CISCO

You make **possible**

The Network Intuitive: Enabling Intent-Based Networking or Cisco DNA and SDA Insights – ask your questions

Scott Hodgdon – Technical Marketing Engineer
Muhammad Imam – Director Technical Marketing
Markus Harbeck – Sr Solution Architect, CX

TCRCRS-2500

CISCO Live!

Cisco Webex Teams

Questions?
Use Cisco Webex Teams to chat
with the speaker after the session

How

1. Find this session in the Cisco Events Mobile App
2. Click "Join the Discussion"
3. Install Webex Teams or go directly to the team space
4. Enter messages/questions in the team space

Agenda

- Ask your question and drive the discussion → ask us anything

→ Cisco DNA Center

→ SDA

→ Catalyst 9000

Who is Scott ?

Personal

- Based in Raleigh, NC (US)
- 19-year-old daughter in university (she's smarter than I)

Career

- 19 years as a Technical Marketing Engineer
- 13 Years focused on just Catalyst 6K Family
- 15 years as a Cisco Live Speaker
- 9 years as Cisco Live Session Group Manager for US and EMEA
- 2 Years as a Cisco Partner SE
- 2 Years Lead Network Engineer for 15-site Health Care network in North Carolina
- No formal technology schooling … I have a Business Degree with a Finance Concentration

Current Focus

- Cisco SDA Network Design and Partner Enablement
- Catalyst 9K Network Design and Partner Enablement

cisco Live!

Muhammad A Imam

Muhammad A Imam

Netscreen/SRX
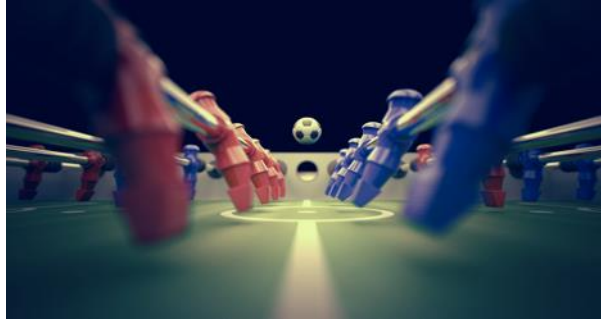
ASR1K

Catalyst Switches

Catalyst 3850/3650

Catalyst 9K

Muhammad A Imam

Tennis

Foosball

Keto

Muhammad A Imam

Who is Markus Harbeck ???

```
interface GigabitEthernet2/0/9
 description 3650-SDA-3
 no switchport
 dampening
 ip address 172.20.195.17 255.255.255.252
 ip router isis 2010
 logging event link-status
 load-interval 30
 carrier-delay msec 0
 bfd interval 300 min_rx 300 multiplier 3
 no bfd echo
!
interface GigabitEthernet2/0/10
 description ucs1-vmnic3
 switchport access vlan 2136
 switchport mode access
 device-tracking attach-policy IPDT_MAX_10
 spanning-tree portfast
!
interface GigabitEthernet2/0/11

CI3850-SDA-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
CI3850-SDA-1(config)#router lisp
CI3850-SDA-1(config-router-lisp)#
```
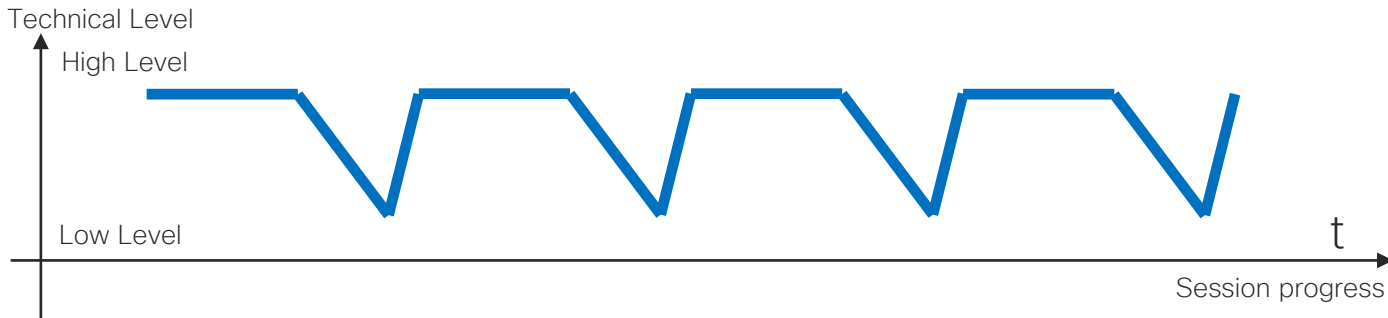
Personal:
- Location: Eschborn, Germany (near Frankfurt) but lives in Bavaria
- Other Interests: My family, 2 kids, Horse back riding, motor cycling

My Background:
- CLI Junkie since 1996 for all Routing and Switching
- Joined CISCO October 2010
- Before; 12 years, operations, engineering, application engineering at Lufthansa Systems
- Drives Cisco DNA Center, Automation and Analytics in EMEAR and loops in the development team and Business Unit
- Book Author – Cisco DNA Assurance 2018

Current Projects:
- Cisco DNA Center since day1 in 2014
- Multidomain
- Analytics, Assurance
- SDA, ITSM

My Kids view on Cisco DNA Center and Network Design

Copyright by Saskia

Copyright by Hanna

Session expectations

Technical Level

High Level

Low Level

t

Session progress

That is not a TCP Session!

This session is for you to ask anything and get a deep inside.

Note: TCP Slow Start is part of the congestion control algorithms put in place by TCP to help control the amount of data flowing through to a network.
Source: https://www.keycdn.com/support/tcp-slow-start/
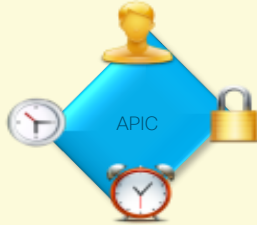
Cisco SDN Domain specific Controller's

Data Center

Application Centric Infrastructure (ACI)

APIC

(for Data Center)

(Nexus 9000)

Enterprise

Cisco DNA

Cisco DNA Center

1.3.3 Available now!

Cisco DNA Center

(formerly APIC-EM)

(Catalyst, ISR, ASR, WLAN, Nexus 7k, NfV, vManage, Meraki)

What is network about?

Source: google.de images

Video

Voice

Data

Security

Cloud

IOT

Mobility

Source: google.de images

What's new in Cisco DNA Center 1.3.3.0

- 1.3.3.0 contains new capabilities across Assurance, Automation, Security, and SD-Access

- Ecosystem integration extends to Samsung mobile devices - provides Samsung client analytics

- Wireless Sensor production readiness

- Wired Client Event Viewer

- Executive Summary Reports

- Extended node and other enhancements in SD-Access

RMA

Choose Replacement Device

You've selected to replace RMA-Switch. Now choose an available replacement from your inventory below. If you don't see your desired device, simply click 'Add Device' to add a single device or sync with Smart Account.

Note : We are supporting only like to like devices.

Replacing RMA-Switch

IP Address	172.20.11.100	Platform	C9200L-24T-4G
Serial Number	JAE22501HHQ	OS Image	16.12.1

Available Replacement Devices(0)

Status [All | Managed | Unclaimed]

Device Name	IP Address	Status ▼	Serial Number	Platform
		No data to d...		

Replacement History

▽ Filter   ⬆ Export   Last updated: 5:43 PM   ⟳ Refresh

Date Replaced	Device Name ▲	Platform	Serial Number	Replacement Serial Number	Replace Status	⋮
01/21/2020 12:22	RMA-Switch	C9200L-24T-4G	JAE22501HHQ	JAE22501JPU	Replaced	
01/21/2020 14:57	RMA-Switch	C9200L-24T-4G	JAE22501JPU	JAE22501HHQ	Replaced	

Showing 1 - 2 of 2

Application Policy - QoS

Applications can interact with Cisco DNA Center via Northbound APIs, informing the network of application-specific and dynamic QoS requirements

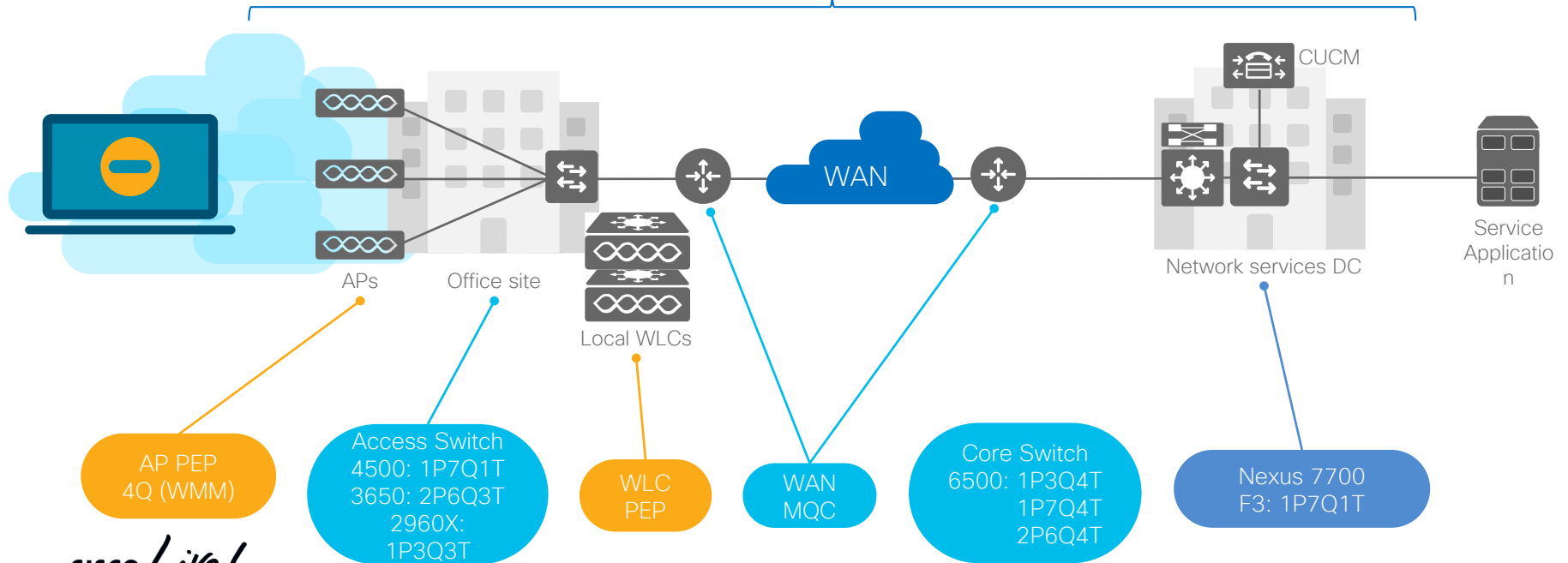Network Operators express high-level business-intent to Cisco DNA Center Application Policy

REST API

Cisco DNA Center

Southbound APIs translate business-intent to platform-specific configurations

CUCM

WAN

Network services DC

Service Application

APs

Office site

Local WLCs

AP PEP
4Q (WMM)

Access Switch
4500: 1P7Q1T
3650: 2P6Q3T
2960X:
1P3Q3T

WLC
PEP

WAN
MQC

Core Switch
6500: 1P3Q4T
1P7Q4T
2P6Q4T

Nexus 7700
F3: 1P7Q1T

Cisco SD-Access
Fabric Roles and Terminology
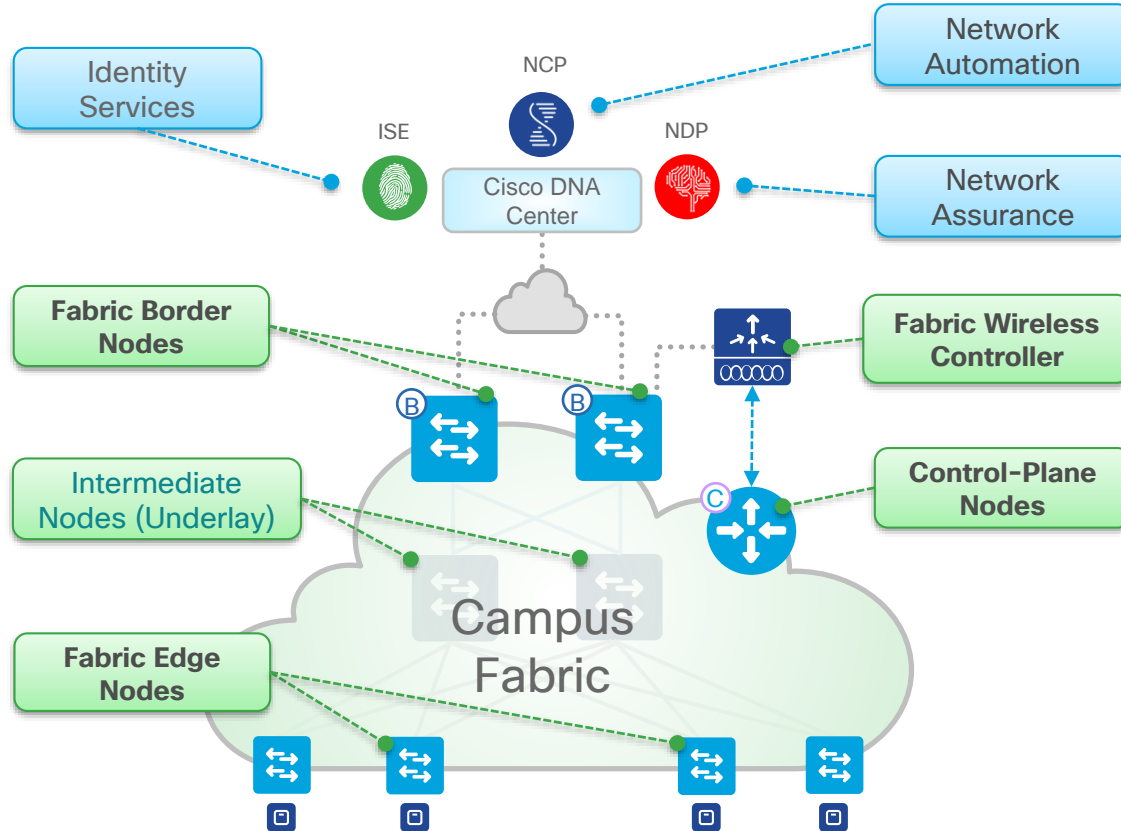
- **Network Automation** – provides simple GUI management and intent based automation (e.g. NCP) and context sharing

- **Network Assurance** – Data Collectors (e.g. NDP) analyze Endpoint to App flows and monitor fabric status

- **Identity Services** – NAC and ID Systems (e.g. ISE) for dynamic Endpoint to Group mapping and Policy definition

- **Control-Plane Nodes** – Map System that manages Endpoint to Device relationships

- **Fabric Border Nodes** – A Fabric device (e.g. Core) that connects External L3 network(s) to the Cisco SD-Access Fabric

- **Fabric Edge Nodes** – A Fabric device (e.g. Access or Distribution) that connects Wired Endpoints to the Cisco SD-Access Fabric

- **Fabric Wireless Controller** – A Fabric device (WLC) that connects APs and Wireless Endpoints to the Cisco SD-Access Fabric

Cisco SD-Access 1.3 Features

Device Support

- Cisco Catalyst IE3400H support as Extended Node – IE-3400-8/16/24-FT.
- eWLC Support – C9800-L-C/F-K9
- Cisco Aironet 1840 Series Access Points.
- Base Automation support for Nexus 9500

Deployment

- Border handoff enhancements: 4-byte ASN
- Embedded wireless support on Fabric edge
- FiaB deployment models :
  - Two Per site.
  - FiaB w/embedded wireless and non collocated control plane
- Extended Node: Template based – Dot1X and MAB for Extended nodes
- Multiple VN for Guest Access in SDA
- Cisco SD-Access Group-Based Access Control Policy
- Bonjour application inter-operability with Cisco SD-Access

Cisco DNA Automation 1.3 Features

RMA

Device Replacement
- RMA workflows – Switches, Routers (APs and WLCs support on Roadmap)

Security

- Stealthwatch Security Analytics service
  - Enable / disable ETA on Catalyst 9300, Catalyst 9400, ISR 4k, and ASR1k
  - Enable / disable NaaS on Catalyst 3650, 3850, and 9200

SDA-API

- SD-Access APIs for Host Onboarding Authentication Template
- SD-Access API for Fabric Edge
- SD-Access APIs for Host Onboarding – Port Assignment for User Devices & APs
- SD-Access APIs for adding IPs to Virtual Networks.

Cisco SD-Access 1.3.3.0 Features

Single Site

- Multicast enhancements
- L2 flooding enhancements
- SVL support

Authentication enhancements
- Hitless Authentication mode change
- Site Specific template
- Critical vlan enhancements.

Extended Node Enhancements
- Dot1X and MAB support
- Multicast Support
- Policy Extended Node

Fabric deployment flexibility features
- Vlan number customization
- Port description

Multi Site

- Layer 2 Inter-site

New Devices

- C9300-48H,C9300-24H
- C9300L-48PF-4G-A,C9300L-48PF-4G-E,C9300L-48PF-4XA, C9300L-48PF-4X-E
- IE3400H8T,IE3400H16T,IE3400H24T

SD-Access Resources
Would you like to know more?

cisco.com/go/dna

cisco.com/go/sdaccess

- SD-Access At-A-Glance
- SD-Access Ordering Guide
- SD-Access Solution Data Sheet
- SD-Access Solution White Paper

cisco.com/go/cvd

- SD-Access Design Guide
- SD-Access Deployment Guide
- SD-Access Segmentation Guide

cisco.com/go/dnacenter

- Cisco DNA Center At-A-Glance
- Cisco DNA ROI Calculator
- Cisco DNA Center Data Sheet
- Cisco DNA Center 'How To' Video Resources
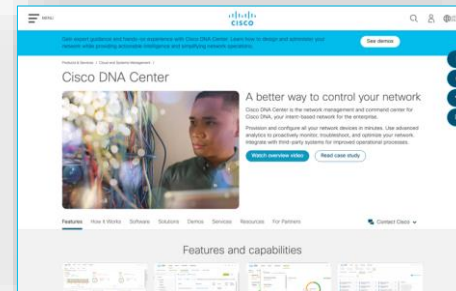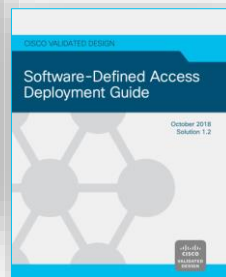
SD-Access Resources

Would you like to know more?

🔗 cs.co/sda-resources
🔗 cs.co/sda-community

- Search from your Browser

- Indexed by Search Engines

- Discuss with experts & friends

- Supported by SDA TMEs

- 24-hour First Response

- Questions are marked Answered

Catalyst 9000

We have been busy since…

With Industry First Innovations across C9k

- Industry's first 90W Modular switch
- Industry's first enterprise optimized Core 10/25/40/100G
- Industry's first enterprise optimized 25G
- Fiber on 9400/9300
- Industry's highest density mGig
- Entry-level IBN solutions

90W Line Card for 9400

Modular

Fixed

C9400-SUP1XL-Y

C9300-NM-2Y

10/25G-CSR / LR

C9400-LC-48/24S
48/24-port 1G SFP

C9400-LC-24XS
24-port 10G SFP+

C9300-24/48S

C9300-48UN (48p 5Gig)

C9300-NM-4M

C9200/L

And the C9300L is shipping now

MultiGigabit

48 Port UPOE
(12 MGig + 36 1G)

24 Port UPOE
(8 MGig + 16 1G)

4x 1G uplinks

48 Port PoE+/Data

24 Port PoE+/Data

Stack kit

Catalyst Switching – fully refreshed Portfolio

Catalyst
9000
Switching
Platform

Catalyst
9600 Series

Catalyst
9500 Series

Catalyst
9400 Series

Catalyst
9300 Series

Catalyst
9200 Series

Catalyst
2960-X/XR

Catalyst
3650/3850

Catalyst
4500E Series

Catalyst
3850-XS/4500-X

Catalyst
6840-X/6880-X

Catalyst
6500-E/6807-XL

Access Switching

Core Switching
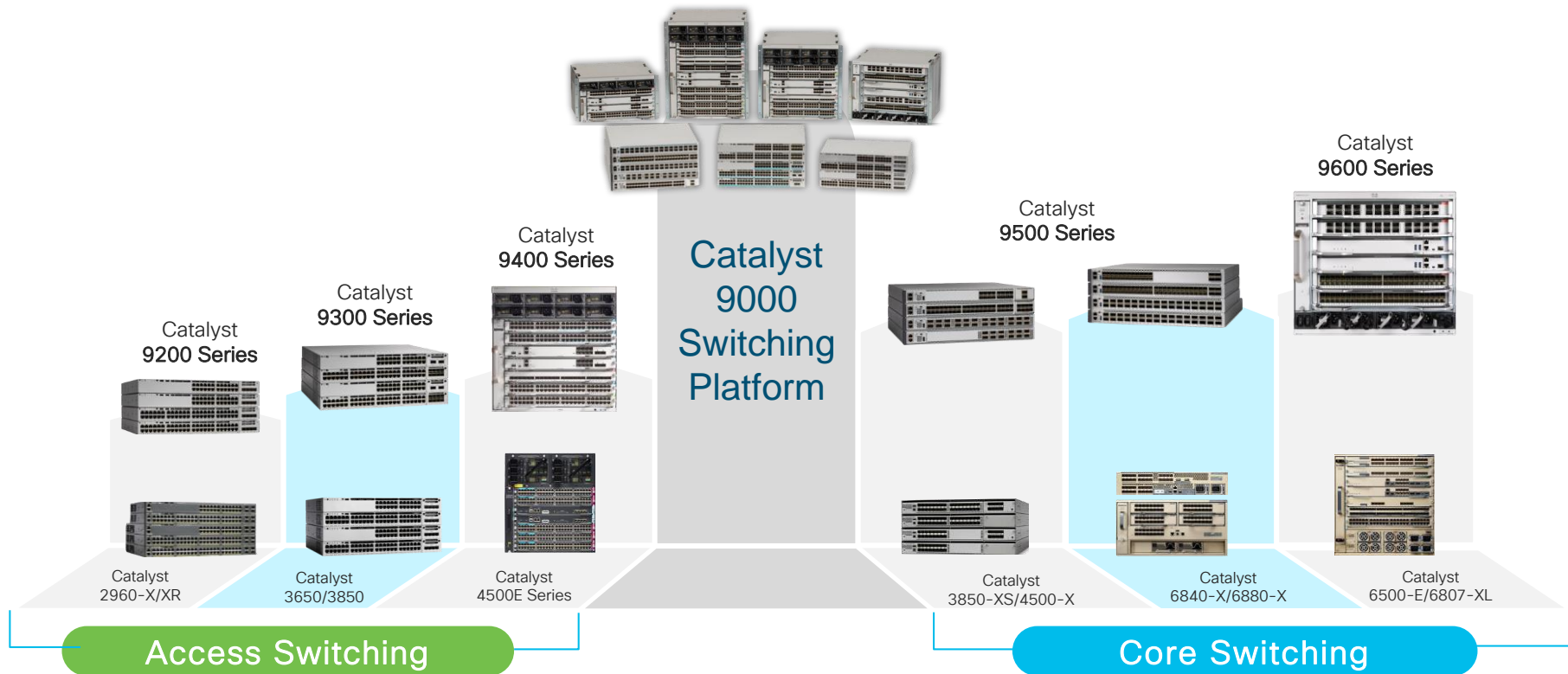
IOS-XE 17.1 **Key Features** Summary

Platform/ Infra

- 9300L mGig SKUs – 9300
- mGig Line Card – 9600
- Per port MTU support – 9200/9300/9400/9500/9600
- Unified Buffer – 9500H/9600 *
- App Hosting Support – 9400

Security

- Umbrella Integration – 9300
- ERSPAN IPv6 – 9300/9400/9500/9600
- MACSEC over EoMPLS – 9300/9400/9500/9600

High Availability

- Quad Sup Support(RPR) – 9600 SVL *
- xFSU Standalone – 9300
- xFSU Stacking – 9300

Routing/ MPLS

- Inter AS Option-A – 9300/9400/9500/9600
- Extranet mVPN– 9300/9400/9500/9600
- VPLS – Protocol mode CLI & Fat Pseudo wire – 9300/9400/9500/9600
- BGP-EVPN – Tenant Routed Multicast – 9300/9400/9500/9600
- VRF aware PBR – 9600
- NAT – 9400

* Controlled Availability

IOS-XE 16.12.1 **Key Features** Summary

Enhanced Security Controls
- Object Group ACL – C9300, C9400, C9500, C9600
- MACsec– MKA High-Availability– C9300, C9400, C9500, C9600
- Secure SVL support with SESA MACsec 128 – C9500, C9600
- CoA support on VRF for IPv4 and IPv6 – All

Flexible Network Segmentation
- L3VPN over GRE – C9300, C9400, C9500, C9600
- VPLSoGRE – C9300, C9400, C9500, C9600
- EoMPLS over GRE – C9300, C9400, C9500, C9600
- BGP-EVPN RT ASN rewrite
- EVPN VXLAN MAC Aliasing for Distributed Anycast Gateway

High Availability
- SVL –C9600
- ISSU on SVL – C9600
- Extended FSU– C9300L
- SVL on QSA– C9500 High Performance, C9600

Platform / Infra
- Native Docker support for application hosting – C9300
- PM Bidir– C9300, C9400, C9500, C9600
- Sub-interface Support – C9300, C9500
- Support 802.3bt Type 3– C9300
- Support 802.3bt Type 4– C9400
- Flexlinks+ – C9300, C9400, C9500, C9600
- Guestshell – C9200

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