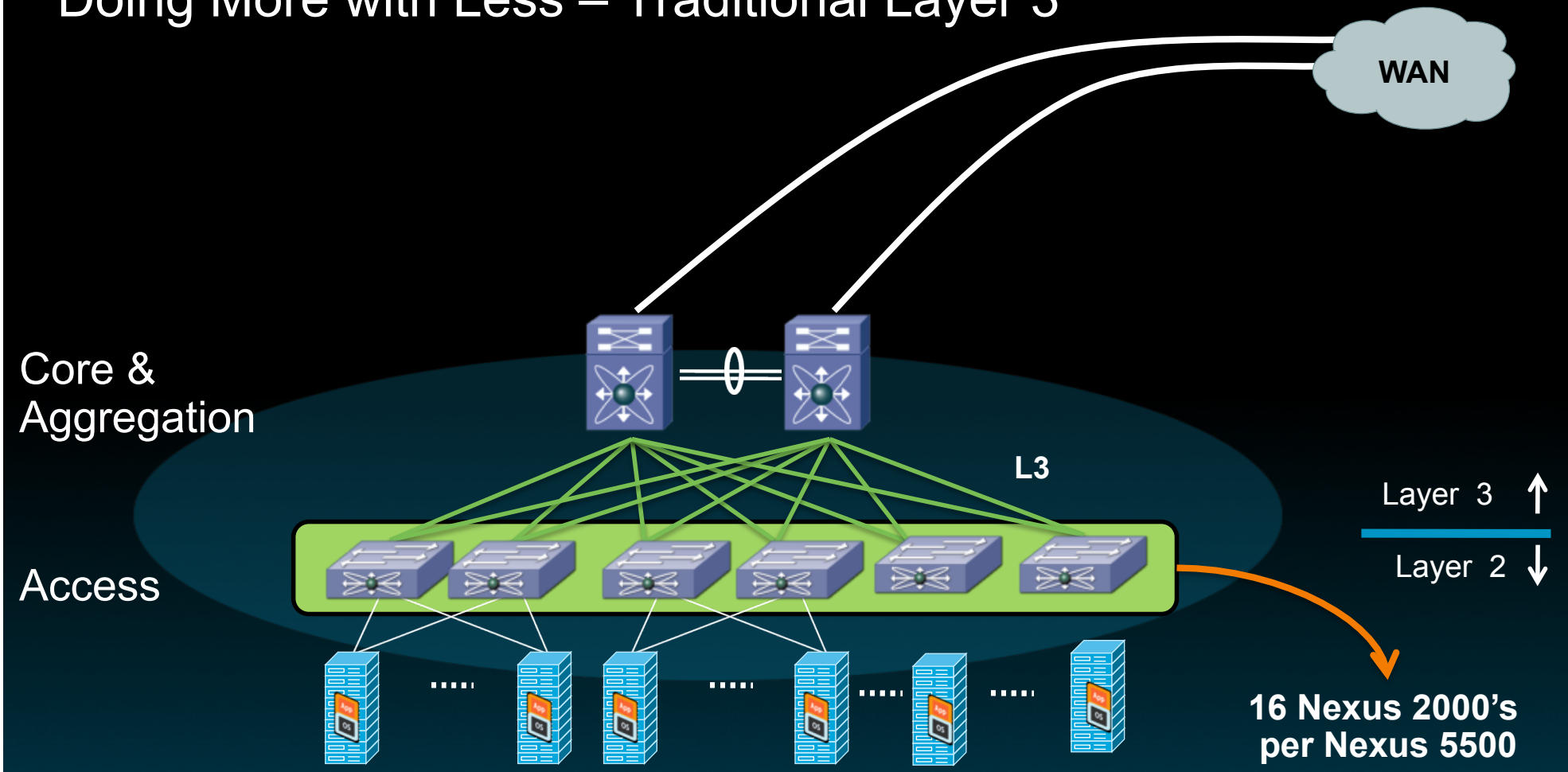
Doing More with Less – Traditional Layer 2



Canonical 3-Tier Architecture
Unique Scale-Out of the Access Tier with Nexus 5000

Nexus 5000 Series Design Options

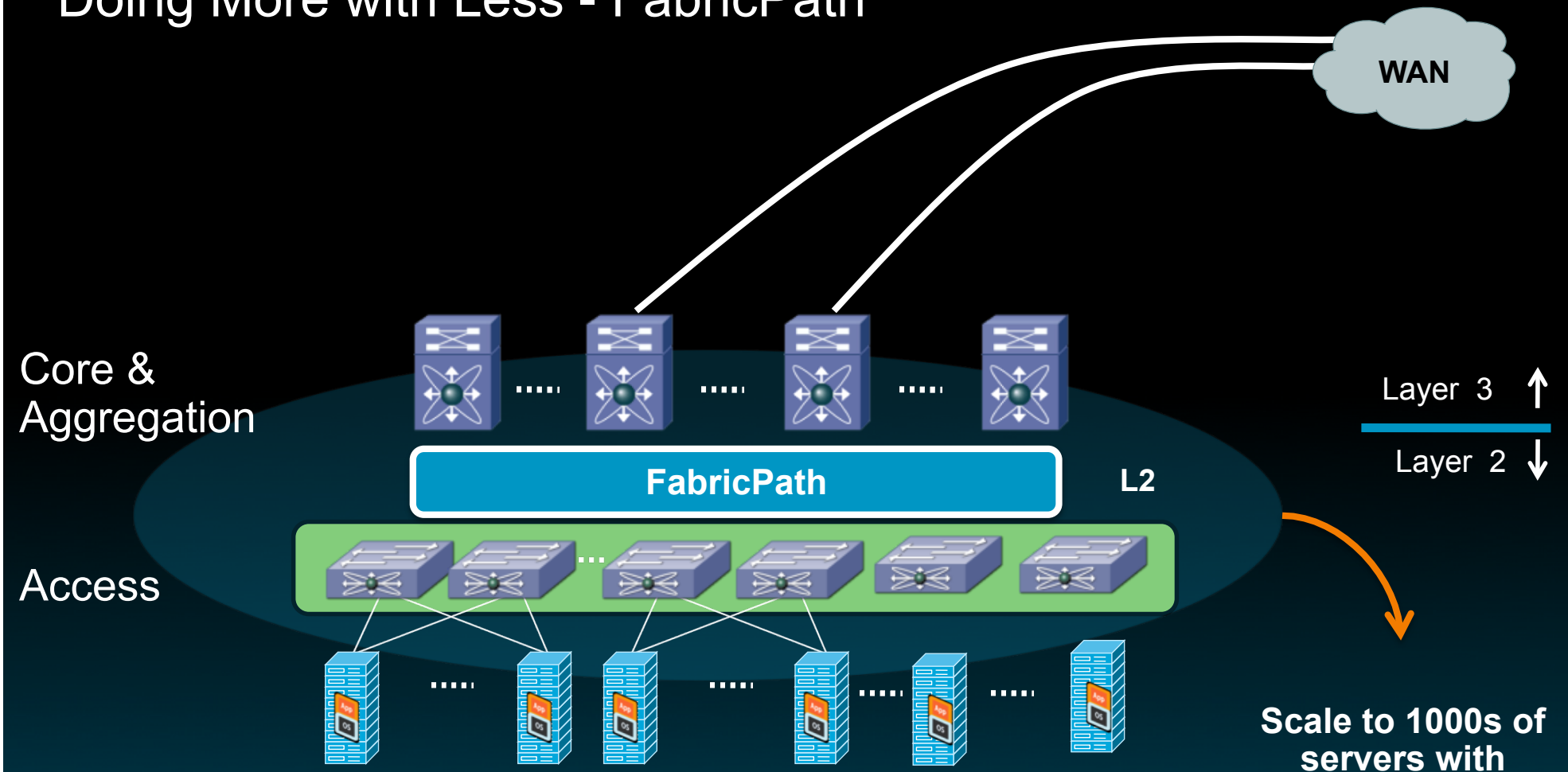
Doing More with Less – Traditional Layer 3



Consolidation of Core and Aggregation Tiers
Larger Scale-Out of the Access Tier with Nexus 5500

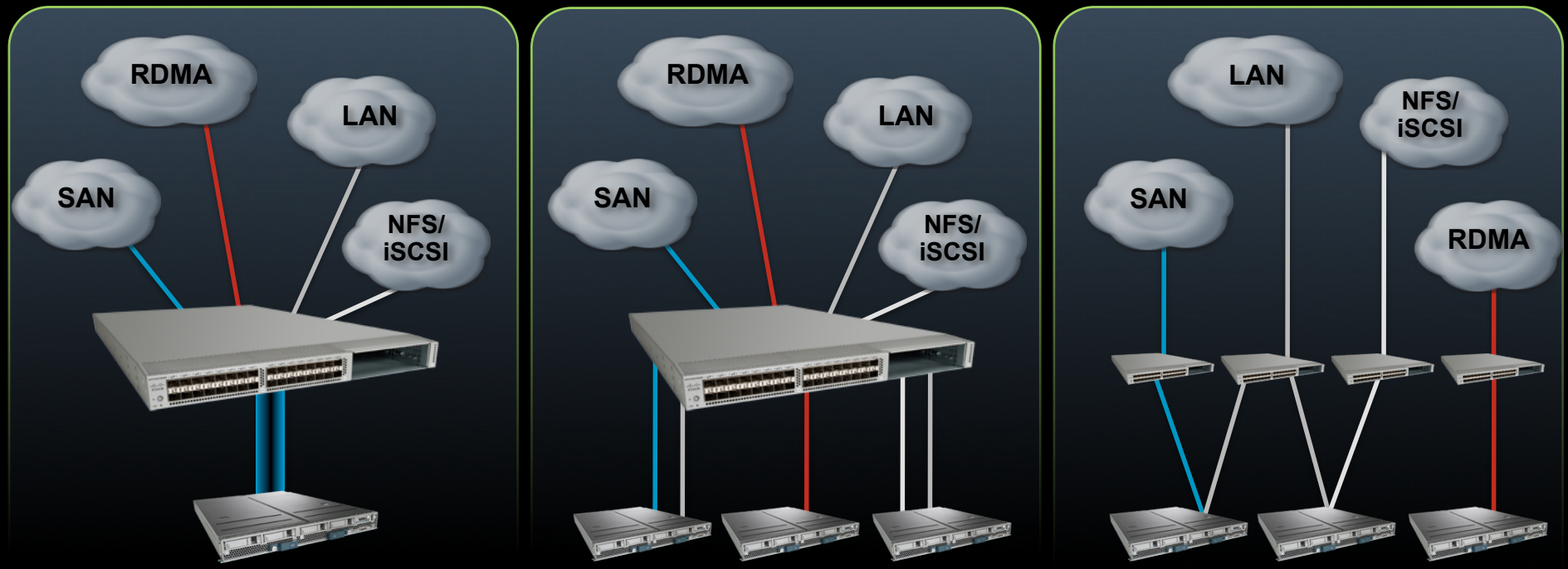
Nexus 5000 Series Design Options

Doing More with Less - FabricPath



Massive Scale-Out of the Access Tier with Nexus 5500 and Nexus 7000 with FabricPath

Nexus 5500 Series
Network/Device/Fabric Consolidation



Unified Wire – Multiple Services to drive Device & Cable Consolidation

Unified Device – Multiple Services to drive Device Consolidation over separate cables

Unified Platform – Discrete services over separate cables with a consistent choice of platform throughout an organization

Infrastructure Simplicity

ONE platform for all Server-Access switching needs

Device Consolidation
Common platform for
LAN / SAN / HPC needs

Pay As You Grow!
Flexible port configurations

Unified Ports
1GE, Lossless 10GE,
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Cisco Nexus 5548 Switch

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NEW!

50% Reduction
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Build Highly Scalable PODs
Beyond 640 10GE ports or
960 GE ports

LatencyStats

Home Whitepaper Blog Contact

Oct 7, 2010

Provisioning for Microbursts

By Fergal Toomey - Chief Scientist and Co-Founder at Corvil

In my last blog entry I discussed the prevalence of 'microbursts' in market data feeds – short, occasional bursts of activity in the feed during which data rates reach levels much higher than average. We saw that during busy periods the LatencyStats.com feeds can send many high-rate microbursts in succession, each burst lasting much less than one second. If the data rate during a microburst exceeds the capacity of a network link or a feed handler, the excess data will be forced to queue. This adds latency to the feed messages, and in the worst case messages may be discarded if a system runs out of buffer space to hold waiting data.

How should network and computing systems be engineered to handle microbursts? A simple but rather conservative approach is to ensure that the available capacity always exceeds the highest microburst data rate measured at some short timescale. For example, if the speed of a network link carrying a market data feed exceeds the feed's highest 1-millisecond data rate, then the link will never be continuously busy for more than 1 millisecond at a time. Therefore no data will be delayed on the link for more than 1 millisecond.

Most Popular

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2. Why LatencyStats.com?
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4. Latency Across the Trading Lifecycle
5. Market Data Microbursts

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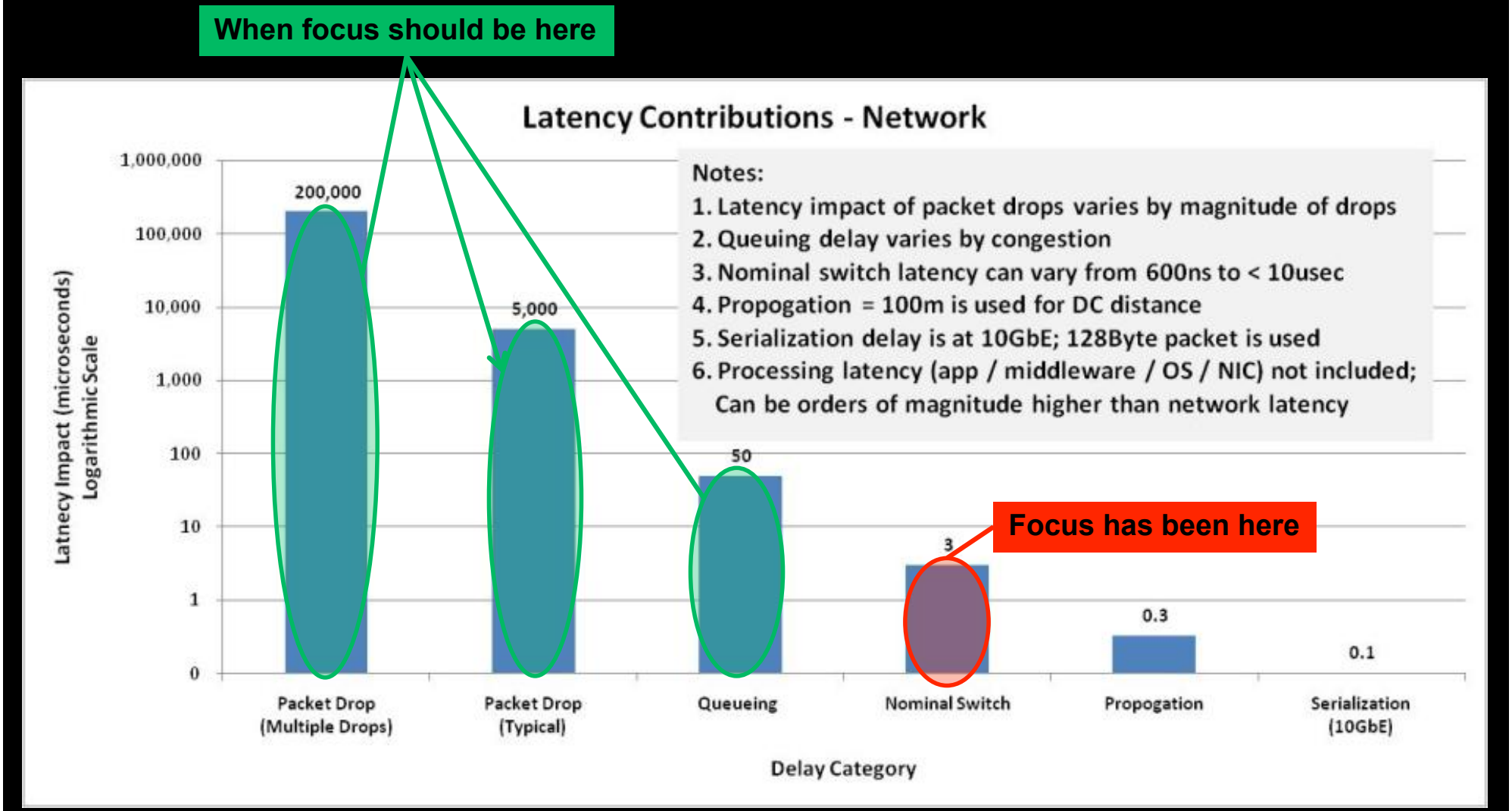
Network Latency Contributions by Category
(Y-Axis in Logarithmic Scale)



www.cisco.com/go/hft

Zuse Institute Berlin (ZIB) Nexus 5000 FCoE Deployment

Deployment Requirements:

- Maximum throughput at the interface between the Cisco SAN and the Ethernet infrastructure
- Support for 10 Gigabit Ethernet connectivity
- Unified Fabric capability for future growth and consolidation of data and storage networks

Why ZIB selected Nexus 5000:

- Unified Fabric allows for flexible development of the IP and SAN infrastructure.
- Consolidated data and storage networks will decrease costs for adapters, cabling, and power consumption
- Cost-effective scalability of data transfer through the increased availability of adapter slots in a server
- End-to-end redundancy for maximum failure protection

Customer Feedback

The [Nexus 5020] switches have increased the throughput at this bottleneck between the SAN and the 10-gigabit Ethernet network in a particularly cost-effective way."

Wolfgang Pyszkalski, Zuse Institute Berlin
IT Services Department Manager

- ZIB solves urgent problems in science, technology, environment, or society through mathematical analysis
- The ZIB supercomputer is one of the top computers in Germany
- As one of two operators of the HLRN supercomputer system, ZIB acts as a service provider for many other scientific institutions.

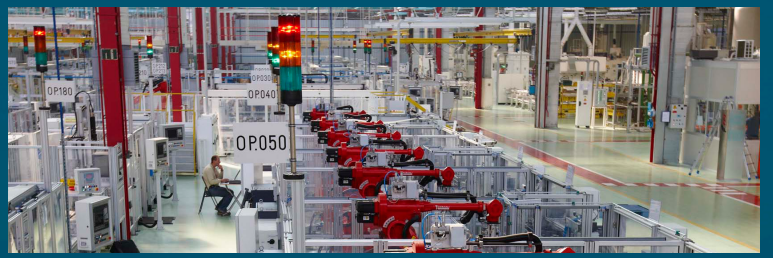
Fiat Powertrain Technologies (FPT) Nexus 5000 Deployment

Deployment requirements:

- Achieving complete virtualization
- Removing the physical hurdles created by differing LAN and SAN architectures
- Improving protection of legacy IT investment

Why FPT selected Nexus 5000:

- Nexus 5000 Unified Fabric and Virtualization features with support for legacy equipment
- Investment protection
- Significant power and cooling savings.
- Reduction in switch ports; extension of FCoE technology beyond SAN for wider DC availability
- **Cisco Data Center 3.0 vision: consolidate, virtualize, automate**



Customer Feedback

"Before, we were unable to complete virtualization mainly because of the physical limitations imposed by separate LAN and SAN architectures. The Cisco Nexus platform has bridged this gap by creating one virtual environment."

-Paolo Vallotti, Chief Technology Officer, Fiat Powertrain Technology

- FPT, formed in 2005, is the driving force behind the group's vehicles, industrial machinery, marine engines, and power generators.
- It is one of the largest companies in the powertrain sector with operations in nine countries. IT plays a vital role in supporting these global operations.

The City of Pforzheim, Germany Nexus 5000 Deployment

Deployment requirements:

- Restructuring and modernizing the old data center structure
- Universal virtualization achieved through Unified Fabric, i.e. the merging of LAN and SAN via FCoE
- CAPEX and OPEX savings

Why Pforzheim selected Nexus 5000:

- The facilitation of FCoE provides the key to virtualizing data centers
- Higher redundancy and increased scalability
- 10GE provides sufficient bandwidth so that network-oriented traffic, storage, and voice traffic can be transported via a medium
- Optimal costs and maintenance fees due to unified server geography and virtualization
- Provides a stable base for future expansion (UCS, 1000v)

Customer Feedback

"Cisco currently has a clear leadership role in the field of storage via Ethernet and FCoE…Nexus is not only a switch, rather a complex system with FCoE. With this product, Cisco has an absolute unique selling point that is helping all cities and their data centers."

-Andreas Hurst, Director of IT for the City of Pforzheim

- Pforzheim, Germany - a traditional city whose history is closely tied to that of the jewelry and watch-making industry.
- It is a very innovative and modern city and operates its own data center (DC) to handle all of the city's administrative and IT needs; due to its rising IT demands, Pforzheim is now modernizing its DC.

Freudenberg IT
Nexus 5000 Deployment

Deployment requirements:

- Increasing technological demands and safety requirements
- Achieving successful virtualization of data center
- Efficient cabling between the individual racks in the data center

Why Freudenberg IT selected Nexus 5000:

- Greater performance capacity through reduced complexity
- Guaranteed availability
- Foundation for future virtualization through merging LAN and SAN via FCoE
- Reduction of CAPEX and OPEX through use of virtualization

Customer Feedback

"The decision to opt for the Nexus line is based on our view into the future. The features it contains perfectly match our processes and in-service software upgrades (ISSU) reduce the maintenance window on the weekend."

-Ekkehard Spieth, Managing Director of Freudenberg IT Europe

- Freudenberg IT, the most successful European IT spin-off from the international corporate group Freudenberg, offers services for both small and medium-sized companies as well as for major corporations
- As a service provider, it offers SAP consulting services and is successfully marketing and selling its own internally developed MES solution called Adicom

Tele Sistemi Ferroviari (TSF) Nexus 2000/5000 Deployment

Deployment requirements:

- Adopting a new business model and transforming its IT infrastructure from a cost center into a revenue generator
- Improving the consolidation of the IT infrastructure through data center virtualization
- Improving scalability and flexibility

Why TSF selected Nexus 2000/5000:

- CAPEX and OPEX savings from agile, simplified infrastructure
- Total cost savings through reduction of cabling, power consumption
- Further improving the cloud computing framework by building up the Cisco Data Center 3.0 architecture

Customer Feedback

"There is a huge market for cloud computing services from companies that do not want to manage their own IT infrastructures. We are one of the first companies in Italy to address this type of market, using an extremely scalable and agile infrastructure that adapts easily and quickly to the needs of many customers."

-Francesco Barbieri, Manager of Data Center Operations, TSF

- Tele Sistemi Ferroviari (TSF) is one of the leading providers of ICT services to the transport and logistics industries in Italy
- It was set up as a spin-off from the ICT division of the Italian State Railways Group which remains TSF's biggest customer

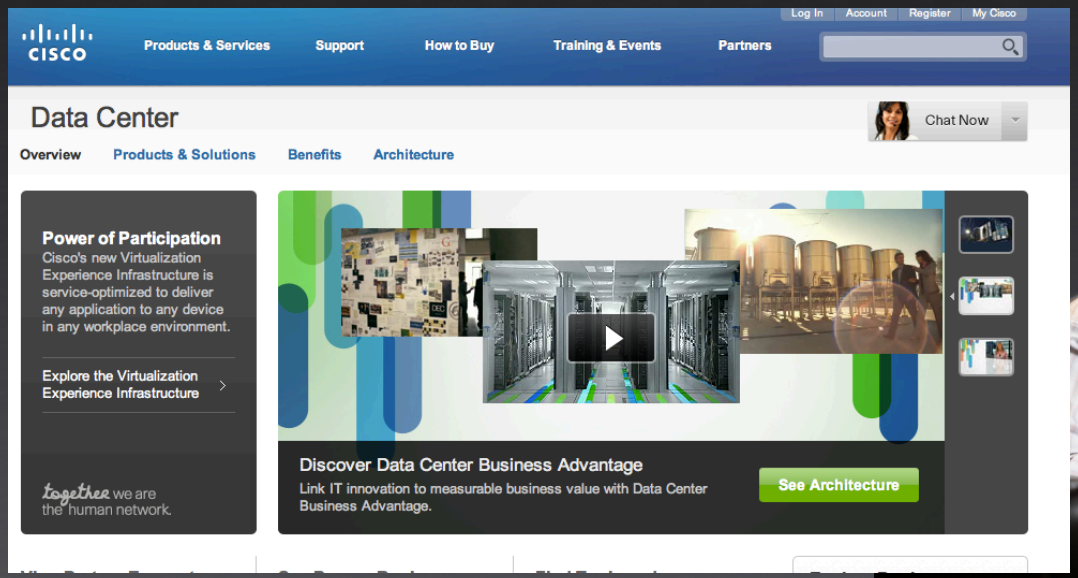
Where to get more information

Data Center Business Advantage website:

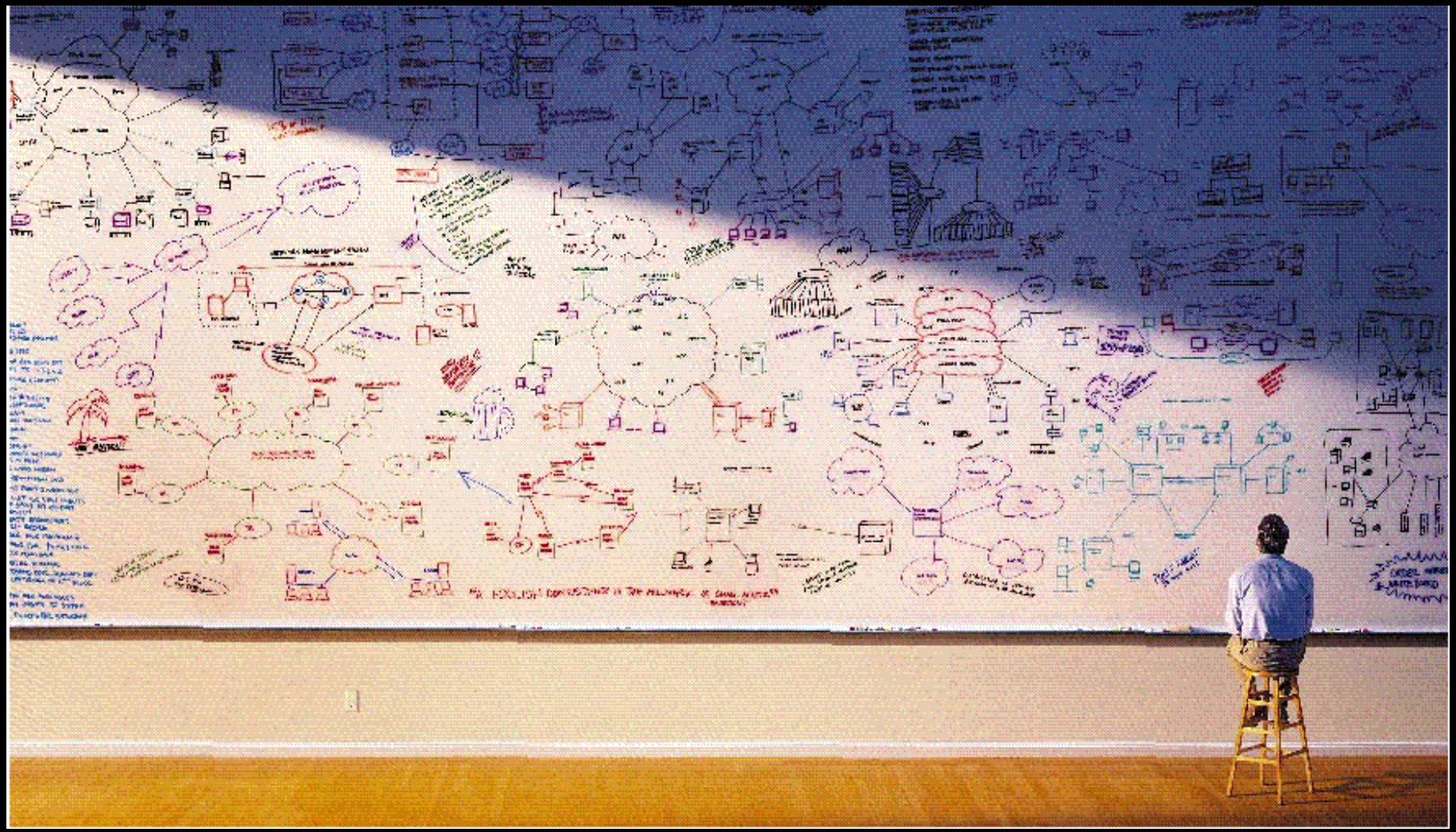
www.cisco.com/web/go/dcba

New Nexus 5548P:

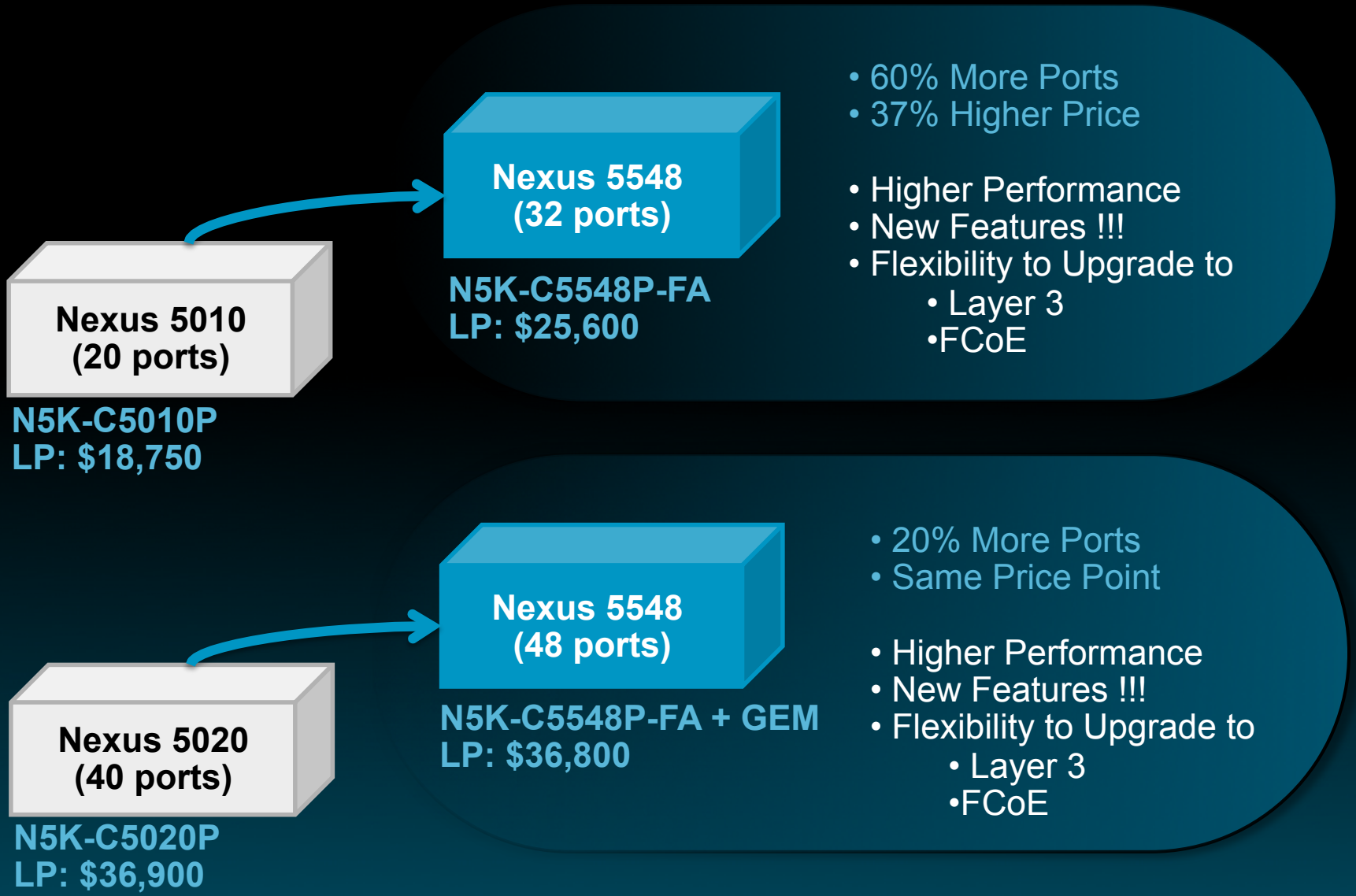
http://www.cisco.com/en/US/products/ps11215/index.html



Q & A



Delivering Greater Value with Nexus 5500



Storage Licensing - Nexus 5000 Series

A "New" Approach

Key Highlights	Nexus 5010	Nexus 5020	Nexus 5548P	Nexus 5596
Chassis-Based Licensing	✔	✔		
Port-Based Licensing			✔	✔
120-Day Trial License	✔	✔	✔	✔

N55-8P-SSK9

- List Price: $3,200
- 8-port Storage Protocol Services License
- Purchase up to (6) licenses on a N5548
- Initial 8-port license is enforced
- Subsequent 8-port licenses are honor-based

N55-48PF-SSK9

- List Price: $12,800
- Available only with N5548-N2K Bundles
- Discounted 48-port Storage Protocol Services License
- Eligible for SPIFF $$

Nexus 5000 Series Storage Bundles

Nexus 5548 Storage Bundles

Shipping NOW !!

N5K-C5548P-B-S16
LP: $37,000

- "Intro" Bundle
- N5548P Chassis
- M8P8FP Expansion Module
- 8 Native FC 8G Optics
- 16-port Storage License

N5K-C5548P-B-S48
LP: $43,000

- "All-In" Bundle
- N5548P Chassis
- M8P8FP Expansion Module
- 8 Native FC 8G Optics
- 48-port Storage License

Nexus 5000 Series – Storage Bundles
Summary

1st Generation Platform	2nd Generation Platform
N5K-C5010P-B-S **$23,300**	N5K-C5548P-B-S16 **$37,000**
N5K-C5020P-B-S **$45,000**	N5K-C5548P-B-S48 **$43,000**

- N5K-C5010P-LAB-S has gone End of Sale effective Q1FY11 and been replaced with N5K-C5010P-B-S
- N5K-C5020P-LAB-S has gone End of Sale effective Q1FY11 and been replaced with N5K-C5020P-B-S

Selling the Nexus 5000 Series

Nexus 5xxx - Nexus 2xxx Bundles

Q1 Valid until Q1FY11

Q2 Valid until Q2FY11

Q4 Valid until Q4FY11

3 Dimensions: Host Port Density, Host Interface Speed, 5K-2K Interconnect Type

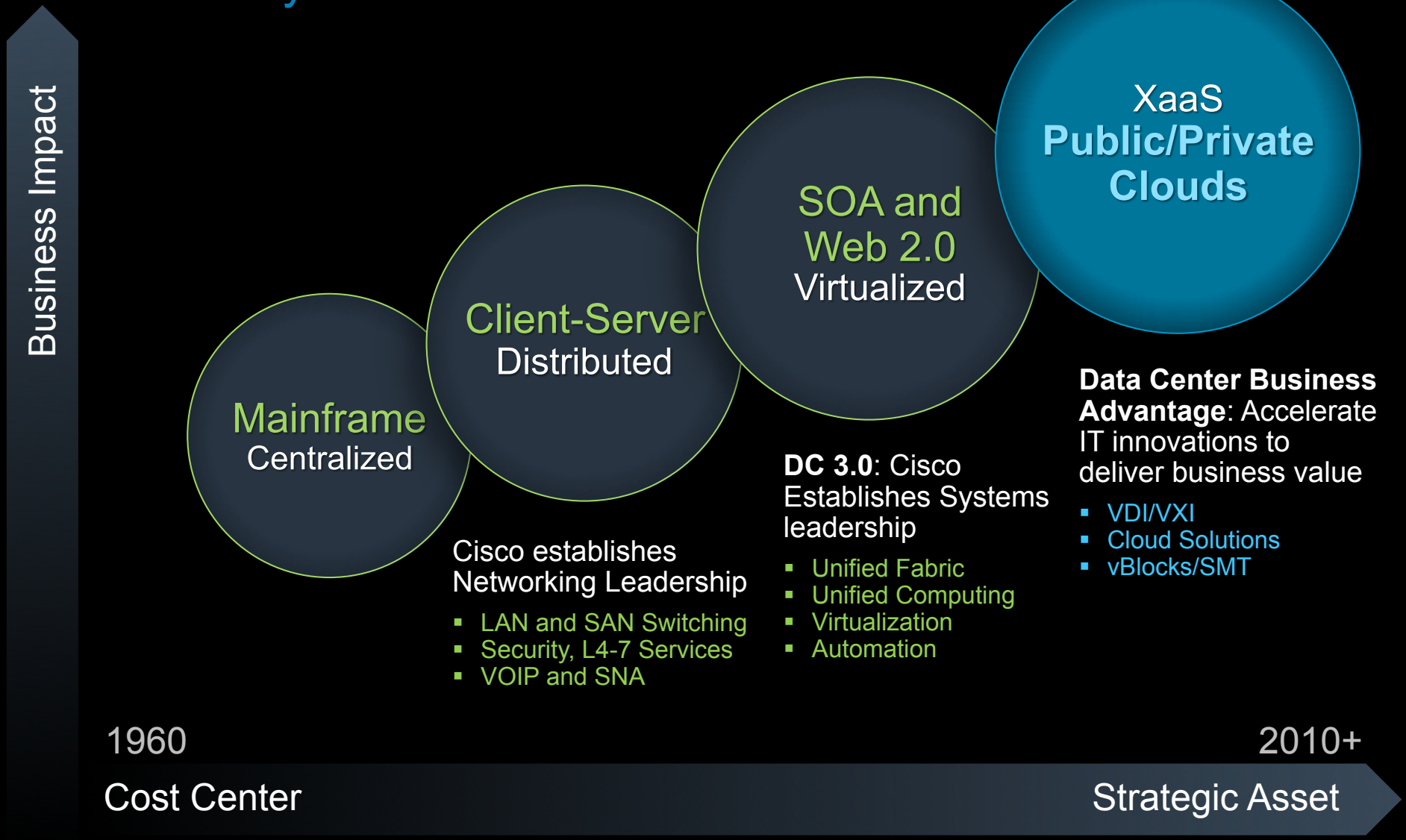
	SR Interconnect	FET Interconnect	Optional Interconnects
128 Ports Density		N5020P-4N2232PF-B $85,500 Q2	
		N5548PM-4N2232PF $84,000 Q4	
192 Ports Density	N5010P-N2248TP-BE $70,000 Q1	N5010P-4N248TF-B $53,000 Q2	N5010P-4N2248TP-B $46,000 Q2
	N5548P-4N2248TR $74,000 Q2	N5548P-4N2248TF $57,000 Q4	N5548P-4N2248TP $52,000 Q4
288 Ports Density	N5020P-N2248TP-BE $105,000 Q1	N5020P-6N2248TF-B $79,500 Q2	N5020P-6N2248TP-B $69,000 Q2
	N5548PM-6N2248TR $108,000 Q2	N5548PM-6N2248TF $82,000 Q4	N5548PM-6N2248TP $74,500 Q4

1/10G Interface Speed

100M/1G Interface Speed

Data Center Evolution

A Journey To Deliver Business Value



Nexus 5000 Series
Generation Evolution

Product Features & Specs	Nexus 5010	Nexus 5020	Nexus 5548P
Switch Fabric Throughput	520Gbps	1.04Tbps	960Gbps
Switch Footprint	1RU	2RU	1RU
1 Gigabit Ethernet Port Density	8	16	48
10 Gigabit Ethernet Port Density	26	52	48
8G Native Fibre Channel Port Density	6	12	16
Port-to-Port Latency	~ 3.2us	~ 3.2us	~2.0us
No. of VLANs	512	512	4096
Layer 3 Capability			✔
1 Gigabit Ethernet Port Scalability	576	576	960
10 Gigabit Ethernet Port Scalability	384	384	640
40 Gigabit Ethernet Ready			✔

Cisco Nexus 5500 Series Switch

Breakthrough Innovation

Convergence

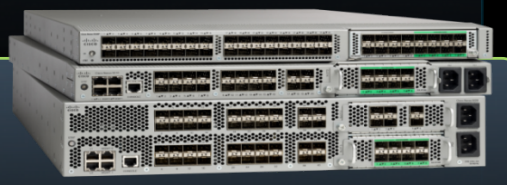
- Ethernet (1/10 GbE) + Storage (FC, FCoE, iSCSI, NAS)
- Unified Ports – Dynamic allocation of multi-protocol ports

Scalability

- 48 wire-rate ports in 1RU
- FEX-link - Over 900 FE/GE& 600 10GE ports
- FabricPath and TRILL

Intelligence

- Policy-based VM connectivity and mobility with Nexus 1000V
- Provides secure VM traffic with Virtual Security Gateway based on Cisco vPath technology
- Layer 2/Layer 3



Industry's Highest Density
& Performance for Fixed Switches