Switching Acesso ao Core (2K, 3K, 4K, 6K)

João Henriques
Enterprise networks Systems Engineer
Junho 2014
Access Switching Portfolio
Catalyst Access Portfolio
Essential connectivity to Unified Access for next-generation workspaces

**TRADITIONAL WORKSPACE**

- Secure, reliable access
- Low TCO & energy-efficient

**UNIFIED WORKSPACE**

- BYOD
- Video
- Mobility

**Converged Wired/Wireless Access**

<table>
<thead>
<tr>
<th>Lead Stackable Switch</th>
<th>Lead Modular Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Catalyst 3850/3650</td>
<td>Cisco Catalyst 4500-E</td>
</tr>
</tbody>
</table>

- Upto 480G Stacking
- Upto 4x10G Uplinks
- Stackpower with 3850
- Supports up to 50AP’s

- Scale and Performance
- 928G Backplane
- 8 Modular 1/10G Uplinks
- Supports 50AP’s*

**Features**

- Cisco Catalyst 2960-X/XR

**Scale**

Competitive Feature Set at Compelling Prices

Key Collateral: snipurl.com/OnlyOneLink
The New Catalyst 2960 Portfolio
Updated to Win!

Layer 2
Stand-alone

Catalyst 2960-Plus
1G SFP/BASE-T Uplinks
802.3af PoE

Advanced Layer 2
STACKABLE

Catalyst 2960-SF
1G SFP Uplinks
40G FlexStack
Full PoE, PoE+
IPv6 FHS

Catalyst 2960-X
10G/1G SFP+/SFP
80G FlexStack+
Full PoE, PoE+
IPv6 FHS
NetFlow Lite

Catalyst 2960-XR
2960-X Features plus:
IP Lite – L3/Routing
Redundant PSU

Fast Ethernet

Gigabit Ethernet

EASE-OF-USE
ROBUST SECURITY
ENHANCED LIFETIME WARRANTY
ENERGY EFFICIENCY
LOWER TCO

Feature Leadership and Cisco Quality at Competitive Prices
Catalyst 2960-X/XR Series
The new 2k

Intelligent Services
- NetFlow-Lite
- IP Lite (XR)
- Smart Ops and SDN

Secure IT
- Trustsec SXP and 802.1X
- IPv6 First Hop Security
- Control Plane Protection

Energy Efficient
- EnergyWise
- Switch Hibernation
- Energy Efficient Ethernet
- Low Power Consumption

highly resilient and scalable platform

Smart
Intelligent & Green

Simple
Reduce TCO

Threats exist even in L2-only and IPv4-only networks

Reduce TCO
FlexStack+ Doubles FlexStack Scale/Performance
Stack up to 2X Switches with 2X of Throughput

Stack up to 8
Up to 384 GigE ports with 2960-X and 2960-XR

80 Gbps throughput
2x 2960-S FlexStack performance

Mix & match models
1G/10G, 24/48-port, PoE/data

Investment Protection
2960-X, 2960-S, 2960-SF (up to 4 at 40Gbps)
2960-X delivers industry leading energy efficiency
Greenest Switch on Planet – sleeps to 4W – 95% Power Savings

- EEE support for intelligent device IO power savings (Saves 6W at peak traffic)
- Best in Class Power Consumption (56W)
- Industry leadership in managing IT infrastructure power with EnergyWise
- Special $0 EnergyWise Fast-Start SKU’s

Benefits
- Saves OPEX – ultra-low power consumption – saves on cooling – saves $$
- Carbon Credits – helps meet regulator requirements and make the network ECO friendly
Catalyst 3K Campus Portfolio

Stackable Switch Portfolio

Catalyst 3750 v2
Data or PoE
StackWise
Fixed 1G Uplinks
Single PS
LLW

Catalyst 3750-X
UPOE (60W/port)
EEE (802.3az)
Data / PoE(+)
StackWise Plus
StackPower in LAN Base
Modular 1G/10G Uplinks
Dual FRU PS and Fans
E-LLW

Fast Ethernet
Gigabit Ethernet

Stand-Alone Switch Portfolio

Catalyst 3560 v2
Data or PoE
Fixed 1G Uplinks
Single PS
LLW

Catalyst 3560-X
UPOE (60W/port)
EEE
Data / PoE(+)
Modular 1G/10G Uplinks
Dual PS
E-LLW

Fast Ethernet
Gigabit Ethernet

Network And Service Modules

C3KX-NM-1G
C3KX-NM-10G
C3KX-NM-10GT
C3KX-SM-10G

Service Module
- Flexible Netflow
- MACsec

Dec. CY’12
Dec. CY’12
Catalyst 3K Next Generation Positioning

**Catalyst 3750X**
- Stacking
- StackPower
- RSU

**Catalyst 3560X**
- Modular Uplink
- Dual P/S
- L3 features
- NetFlow w/ stacking module
- LB, IPB, IPS software

**Catalyst 3650**
- Wired/Wireless with 25 AP
- 160G Optional Stacking
- Dual power supplies
- Native NetFlow
- MQC
- LB, IPB, IPS software

**Catalyst 3850**
- Wired/Wireless with 50 AP
- High Performance 480G Stacking
- Modular GE or 10GE Uplink
- StackPower
- ISSU

FCS Sept 2013
Cisco Catalyst 3650 Switch

- Dual FRU Power Supplies
- FRU Fans
- Optional StackWise-160 9 member Stack
- Multi-Core CPU
- MACsec HW Ready
- SGT/SGACL
- EEE
- Full Netflow/QoS for wired/wireless
- Line Rate on All Ports
- Full POE+
- 802.11n 802.11ac
- 25 AP’s and 1000 Clients Per Stack
- 40G Wireless Capacity Per Switch
- Fixed Uplinks 4 x 1G 2 x10G 4 x 10G*

*4 X 10G uplinks are available only on 48-port switches

Built on Cisco’s Innovative “UADP” ASIC
The Intelligent Switch for the World Connected
NEW Catalyst 3850 Switch

- Built on Cisco’s Innovative “UADP” ASIC
- The Intelligent Switch for the World Connected

- FRU Fans, Power Supplies
- Up to 2000 Clients per Stack
- SGT/SGACL*
- Granular QoS/Flexible NetFlow
- Stackpower
- 480 Gbps Stacking Bandwidth
- Up to 50 APs/2000 clients per stack, and 40G per switch
- Wireless CAPWAP Termination
- 40 Gbps Uplink Bandwidth
- Full POE+
- Line Rate on All Ports
Converged Wired / Wireless Access Benefits

- **Single platform** for wired and wireless
  - Common IOS, same administration point, one release

- **Network wide visibility** for faster troubleshooting
  - Wired and wireless traffic visible at every hop

- **Consistent Security and Quality of Service control**
  - Hierarchical bandwidth management and distributed policy enforcement

- **Maximum resiliency** with fast stateful recovery
  - Layered network high availability design with stateful switchover

- **Scale** with distributed wired and wireless data plane
  - 480G stack bandwidth; 40G wireless / switch; efficient multicast; 802.11ac fully ready

Unified Access - One Policy | One Management | One Network
Catalyst 4K
Business Challenges of Evolving Workspace

BYOD
- Secure access
- Customized experience
- Guest access

COLLABORATION
- Multicast streaming
- Video conferencing
- Reliable performance

Mobility
- Seamless roaming
- Optimal client performance
- Cloud access/VXI

IT REQUIREMENTS
- Securing Any Access
- Managing Complexity And Scale
- Delivering High-Quality Experience
- Ensuring Business Continuity with Lower TCO
Catalyst 4500E Leadership

MARKET LEADERSHIP
100M+ Ports Sold
700K+ Systems
70% PoE/PoEP Port share
70% Adoption by Top Cisco Customers (GET, Enterprise)

INDUSTRY LEADERSHIP
1st Catalyst platform to support
48G/slot
FNF
IOS-XE
ISSU
EEE/ Cisco UPOE

Leading Modular Access Platform
Price/Performance Distribution Option
Strategic Campus Platform
SUPERVISOR ENGINE 7-E
- Optimized for Large Campus
- 848 Gbps Switching Capacity
- 4x10G SFP+/SFP uplinks
- 250 MPPS
- Flexible Netflow

SUPERVISOR ENGINE 7L-E
- Optimized for Small/Mid Size Campus
- 520 Gbps (48G/slot)
- 2x10G (SFP/SFP+) or 4x1G SFP Uplinks
- 225 MPPS
- Flexible Netflow

FIBER LINE CARD PORTFOLIO
<table>
<thead>
<tr>
<th>Density</th>
<th>Card Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>WS-X4624-SFP-E</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>WS-X4612-SFP-E</td>
<td></td>
</tr>
<tr>
<td>1G</td>
<td>WS-X4606-X2-E</td>
<td></td>
</tr>
<tr>
<td>10G</td>
<td>WS-X4712-SFP+E</td>
<td></td>
</tr>
</tbody>
</table>

COPPER LINE CARD PORTFOLIO
<table>
<thead>
<tr>
<th>Speed</th>
<th>Card Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>48G</td>
<td>WS-X4748-RJ45-E</td>
<td>Data Only</td>
</tr>
<tr>
<td>24G</td>
<td>WS-X4648-RJ45-E</td>
<td>PoE+</td>
</tr>
</tbody>
</table>

POE POWER SUPPLIES
- PWR-C45-1300ACV
- PWR-C45-2800ACV
- PWR-C45-4200ACV
- PWR-C45-6000ACV
- PWR-C45-9000ACV
Managing Complexity And Scale

- How do I scale my network to meet device proliferation?
- How do I future proof my network while protecting my investment?
- How do I provide consistent policies across networks and devices?

Scale and Performance

- 848 Gbps System Performance
- 384 Ports of 10/100/1000 & 40G uplinks
- 384p of PoEP & 192p of UPOE (9KW PS)
- 384p of Energy Efficient Ethernet

Investment Protection

- 7-10 years of life cycle
- Legacy line-card support with new supervisor
- Feature enhancement with new supervisor
- Mix/Match different generation line cards with no impact to system performance

Seamless Management and Policy enforcement

- Unified Management / Single Pane of Glass Management: Prime Infrastructure
- Single Policy Control Dashboard: Identity Services Engine [ISE]
**Catalyst 4500E**

**Best of Breed for Entire Campus**

Optimized for Large Enterprise Campus Deployments

**Supervisor Engine 7-E**

848Gbps Switching Capacity

And more

- 4 x 10G Uplinks
- 384 10/100/1000 ports
- 3,6,7 and 10 slot chassis
- 96 SFP+ LC ports
- 256K Routes

**SCALABILITY**

- 2 x10G + 2 x 1G Uplinks
- 240 10/100/1000 ports
- 3,6 and 7 slot chassis
- 60 10G LC Fiber ports
- 64K Routes

Optimized for Small/Medium Sized Campus Deployments

**Supervisor Engine 7L-E**

520Gbps Switching Capacity

**Platform Innovations**

- 48G/slot
- Flexible NetFlow
- UPOE
- Hosted Applications
- VRF, EVN*
- In Service Software Upgrade
- VSS*
- Cisco TrustSec (MACSec*)
- AutoSmart Ports

* Roadmap
Wireshark provides a built-in packet sniffer and decoder to enable remote troubleshooting.

Wireshark removes the need to travel onsite for packet captures and also need for external equipment to be connected on the path.

WireShark: Real-time capture and decode on Sup7E (Lightweight Text version “T-Shark”)

Capture and Display Filters to capture packets and/or decode and display packets.

Captured packets can be stored on SD card or USB.

Ability to display packets in brief, detailed or hexadecimal dump mode.
Powerful stuff: New Cisco switch delivers 60 watts to the desktop

“...both to upgrade and downgrade software images while concurrently blasting all ports with line-rate traffic ... 30.5 msec

...demonstrated an alpha version of a protocol analyzer running on the Supervisor 7-E module

...identify a SYN flood attack, ... then shut down the affected switch port or throttle traffic rates.

...capture of any unknown protocol “

Supervisor Engine 7L-E: Third Party Certification

“In tests conducted of the Cisco Catalyst 4500E Supervisor 7L-E, Miercom was impressed with its determinstic performance, high availability, Flexible NetFlow and Wireshark capabilities along with UPOE making it an ideal platform for campus access networks.”
Power Over Ethernet
A Historical Perspective

2000
7W Inline Power

2003
15W (PoE)

2007
30W (PoE+)

2009
Industry Standard: IEEE 802.3at (30W PoE+)

2011
60W (UPOE)

All specifications subject to change without notice

Cisco Innovations Drive Industry Standards
Cisco UPOE Eco-system
Enabling BYOD, Collaboration and Virtualization

Virtualization
- Virtual Desktop
- Trading Floor (IP turrets)

Collaboration
- Campus, Retail, Hospitality
- Personal Telepresence
- Compact Switches
- Healthcare (Nurse Call Systems)

TCO
- Building Management
- DEP Lighting

~900 customers & 2M ports run-rate
"Catalyst 4500" LifeCycle
Unprecedented Switching Lifecycle

Supervisor backward compatible with non-E & 4000 series line cards

Cisco Catalyst 4500 E-Series

Cisco Catalyst 4500 (non-E)

Maintain Support

EOS

EQL

1999

2004

2007

2010

2015

2020
Supervisor 8-E on Catalyst 4500

Performance & Scale

- Works in all existing 4500-E chassis
- Faster CPU
- Doppler daughtercard for wireless integration
- LiSP Ready
- 888Gbps total capacity
- Up to 50APs
- 2000 Clients
- 8 SFP+ 10G/1G Uplinks

Scale
- 20G Wireless Termination
- 100% more Uplink Bandwidth
- Uplink FPGA (LiSP)

Services
- Complete wired/wireless integration
- Application Visibility for Collaboration Protocols

Modular Value Proposition
- Investment Protection to UA Arch
- In Service Software Upgrade for wired/wireless
Best-in-Class Performance, Security, and Resiliency
Catalyst 4500-X

**INOVAÇÃO**

- Virtual Switching System (VSS)*
- Flexible NetFlow
- Easy Virtual Network (EVN)
- IOS XE Open Application Platform (Wireshark)
- ISSU, NSF, SSO w/ VSS

**SIMPlicidade Operacional**

- Automation
- Investment protection
- Modular 8-port 10GE uplink
- Hot-swappable dual redundant power supplies & five individual fans
- Limited Lifetime Warranty

**Revolutionizing Fixed 10GE Campus Aggregation Platform**

- 800 Gbps System 1.6Tbps w/ VSS
- Smallest Size – 1RU 21” Deep
- Highest Scalability Richest Services
- Industry Leadership
- Lower TCO

* 15.1(2)SG
## Catalyst 4500-X Portfolio Agregação

### Catalyst 4500-X PORTFOLIO

<table>
<thead>
<tr>
<th>IP Base SKUs</th>
<th>Enterprise Services SKUs</th>
<th>IP Base SKUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front to Back Airflow</td>
<td>w/ 8-port uplink Front to back Airflow</td>
<td>Back to Front Airflow</td>
</tr>
<tr>
<td>1x 750WAC P/S</td>
<td>2x 750WAC P/S</td>
<td>1x 750WAC P/S</td>
</tr>
<tr>
<td>WS-C4500X-32SFP+</td>
<td>WS-C4500X-40X-ES</td>
<td>WS-C4500X-F-32SFP+</td>
</tr>
<tr>
<td>WS-C4500X-16SFP+</td>
<td>WS-C4500X-24X-ES</td>
<td>WS-C4500X-F-16SFP+</td>
</tr>
</tbody>
</table>

**Front to Back Airflow**
- Burgandy color fan and P/S handle

**Back to Front Airflow**
- Blue color fan and P/S handle

- 8-port 10GE Modular Uplink Module C4KX-NM-8SFP+
- Removable Fan Module
- 750WAC Modular P/S
Campus Portfolio Switching Aggregation

10G Fiber

Cisco Catalyst 4500-X

1G Fiber

Cisco Catalyst 3750-X

Fixed Platform

Modular Platform

Cisco Catalyst 4500

WS-X4712-SFP+E

WS-X4606-X2-E

WS-X4624-SFP-E

WS-X4612-SFP-E
Cisco Catalyst 6500
Cisco Catalyst Campus/Nexus Data Center

**Campus**

**IOS 15.0**
- **Backbone**: Cisco Catalyst 6500
- **Distribution**: Cisco Catalyst 6500
- **Access**: Catalyst 4500/3750-X

**Cisco Catalyst or Nexus?**

**Data Center**

**NX-OS**
- **Backbone**: Nexus 7000
- **Aggregation**: Nexus 7000
- **Access**: Nexus 5000/2000

**Video**

**Mobility/BYOD**

**Security**

**Workload Mobility**

**10G/Virtualization**

**Energy Efficiency**
Unlock 80G/slot across ALL E-Series Chassis

E-Series Systems for the “2T” Family

- 6503-E: 34x10GE, 96x1GE, 8x40GE, 150Mpps
- 6504-E: 50x10GE, 144x1GE, 12x40GE, 210Mpps
- 6506-E: 82x10GE, 240x1GE, 20x40GE, 330Mpps
- 6509-E: 130x10GE, 384x1GE, 32x40GE, 510Mpps
- 6513-E: 180x10GE, 528x1GE, 44x40GE, 720Mpps
- 6509-V-E: 130x10GE, 384x1GE, 32x40GE, 510Mpps
Cisco Catalyst 6500 Strategy and Direction

Innovation

Innovation with Investment Protection

Transition

Driving Next-Gen Ethernet in the Campus
1G → 10G → 40G → 100G

Differentiation

The Network Services Platform for Unified Access

Lower TCO

Price/Performance
Virtualization, Simplified Operations, and Change Management

CISCO CATALYST 6500 E-SERIES
The New Catalyst 6500
Balancing Innovation with Investment Protection

69xx Series 80Gbps Built-In DFC4
- 8 port 10G
- 4 port 40G or 16 port 10G

68xx Series 40Gbps
- Built-in DFC4
- 1Gbe Fiber: 24/48 ports
- 10/100/1000: 48 ports
- 10GBASE-T: 16 ports
- 10G Fiber: 16 ports

2 Terabit Supervisor

Service Modules
- WiSM-2
- ASA-SM
- NAM-3
- ACE-30

INNOVATION
The New Catalyst 6500

Investment Protection
- All E-Series Chassis
- All 61XXPOE/POE+ Legacy Service Modules
- DFC4 Upgrade Option for 67xx Line Cards
6500 Ready for BYOD

Sup2T

Service Modules – Sup2T e Sup720-10G

- NAM-3
- WiSM2
- ASA-SM

Fiber 40G – Sup2T

- 40G/Slot
  - 6904
  - FourX
  - SR4
  - LR4

Fiber and Copper 40G – Sup2T

- 40G/Slot
  - 6816
  - 80G/Slot
  - 6908

Fiber and Copper 1G – Sup2T

- Fibra
  - 6824
  - 6848
- Acesso de Elevado Desempenho
  - 6848
- Acesso de Cobre
  - 6148
  - 45AT

Sup720-10G

Fiber 10G e Copper 40G/Slot para Sup720-10G

- 6716
- 6704
- 6716
- 6708

Fiber and copper 1G to Sup720-10G

- Fibra
  - 6724
  - 6748
- Acesso de Elevado Desempenho
  - 6748
- Acesso de Cobre
  - 6148
  - 45AT
Cisco Catalyst 6500: Continued Investments in Leadership
Doubling Down on the Industry Leader

Today

6500E

- Scale BW/Slot with Backward Compatibility
- Unprecedented Investment Protection
- Compact Form with C6K Features

The New Today

6807-XL

- Up to 880G/Slot
- 32 x 10GE
- 40G / 100G
- Smart Install
- Instant Access
- TrustSec
- SDN / OnePK
- Campus LISP
- Wireless MC/MTE

6500E

- Up to 180G/Slot
- 100G
- 40G
- 10G

6880-X

- 80 x 10G

Full Software Consistency for Investment Protection
End-to-End Forwarding Engine Consistency
EBG Product Portfolio
Tomorrow Starts Here…

Features

Catalyst 4500-X
- Dense 1 RU
- Fixed Space Constrained 10G Aggregation
- Industry’s Most Scalable & Feature Rich “Extensible” Fixed Campus Backbone Platform
- 10G Cost Optimized for Best-in-Class Features

Catalyst 6880-X
- Industry-Leading Campus Backbone Platform
- Comprehensive Borderless Networks Feature Set
- Highest Performance & Scalability
- Lower TCO
- Lead Platform to Enable Video, Cloud and BYOD

Catalyst 4500-E
- Competitive Feature Set at Compelling Prices
- Baseline Backbone Features
- Collapsed Access

Catalyst 6500-E & 6807-X
- Fixed
- Modular
- Scale & Performance
Cisco Catalyst 6800 Family

6807-XL
Future-proof backbone platform to scale your campus services with NO compromise

6880-X
Mini but mighty backbone platform with high density 10G and rich services

6800ia
With Catalyst Instant Access Technology solution that dramatically simplifies your campus operations

Reinventing Your Backbone Experience
The New Catalyst 6807-XL
Taking Catalyst 6500 to 880G/Slot

7 Slots 10 RU
NG Asic Ready
N+1 power Supply Redundancy—Add as You Grow

- Only 10 RU height *(smaller than 6506-E)*
- 220 to 880Gbps per Slot capable
The New Catalyst 6880-X

- Only 4.5 RU height (smaller than 6504-E)
- 80 to 220Gbps per Half Slot capable

Four 100G-Ready Port Slots, Front Serviceable Power Supplies, and Fan Tray

NEBS Level 3-Compliant Platform

- MACsec, VSS, Instant Access, MPLS, VPLS, LISP, SGT, 1588(*) Capable on Every Port
- Sixteen 10/100/1000/10G or Up to Four 40G ports
- Fixed Module Sixteen 10/100/1000/10G or Up to Four 40G X86 2 GHz CPU 4 GB DRAM

Low Power
Low Noise Fans

Platinum EFF
Redundant AC and DC PS
Catalyst Instant Access
Value Proposition

ISE  Cisco Prime
Managed Devices = 20+
Managed Devices = 1

Benefits

- Single Point Of Management, Configuration and Troubleshooting
- Simplified Network design for VLANs and port channels
- Highly Fault Tolerance with VSS Quad-Sup SSO
- Agile Infrastructure to add new features & services uniformly across Access Layer
- A Single Image to deploy and manage across Distribution Block

Campus Distribution Block
Catalyst Instant Access

- **F101**
  - Catalyst 6800ia
  - Console Port
  - Management
  - Mini USB Console

- **F102**
  - Catalyst 6800ia

- **F103**
  - Catalyst 6800ia

- **F104**
  - Catalyst 6800ia

**Data and POE Support**
- 740W total POE Budget
- 15W on 48 ports or 30W on 24 ports

**Integrated Stacking Module**
- Up to 3 members in a Stack

**Key Features**
- 48x 1G ports
- 2x 10G uplink ports
- 1G POE/Non-POE ports
- 2x 10G SFP+
- 740W total POE Budget
- 15W on 48 ports or 30W on 24 ports
- Up to 3 members in a Stack
<table>
<thead>
<tr>
<th>Feature</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security in Hardware</td>
<td>✓</td>
</tr>
<tr>
<td>Multicast in Hardware</td>
<td>✓</td>
</tr>
<tr>
<td>QoS In Hardware</td>
<td>✓</td>
</tr>
<tr>
<td>IPv4 in Hardware</td>
<td>✓</td>
</tr>
<tr>
<td>IPv6 in Hardware</td>
<td>✓</td>
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<tr>
<td>Netflow in Hardware</td>
<td>✓</td>
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<tr>
<td>Stacking Capacity(80G/160G/480G)</td>
<td>✓</td>
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<tr>
<td>EnergyWise</td>
<td>✓</td>
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<tr>
<td>PoE and PoE +</td>
<td>✓</td>
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<tr>
<td>High Availability(VSS+SSO)</td>
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<tr>
<td>Redundancy</td>
<td>✓</td>
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<tr>
<td>SmartInstall/Smarports</td>
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<tr>
<td>Power Consumption(2960X)</td>
<td>✓</td>
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<tr>
<td>Flexible Netflow/AVC(DPI)</td>
<td>✓</td>
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<tr>
<td>Unified Access(3650,3850, SUP8E)</td>
<td>✓</td>
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<tr>
<td>IOS XE – Multi Hosted Applications</td>
<td>✓</td>
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<tr>
<td>Instant Acess(6800IA)</td>
<td>✓</td>
</tr>
<tr>
<td>IOS Consistency(wired + Wireless)</td>
<td>✓</td>
</tr>
<tr>
<td>IEEE 802.1AE (MACSEC)</td>
<td>✓</td>
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Thank you.