



# LAN Switching Solutions Update



Vincent Rosolen  
Systems Engineer  
[vr@cisco.com](mailto:vr@cisco.com)

# Agenda

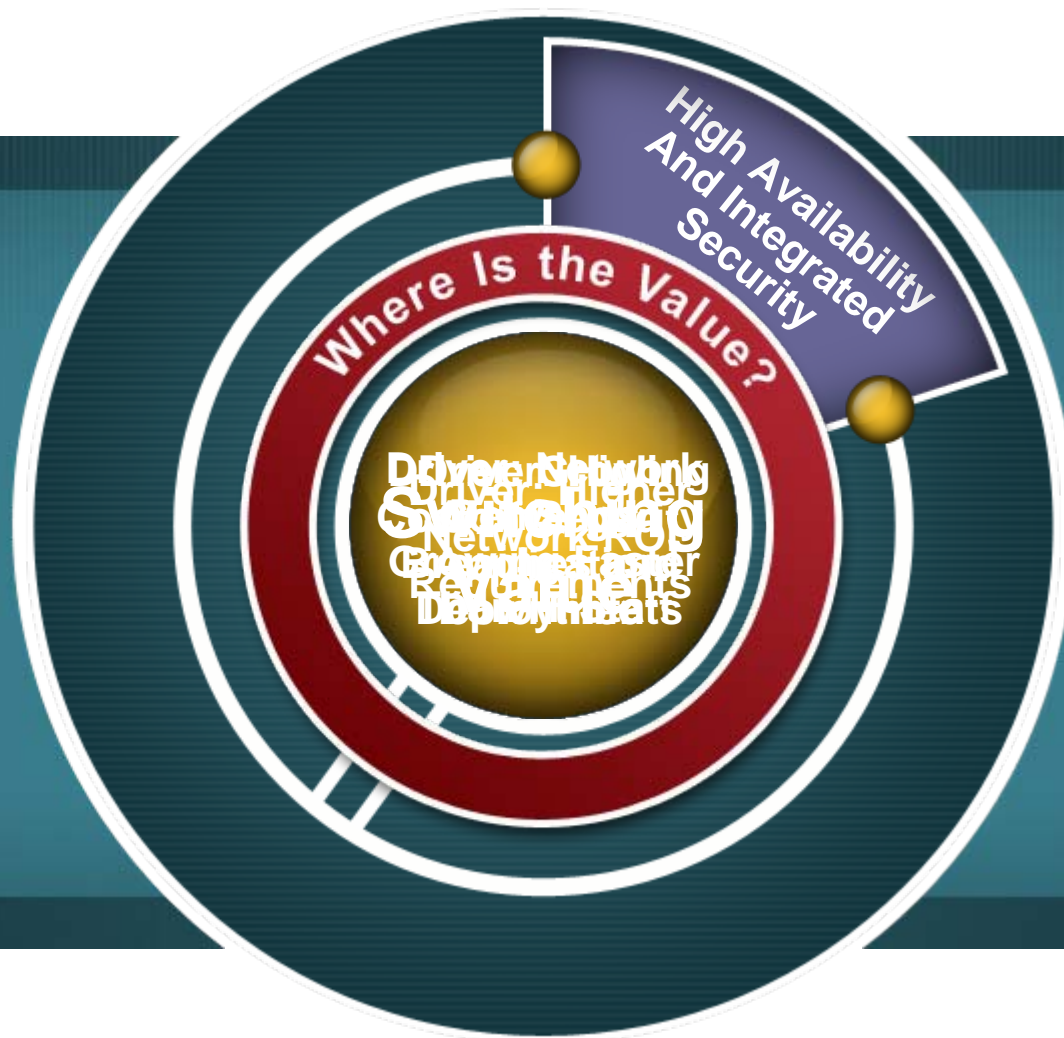
- Cisco's strategy for the LAN switching environment
- Catalyst portfolio of Ethernet platforms
- Innovation snapshots

# Today's key business issues for IT

- Drive efficiency for users, applications and networked resources
- Increase network efficiency and maximize uptime
- Mitigate need for near term upgrades and disruptions
- Maximize network investment and reduce Total Cost of Ownership
- New and growing application deployment with unpredictable traffic patterns
- Increased simultaneous application use and desktop computing power increasing
- Security is mission-critical
- Virtualization of network resources



# The LAN is more than “Speeds & Feeds”



# Cisco Catalyst switching innovation

1993 – 1995

1996 – 1998

1999 – 2001

2001 – 2003

2004 and beyond

Switched Ethernet  
Modular Chassis  
Fast Ethernet  
10/100 Desktop Switching  
Virtual LANs

ATM Switching  
Etherchannel  
Gigabit Ethernet  
Routing Integration  
Quality of Service

Power over Ethernet  
High Density Chassis  
Gigabit Core Switching  
Voice over IP  
Layer 3 Stackable Switching

L4-7 Services Integration  
Full Distributed Forwarding  
10GE Core Switching  
MPLS Virtual Networks  
Resilient, Gigabit-scaled Stackables

Continued Manageability Improvements  
Performance and Density of GE and 10GE  
Simplified QoS  
Convergence Integration  
Security and Wireless integration  
Evolve Current Platforms

Connectivity

End-to-end system deployments

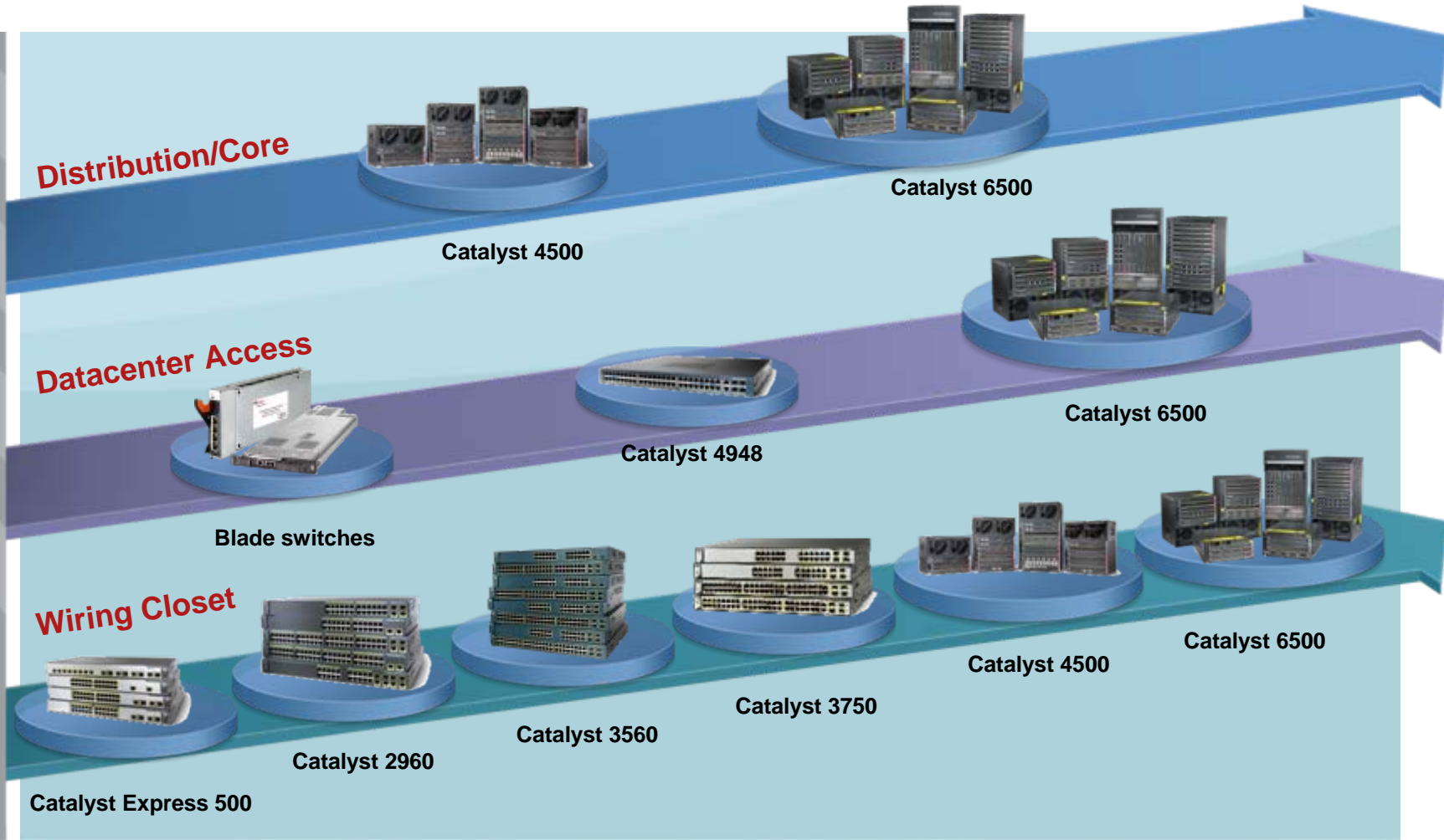
Intelligent network services

Service integration and convergence



# Cisco LAN switching portfolio

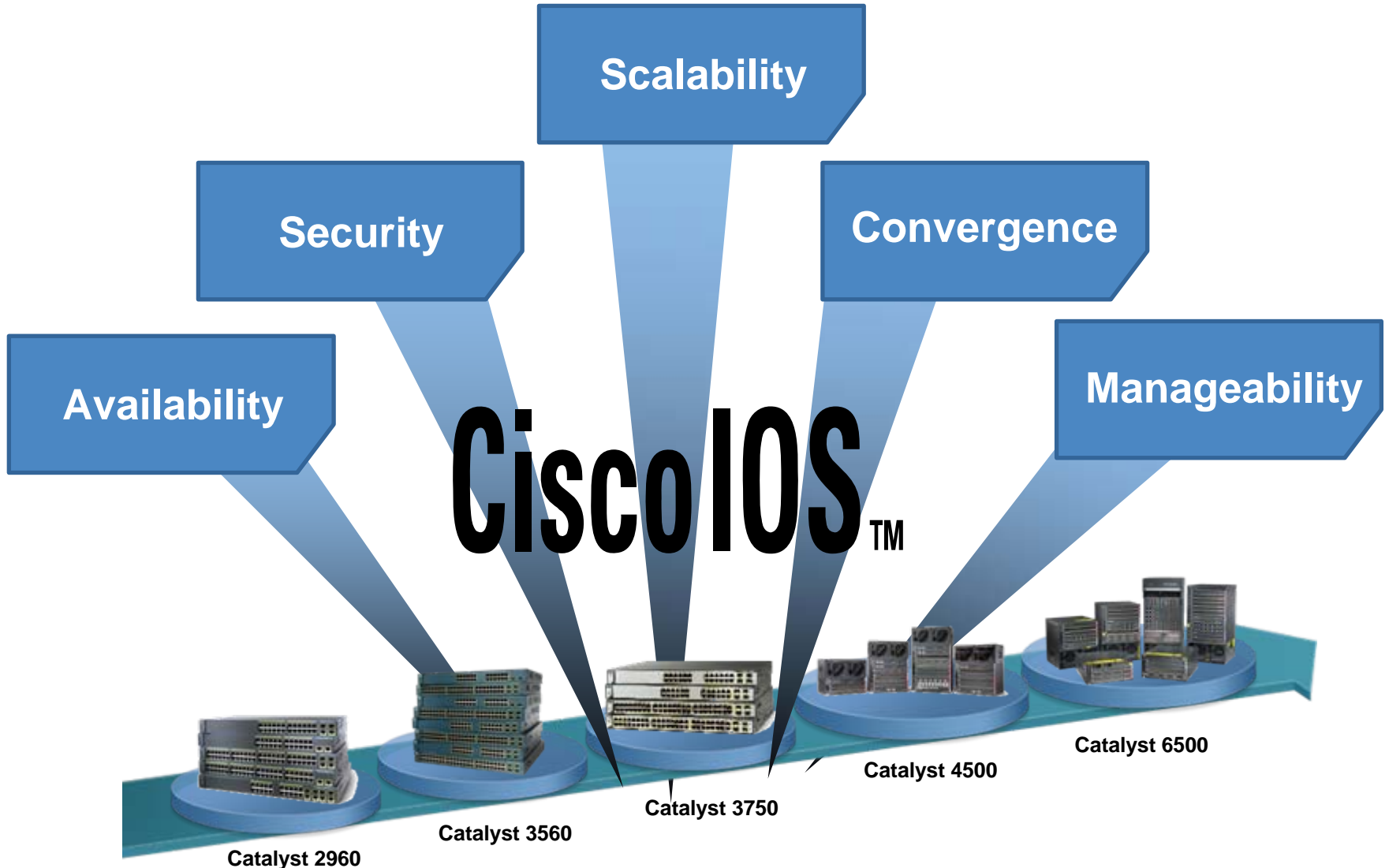
Features, scalability, longevity



# Quick positioning guidelines

- 2960 – cost-effective, intelligent Layer 2
- 3560 – entry-level Layer 3 and PoE
- 3750 – just the same as 3560... Plus stacking
- 4500 – modular Ethernet (from 10Mbps to 10Gbps)
- 6500 – fully integrated services platform
  
- Mission-specific : 2940, 2950i, 30x0, 4900 and “Metro” variants

# Focus areas for Catalyst development



# Attack mitigation



Access Security



Worm/Virus Protection



Malicious Intent

## IDENTITY-BASED NETWORKING SERVICES (802.1X)

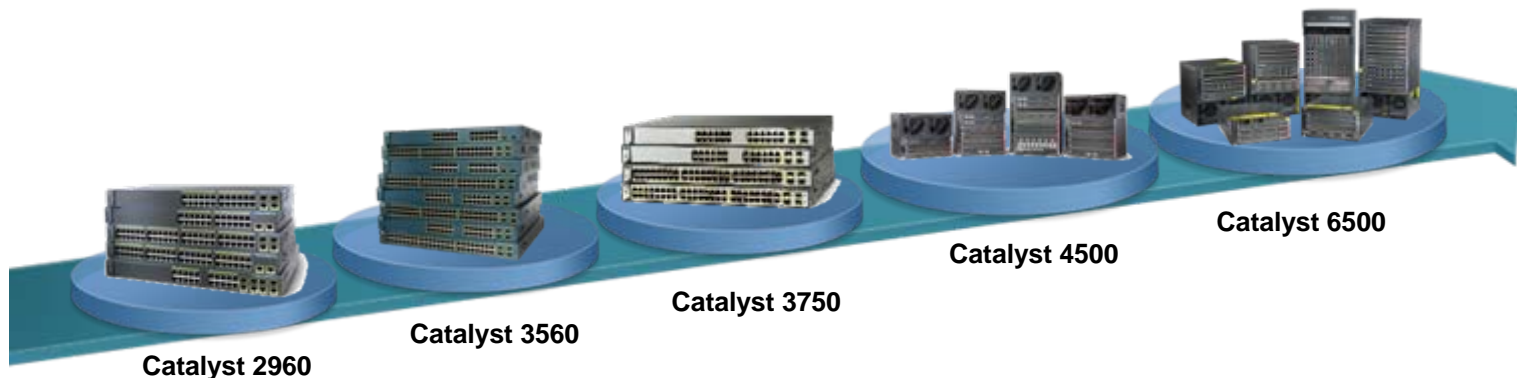
Identify and authenticate the **user** or device on the network and ensures access to correct network resources

## NETWORK ACCESS CONTROL SERVICES (NAC)

Identify the posture (or compliance) of the device to ensure the device can safely be admitted into the network without undue hazard

## LAYER 2 SECURITY FEATURE SUITE

Mitigate identify theft and “man-in-the-middle” attacks through DHCP Snooping, Dynamic ARP Inspection and IP Source Guard

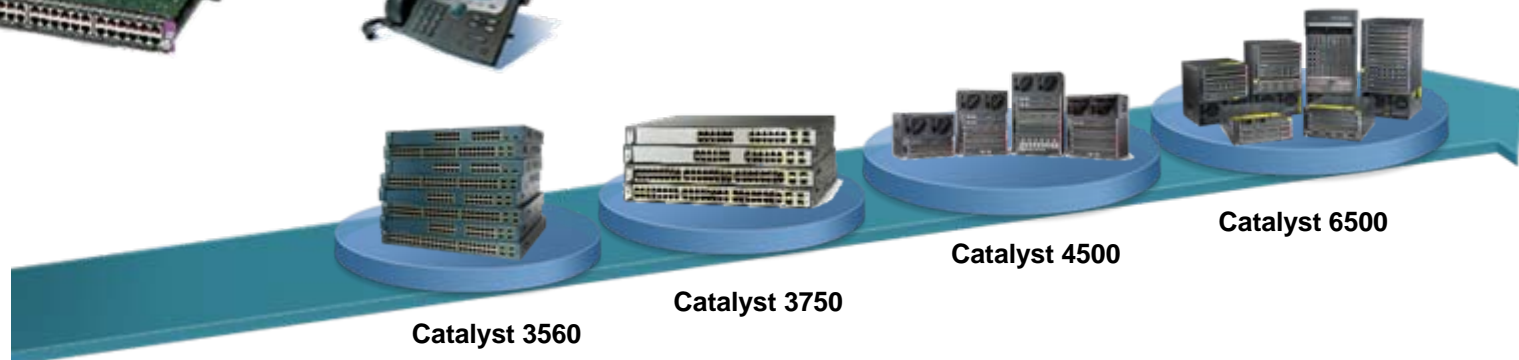
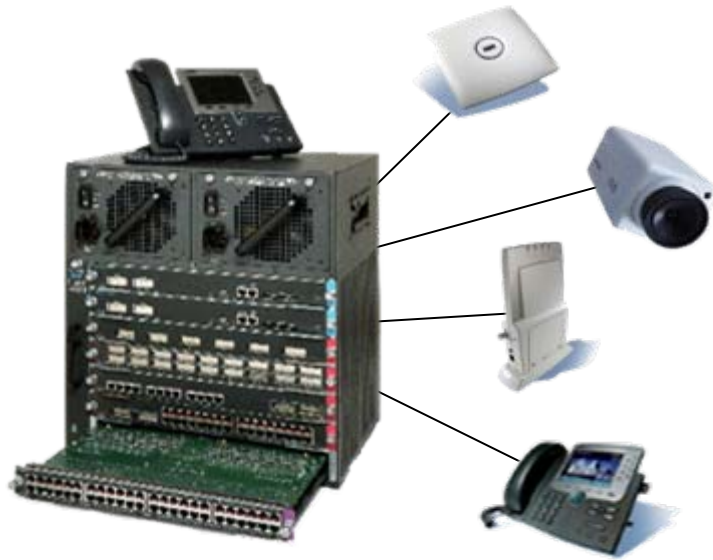


## Power over Ethernet

- Intelligent power management enables Cisco Catalyst switches to identify precise power requirements for compatible powered devices
- Catalyst switch initially uses the IEEE Class structure to determine initial power requirements, then refines power allocation for compatible devices



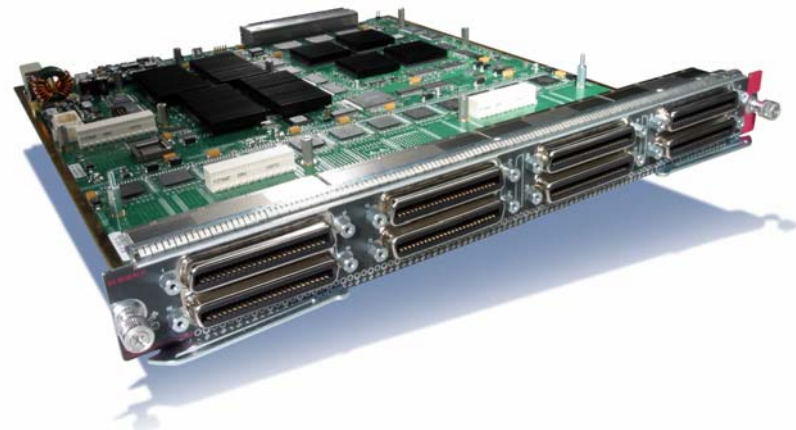
Class Number	Max power at output per port
0 (Default)	15.4 W reserved (actual device requirement can be much less)
1	4 W
2	7 W
3	15.4 W
4	Future use



# Up to... 1152 ports in a single chassis

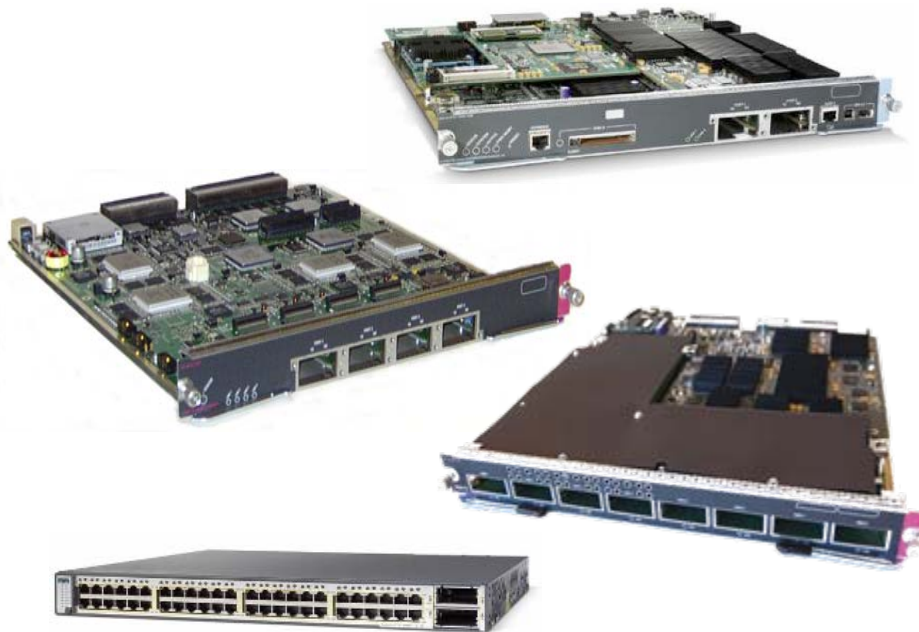
## Catalyst 6500 96-port module

- 10/100 Ethernet with RJ21 Telco
- Inline Power (Cisco and IEEE 802.3af)
- Up to 96 Class 2 devices
- Up to 62 Class 3 devices
- Strict priority queuing for QoS

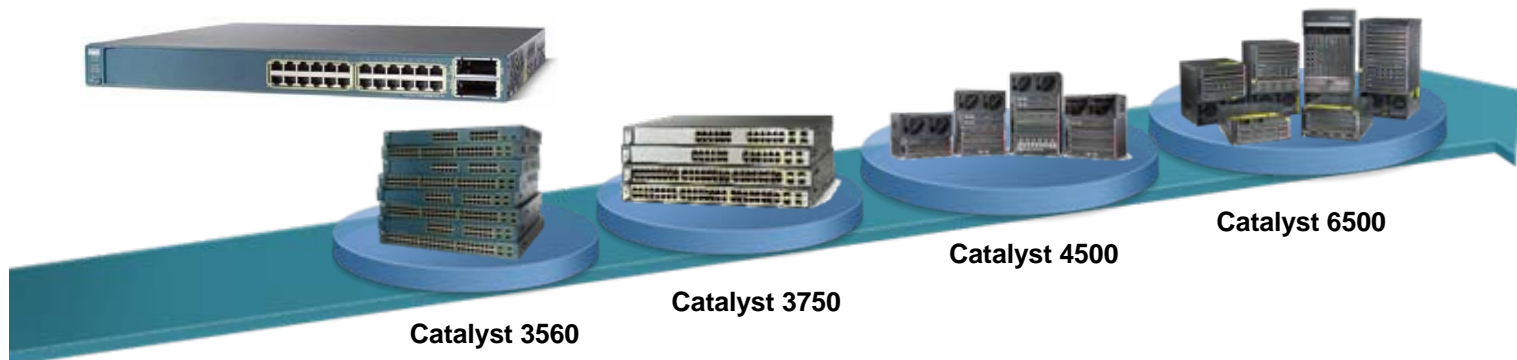


Catalyst 6500

## 10 Gigabit Ethernet



Spec	Media	Distance
10GBASE-CX4	Copper	15 m
10GBASE-SR	MMF	26 – 300 m
10GBASE-LX4	MMF	240 – 300 m
10GBASE-LRM	MMF	100 – 220 m
10GBASE-LR	SMF	10 km
10GBASE-ER	SMF	40 km



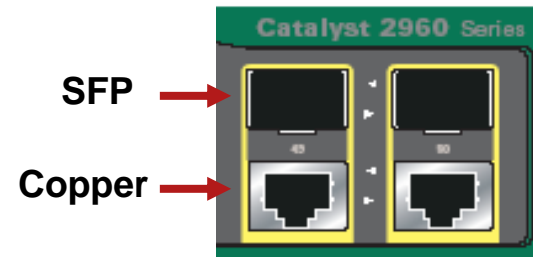
# Native WDM transceivers

- “Coloured” GBIC and SFP transceivers available for all Catalysts
- Allows native integration with CWDM and DWDM optical platforms
- Cisco EWDM technology scaling to 10G wavelengths
- Ideal solution for business continuance situations

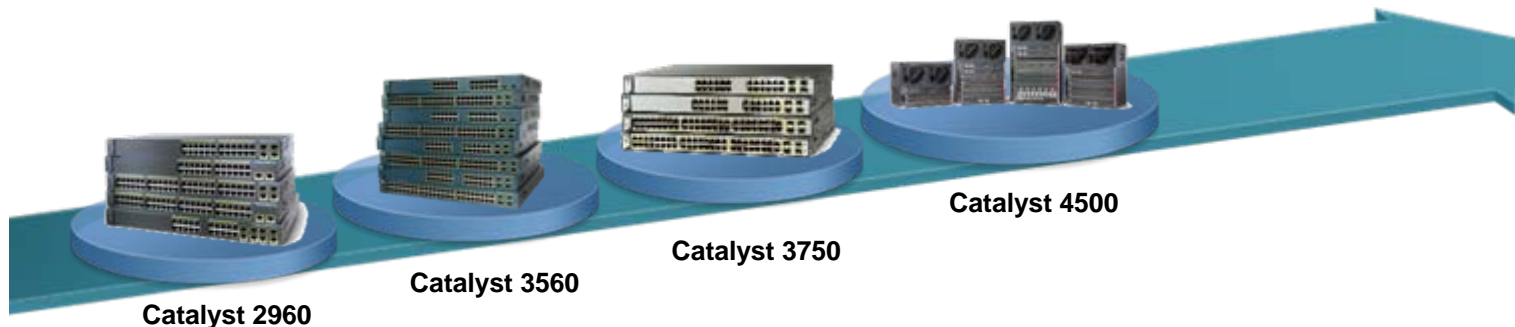


# Dual-purpose uplink ports

- “Alt-wired” ports : either RJ45 or SFP transceiver (not meant to be used as redundant link – for a single pair, only one port will be active at any time)

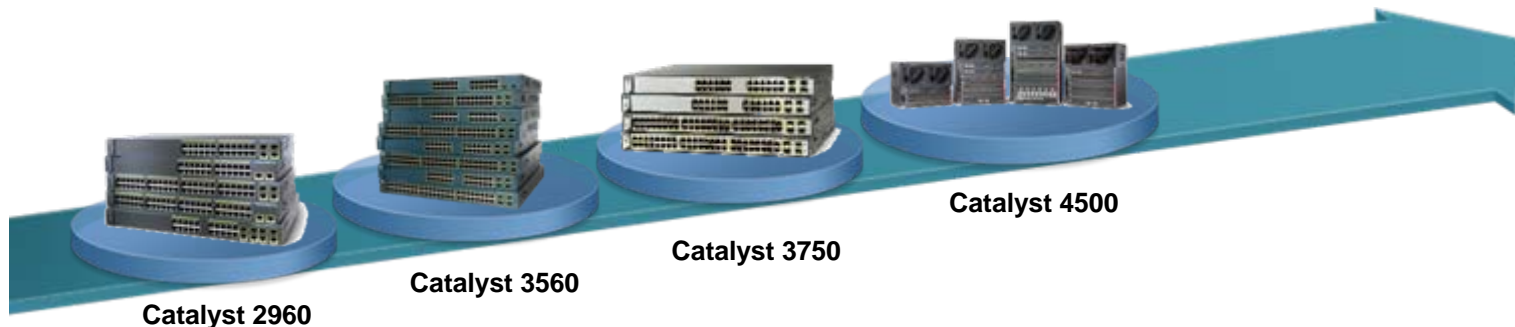
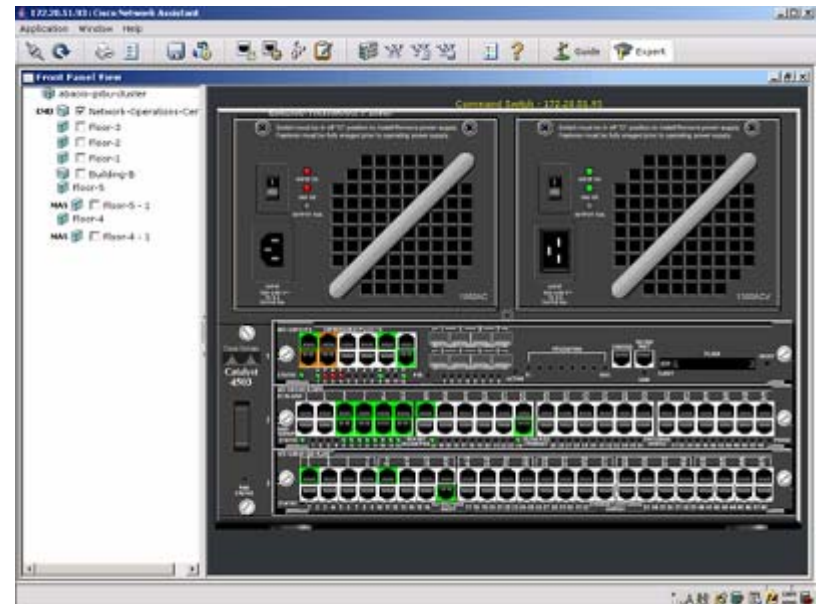


- “Twin-Gig” ports : convert a GE uplink to 10GE without changing the switch – even without impacting its operation !



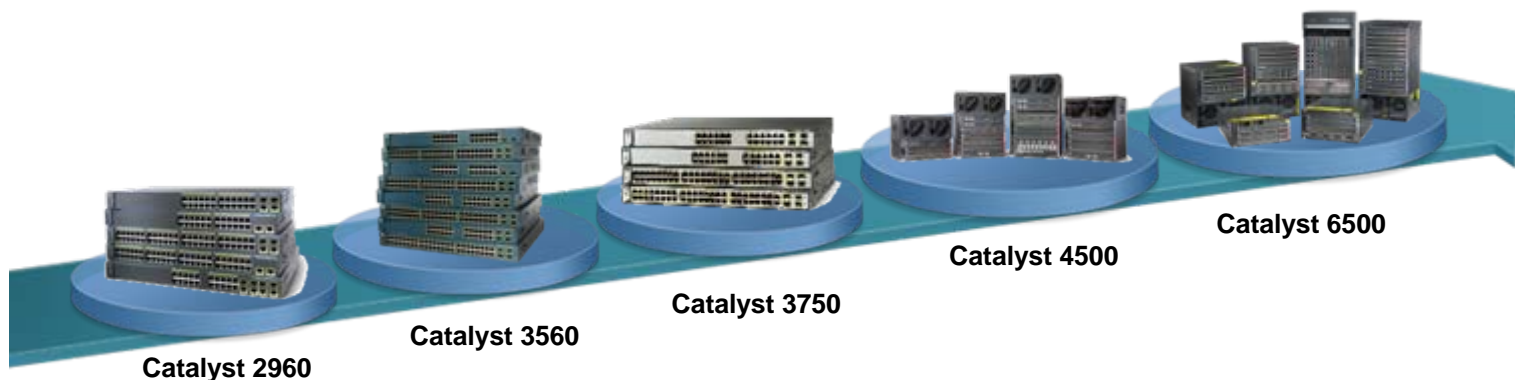
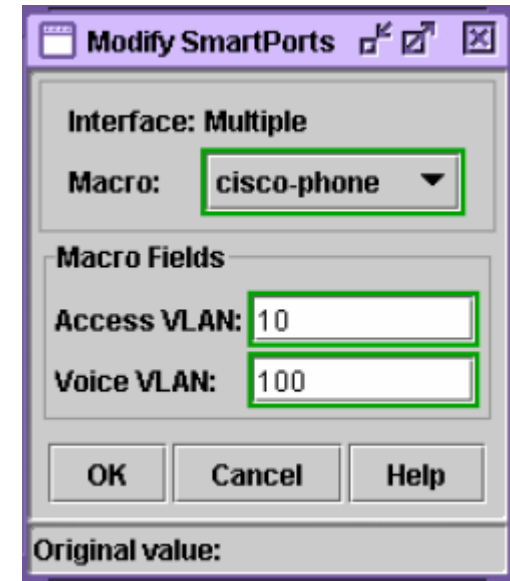
# Cisco Network Assistant

- Entry-level, GUI-Based, SMB network management application
- Single point of management for up to 40 network devices (switches, routers and security appliances)
- Also manages unlimited number of wireless APs and IP Phones
- Easy and accurate configuration
- Simplified troubleshooting assistance



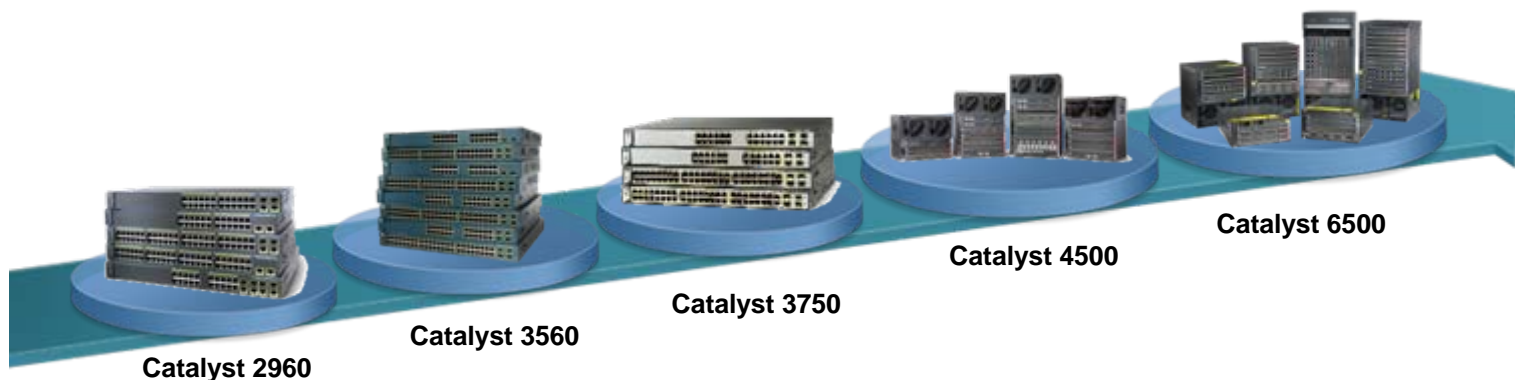
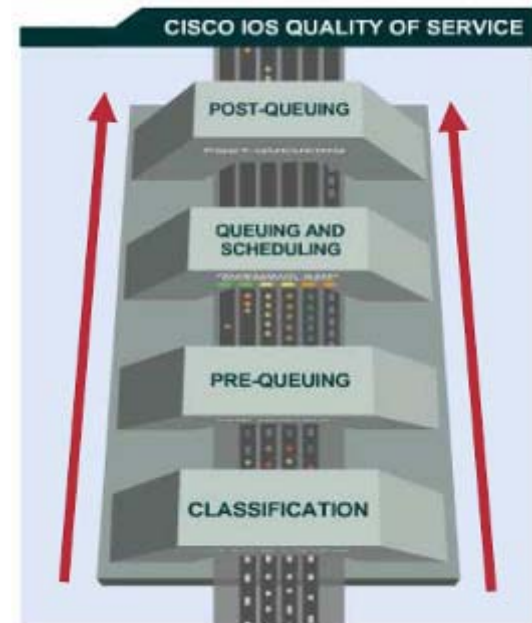
# SmartPorts

- Save time, minimize human error, and easily deploy, configure, and manage network devices with minimal effort and expertise
- Pre-configured macros based on Cisco recommended configurations
- Based on “roles” to simplify deployment : user desktop, IP Phone, wireless access point, server, router uplink...
- Ability to create customized macros



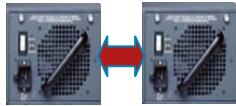
## Auto-QoS

- Automation and simplification of the existing user interface to expedite deployment of QoS
- Invoke “Discovery” mode on the applicable link and view data collection in progress
- Automatically configure the link and provision up to 10 traffic classes (suggested policy)
- Support for fine-tuning of suggested policy (if desired)



# Modularity

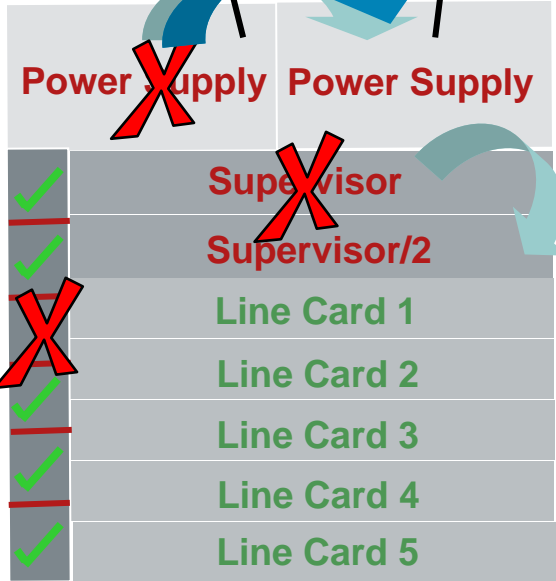
Power Supplies(1+1)



N +1 Redundant Fans

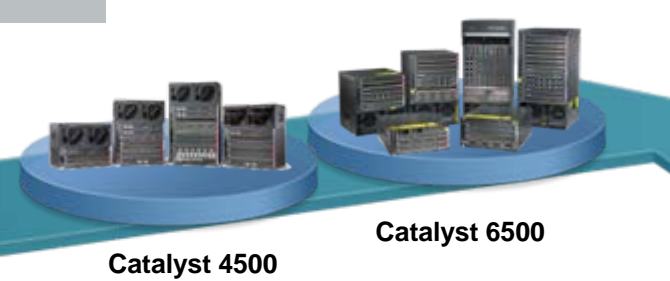


Pwr rail 1      Pwr rail 2



Power Circuit Redundancy

Supervisors (1+1)





# Embedded services



SSL & WebVPN



Firewall



Load-balancing



VPN



Wireless



Voice gateway



Catalyst 6500

# Intelligent blade connectivity



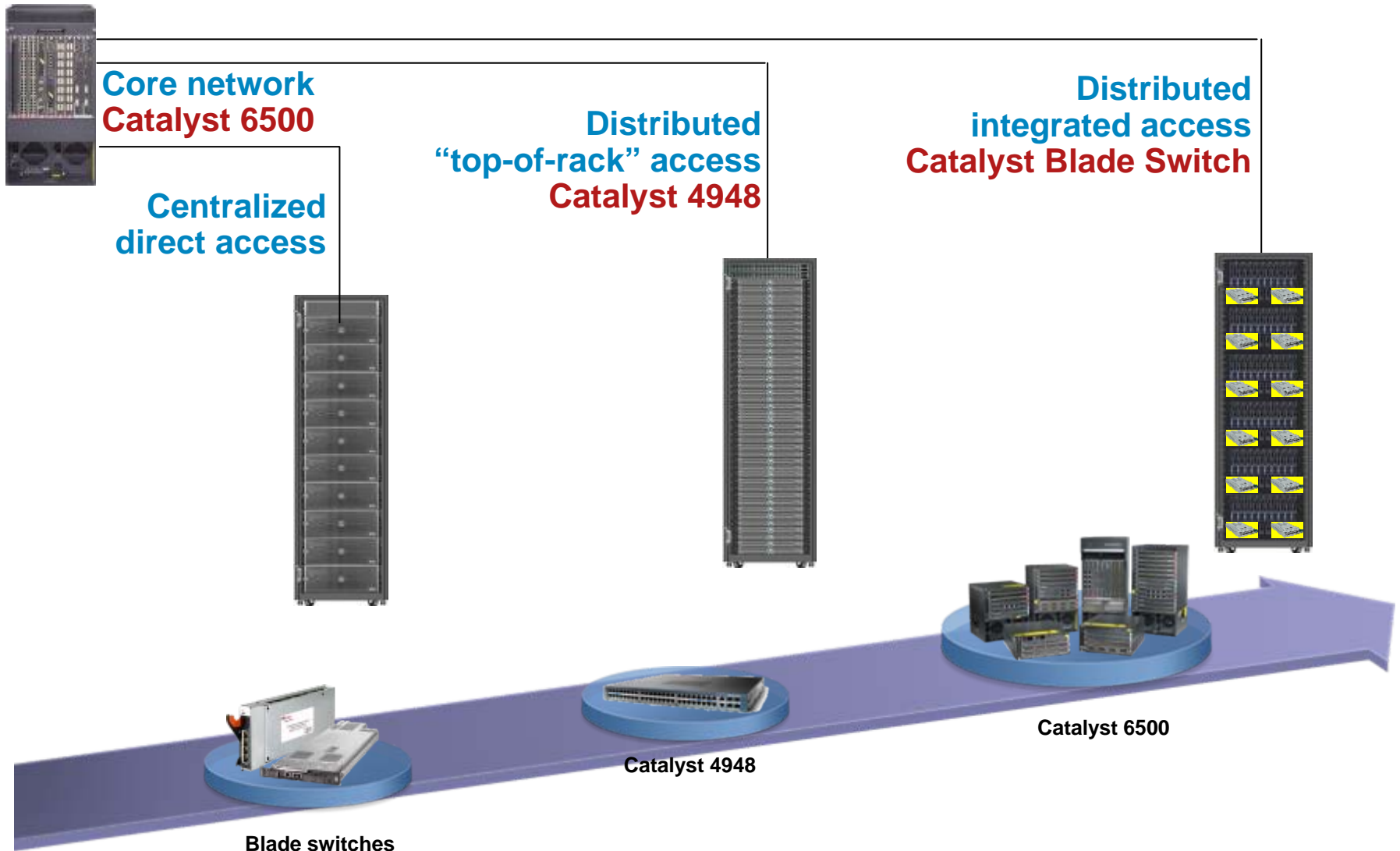
## Co-branded products

- Layer 2+ switches
- Rich IOS features
- Line rate performance



Blade switches

# Data center access alternatives



# Summary & Key take-aways

- The (IP) network is becoming ubiquitous
  - Virtually touches any client, any application, any device
- Commodity vs. value-add
  - The network infrastructure can transcend its connectivity role to offer intelligent services and become “application fluent”
- “Must-have” vs. “Nice-to-have”
  - IT services becoming strategic : security, convergence, mobility
- “Built-in” vs. “Bolted-on”
  - Only Cisco has the innovative power and the execution strength to make it happen in an **end-to-end** fashion

# Q & A

## Thank you for listening !

