



Catalyst 4500 E- Series with CenterFlex

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Cisco Catalyst 4500 Series

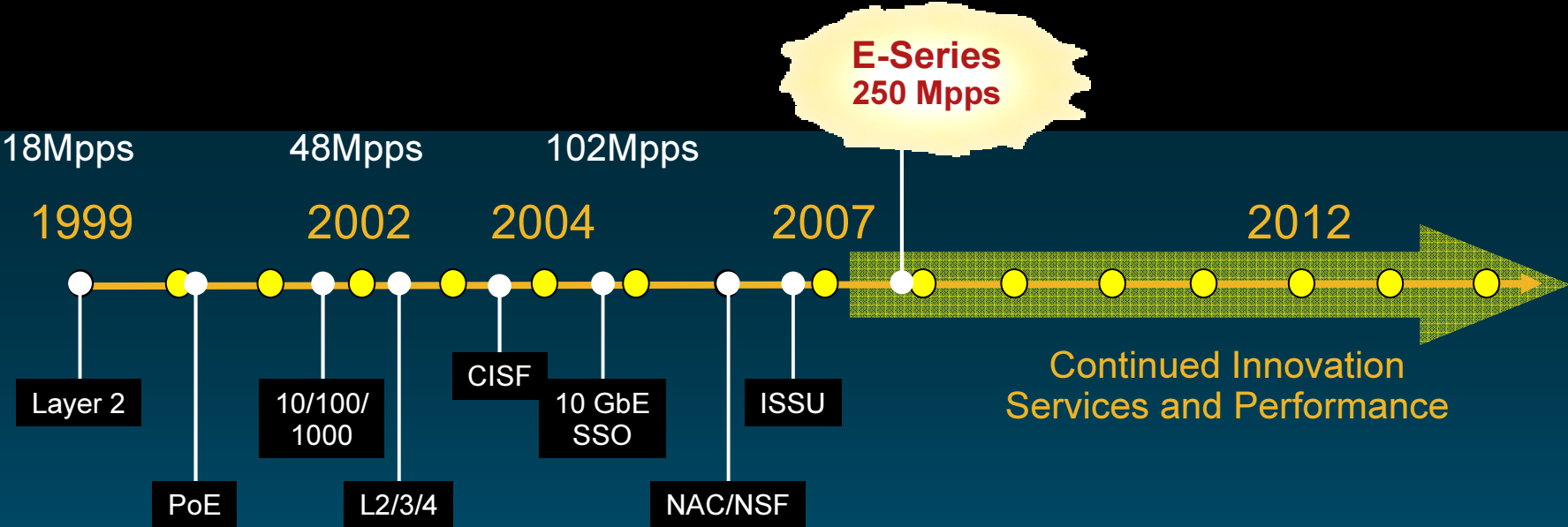


Cisco Catalyst® 4500 Series

Most Widely Deployed
Modular Ethernet Switch
in the Industry

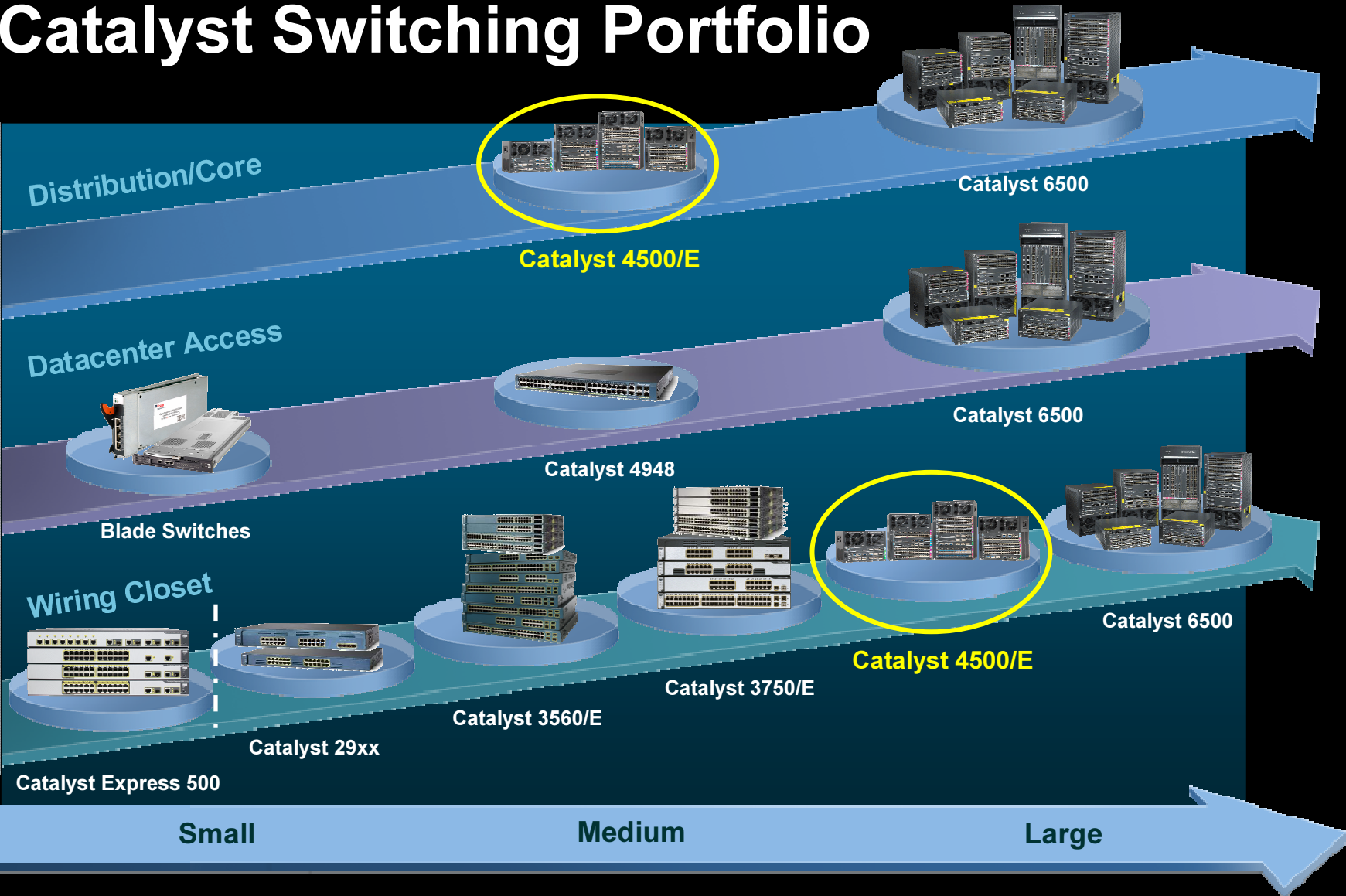
Over 500,000 chassis shipped
Over 65 million ports shipped

Cisco Catalyst 4500 Series Evolutionary Centralized Architecture



Catalyst Switching Portfolio

Features, Scalability, Longevity



Introducing 4500-E Series...



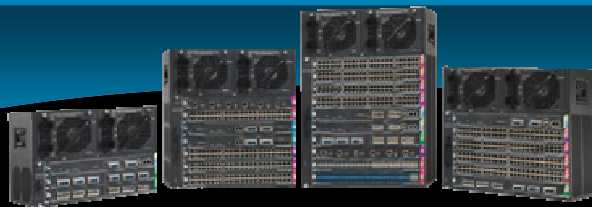
Catalyst 4500 E-Series

CenterFlex
Technology

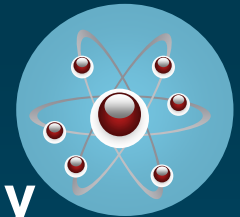
New Catalyst 4500E-Series
Customer benefits
Customer references

Cisco Catalyst 4500 E-Series

Next Generation Cisco Catalyst 4500 Series Extension



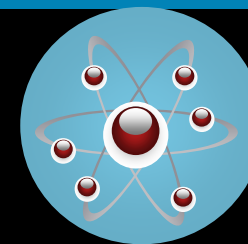
Supervisor 6-E with
CenterFlex Technology



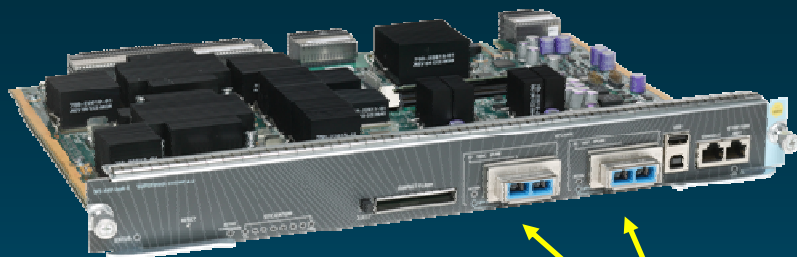
E-Series Line Cards

E-Series Chassis

Supervisor Engine 6-E



WS-X45-Sup6-E



Dual Purpose Uplink Ports
Two 10 GbE or
Four 1 GbE
with Twin Gig
Module

**Centralized 320 Gbps, 250 Mpps,
L2/3/4**

**IPv4 (250Mpps) and IPv6
(125Mpps) in HW**

**Supports full redundancy with
SSO/NSF/ISSU (7R and 10R)**

**Four active 10GbE ports or Eight
active SFPs in redundant mode**

512MB DRAM (upgradeable to 1 Gig)

256K FIB entries, 128K security/QoS

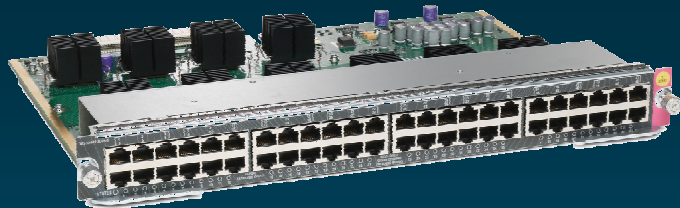
3, 6, 7R, and 10R support

**Supports “classic” (6 Gig/slot) and “E”
series line cards (24 gig/slot) with no
performance degradation if mixed**

Catalyst 4500 E-Series Copper Line Cards

Requires
Sup 6-E

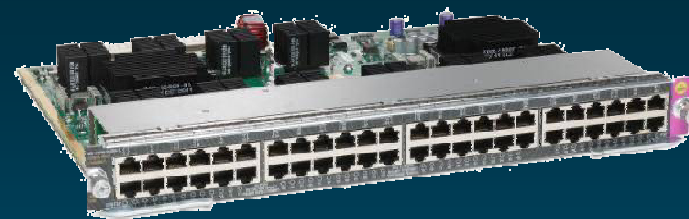
All E-Series Copper
Line Cards ship
with PoE



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



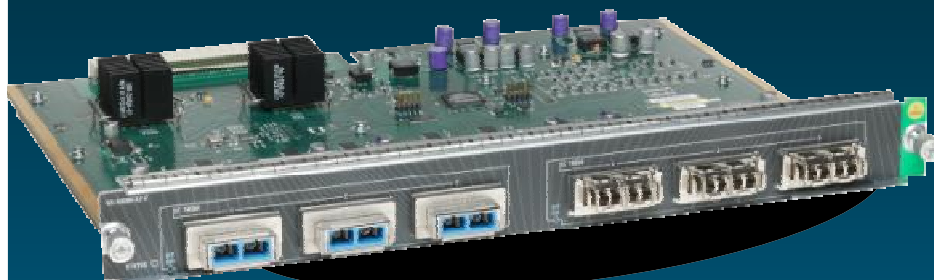
WS-X4648-RJ45V+E

48 Port 10/100/1000 Premium PoE

- All capabilities of the PoE line card plus..
- 30 watts per port capable (future SW upgrade)

E-Series 10 GbE Fiber Line Card

Requires
Sup 6-E



WS-X4606-X2-E

6-Port 10 GbE “E” Series

24-Gig per slot (2.5 to 1 oversubscribed)

X2 or twin gig module—orderable option

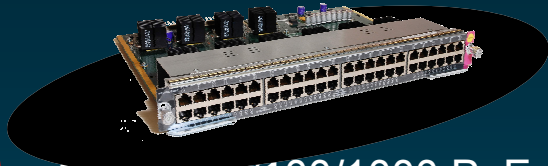
Mix/match X2/twin gig module

Jumbo frame support

Mix with classic cards with no
performance hit

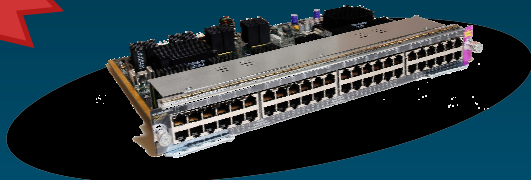
Cisco Catalyst 4500 E-Series Line Cards

Eliminating Bottlenecks

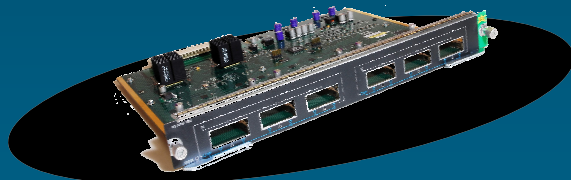


48-Port 10/100/1000 PoE

PoE Ships
Standard



48-Port 10/100/1000 Premium PoE



6-Port 10 Gigabit Ethernet

Features

Premium PoE line card capable of 30W per port

Twin Gig module support on 10 GbE card

24 Gbps per slot

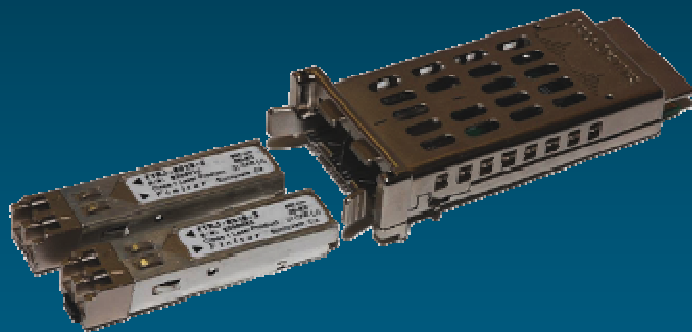
Benefits

Future-proofing

E-Series and Classic cards can co-exist without performance impact

Cisco TwinGig Converter Module

**Ships Standard
on Supervisor 6-E**



Converts X2 10GE
interface into
dual SFP interfaces

Benefit:

Future proofing—
customers can utilize
current 1GE links in
wiring closets until they
are ready to upgrade to
10GE links

Cisco Catalyst 4500 E-Series Chassis



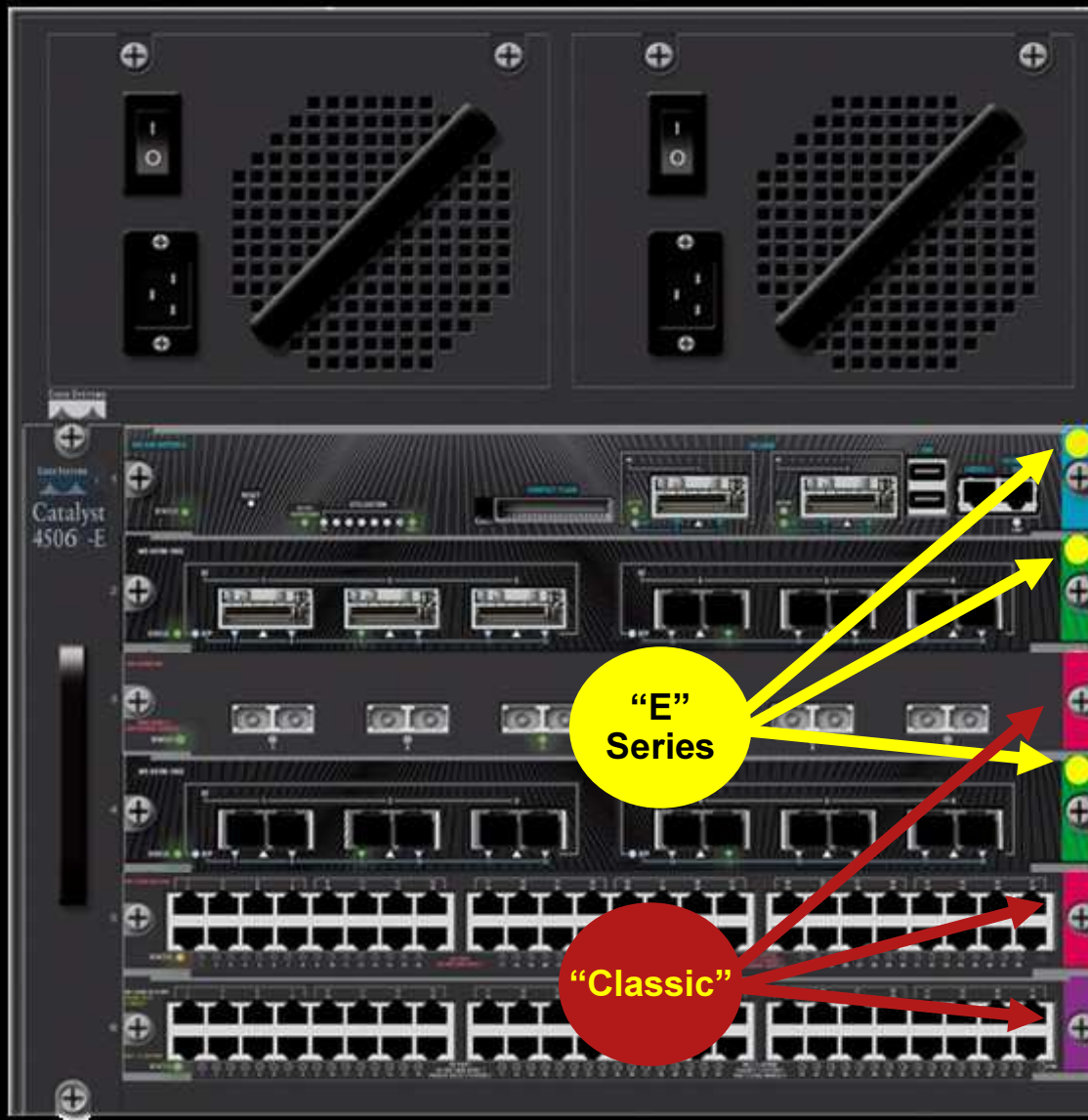
Available in 3, 6, 7 (redundant) & 10 slot (redundant)

Up to 384 10/100/1000 PoE ports or 34 10GbE ports

Enables high performance E-Series line cards

Compatible with all shipping Supervisors, line cards & power supplies

Identifying Classic from E-Series



Label Legend

Blue Tab = Sup

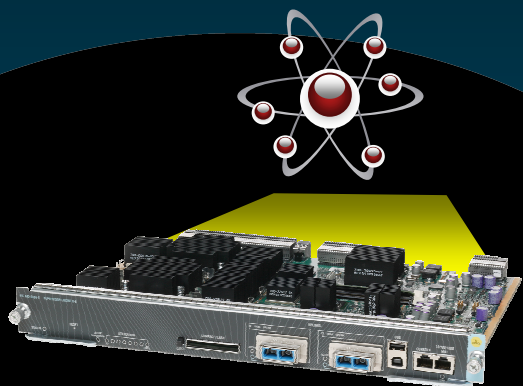
Green Tab = 10GE

Red Tab = FE & GE

Purple Tab = PoE

What Is “CenterFlex?”

Innovations Enabled by the Supervisor 6-E Centralized ASICs



Catalyst 4500 E-Series
CenterFlex
Technology

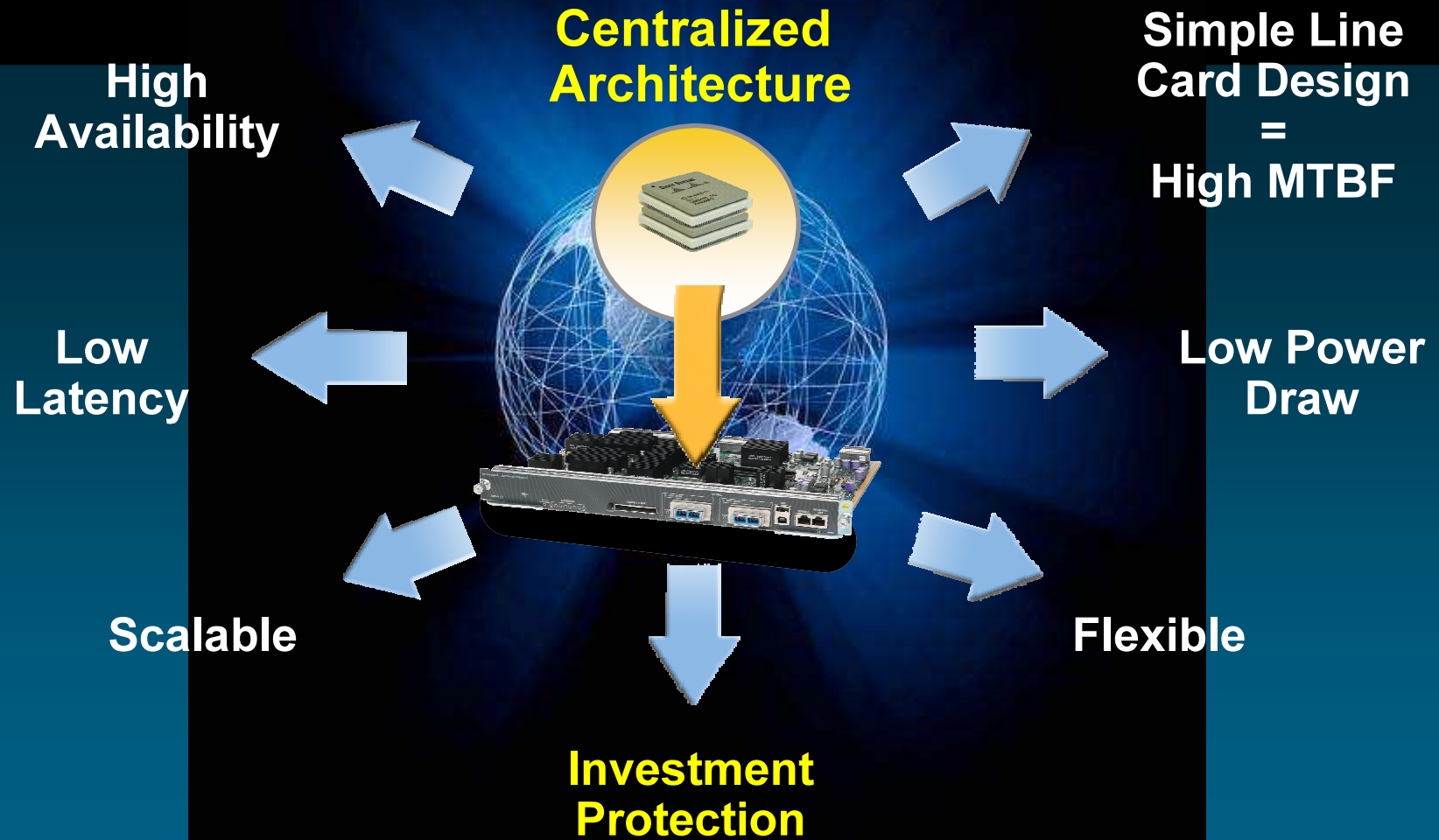
Centralized

- 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

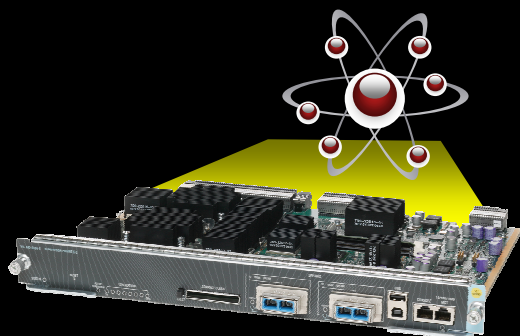


Customer Benefits

Reasons to choose Catalyst4500-E



Place in the Network Opportunities



Catalyst 4500 E-Series
CenterFlex
Technology

Enterprise Wiring Closet

Small/Mid Commercial Core

Small/Mid L3 Distribution

Metro FTTH and Agg

Catalyst 4500 E-Series

Reasons to Migrate

High Performance

- 320 Gbps switching capacity—250 mpps
- 4X bandwidth/line card slot (24 Gbps)
- 10 GbE

Scalable and Flexible Services Capacity

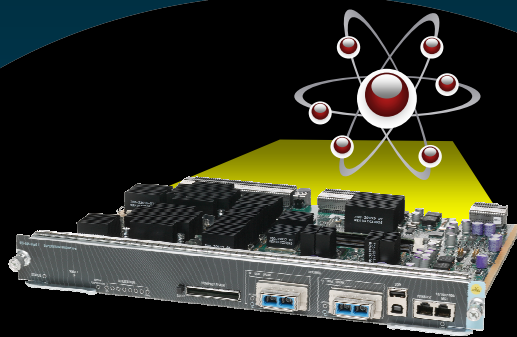
- Ample system resources—“now and future”
- Optimized for dual mode or IPv4/IPv6 migration
- Higher capacity dynamic QoS and security resources

Unprecedented Investment Protection

- Mix and match classic and E-Series line cards
- Twin gig capabilities on all 10Gbe ports
- Uses current power supplies

Reasons to Migrate

High
Performance



Catalyst 4500 E-Series
CenterFlex
Technology

Challenge

- Gig to the desktop adoption increasing
- Gig uplink bottleneck to Aggregation Layer
- Bandwidth intensive real-time applications

Solution

Catalyst 4500 E-Series with CenterFlex technology

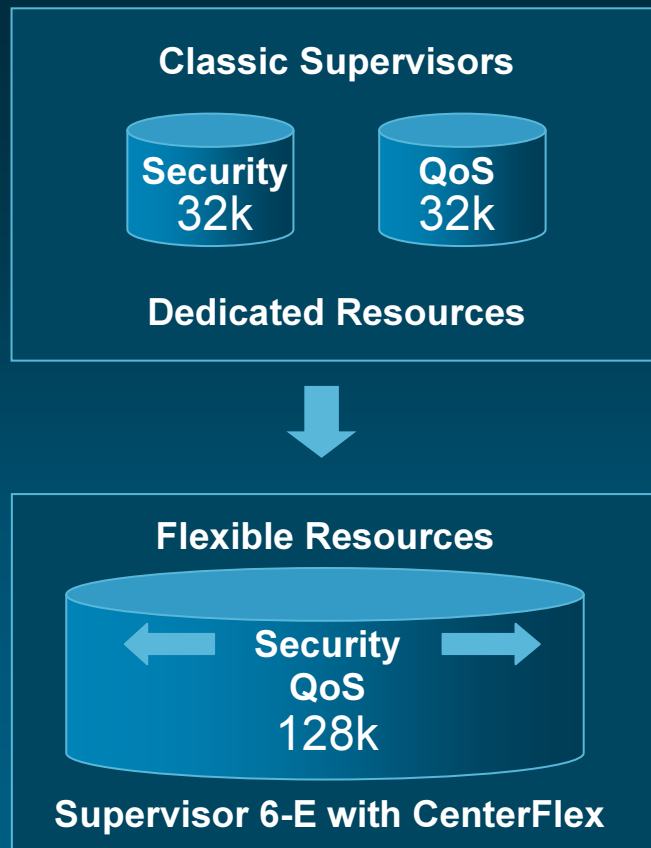
Higher per slot performance
Ten GbE uplinks
320Gbps switching capacity

Benefits

Improved user experience
Increased productivity
Greater application scalability

Reasons to Migrate Sharing TCAM resources

Scalable and
Flexible
Services
Capacity



Challenge

Increasing Services in the Access—
VoIP/Video/Security/Telepresence

Solution

Catalyst 4500 E-Series Delivers
Two fold services capacity increase
Flexible TCAM resources

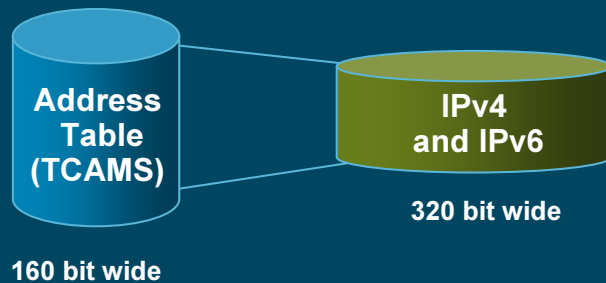
Benefits

- Scale services as needed
- Service deployment flexibility
- Optimization for QoS/security policies
- Investment enhancement and protection

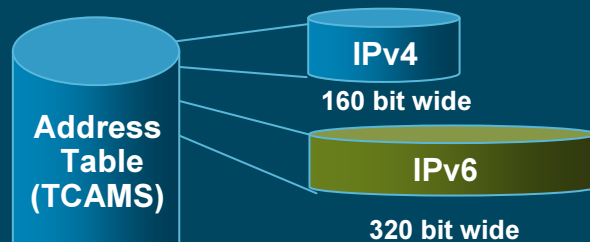
Reasons to Migrate IPv4 & IPv6

Scalable and Flexible Services Capacity

Typical IPv4/IPv6 Allocations



Dynamic Allocation



Supervisor 6-E with CenterFlex

Challenge

- IPv6 applications appearing in the network
- IPv4 to IPv6 migration
- Performance and scalability compromised

Solution

- Increased forwarding table capacity
- Dynamic hardware tables for IPv4 to IPv6 migration
- Hardware-based performance for IPv4 and IPv6 data

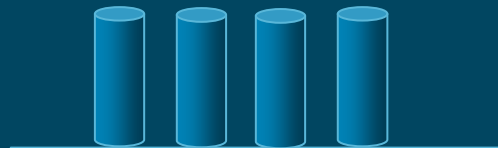
Benefits

- Customers provide end-end IPv4 and IPv6 services
- Customers can mix IPv4 and IPv6 traffic efficiently

Reasons to Migrate Flexible Queuing Resources

Scalable and Flexible Services Capacity

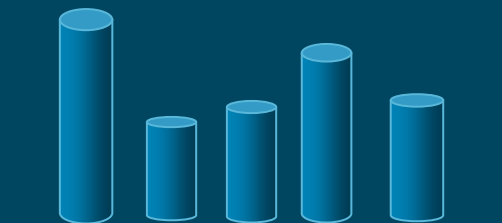
Classic Supervisors



Four **Fixed** Tx Queues per Port



Flexible Resources



Up to Eight **User Configurable** Tx Queues per Port

Supervisor 6-E with CenterFlex

Challenge

- Increasingly diverse traffic types and patterns
- Static buffering approach limits network optimization
- Configuring queues is an operational challenge

Solution

- Flexible, user configurable per port level queues
- Queuing dynamically allocated based on configuration
- Unused resources can be assigned to any port
- Simplified queuing configuration, MQC compliant

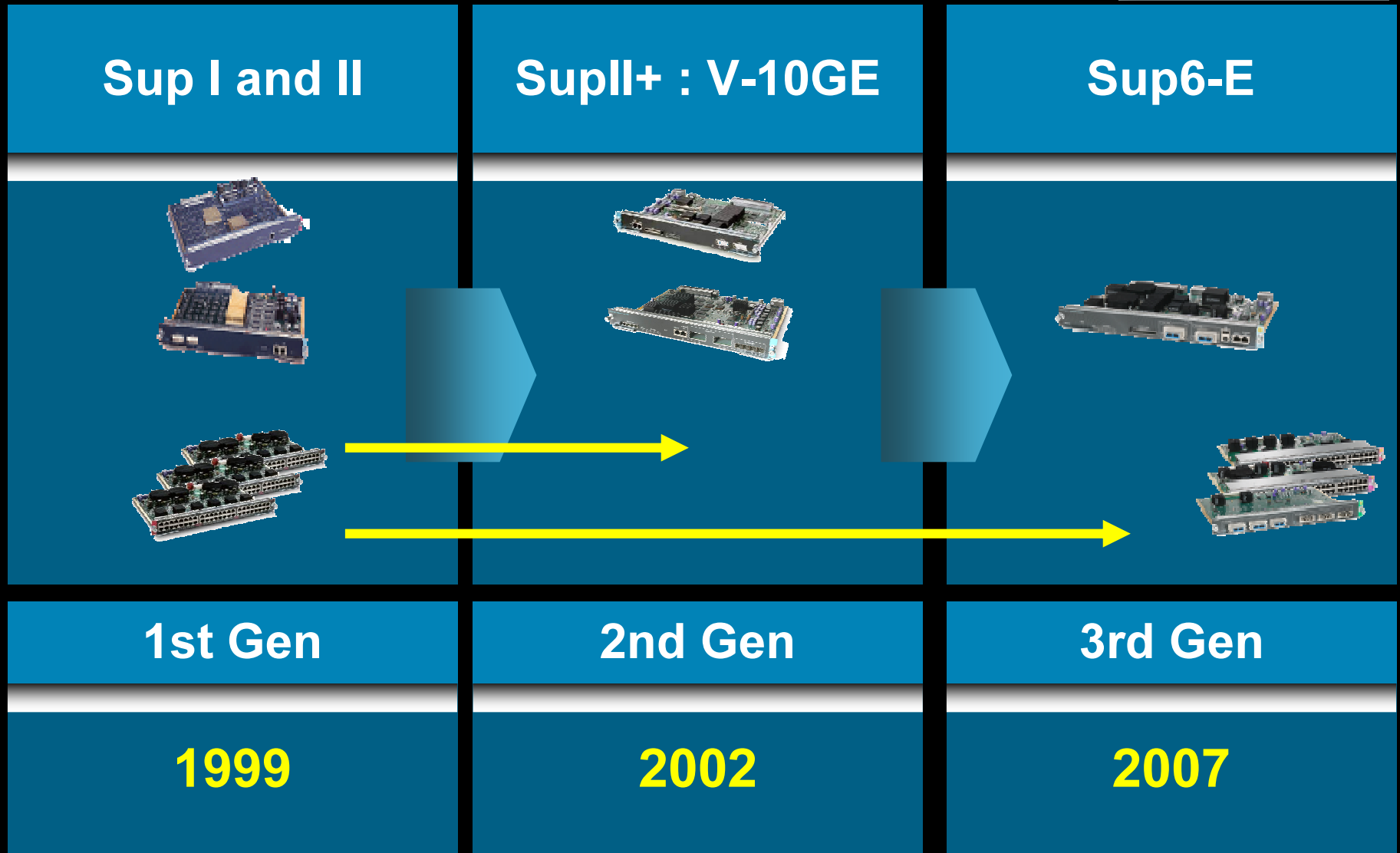
Benefits

- Fine-tune network for diverse applications
- Maximize network bandwidth and performance
- Enhance end user experience

Reasons to Migrate

Investment Protection Dating to 1999

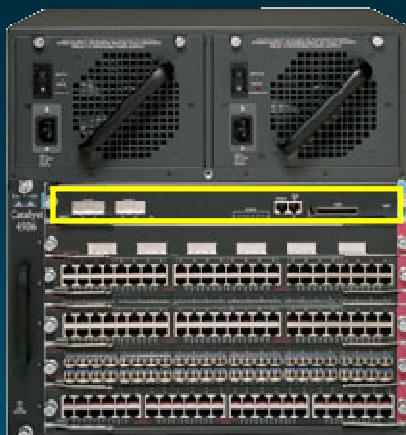
Unprecedented
Investment
Protection



Reasons to Migrate Investment Enhancement

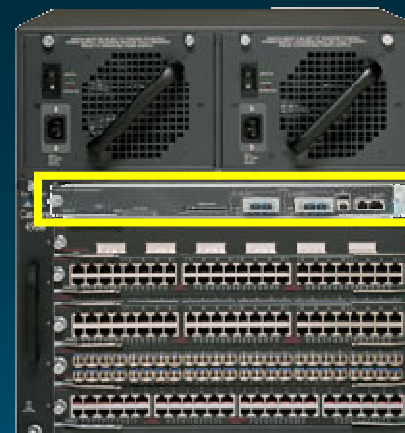
Unprecedented
Investment
Protection

Catalyst 4506 with Supervisor II



L2 Only
2 Tx Q's (136 packets)
Box Wide L2 Qos
Port/Telnet Security

Catalyst 4506 with Supervisor 6-E & CenterFlex Technology



L2 to L4
Up to 8 dynamic Tx Q's (8K packets)
Per Port L2-L4 classification
Port Security/DHCP Snoop/MiTM etc
L2 to L7 ACL's
uRPF
Policing
Ipv6

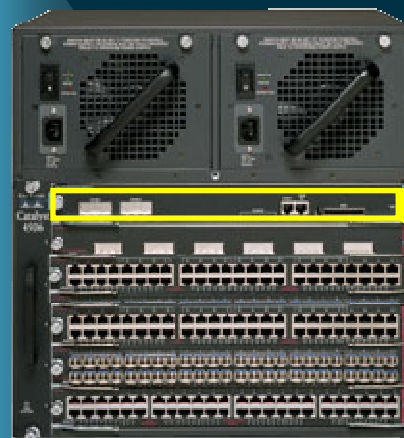
Reasons to Migrate Investment Enhancement Example

Unprecedented
Investment
Protection

Supervisor II: Only 15%
of Purchase Price

Chassis	=	12%
Dual AC Power	=	5%
Supervisor II	=	15%
6 Port GBIC	=	7%
2*48 Port 10/100	=	24%
2*48 Port 10/100/1000	=	27%
8 GBICs	=	10%
Investment	=	100%

Catalyst 4506
with Supervisor II



Upgrade to
Supervisor 6-E
with **CenterFlex**



**85% of Initial
Investment Is
Maintained!**

Upgrades all Ports with CenterFlex Features

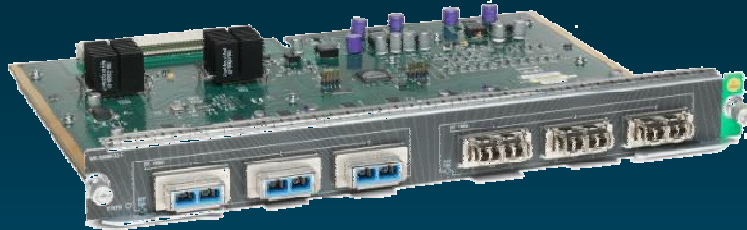
Reasons to Migrate!

Smooth 10GE Uplink/Downlink Migration

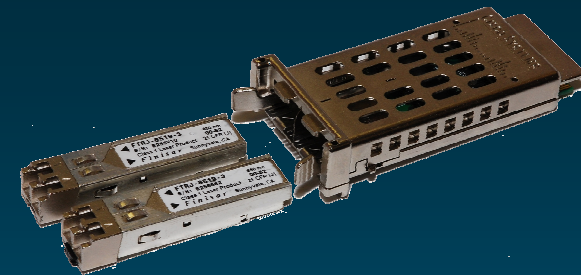
Unprecedented
Investment
Protection



Supervisor 6-E



6-Port 10 GbE



TwinGig Converter Module

Mix and Match X2 & TwinGig converter module

Dual wire speed 10GE uplinks integrated into Sup 6-E

Migration from 12 port GE SFP to 6 port 10GE

30x10GE downlinks

Reasons to Migrate

Enhance Your Investment



Catalyst 4500 E-Series
CenterFlex
Technology

10GE migration

IPv6 migration

PoE+ migration

Forward & Backward
Compatibility

Future Ready Today!

Catalyst 4500 E-Series with CenterFlex Key Benefits

- Exceptional Investment Protection and Enhancement



- Increased Network Flexibility and Control



Platform
Extension

Non-Stop
Communications

- Deterministic sub-sec recovery
- Business continuity with no service disruption



- 4x Per Slot Bandwidth
- 2x Service Capacity



Network
Optimization

Increased
Performance



Product Pricing and Expected Availability

Product	List Price (US)	Availability
Cisco Catalyst 4500 E-Series Supervisor 6-E with CenterFlex Technolgy	\$19,995	Nov. 2007
Cisco Catalyst 4500 E-Series 48-Port 10/100/1000 PoE line card	\$9,495	Nov. 2007
Cisco Catalyst 4500 E-Series 48-Port 10/100/1000 Premium PoE line card	\$11,995	Nov. 2007
Cisco Catalyst 4500 E-Series 6-Port 10GbE line card	\$24,995	Nov. 2007
Cisco Catalyst 4500 E-Series 3-Slot E-Series Chassis	\$995	Now
Cisco Catalyst 4500 E-Series 6-Slot E-Series Chassis	\$4,995	Now
Cisco Catalyst 4500 E-Series 7-Slot E-Series Chassis	\$9,995	Nov. 2007
Cisco Catalyst 4500 E-Series 10-Slot E-Series Chassis	\$12,495	Nov. 2007

Customer References



Campus Communications Fabric Haier



“The Cisco Catalyst 4500 E-Series switches are a lasting investment...extending the life of our existing switching investment..[&] future proofs the network for support of future business needs.”

Hu Jun, PSI IT Operations Director, Haier Group

HCL quote



"The new Cisco Catalyst 4500 E-Series switches have shown that they have the performance and advanced features to meet our business and technology needs and offer excellent investment protection." said Shyamal Bhattacharya, Vice President , at HCL Technologies.

Praxis Quote



“Campus Communications Fabric solutions demonstrates Cisco’s commitment to helping customers optimize their network switching resources while enhancing their existing investment to meet future needs.”

Jeff Roback, President/CEO, Praxis Computing (Cisco Premier Certified Partner)

