



Switch update dai Cat 500 ai Cat 4X00



Zoom In

Seminari WEB di introduzione alla tecnologia

Webex, 8 maggio 2008

Michele Di Franco


Zoom In

- ciclo di seminari di introduzione alla tecnologia dedicato ai partner che operano nel mercato PMI
- percorso formativo sulle tecnologie maggiormente utilizzate:
 - ☞ Unified Communication, Security , Mobility , Routing & Switching
- la presentazione, la sua registrazione, le Q & A e la documentazione associata ad ogni seminario verranno pubblicate su:



www.cisco.com/it/zoomin/index.html

Calendario seminari

21 febbraio	It's on the web!
12 marzo	Cisco Unified Communication nel mondo PMI
28 marzo	Cisco Unified Communication – Le applicazioni
17 aprile	Router update - La famiglia ISR – dagli 800 ai 3800
 8 maggio	Switch update – dai cat 500 ai Cat 4000
27 maggio	Cisco Mobility Express (inizio ore 10:00)
11 giugno	Self Defending Network & ASA
3 luglio	Self Defending Network & ISR Security

- Il calendario degli eventi ed il link per la registrazione sono disponibili sul nostro sito nell'area dedicata ai partner
http://www.cisco.com/web/IT/unified_channels/reseller/engage/calendario/fy08/zoomin.html
- Ogni seminario inizia alle 14:30 ed avrà la durata di 60 min di cui i primi 45 dedicati alla presentazione ed i rimanenti 15 alle domande del pubblico

Switch update: dai Cat 500 ai Cat 4X00.

- Coprotagonisti delle reti IP sono senz'altro gli switch che permettono il collegamento fisico degli apparati ogni rete. Il seminario ha l'obiettivo di individuare le caratteristiche un tempo ad esclusivo appannaggio dei router e che oggi invece, pervadendo tutti gli elementi di rete, devono essere presenti anche negli switch. Si parte dalla classica funzionalità di connessione per arrivare alla qualità del servizio, alla sicurezza, al routing stesso. Durante il seminario saranno esaminate con maggior dettaglio quelle famiglie di prodotti Cisco che, ferme restando le funzionalità, si prestano maggiormente per la proposizione nel mercato PMI

Agenda

Switching Product Portfolio Introduction

Switching Product Portfolio Positioning

Entry Level Platforms

Medium Level Platforms

High Level Platforms

Conclusion Q&A

Strengthening Campus Communications Fabric

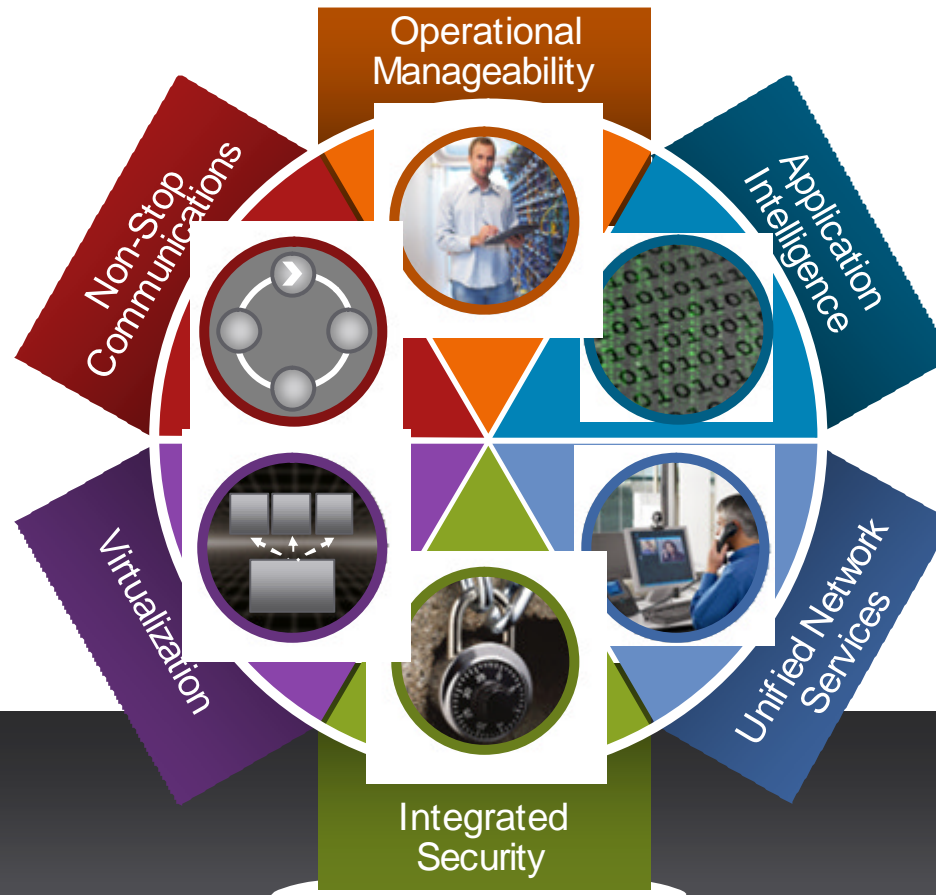
- Accelerate Service implementation
- Ease Management, Automate Infrastructure
- Facilitate Changes

- Resilient Infrastructure
- Application Availability
- In Service Maintenance

- Recognize Applications & Prioritize
- Monitor & Control Traffic
- Deliver new applications
- Eliminate Latency

- Dynamic Resource and Service Utilization
- Shared Infrastructure

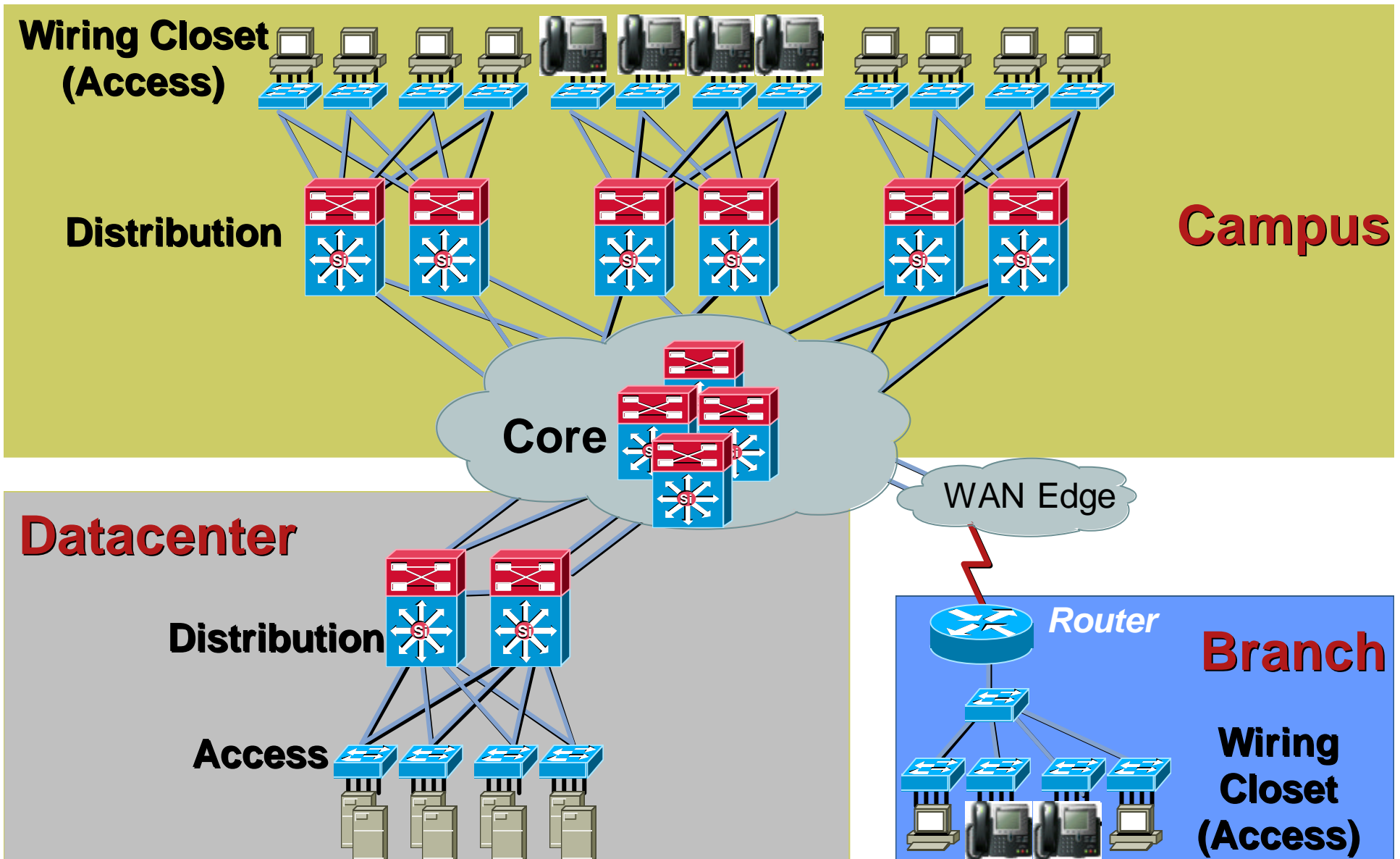
- Connect to any resource/ person through any device
- Consistent services and performance
- Wired and wireless



- Pervasive security policies
- Built-in
- Protects access, identities, resources and content

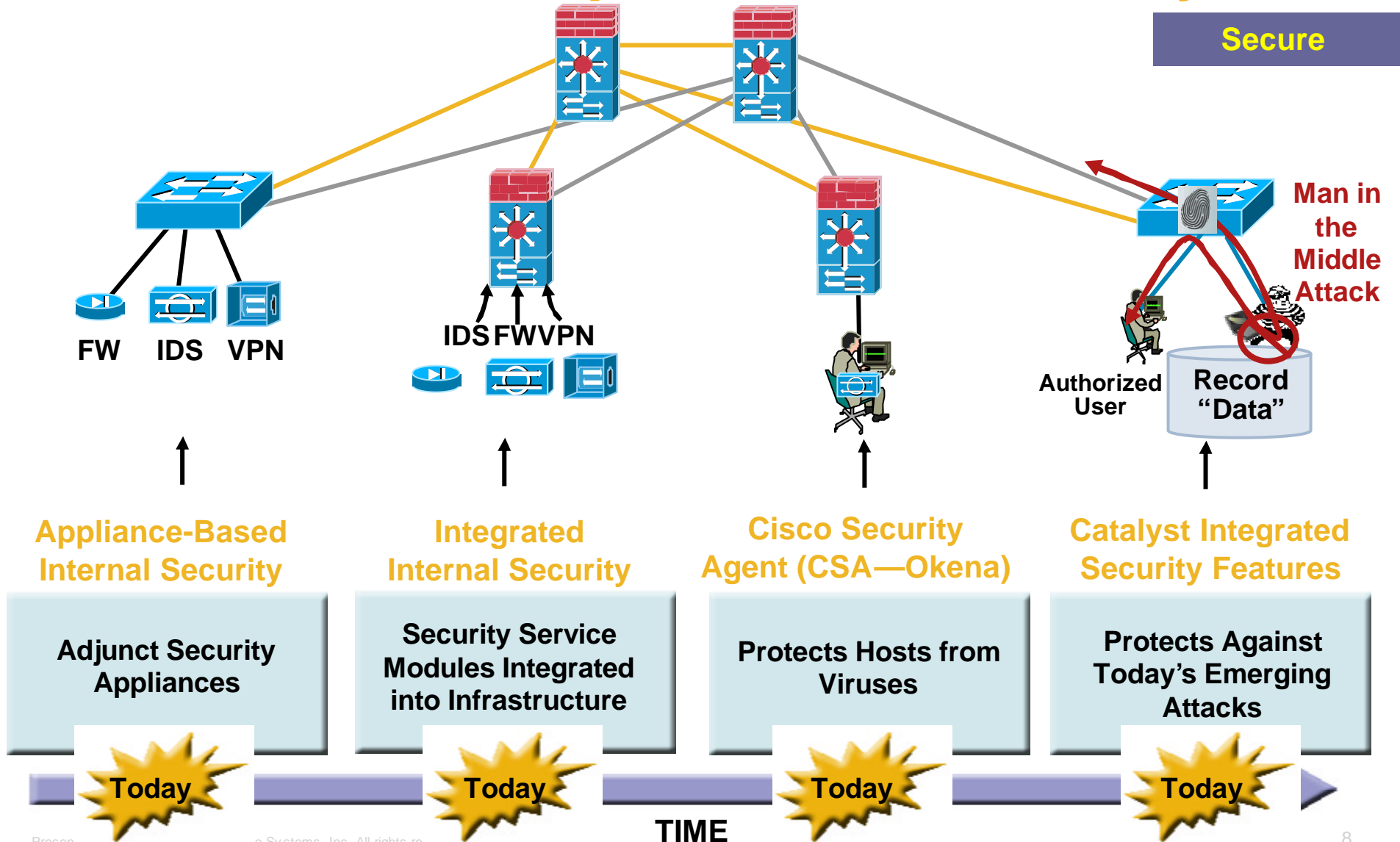
Where You Sell Switches

Enterprise Network



Campus Integrated Security Features

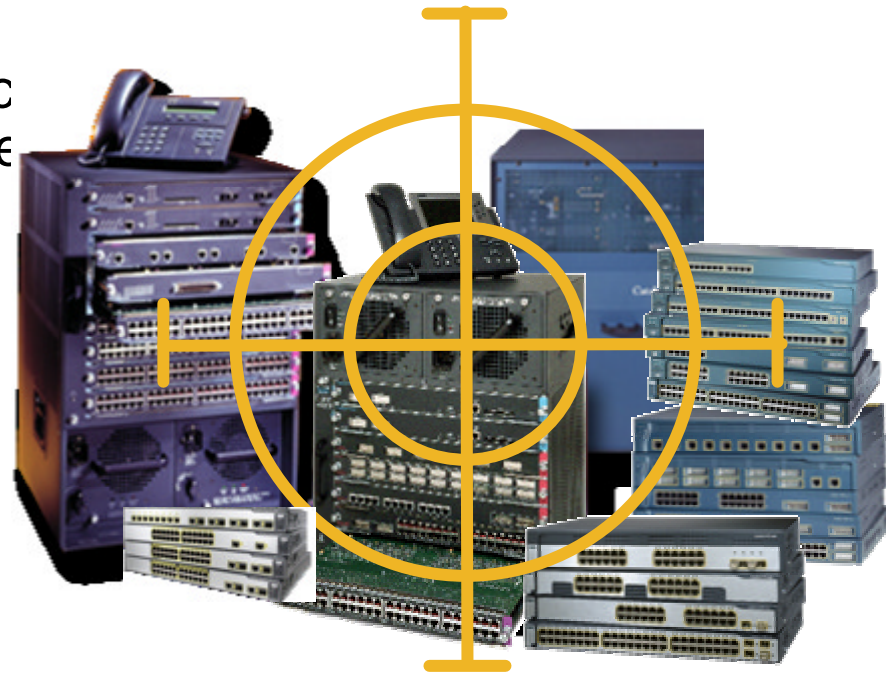
Evolution of Campus Internal-Security



The Switches Are Targets

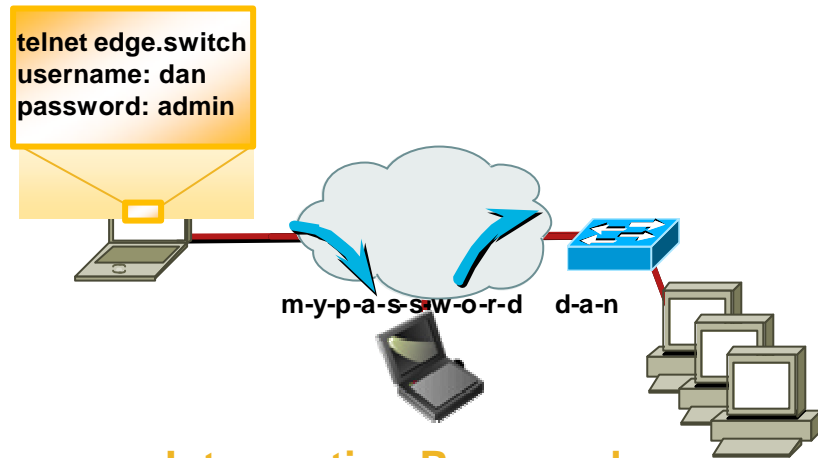
Secure

- ✍ Security threats often target the infrastructure itself in order to slow down or halt operation of the device under attack
- ✍ Worms, viruses, denial-of-service attacks, and flooding attacks are most common
- ✍ The Catalyst “arsenal”:
 - Access control lists
 - Cisco express forwarding
 - Control-plane rate limiting
 - Scavenger-class queue
 - Port security
 - Broadcast suppression
 - BPDU-guard/root-guard
 - SSH v2 and SSL

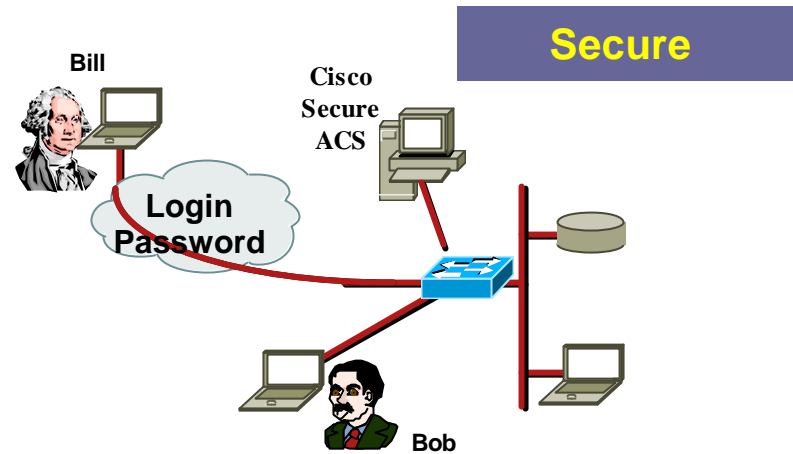


Campus Integrated Security Features

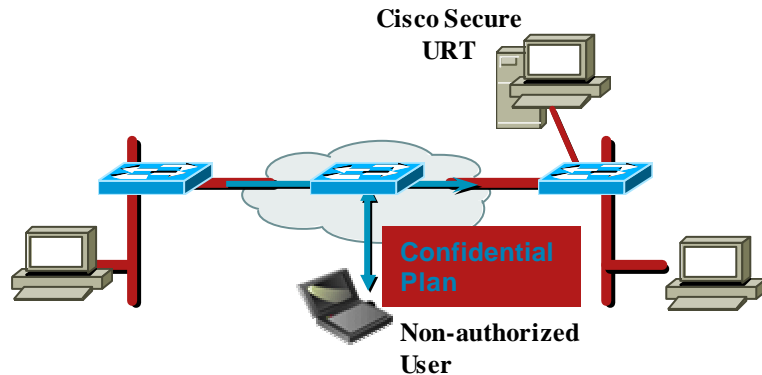
Common Security Threats in the LAN



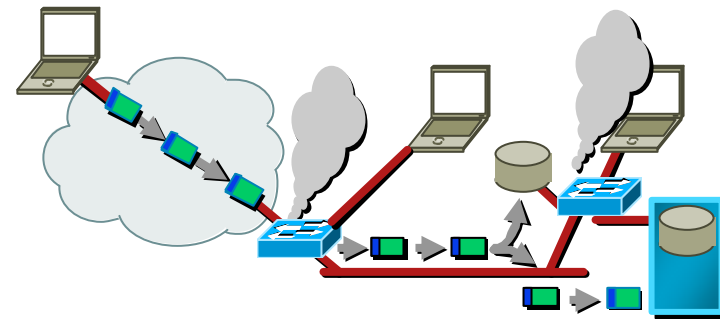
**Intercepting Passwords
(Packet Sniffing)**



**Impersonation
(Identity Spoofing)**

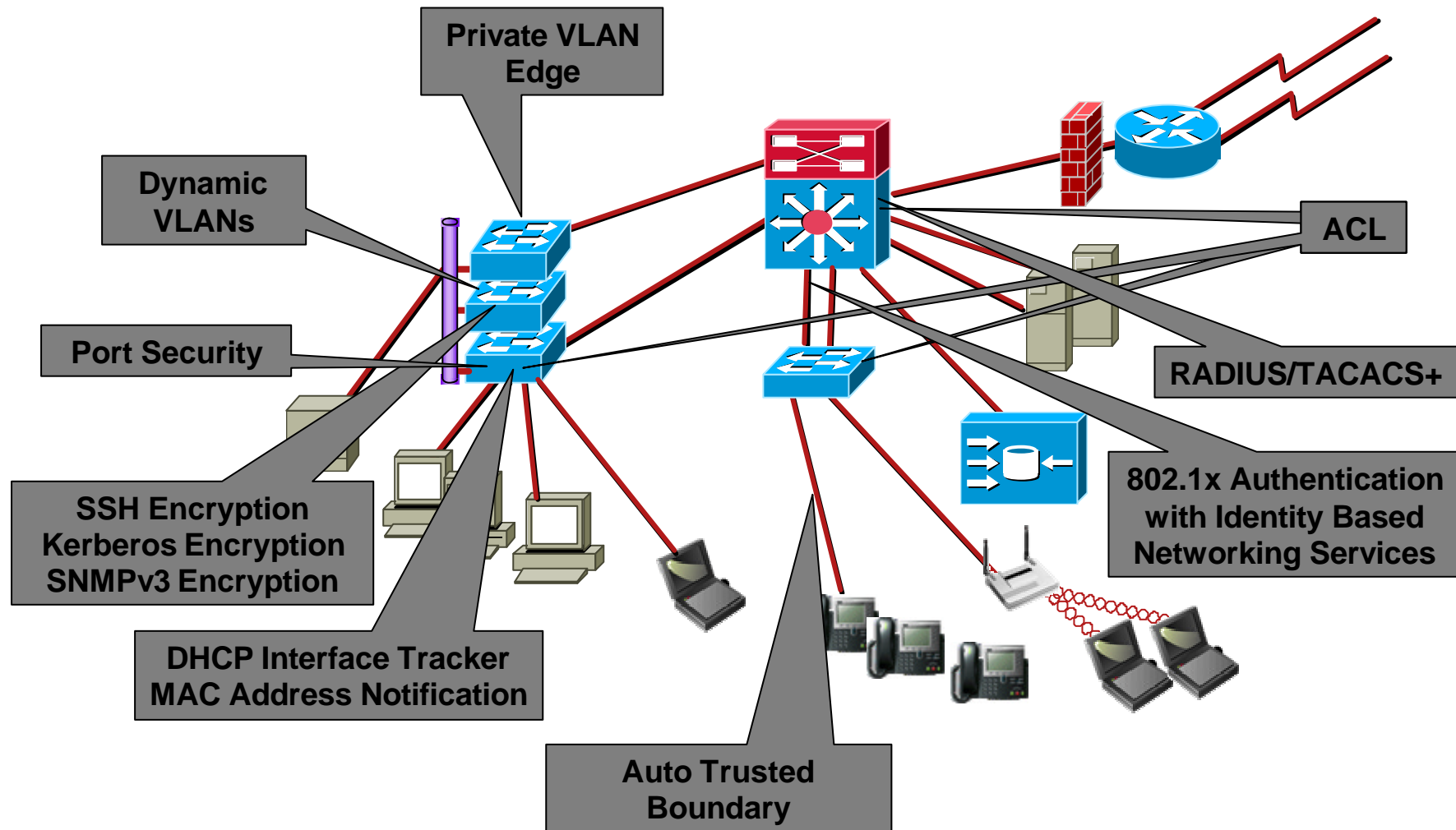


Data Theft or Unauthorized Access

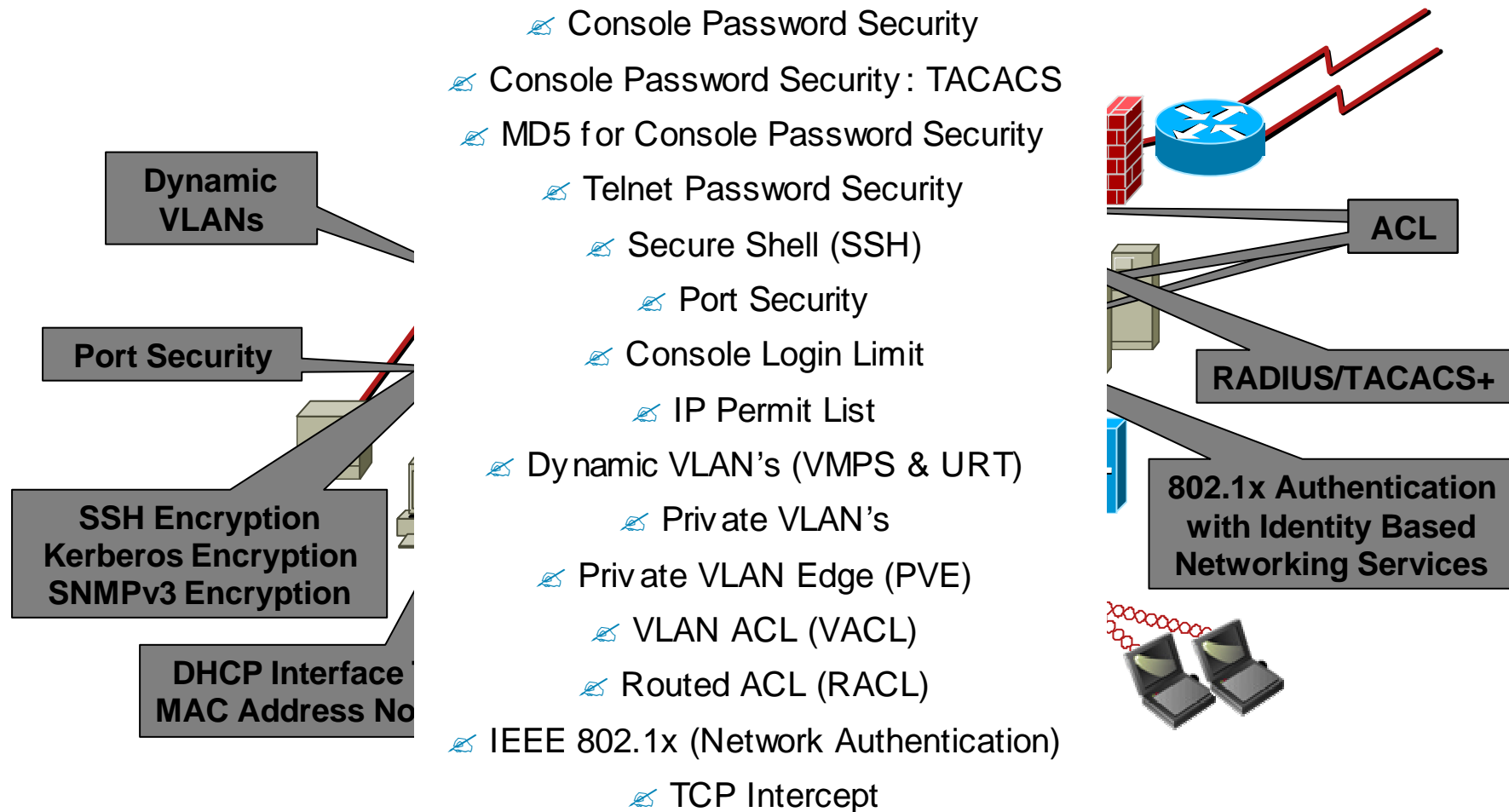


Bringing down the Network

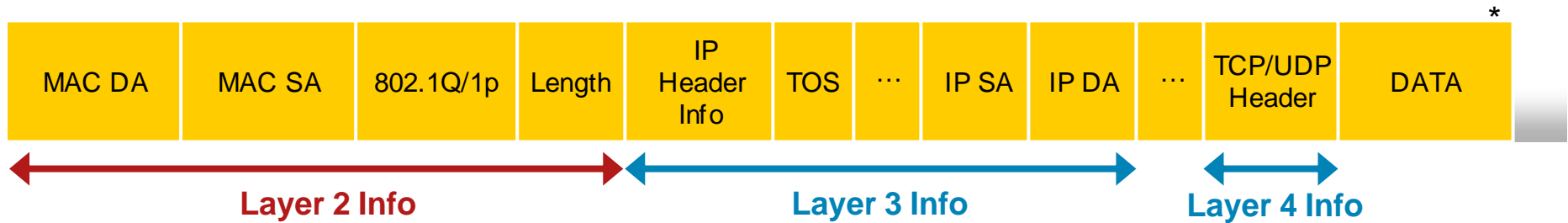
Catalyst Security Capabilities



Further Catalyst Security Capabilities



Intelligence Through More-Capable ASICs

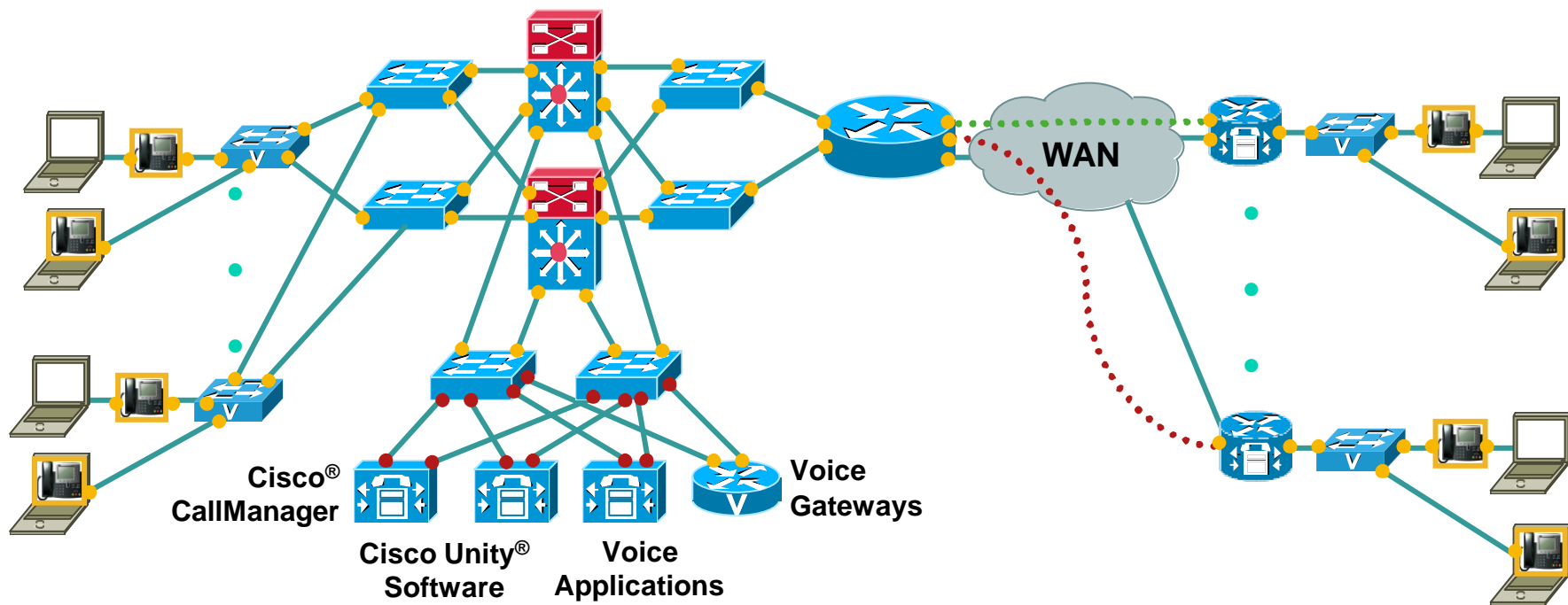


- Layer 2 switches are limited to the processing and forwarding of Layer 2 information.
- Multilayer switches can look deeper into the frame => intelligent decisions based on Layer 3 or Layer 4 information.
- Examples of why this scenario is useful:
 - Preserve bandwidth by limiting traffic based on a user's IP address.
 - Preserve bandwidth by limiting traffic based on applications using a constant TCP/UDP port number—Web browsing, enterprise resource planning (ERP) applications, etc.
 - Prevent access to network resources based on user's IP address.
 - Classify and mark traffic based on Layer 3 QoS (DSCP).
- Cisco® innovative ASICs with Cisco IOS® Software integration enable superior intelligent services that will not bottleneck the network.

* Not to Scale

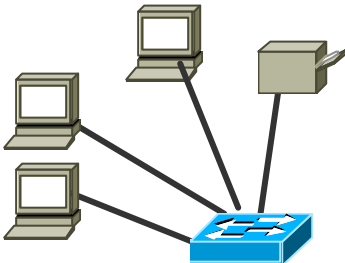
Auto QoS

One Command per Interface to Enable and Configure QoS.
Modify Global and Interface Settings to Make QoS for VoIP Work.

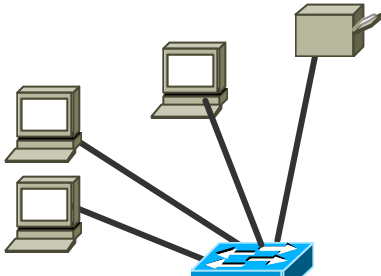


Office Workspace Deployment Scenario

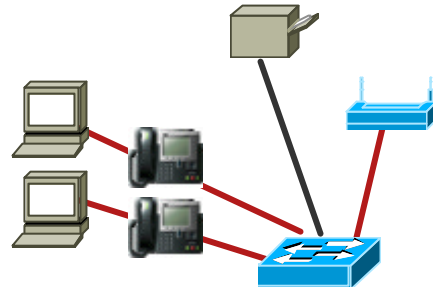
Cisco® Catalyst® 2960-8TC: Desktop and Printer Fast Ethernet Secure Connectivity



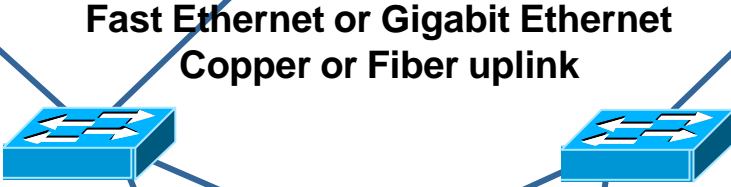
Cisco Catalyst 2960G-8TC: Desktop and Printer Gigabit Ethernet Secure Connectivity



Cisco Catalyst 3560-8PC: Desktop, Printer, Wireless LAN, and Unified Communications



Cisco Catalyst 3560/3750 or 4500 in wiring closet



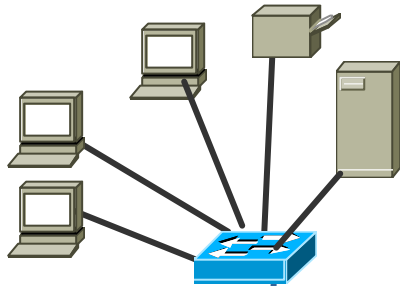
Fast Ethernet or Gigabit Ethernet Copper or Fiber uplink

Cisco Catalyst 6500 in core

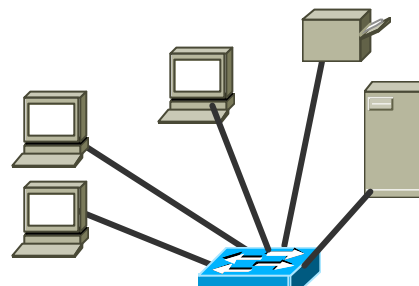


Micro Branch Deployment Scenario

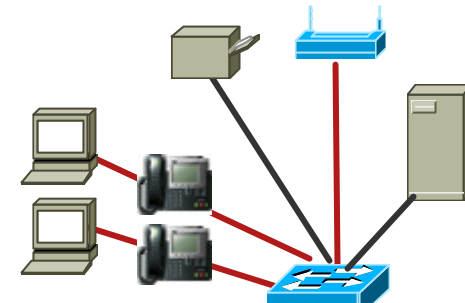
Cisco® Catalyst® 2960-8TC: Desktop and Printer Fast Ethernet Secure Connectivity



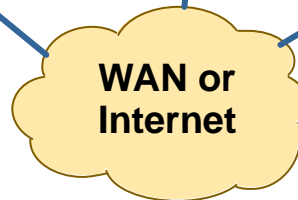
Cisco Catalyst 2960G-8TC: Desktop and Printer Gigabit Ethernet Secure Connectivity



Cisco Catalyst 3560-8PC: Desktop, Printer, Wireless LAN, and Unified Communications



Cisco Integrated Services Router



Power over Ethernet Enables New Device Connectivity

Convergence

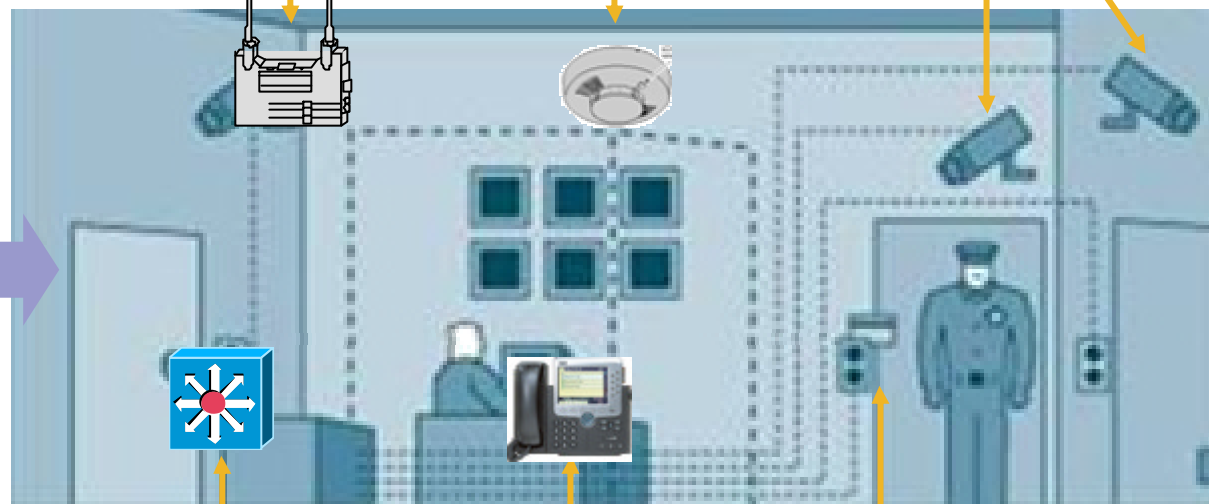
Power Over Ethernet (PoE) Delivers 48V DC Power Over a Standard Copper Ethernet Cable

The Power and Network is Used by the Devices for Operation

Wireless Access Points

Fire Protection

IP Integrated Video Surveillance



Resilient, Available IP Network with Scalable Power Delivery

Powered IP Telephone

Building Access Control

Power over Ethernet (PoE)

Convergence

New Features: Per port Power Sensing & Power Policing

 **Power monitoring or power sensing:** The switch monitors the real-time power consumption of the connected powered device

 **Power policing:**

The switch polices power usage by comparing the real-time power consumption to the maximum power allocated to the device.

If the device uses more than the maximum power allocation on the port, the switch can either:

- Turn off power to the port

- Generate a syslog message and update the LEDs while still providing power

By default, power-usage policing is disabled on all PoE ports (no action occurs when the powered device consumes more than the maximum power allocation on the PoE port)

Agenda

Switching Product Portfolio Introduction

Switching Product Portfolio Positioning

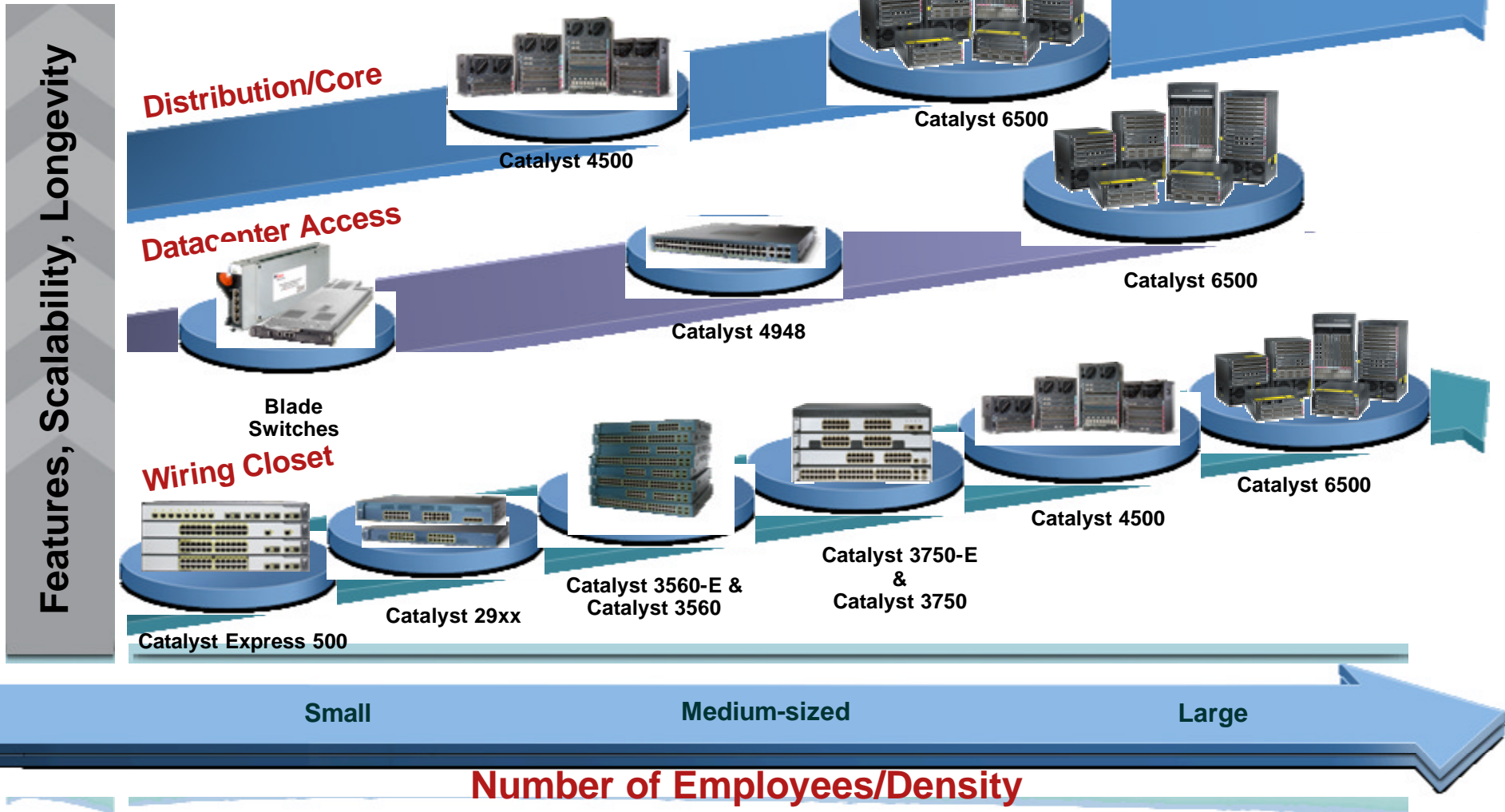
Entry Level Platforms

Medium Level Platforms

High Level Platforms

Conclusion Q&A

Switches for Cisco SMB Class Secure Network Foundation



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Switching Product Portfolio Introduction

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Entry Level Platforms

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Conclusion Q&A

Cisco Catalyst Express 500 Series Switches

Positioning:

For small businesses up to 250 employees

Stand-alone fixed configuration Layer 2 switches

Features/Highlights:

- ✍ Fast Ethernet and Gigabit Ethernet connectivity
- ✍ Intuitive GUI simplifies setting up, running and troubleshooting a network
- ✍ Power over Ethernet connectivity eliminates need for separate power outlets for IP Phones, wireless LAN access points and video surveillance

Ideal Entry-level Ethernet Switch for Businesses With Up to 250 Employees



www.cisco.com/go/ce500

Cisco Catalyst Express 500 Series Model Overview

Cisco® Catalyst® Express 500-24TT



- 24 10/100 ports
- 2 10/100/1000 Base-T ports

Cisco Catalyst Express 500-24LC



- 20 10/100 ports
- 4 10/100 PoE ports
- 2 10/100/1000BT or SFP ports
- 62W IEEE 802.3af / Cisco prestandard PoE

Cisco Catalyst Express 500-24PC



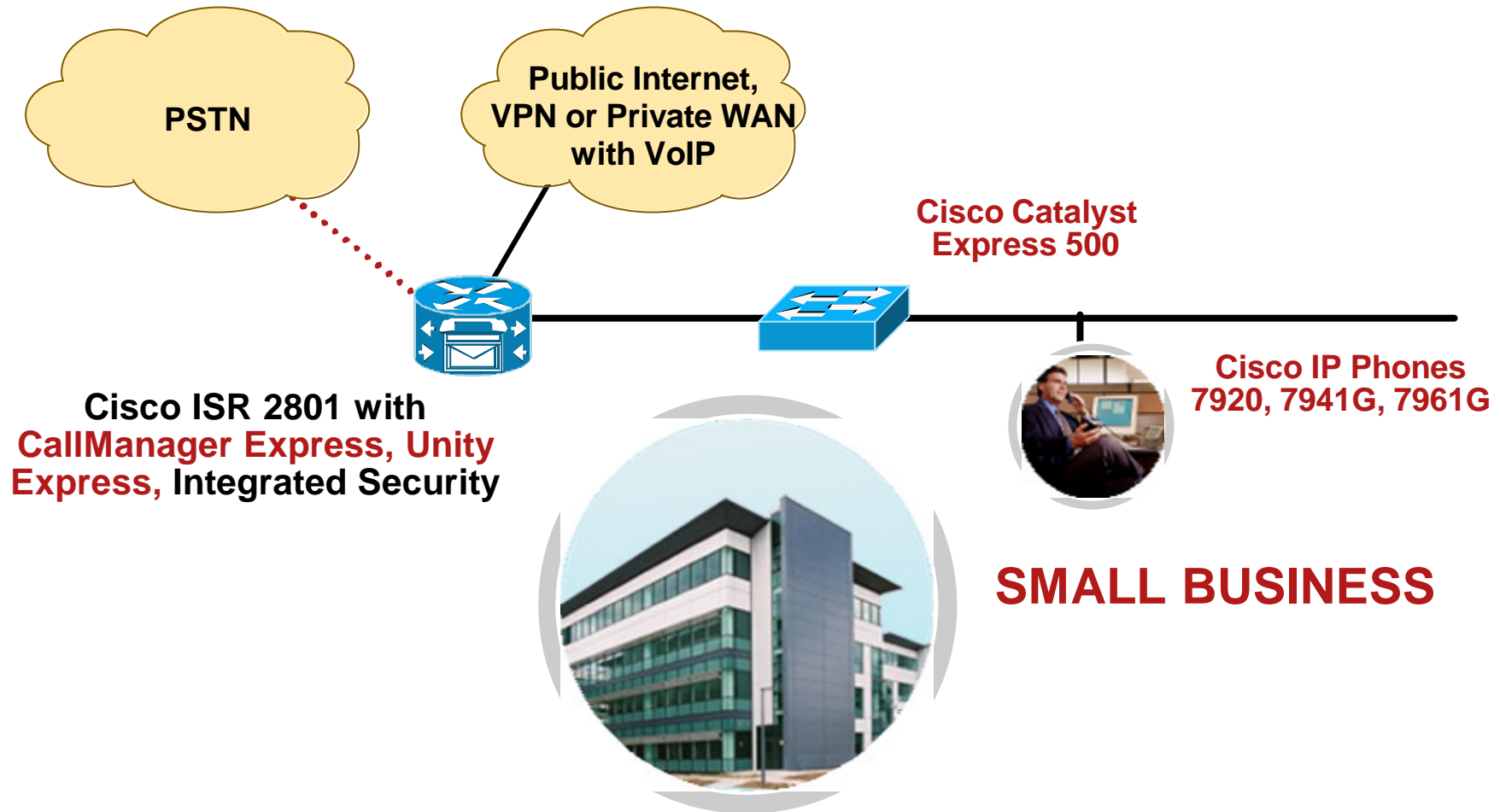
- 24 10/100 PoE ports
- 2 10/100/1000BT/SFP ports
- 370W IEEE 802.3af / Cisco prestandard PoE

Cisco Catalyst Express 500G-12TC

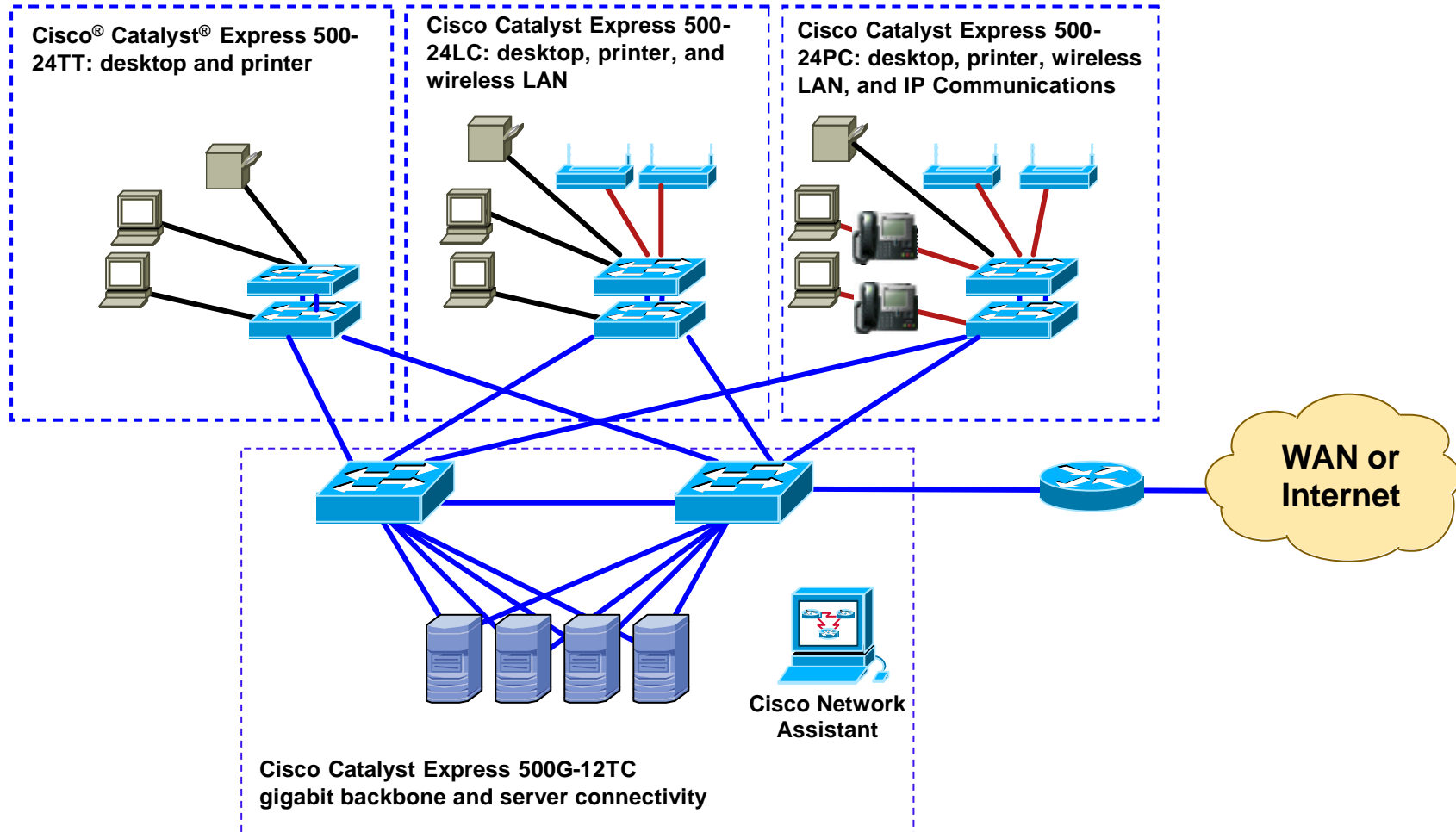


- 8 10/100/1000BT ports
- 4 10/100/1000BT or SFP ports

Typical Solution Deployment That Grows With The Business



Typical Deployment Scenario



Choice of Management Interfaces

Device Manager

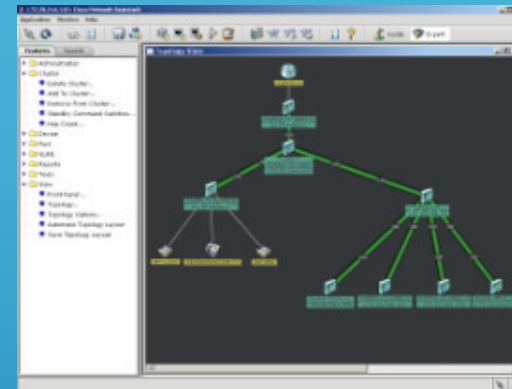


Manages a Single Device

✍ Web-based—HTML



Cisco Network Assistant



Manages a SMB Network

✍ Router, Switch
✍ IP Phone, Wireless
✍ Web-based—Java



Cisco Catalyst Express 520 Switches

Best for:

- ✍ Cisco Smart Business Communication System (SBCS)

Features/Highlights:

- ✍ Fast Ethernet and Gigabit Ethernet
- ✍ Power over Ethernet
- ✍ Easy Integration with SBCS
- ✍ Simple Deployment, Management and Troubleshooting with Cisco Configuration Assistant
- ✍ Limited Lifetime Warranty and Free Cisco IOS Software Updates

Ideal for Small Businesses Deploying Cisco Smart Business Communication System



www.cisco.com/go/ce520

Cisco Catalyst 2960 Series Switches

Positioning:

For Mid-sized and branch office networks

Stand-alone fixed configuration

Features/Highlights:

- ✍ Easy network configuration using Cisco Network Assistant software
- ✍ Fast Ethernet and Gigabit Ethernet connectivity
- ✍ Redundant power supply support
- ✍ Spanning Tree Protocol enhancements aimed to minimize network downtime

**Ideal for Small Enterprise and Mid-sized Networks
Needing Enhanced Security and Qos Services**



www.cisco.com/go/catalyst2960

Cisco Catalyst 2960 Series Model Overview

Catalyst 2960-24TC



- 24 10/100 ports
- 2 Dual-Purpose Uplink ports

Catalyst 2960-48TC



- 48 10/100 ports
- 2 Dual Purpose Uplink ports

Catalyst 2960-24TT



- 24 10/100 ports
- 2 10/100/1000 Uplink ports

Catalyst 2960-48TT



- 48 10/100 ports
- 2 10/100/1000 Uplink ports

Catalyst 2960G-24TS



- 20 10/100/1000 ports
- 4 Dual-Purpose Uplink ports

➤ L2+ Switch family containing FE & GE options

➤ Consistency: LAN Base Image Cisco ASICS

➤ Enterprise-class intelligent services: Advanced QoS, enhanced security, high availability

Cisco Catalyst 2960 and Catalyst Express 500/520

Positioning

Catalyst Express 500/520 Series



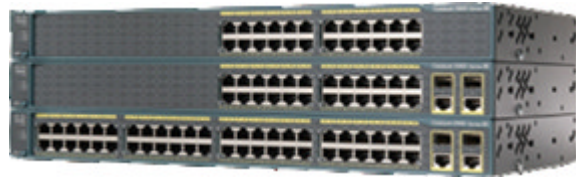
- ✍ Ideal for small and medium businesses (up to 250 users)
- ✍ Intelligence for delivering converged applications for SMB customers
- ✍ Integrated within the Cisco's Small Business Communications Solution
- ✍ Simplified management and troubleshooting for lower total cost of ownership
- ✍ Cisco Network Assistant and Cisco Smartports
- ✍ Limited lifetime hardware warranty and software updates at no additional charge

Catalyst 2960 Series



- ✍ Ideal for mid-sized businesses and branch offices
- ✍ Targeted for networks that require scalable and secure network management
- ✍ Catalyst 2960 LAN Lite switches for replacing unmanaged switches and hubs in small branch offices and wiring closets
- ✍ Catalyst 2960 LAN Base with intelligent LAN services for entry-level enterprise and mid-market customers
- ✍ Simplified management and troubleshooting for lower total cost of ownership
- ✍ CiscoWorks LMS, Cisco Network Assistant, and Cisco Smartports
- ✍ Limited lifetime hardware warranty and software updates at no additional charge

Catalyst 2960 Switches with LAN Lite Software



Cisco Catalyst 2960
LAN Lite

**Designed for
Small Branches
and Wiring Closets**

- ✍ Extend Catalyst 2960 Series for entry-level customers

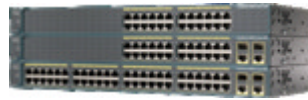
Upgrade path for customers with hubs and unmanaged switches

Migration path for Catalyst 2950 Standard Image Switches

- ✍ Basic QoS, security and availability
- ✍ Ease-of-use with scalable management for lower total cost of ownership
- ✍ Limited lifetime hardware warranty
- ✍ Software updates at no additional cost

Part Number	Description
WS-C2960-24-S	24 Ethernet 10/100 Ports
WS-C2960-24TC-S	24 Ethernet 10/100 Ports and Two Dual-Purpose Uplinks
WS-C2960-48TC-S	48 Ethernet 10/100 Ports and Two Dual-Purpose Uplinks

Catalyst 2960 Differentiation



Catalyst 2960 LAN Lite



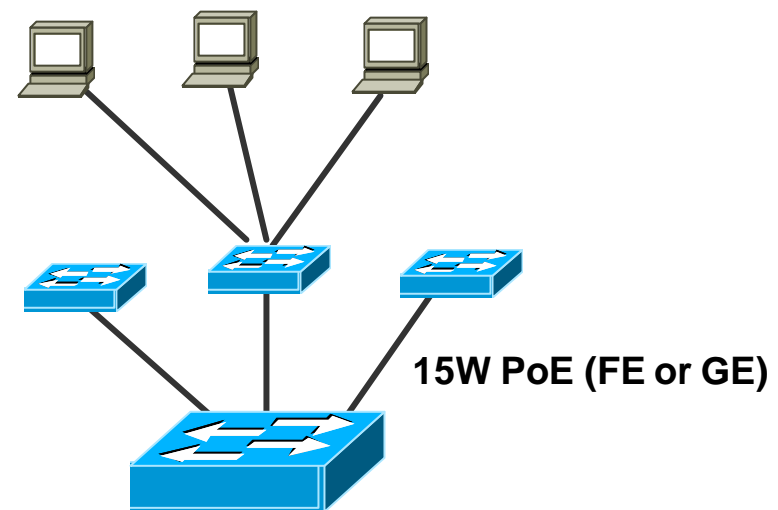
Catalyst 2960 LAN Base

Hardware	Fast Ethernet	Gigabit Ethernet + Compact + additional SFPs supported
Security	802.1x, MAB, Port Security, SSH, SSL, Baseline NAC	L2-4 Access Control Lists, DHCP Snooping, Web-Auth, Enhanced NAC
QoS	802.1p (4 queues), SRR, Strict Priority	AutoQoS, Policing, Class/Policy Maps, Trust Boundary, DSCP, Configure queue weights, buffers, thresholds, maps
Availability	802.1s/w, 802.3ad, PVST+, BPDU & Root Guard	Flex Links, Link State Tracking, RPS support
Multicast	IGMP Snooping, Filtering	MLD Snooping, MVR
Management	64 VLANs, SPAN, LLDP, TDR, UDLD, Smartports, Cisco Network Assistant, Catalyst Device Manager	256 VLANs, RSPAN, LLDP-MED, IP SLA (responder), DHCP Option 82, IPv6 Host

Catalyst 2960 Powered Device Compact Switch

Product	Access Ports	Uplink Ports	Software
WS-C2960PD-8TT-L	8 10/100	1 10/100/1000 PoE input	LAN Base

- ✍ Receives Power-over-Ethernet via 10/100/1000 uplink port
- ✍ Requires 11W (Class 3 PD)
- ✍ No internal power supply. External power brick optional.
- ✍ More deployment flexibility and availability



Catalyst 3560 and Catalyst 2960 Compact Switches

Product ID	Product Family	Access Ports	Uplink Port	Software
WS-C2960-8TC-L	Catalyst 2960	8 10/100	1 10/100/1000 or SFP	LAN Base
WS-C2960G-8TC-L	Catalyst 2960	7 10/100/1000	1 10/100/1000 or SFP	LAN Base
WS-C3560-8PC-S	Catalyst 3560	8 10/100 PoE	1 10/100/1000 or SFP	IP Base

- ✍ Compact form-factor ideal for office workspaces, micro branch offices, classrooms, cruise ships, and other wiring constrained environments
- ✍ Integrated with the existing Catalyst 3560 and Catalyst 2960 Series Switches



Catalyst 3560 and 2960 Compact Switch Overview

Compact Form Factor

Durable, silent, and versatile design with a metal shell, no fan, small size, magnet, cable guard, and rack mount.

Advanced Security

Network Admission Control, Enhanced 802.1x, Access Control Lists, DHCP Snooping, Dynamic ARP Inspection (3560 only) and IP Source Guard (3560 only)

Support Advanced Technology

Power over Ethernet (15.4W on all 8 ports) with superior QoS to support Cisco Unified Communications (3560 only)

Gigabit Ethernet access for higher performance (2960G only)

Simplified Management

Cisco Network Assistant, Catalyst Device Manager, Smartports, and CiscoWorks support

Investment Protection and Deployment Flexibility

Dual-purpose 10/100/1000Base-T and SFP uplink. IPv6 support in hardware. Limited Lifetime Warranty.

Agenda

Switching Product Portfolio Introduction

Switching Product Portfolio Positioning

Entry Level Platforms

Medium Level Platforms

High Level Platforms

Conclusion Q&A

Cisco Catalyst 3560 Series Switches

Positioning:

For Mid-sized and low density Enterprise branch and wiring closets

Stand-alone fixed-configuration switches

Features/Highlights:









- ✍ Fast Ethernet and Gigabit Ethernet connectivity
- ✍ Redundant power supply support
- ✍ Power over Ethernet
- ✍ High-performance IP routing to support advanced technologies and mission critical applications

Ideal for Mid-sized and Small Enterprise Branch and Wiring Closets Needing Standalone, Intelligent Switches



www.cisco.com/go/catalyst3560

Cisco Catalyst 3560 Series Model Overview

Catalyst 3560-24TS  <ul style="list-style-type: none">• 24 10/100 + 2 SFP ports	Catalyst 3560-48TS  <ul style="list-style-type: none">• 48 10/100 + 4 SFP ports
Catalyst 3560-24PS  <ul style="list-style-type: none">• 24 10/100 + 2 SFP ports• 370W PoE	Catalyst 3560-48PS  <ul style="list-style-type: none">• 48 10/100 + 4 SFP ports• 370W PoE
Catalyst 3560G-24TS  <ul style="list-style-type: none">• 24 10/100/1000 + 4 SFP	Catalyst 3560G-48TS  <ul style="list-style-type: none">• 48 10/100/1000 + 4 SFP
Catalyst 3560G-24PS  <ul style="list-style-type: none">• 24 10/100/1000 + 4 SFP• 370W PoE	Catalyst 3560G-48PS  <ul style="list-style-type: none">• 48 10/100/1000 + 4 SFP• 370W PoE

Three Software Licenses

IP Base Software License

- Enterprise-class intelligent services: advanced QoS, enhanced security, RIP, and static IP routing

IP Services Software License

- IP Base feature set plus: dynamic IP unicast routing, smart multicast routing, and PBR

Advanced IP Services License

- Adds IPv6 capability

Catalyst 3560-E Models

- ✍ The 3560-E is for standalone deployments
- ✍ Similar features to the 3750-E, but StackWise is removed
 - Same software features
 - Same PoE options



24 10/100/1000T Ports + 2x 10GE



48 10/100/1000T Ports + 2x 10GE



24 10/100/1000T Ports w/POE + 2x 10GE



48 10/100/1000T Ports w/POE + 2x 10GE

10 Gigabit Ethernet

- ✍ **Two 10GE uplink interfaces**
- ✍ **Wire rate forwarding performance**
- ✍ **Supported X2 Transceivers**
 - *LX4 (MMF - 300m SMF - 10km)
 - LR (SMF 10km)
 - SR (MMF)
 - *CX4 (Copper)
 - ER (SMF 40km)
- ✍ **TwinGig Adapter** converts an X2 interface into dual SFP interfaces
- ✍ **All SFPs supported on 3750 platform are supported with the TwinGig Adapter**
- ✍ **TwinGig Adapters are hot swappable with X2 modules**

* Available in February 2007



Cisco Catalyst 3750 Series Switches

Positioning:

For Mid-sized and large Enterprise branch office and wiring closets

Stackable, fixed-configuration switches—up to 9 switches using StackWise technology

Features/Highlights:

- ✍ Power over Ethernet capability
- ✍ Redundant power supply support
- ✍ High performance IP routing
- ✍ Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet connectivity

Ideal for Mid-sized and Large Enterprise Branch Office and Wiring Closets Requiring Scalable, Intelligent Switches

Innovative Stacking Sets New Standards for Resiliency and Management



www.cisco.com/go/catalyst3750

Catalyst StackWise Technology

Reliable



Unified Stacking, Behaving as a Single Unit

- ✍ 32Gbps fault tolerant bidirectional stack interconnection
- ✍ Master/slave architecture with 1:N master failover provides 1 second Layer 2 failover and 3-second Layer 3 failover
- ✍ Cross-stack EtherChannel®, cross-stack QoS
- ✍ Single network instance (IP, SNMP, CLI, STP, VLAN)

Cisco Catalyst 3750 Series Model Overview

Catalyst 3750-24TS



- 24 10/100 + 2 SFP ports

Catalyst 3750-48TS



- 48 10/100 + 4 SFP ports

Catalyst 3750-24PS



- 24 10/100 + 2 SFP ports
- 370W PoE

Catalyst 3750-48PS



- 48 10/100 + 4 SFP ports
- 370W PoE

Catalyst 3750G-24TS-1U



- 24 10/100/1000 + 4 SFP

Catalyst 3750G-48TS



- 48 10/100/1000 + 4 SFP

Catalyst 3750G-24PS



- 24 10/100/1000 + 4 SFP
- 370W PoE

Catalyst 3750G-48PS



- 48 10/100/1000 + 4 SFP
- 370W PoE

Catalyst 3750-24TS



- 24 10/100/1000

Catalyst 3750-24PS



- 12 SFP (AC or DC)

Catalyst 3750G-24TS-1U



- 16 10/100/1000
- 1x 10GE XENPAK

Catalyst 3750-24FS



- 24 100BaseFX

Catalyst 3750-E Models

- ✍ PoE and data only options
- ✍ Any 3750-E model can be connected with another through StackWise Plus
- ✍ 3750-E models can be combined in a stack with existing 3750 models in a mixed stack



24 10/100/1000T Ports + 2x 10GE



48 10/100/1000T Ports + 2x 10GE



24 10/100/1000T Ports w/POE + 2x 10GE



48 10/100/1000T Ports w/POE + 2x 10GE

Cisco StackWise **PLUS** Technology

- 64Gbps Stacking Throughput*
- Local switching
- Intelligently traffic forwarding
- Backward compatible with the original StackWise
- Fault-tolerant, Bi-directional stack interconnection
- Automated Configuration & Management
- Single network instance (IP, SNMP, CLI, STP Protocol , VLAN)
- Master/secondary architecture with master failover
- Cross-Stack EtherChannel®, cross-stack QoS

**Unified Stacking,
Behaving As a Single Unit**



* For typical traffic patterns, actual performance may be higher or lower

Product Comparison

Feature	Cisco Catalyst 3750-E	Cisco Catalyst 3750	Cisco Catalyst 3560-E	Cisco Catalyst 3500
Stackwise+	X			
Stackwise		X		
GE (SFP) or 10GE (X2) uplinks	X		X	
10/100/1000	X	X	X	X
10/100		X		X
Hot-Swappable FRU PS	X		X	
750W PoE option	X		X	
370W PoE	X	X	X	X

New Catalyst 3560E-12D: Overview



Cisco Catalyst 4900 Series Switches

Positioning:

For data center “top of rack” server aggregation deployments
Standalone fixed-configuration switches

Features/Highlights:

- ✍ Low latency, wire-speed performance
- ✍ Layer 2–4 switching
- ✍ Gigabit Ethernet or 10 Gigabit Ethernet uplinks
- ✍ Redundant power supply and fans

**Ideal for Data Centers Needing High Performance
“Top of Rack” Server Aggregation**



www.cisco.com/go/catalyst4900

New Cat4K Fixed Configuration

Catalyst 4948

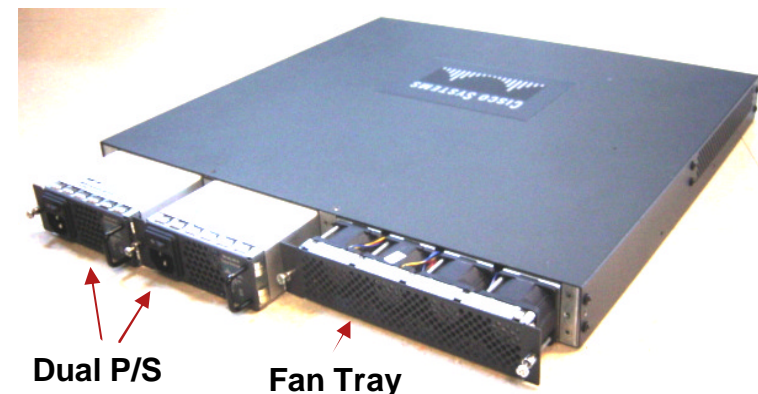
- K2 (PPE2) based 1RU Standalone
- Basic L3 and Enhanced L3 Options
- 48-wirespeed 10/100/1000 Ports
- 4 SFP Ports (Alternative wired)
- Dual AC/DC removable power supplies
- Removable fan tray
- Jumbo Frame Support
- Positioned for space constrained server rack



Catalyst 4948 Front view

Catalyst 4948-10GE

- K2 (PPE4) based 1RU Standalone
- Basic L3 and Enhanced L3 Options
- 48-wirespeed 10/100/1000 Ports
- 2 wirespeed 10-GigE Uplinks(X2 Optics)
- Dual AC/DC removable power supplies
- Removable fan tray
- Jumbo Frame Support
- Positioned for space constrained server rack



Catalyst 4948-10GE Rear view

Agenda

Switching Product Portfolio Introduction

Switching Product Portfolio Positioning

Entry Level Platforms

Medium Level Platforms

High Level Platforms

Conclusion Q&A

Catalyst 4500 E-Series CenterFlex

- **Innovations Enabled by the Supervisor 6-E Centralized ASICs**



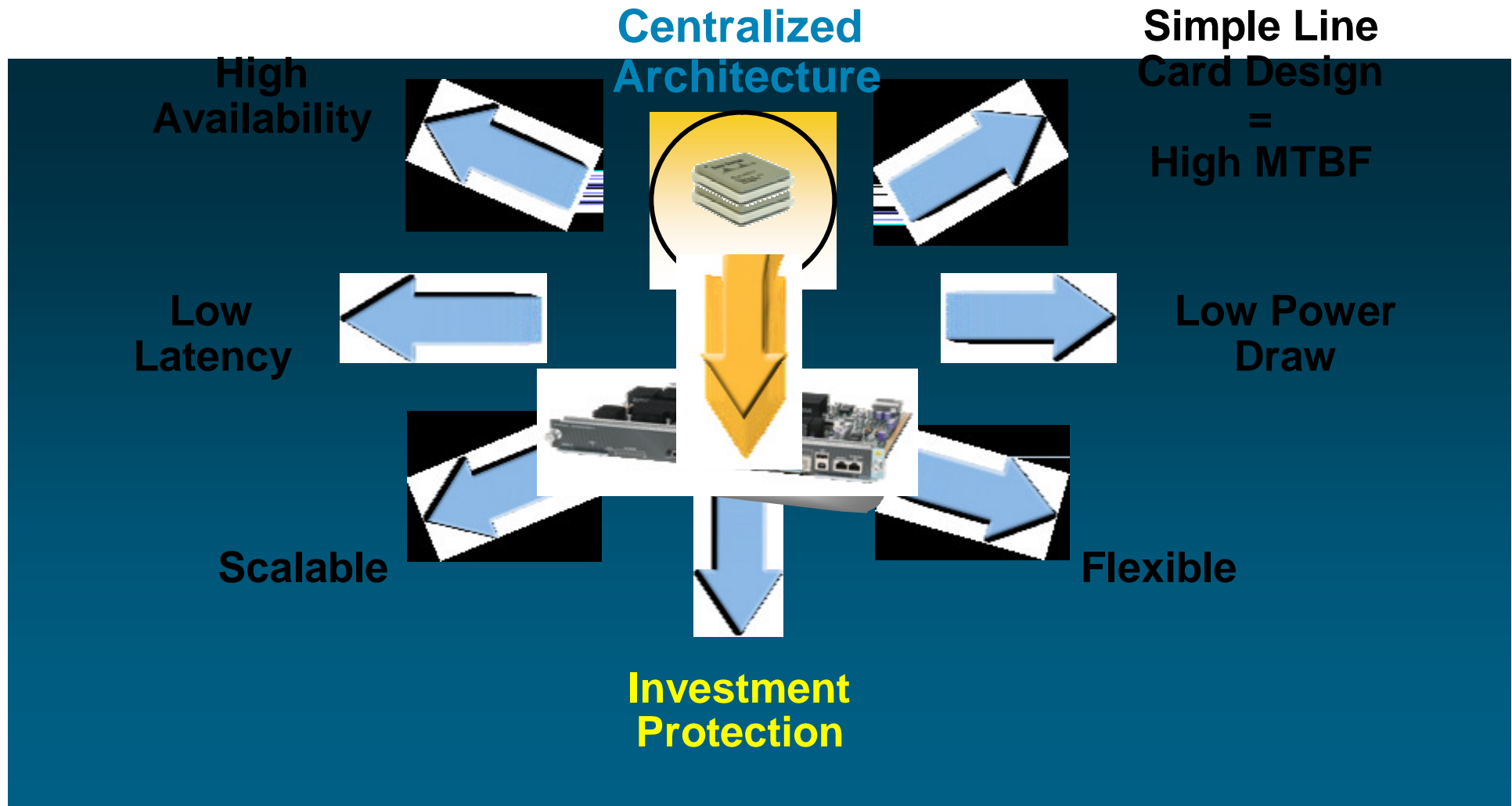
- ✍ **Centralized**

- ✍ Highest centralized performance
- ✍ Low latency forwarding
- ✍ High availability
- ✍ Simplified operations

- ✍ **Flexible**

- ✍ Mix and match new and classic line cards
- ✍ Forward/backward compatibility
- ✍ User configurable queuing resources
- ✍ Dynamic QoS, security and IPv6 resource allocation

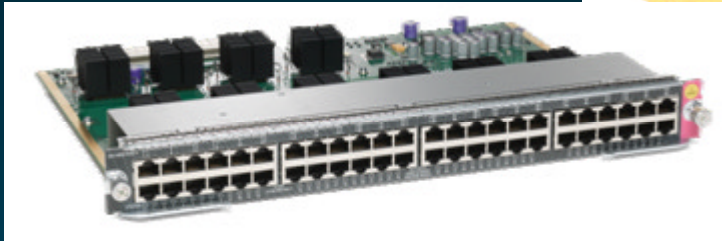
Benefits of a Centralized Architecture



Catalyst 4500 E-Series Copper Line Cards

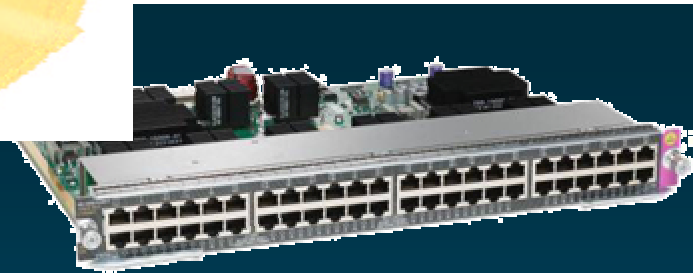
Requires
Sup 6-E

All E-Series Copper
Line Cards ship
with PoE



WS-X4648-RJ45V-E

- ✍ 48-Port 10/100/1000 PoE
- ✍ Supports data with future proofing for PoE
- ✍ 24-Gig per slot (2:1 oversubscribed)
- ✍ Built in 802.3af PoE support
- ✍ Line card level temperature sensors
- ✍ L2/L3 jumbo frames on all ports
- ✍ Mix with classic cards with no performance hit



WS-X4648-RJ45V+E

- ✍ 48 Port 10/100/1000 Premium PoE
- ✍ All capabilities of the PoE line card plus..
- ✍ 30 watts per port capable (future SW upgrade)

Cisco Switching Product Comparison

	Catalyst Express 500	Catalyst 2960	Catalyst 3560	Catalyst 3750	Catalyst 4500	Catalyst 4948	Catalyst 6500
Stand-alone	X	X	X			X	
Stackable				X			
Modular					X		X
PoE	X	X	X	X	X		X
IP-Routing			X	X	X	X	X
10GE			X	X	X	X	X
Full Advanced Technology Integration							X

Link utili

- Cisco Catalyst Express Series Switches

☞ www.cisco.com/go/ce500

- Catalyst 2960

☞ <http://www.cisco.com/en/US/products/ps6406/index.html>

- Catalyst 3560

☞ <http://www.cisco.com/en/US/products/ps7078/index.html>

Design

☞ http://www.cisco.com/en/US/products/ps7078/tsd_products_support_design.html

- Catalyst 3750

☞ <http://www.cisco.com/en/US/products/hw/switches/ps5023/index.html>

- Catalyst 4500

☞ <http://www.cisco.com/en/US/products/hw/switches/ps4324/index.html>



Domande?

