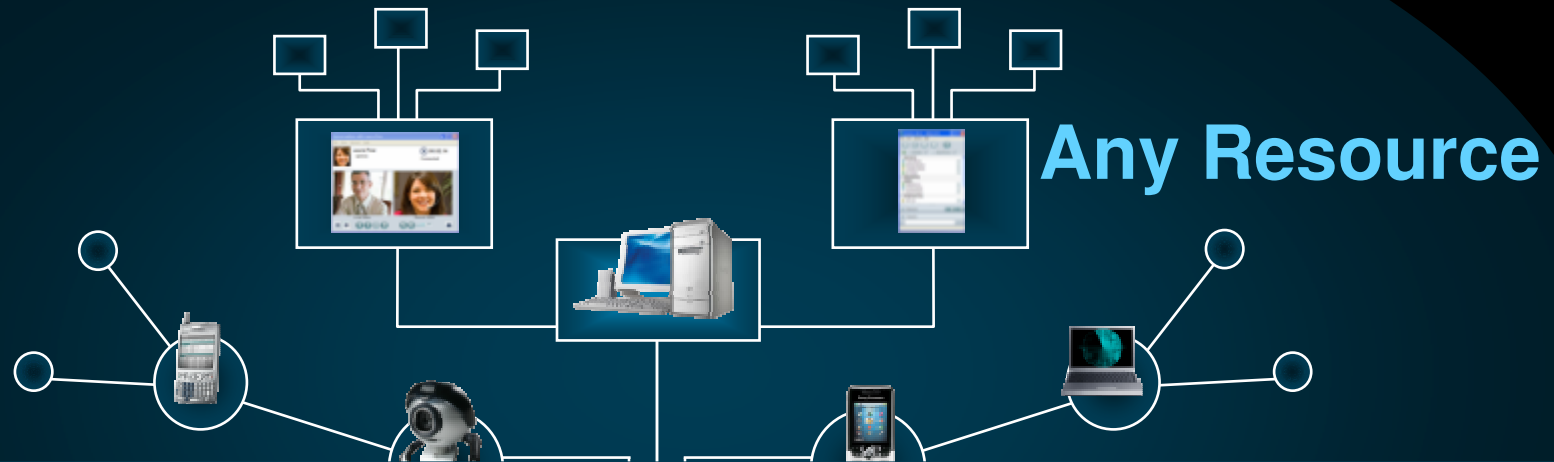


Evolving With The
Business

Cisco Expands Borderless Networks Access Solutions

Dev Datta
Catalyst 2K Product Manager
dedatta@cisco.com

The Transformation: The World Is Our New Workspace



BOUNDLESS NETWORKS

**A Next Generation Architecture to
Deliver the New Workspace Experience**

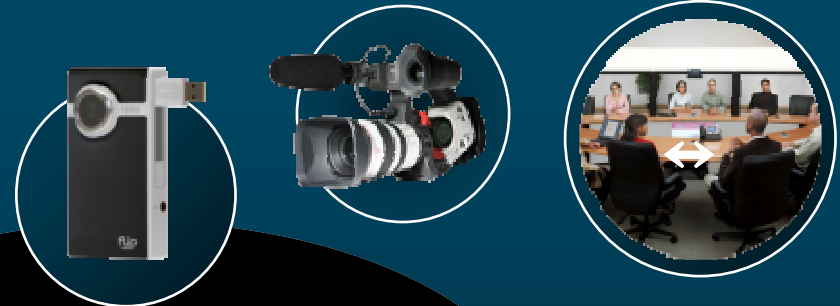
Driving the Transformation

Mobile Devices



IT Resources

○ 1.3 Billion New Networked Mobile Devices in Next 3 Years



Mo

Video

○ 60% of All Cisco Network Traffic Today Is Video

Workspace Experience



○ Blurring the Borders : Consumer ↔ Workforce; Employee ↔ Partner

Sources: IDC; Visual Networking Index; Cisco IT

Borderless Networks

Network Access Challenges



**Operational
Complexity
and Costs**



**Struggling to
Keep up
With Security**



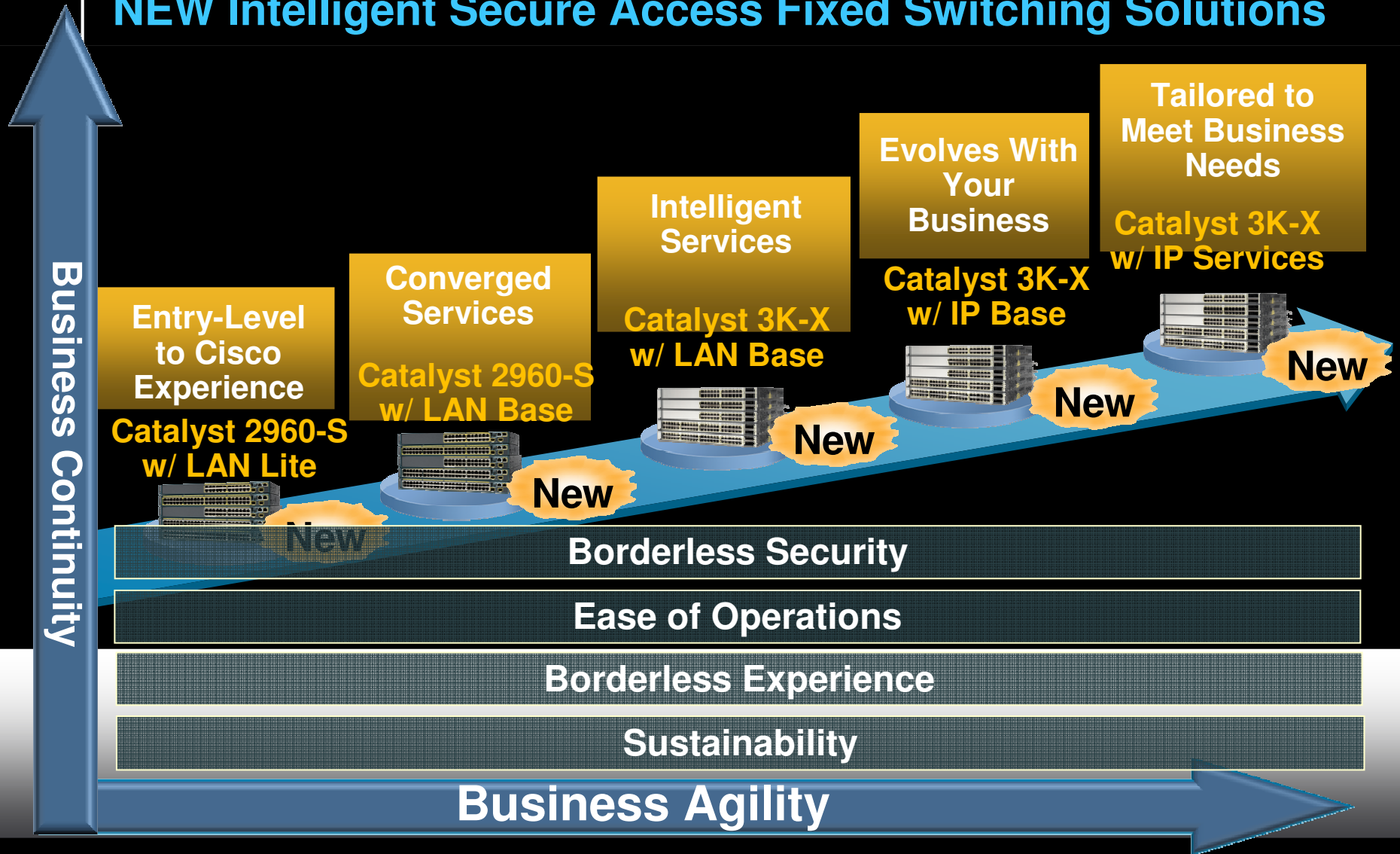
**Network
Downtime
Is Expensive**



**Traffic Volume
and Bandwidth
Expanding**

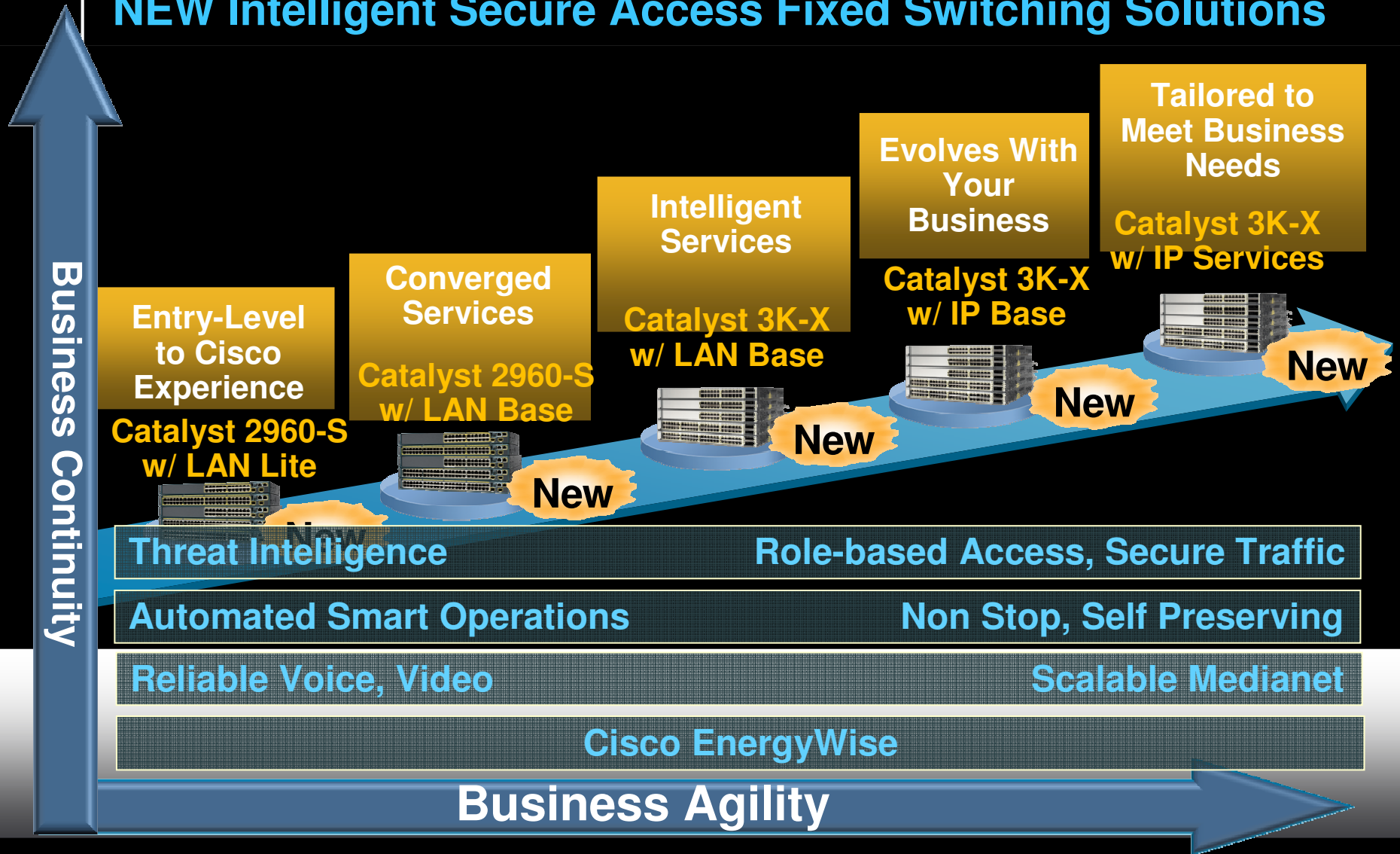
Addressing Business Transformation

NEW Intelligent Secure Access Fixed Switching Solutions



Addressing Business Transformation

NEW Intelligent Secure Access Fixed Switching Solutions



Introducing Catalyst 3750-X & 3560-X

Innovation Leadership

- Next Generation Gigabit Ethernet
24 and 48 port, Data and PoE+ switches
- Cisco StackPower
Resiliency and high availability made easy
- Modular hot swappable Network Module
- Dual Field Replaceable Power Supplies/Fans
 - Switch can be upgraded and serviced in the field
- MACsec 802.1AE encryption
Standard based encryption on user-facing ports
- Full 802.3at PoE+ Support
Standards based power delivery up to 30 watts per port supporting next-generation high-power devices
- Enhanced Limited Lifetime Hardware Warranty
 - NBD delivery where available
 - 90-day 8x5 TAC support

Catalyst 3750-X



Catalyst 3560-X



- 3 Software Options: LAN Base, IP Base, IP Services

Flexible software features and lower entry level pricing

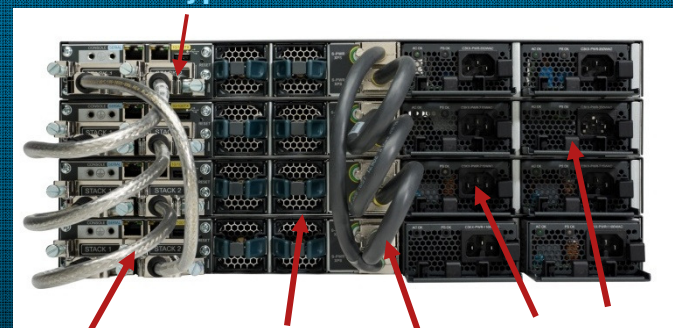
Industry
Leadership

StackPower

Ease of Operations And High Availability

- Adaptable – “pool of power” across the stack
- Flexibility and sustainability with zero to 2.2kW per switch
- Intelligent power shedding – turn off low priority PDs
- Supports mix of AC/DC power supplies in a stack
- “Zero-footprint” RPS deployment

Console, 10/100 port
& USB type A



StackWise+ FRU Dual Redundant Fans Dual Power supply

StackPower

When
the Network
KNOWS

Your Productivity
Is ENHANCED

StackPower – Demo Video

industry
leadership

When
the Network
KNOWS

Your Productivity
Is **ENHANCED**

Ease of Operations

Overcoming Network Challenges

- Network resiliency with:
Virtual switching system
Cisco Stackwise Plus
In-service software upgrades
- Zero touch deployments with
AutoSmart ports
- Easy automation with
Embedded Event Manager
- Preventative maintenance
with Smart call home
- Network virtualization
- World-class Cisco TAC



When
the Network
KNOWS

Your Cost of Ownership
IS LOWER

Smart Ports – Demo Video

industry
leadership

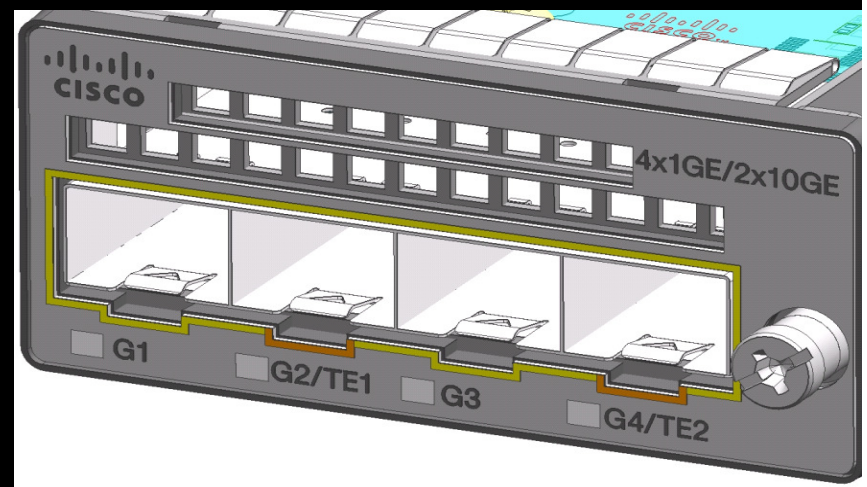
When
the Network
KNOWS

Your Productivity
Is **ENHANCED**

Uplink Module

GigEthernet / TenGigEthernet

Main features



- First externally installed network module for the Cat3K switches
- OIR – Online Insertion & Removal
- Provides flexibility with two options at FCS:
 - Four 1G ports (SFP)
 - Two 10Gig port (SFP+) and Two 1G ports (SFP)
- Functionality can be expanded via future service modules

Dual Redundant Power supplies

Main features

- Four PS options
 - 1100W AC – C3KX-PWR-1100WAC
 - 715W AC – C3KX-PWR-715WAC
 - 350W AC – C3KX-PWR-350WAC
 - 440W DC – C3KX-PWR-440WDC (future availability)
- Can combine AC & DC PS in the same switch Second PS is for redundancy or supplemental power
 - 48-port of PoE+ requires 1.4KW
- Flexible PS options including DC with PoE support
- Ability to off-line a PS and draw power from the stack



Models	Default Power Supply	Available PoE Power
24 Port Data Switch	C3KX-PWR-350WAC	N/A
48 Port Data Switch	C3KX-PWR-715WAC	435W
24 Port PoE Switch	C3KX-PWR-715WAC	435W
48 Port PoE Switch	C3KX-PWR-715WAC	435W
48 Port Full PoE Switch	C3KX-PWR-1100WAC	800W

industry
leadership

MACsec Encryption

Borderless Security

- Wire rate data confidentiality and integrity
- Simplified deployments with 802.1X-Rev/MKA auto key negotiation
- Protects against Man-in-the-Middle attacks
- No impact to other packet inspection features currently used
- Incrementally deployed based on link vulnerability

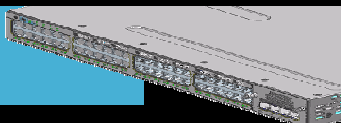
When
the **Network**
KNOWS

Your Data
Is **CONFIDENTIAL**

LAN Base vs. IP Base and IP Services Highlights

New

Cisco® Catalyst® 3560-X
and Catalyst 3750-X



Cisco Catalyst 3560 and Catalyst
3750, Including E and X Series



Functions	LAN Base	IP Base	IP Services
Layer 2+	<ul style="list-style-type: none"> • Enterprise access Layer 2 Wide range of Layer 2 access features for enterprise deployments 	<ul style="list-style-type: none"> • Complete Access Layer 2 Supports all Cisco Catalyst 2000 and Catalyst 3000 Layer 2 features, including hot standby protocols; supports Cisco StackPower™ technology (Cisco Catalyst 3750-X) 	
Layer 3	<ul style="list-style-type: none"> • No routing support Support for SVI with no IP routing support 	<ul style="list-style-type: none"> • Enterprise access Layer 3 RIP, static and stub PIM, and EIGRP 	<ul style="list-style-type: none"> • Complete access Layer 3 OSPF, EIGRP, BGP, IS-IS VRF-lite, WCCP, and PBR
Manageability	<ul style="list-style-type: none"> • Basic manageability Support for a wide range of MIBs, IPSLA Responder, and RSPAN 	<ul style="list-style-type: none"> • Enterprise access Layer 3 Gold-Lite and Smart Install Director 	<ul style="list-style-type: none"> • Complete access Layer 3 EEM and IPSLA Initiator
Security	<ul style="list-style-type: none"> • Enterprise access security DHCP Snooping, IPSG, DAI, ACLs, Cisco Identity 4.0, NAC and 802.1x features 	<ul style="list-style-type: none"> • Complete access security Router and VLAN ACLs, private VLANs, complete identity and security, TrustSec SXP, and IEEE 802.1AE (Cisco Catalyst 3560-X and Catalyst 3750-X) 	
QoS	<ul style="list-style-type: none"> • Enterprise access QoS Ingress policing, Trust Boundary, AutoQoS, and DSCP mapping 	<ul style="list-style-type: none"> • Complete access QoS Support for all Cisco Catalyst 2000 and Catalyst 3000 QoS features, including per-VLAN policies 	

Note: IP Services feature set includes all IP Base features. IP Base feature set includes all LAN Base features.

Catalyst 3750 Models comparison

	3750-X	3750-E	3750G
StackPower	Yes	No	No
FRU Network Module	Yes	No	No
FRU Power Supplies	Yes, Dual PS	Yes	No
Encryption	Yes (Downlink)	No	No
PoE+ 30W/port	Yes	No	No
IOS LAN Base Option	Yes	No	No
Management Options	Console RJ45, USB console , and Out of band Ethernet	Console RJ45 and Out of Band Ethernet	Console RJ45
RPS / XPS	XPS	RPS	RPS
EnergyWise	Report Actual Power use PoE & System	Report Actual Power use PoE	Report Budgeted Power

Introducing Catalyst 2960-S

Mainstream Features in a Cost Optimized Platform

- 24/48 10/100/1000 ports with fixed uplinks
- Fixed Uplink Options: 4x1G or 2x10G SFP+
10 Gigabit Ethernet in a cost optimized platform
- FlexStack Technology
Brings stackable ease-of-use features to the 2960 family, features 20G stacking links
- Power over Ethernet
Full standards-based PoE on every port
PoE+ support for next-generation high-power devices
- Cisco Online Diagnostics & Onboard Fault Logging
Hardware innovations that deliver preventative early fault detection
- Enhanced Limited Lifetime Hardware Warranty
NBD delivery where available
90-day 8x5 TAC support

New



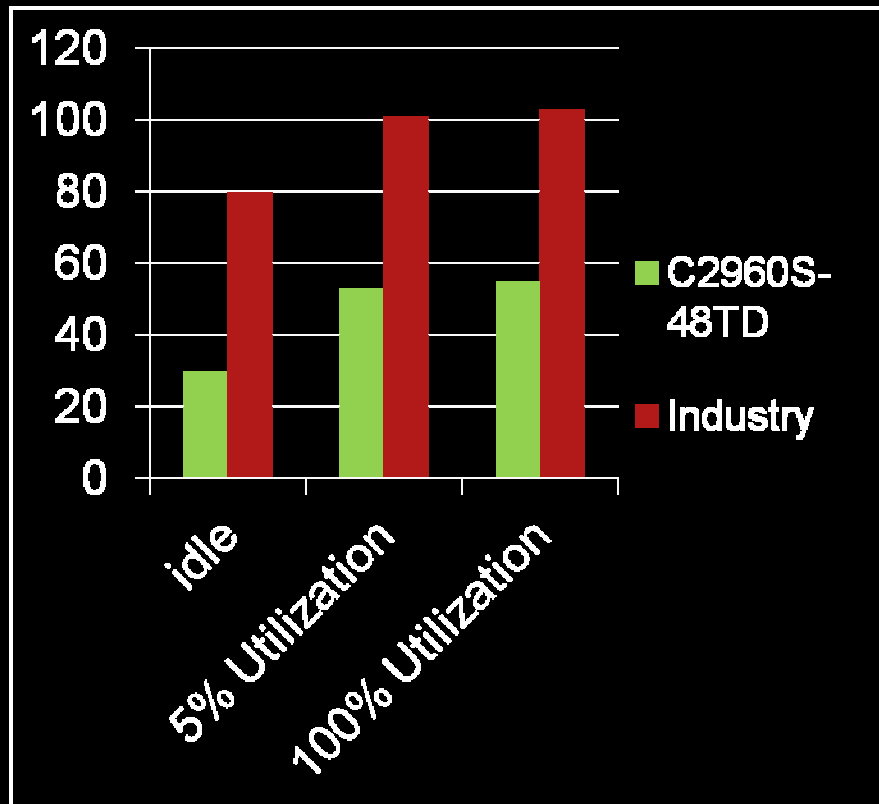
LAN Lite and LAN Base Software Options

LAN Lite option provides entry-level Gig-E platform

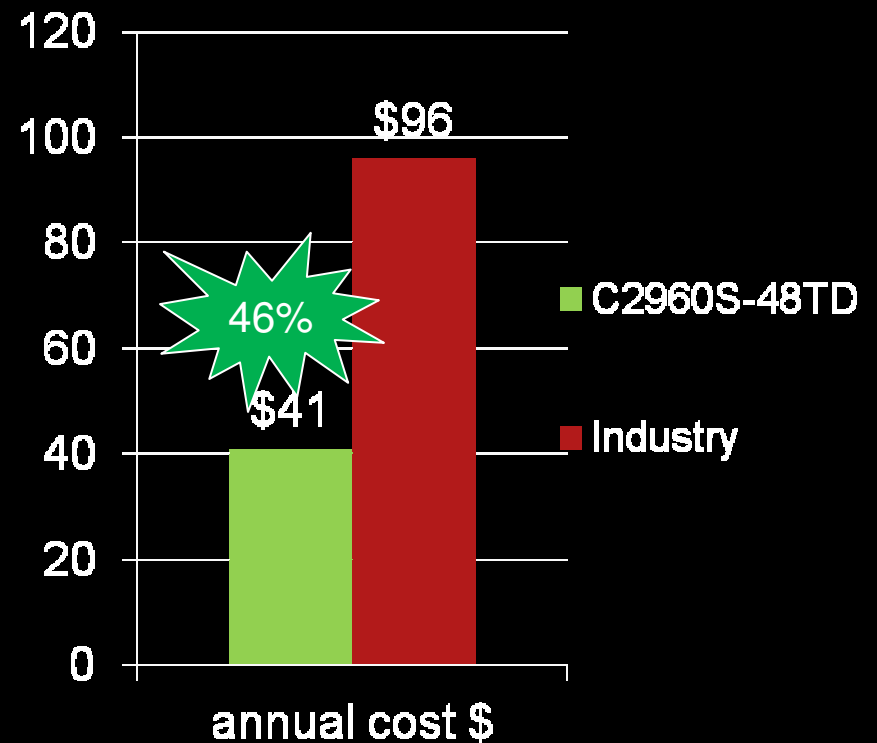
Catalyst 2960-S Power Usage vs. Industry

\$55K cost savings 1000 switches per year

Watts Consumed & Utilization

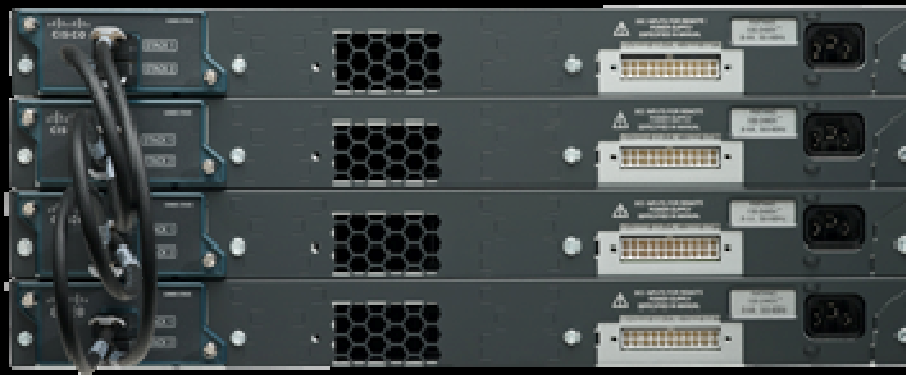


Annual Energy Costs per Switch



Catalyst 2960-S Power Demo Video

Catalyst 2960-S FlexStack



- FlexStack available with optional Module Hot Swappable with two wire-speed 10G ports
- Up to 4 switches in a stack
- Unified management, control, and data plane (similar look and feel as StackWise)
- 3 FlexStack Cable lengths supported
0.5 meters, 1.0 meter, 3.0 meter

StackWise Plus vs. FlexStack

Ease of Operations

- **Catalyst 3750-X StackWise Plus**
 - High performance – 64G stacking
 - Non Stop, Self Healing – seamless recovery
 - Unified management, control & data plane
 - Bandwidth optimization – dynamic ring load balancing
 - Traffic prioritization – Built in QoS
 - Up to nine switches in a stack
- **Catalyst 2960-S FlexStack**
 - Module with two wire-speed 10G ports
 - Unified management, control & data plane
 - Up to four switches in a stack



When
the Network
KNOWS

You Have
MORE OPTIONS

LAN Lite vs. LAN Base Highlights



Functions	LAN Lite	LAN Base
Layer 2	<ul style="list-style-type: none"> • Entry-level access Layer 2 Basic Layer 2 access features, including 802.1Q trunking, (M)STP, STP extensions, Cisco Discovery Protocol, DTP, UDLD, VTPv2, PAGP/LACP, LLDP, and storm control 	<ul style="list-style-type: none"> • Enterprise Access Layer 2 Wide range of Layer 2 access features for enterprise deployments, including FlexLinks, VTPv3, and LLDP MED
Layer 3	<ul style="list-style-type: none"> • No routing support Support for Layer 3 management interface 	<ul style="list-style-type: none"> • Static Routing Support (Future)
Manageability	<ul style="list-style-type: none"> • Entry-level manageability Express setup, Cisco Device Manager, SNMPv3 (with cryptography), RMON, SPAN, TDR, Auto Smart Ports, and Smart Install client 	<ul style="list-style-type: none"> • Basic manageability Support for a wider range of MIBs, IPSLA Responder, and RSPAN
Security	<ul style="list-style-type: none"> • Entry-level access security SSH v2 server, SSL, HTTPS, SCP, TACACS+, RADIUS, port security, 802.1x (with guest VLAN), MAB, private VLAN edge, and NAC 	<ul style="list-style-type: none"> • Enterprise access security DHCP snooping, IPSG, DAI, ACLs, Cisco Identity 4.0, and 802.1x features
QoS	<ul style="list-style-type: none"> • Entry-level access QoS Ingress and egress queuing, scheduling, Priority Queuing, and SRR 	<ul style="list-style-type: none"> • Enterprise access QoS Ingress policing, Trust Boundary, AutoQoS, and DSCP mapping, service policy

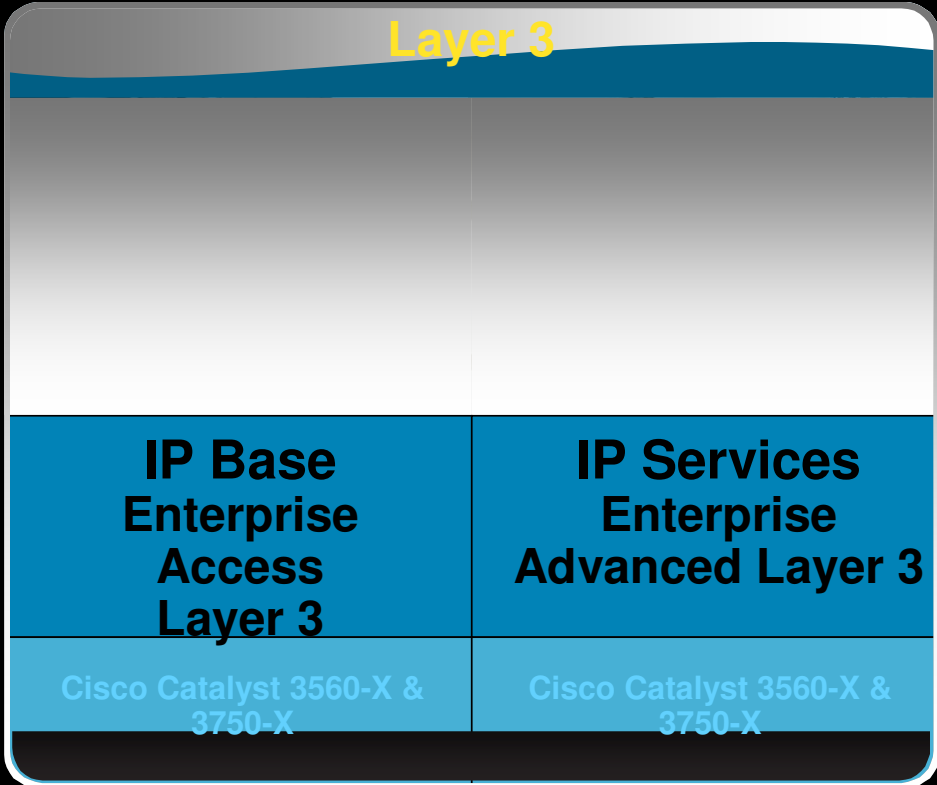
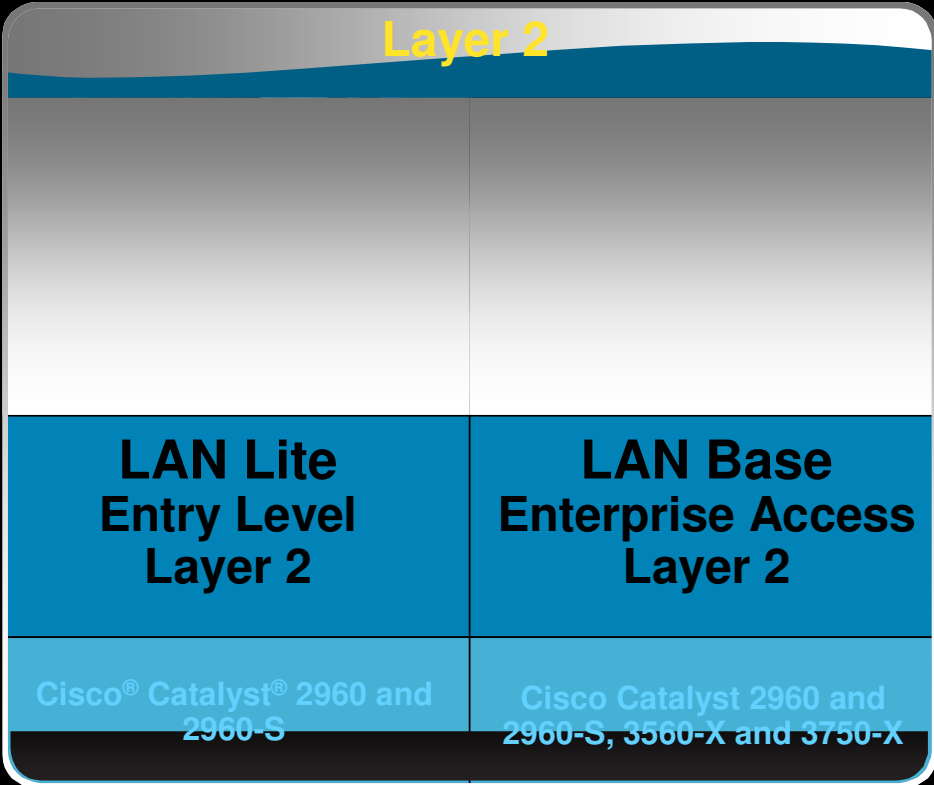
Note: LAN Base feature set includes all LAN Lite features.

Catalyst 2960-S Model comparison

Model	Cisco FlexStack Stacking	10G SFP+ Ports	1G SFP Ports	10/100/1000 Ports	Full PoE (15.4W) ports	PoE Budget
10G Uplink Ports						
<u>WS-C2960S-48FPD-L</u>	√	2		48	48	740W (PoE+)
<u>WS-C2960S-48LPD-L</u>	√	2		48	24	370W (PoE+)
<u>WS-C2960S-48TD-L</u>	√	2		48		
<u>WS-C2960S-24PD-L</u>	√	2		24	24	370W (PoE+)
<u>WS-C2960S-24TD-L</u>	√	2		24		
1G Uplink Ports						
<u>WS-C2960S-48FPS-L</u>	√		4	48	48	740W (PoE+)
<u>WS-C2960S-48LPS-L</u>	√		4	48	24	370W (PoE+)
<u>WS-C2960S-48TS-L</u>	√		4	48		
<u>WS-C2960S-24PS-L</u>	√		4	24	24	370W (PoE+)
<u>WS-C2960S-24TS-L</u>	√		4	24		
LAN Lite 1G Uplink Ports						
<u>WS-2960S-48TS-S</u>			2	48		
<u>WS-2960S-24TS-S</u>			2	24		

Cisco IOS Software Feature Set Capabilities Catalyst 2960-S, Catalyst 3750-X and 3560-X

Positioning Guidelines



Borderless Access: **Enhanced** Limited Lifetime Warranty

Catalyst 3750-X, 3560-X and 2960-S

**Best in Class
Support**

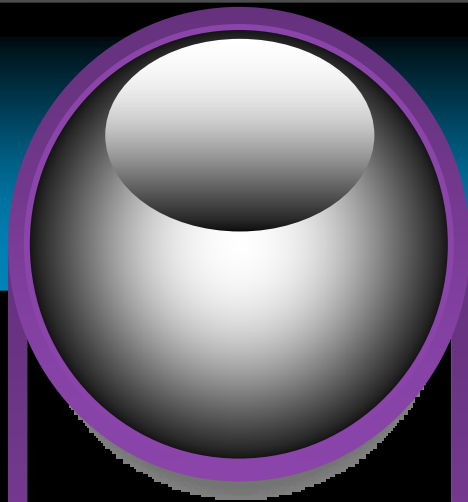
- **Limited Lifetime Warranty**
 - 5 years on Power Supplies and Fans
- **Next Business Day Hardware Replacement**
- **90-Days TAC Support**
- **Unlimited maintenance updates for LAN Base and LAN Lite Images***



*Service Contract required for IOS Premium Images

Borderless Networks

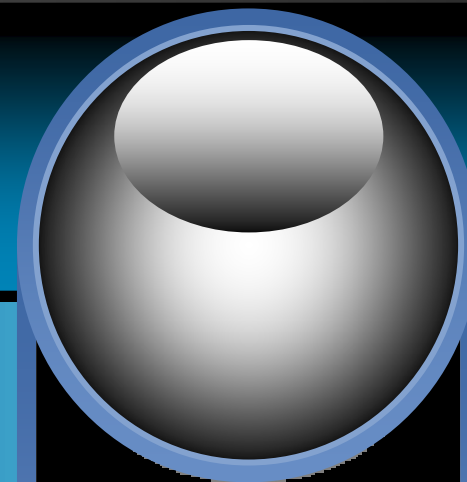
Network Access Challenges



**Operational
Complexity
and Costs**



**Struggling to
Keep up
With Security**



**Network
Downtime
Is Expensive**



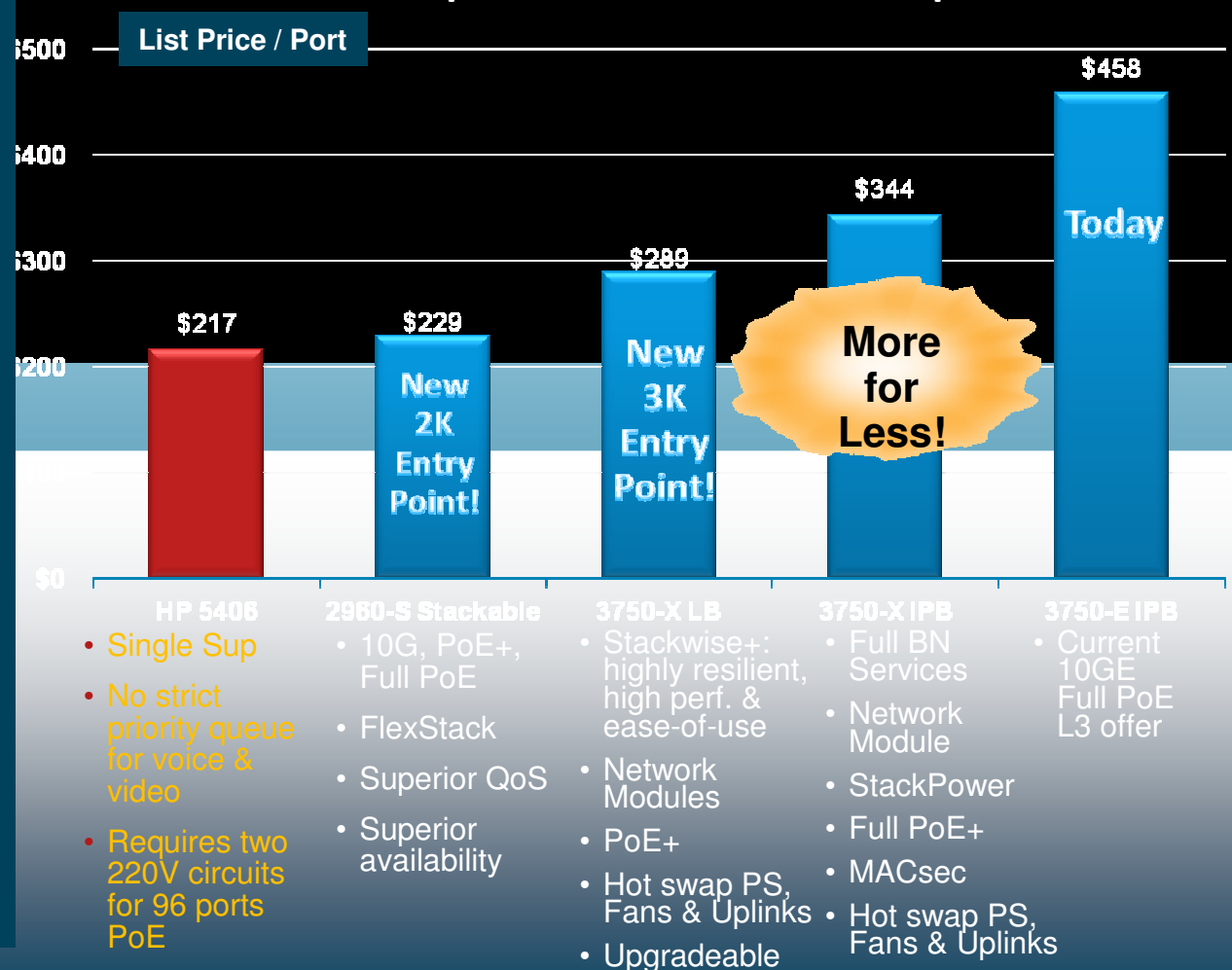
**Traffic Volume
and Bandwidth
Expanding**

Borderless Access: Refuse to Lose!

Compelling Catalyst 3K-X and 2K-S pricing for all customers

- Improve business agility with Borderless Services
 - Medianet
 - Trustsec
 - EnergyWise
- Leverage compelling entry points to innovative platforms
 - Price parity with competitive solutions
- Disrupt the competition
 - Drive BN architecture and services
 - Regain momentum with price parity on baseline offers
 - Accelerate customer refresh with IBLM

96 ports Full PoE with 10G uplinks



Expect
Get
Save

MORE From Your Borderless Network

- Superior Customer Experience
- Increase Productivity
- Focus on Strategic IT
- ~~Optimize Costs~~
- Single Point of Service



