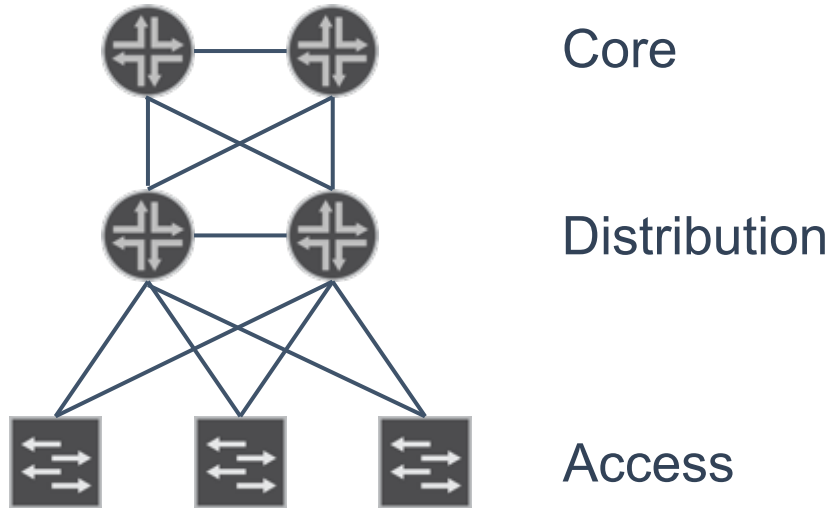


Evolved Campus Core EVPN For Everyone Else

Vincent Celindro – JNCIE #69 / CCIE #8630

Legacy 3-Tier Architecture



Circa – Late 90's - 2017 ???

Cisco SRND

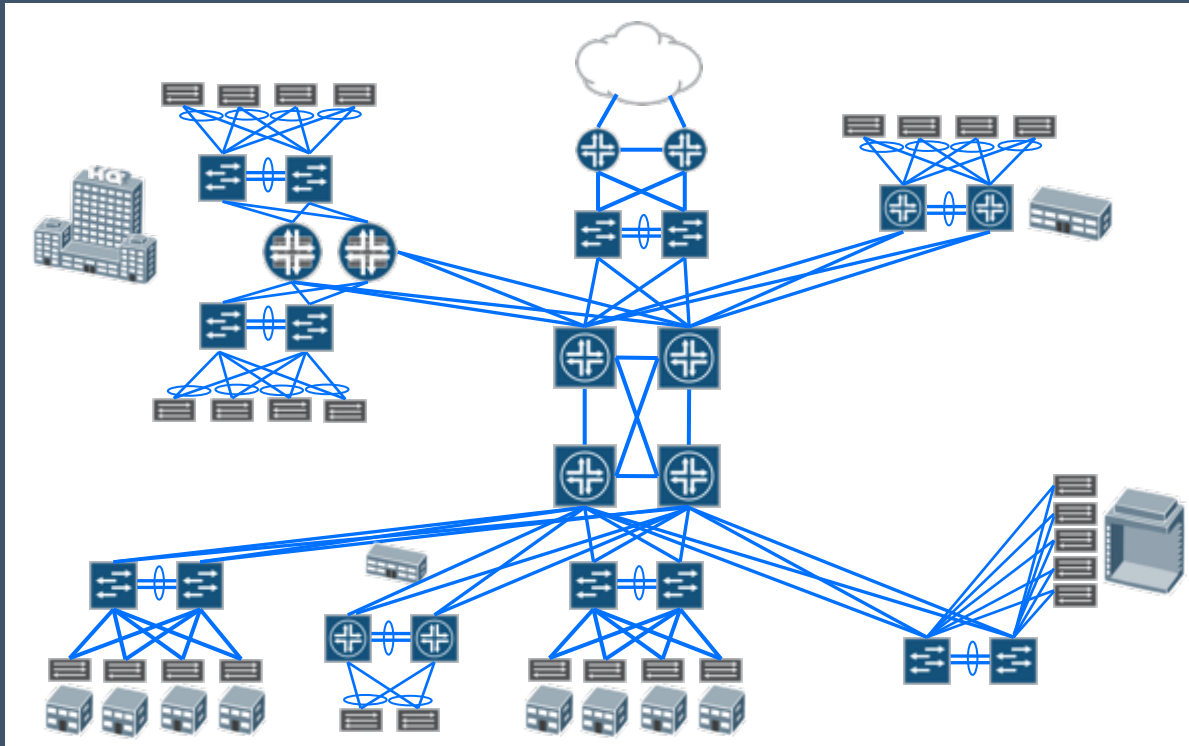
Cat 6500

Brocade MLX/XMR

Juniper 8200

How many networks are still running architectures like this?

Typical Campus Network



Redundancy

Spanning Tree

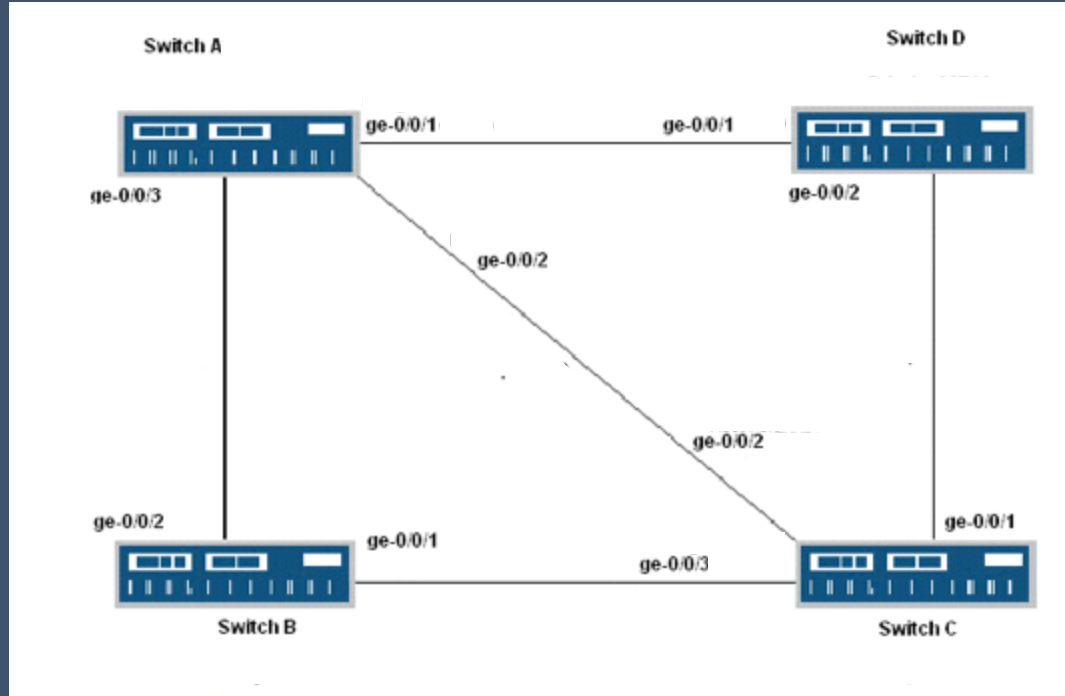
Flood and Learn

Users

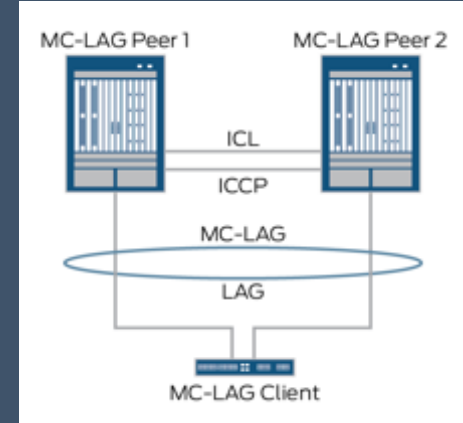
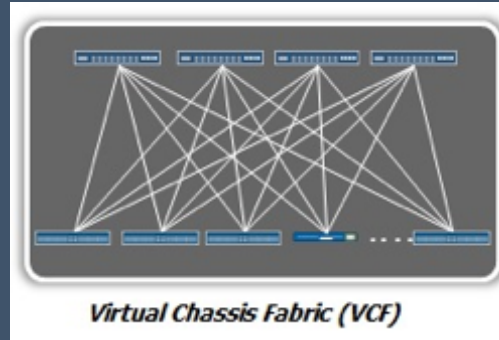
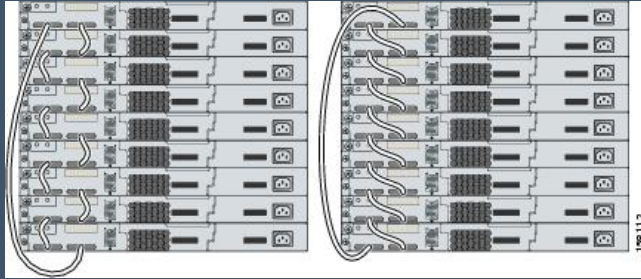
Layer 2 Adjacency

Segmentation

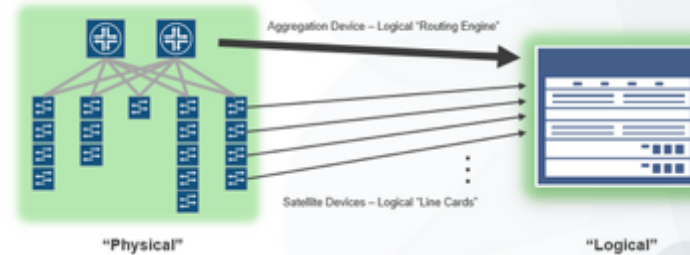
Redundancy – Spanning Tree



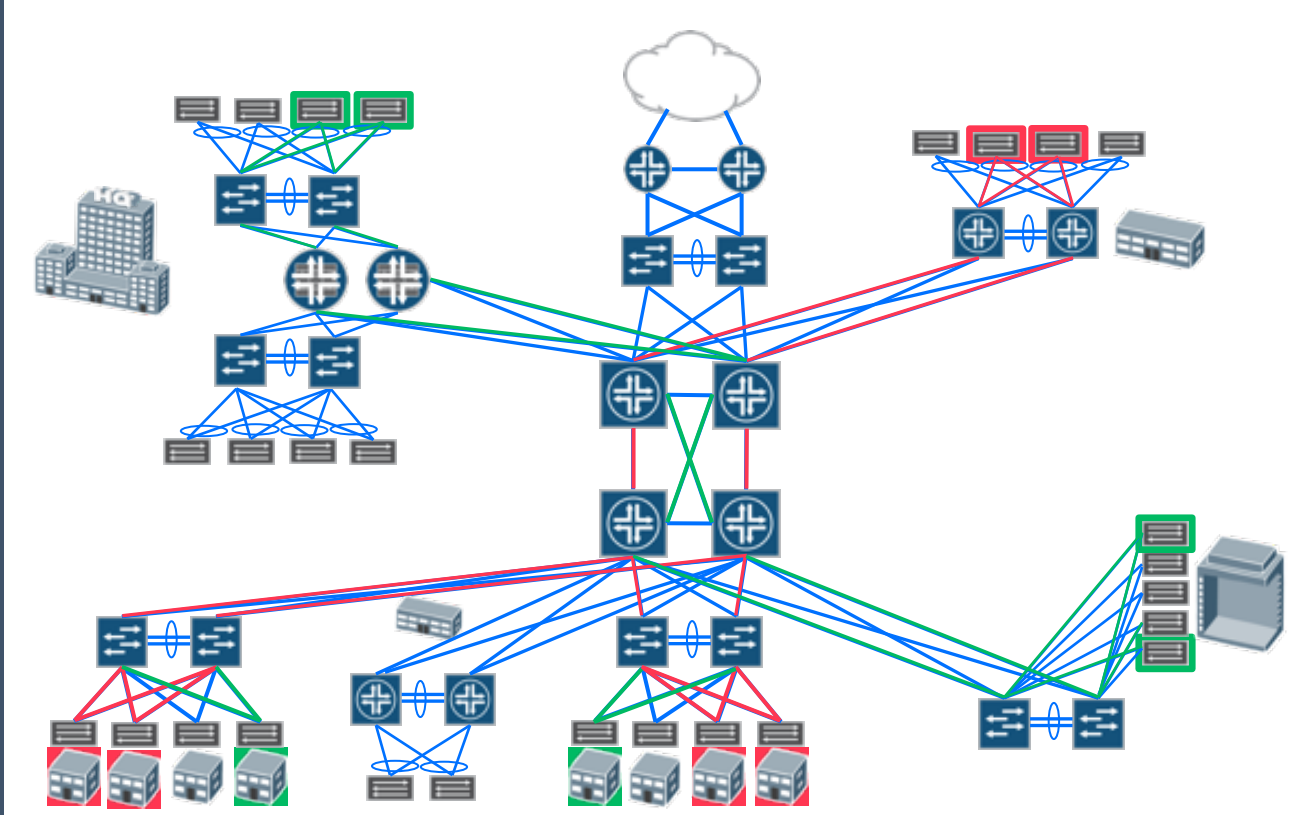
Spanning Layer 2 – Still Flood and Learn - Loops



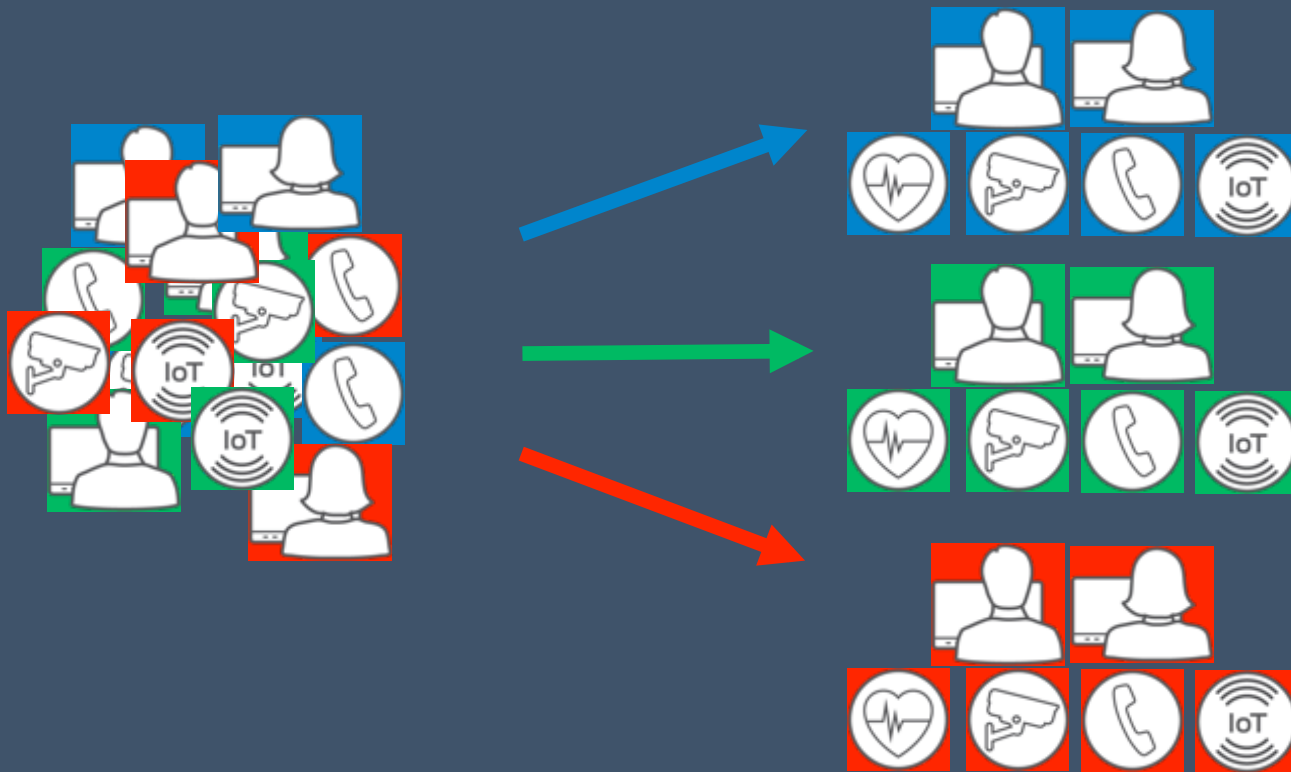
Junos Fusion / Cisco FEX



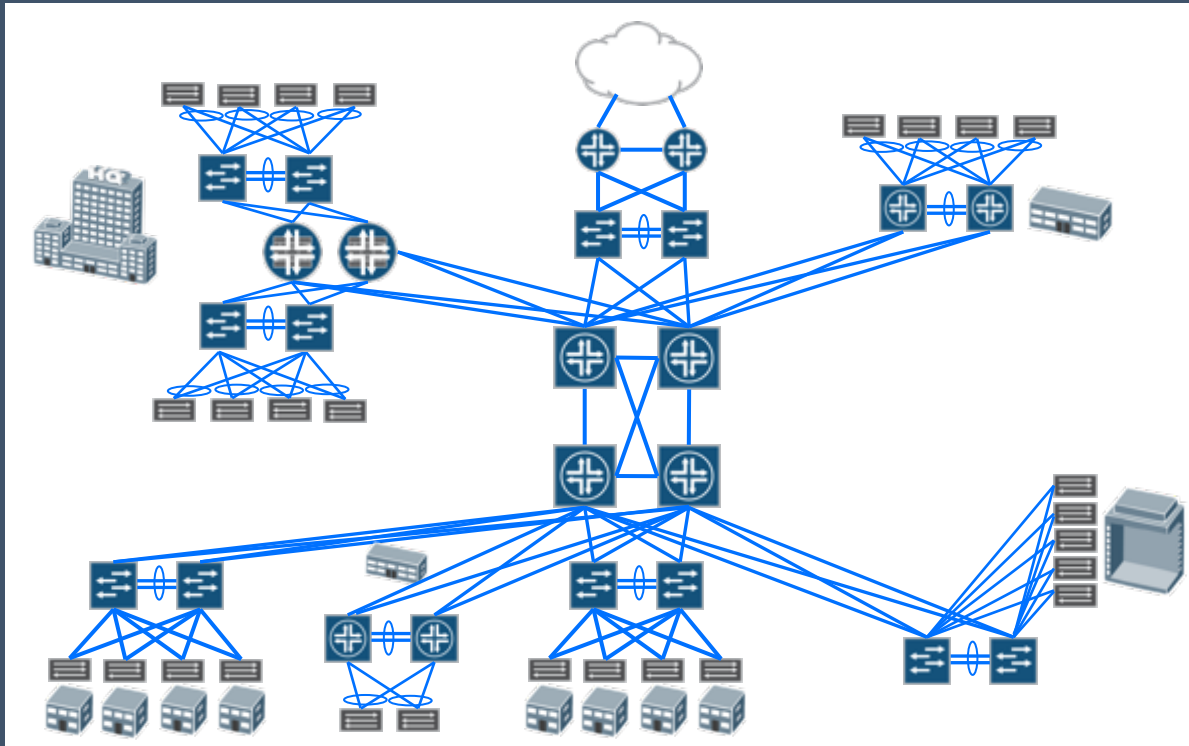
Layer 2 Adjacency



Segmentation



Typical Campus Network



Redundancy

Spanning Tree

Flood and Learn

Users

Layer 2 Adjacency

Segmentation

DataCenters, Campuses & Fabrics

is here.

FUTURE

MACHINE LEARNING

BIG DATA

INTERNET OF THINGS

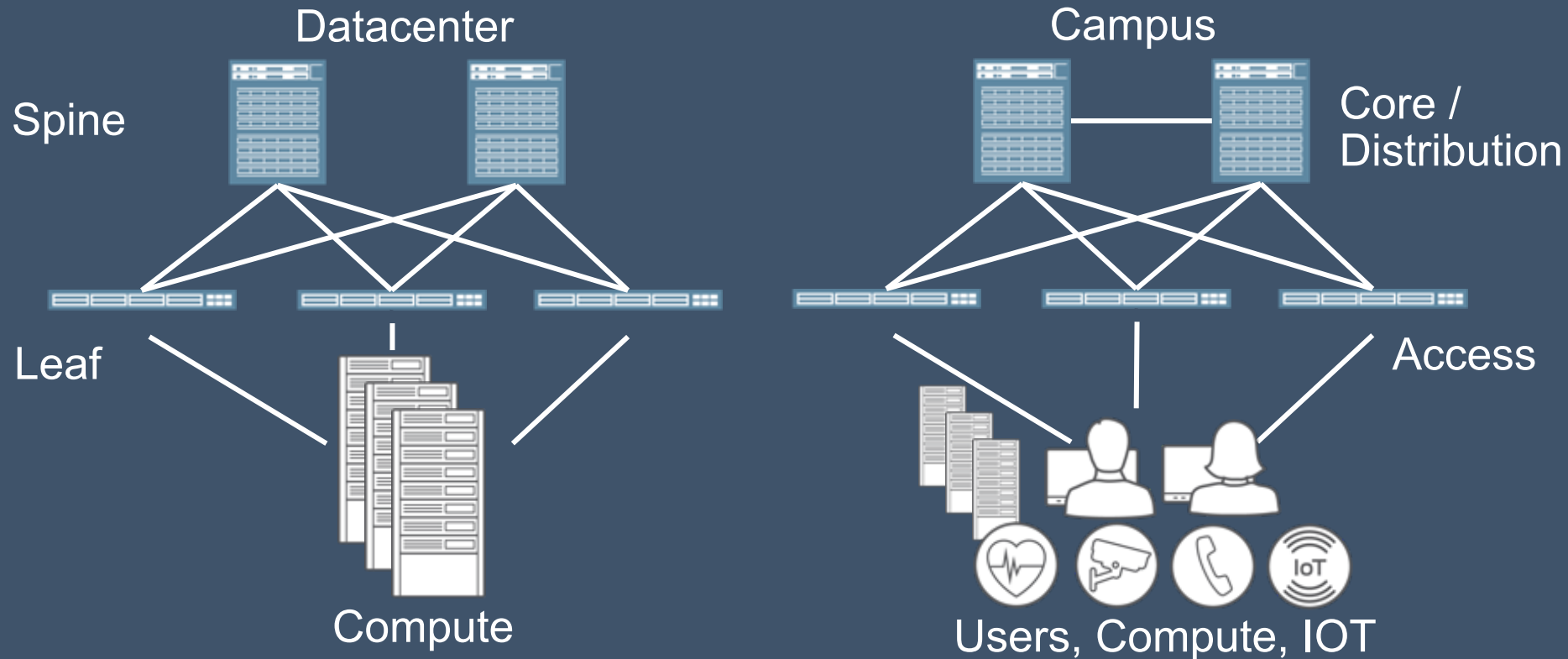
DIGITAL COESION

AUTOMATION

SECURITY

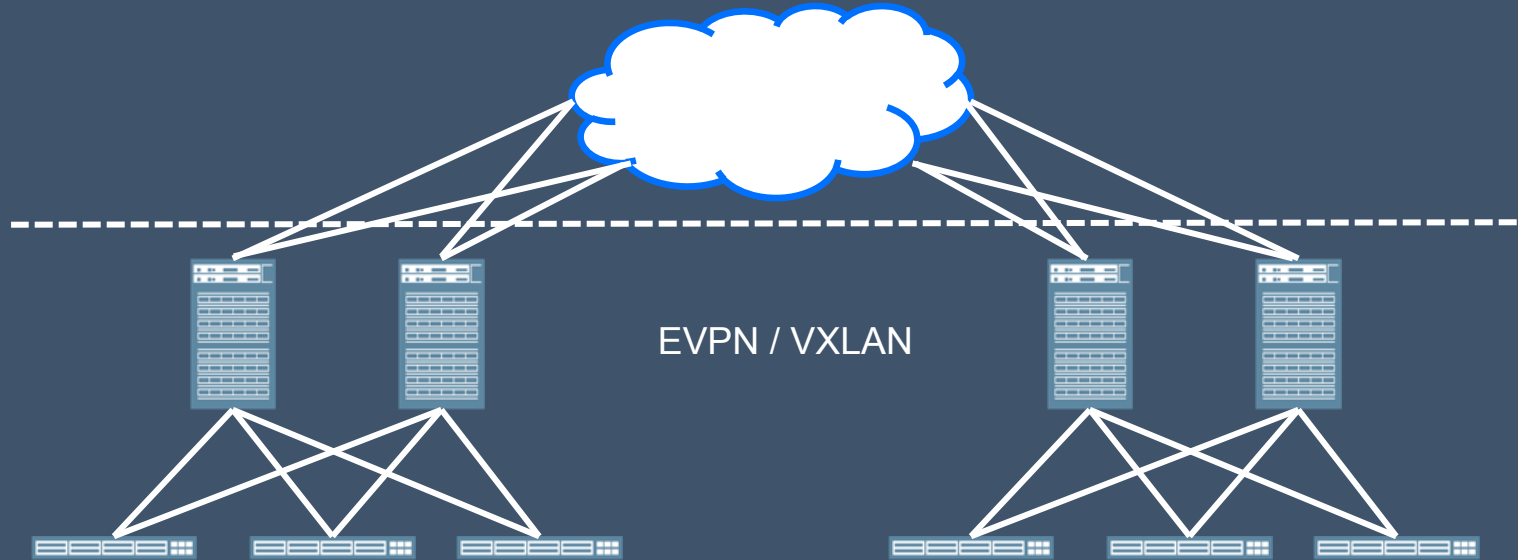
BUILD MORE THAN A NETWORK™

EVPN

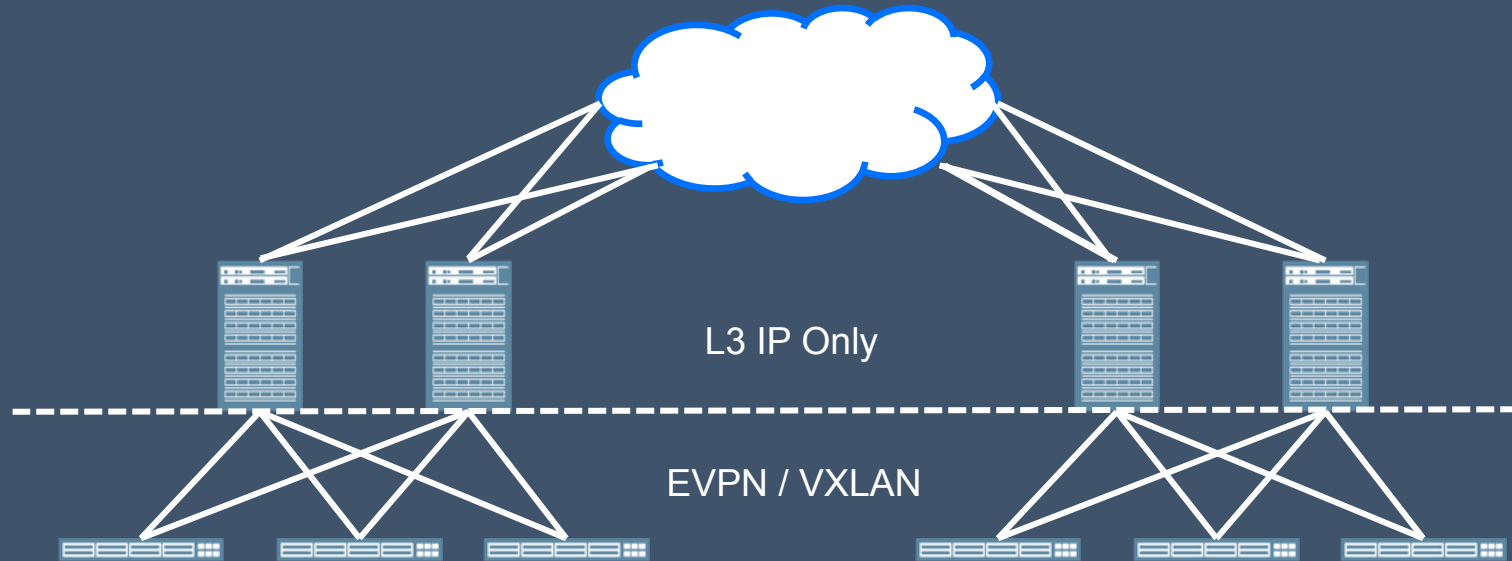


<https://tools.ietf.org/html/rfc7432>

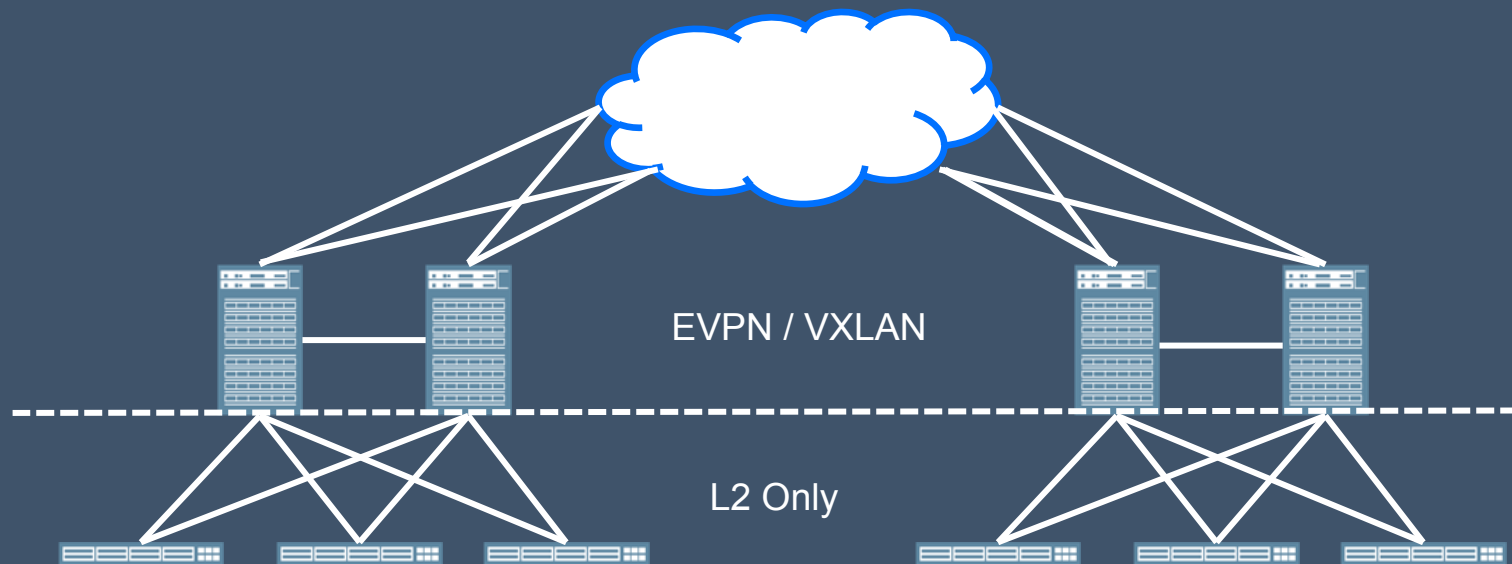
Full Fabric



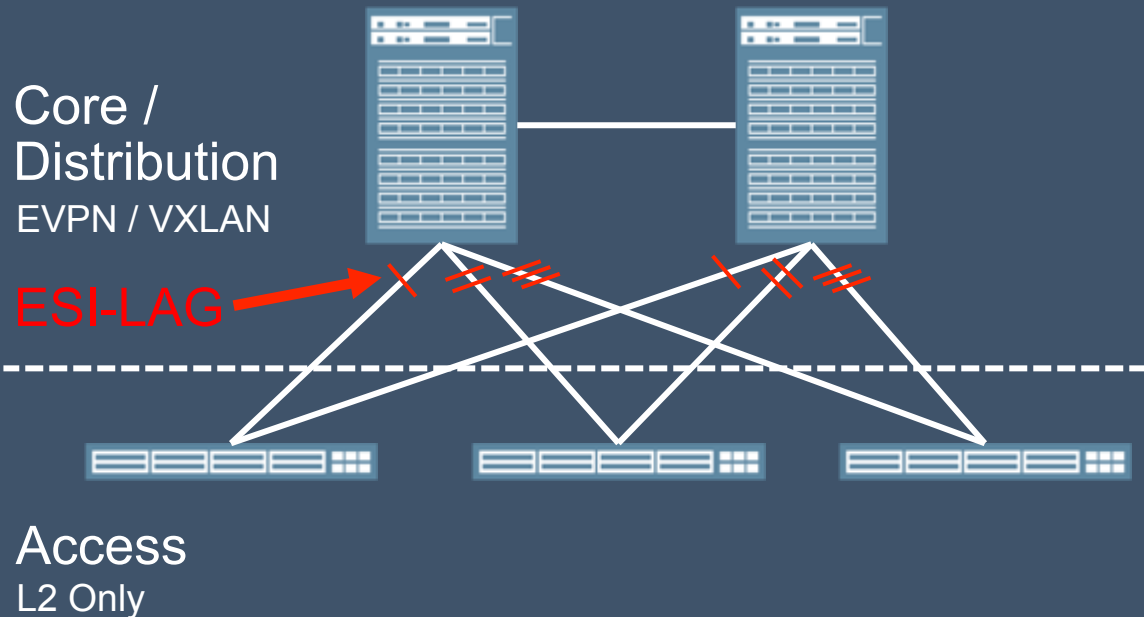
Lean Spine



Spine Only



EVPN/VXLAN in the Campus



Standards Based
Large Industry Adoption
Minimized Fault Domain
Easy to Scale

EVPN - Control/Forwarding
Brown Field
Operational Advantages

ECC – Evolved Campus Core

And
HERE.

MACHINE LEARNING

BIG DATA

INTERNET OF THINGS

DIGITAL CONVERGENCE

AUTOMATION

SECURITY

And here.

BUILD MORE THAN A NETWORK.

ECC (Evolved Campus Core) – Five Key Concepts

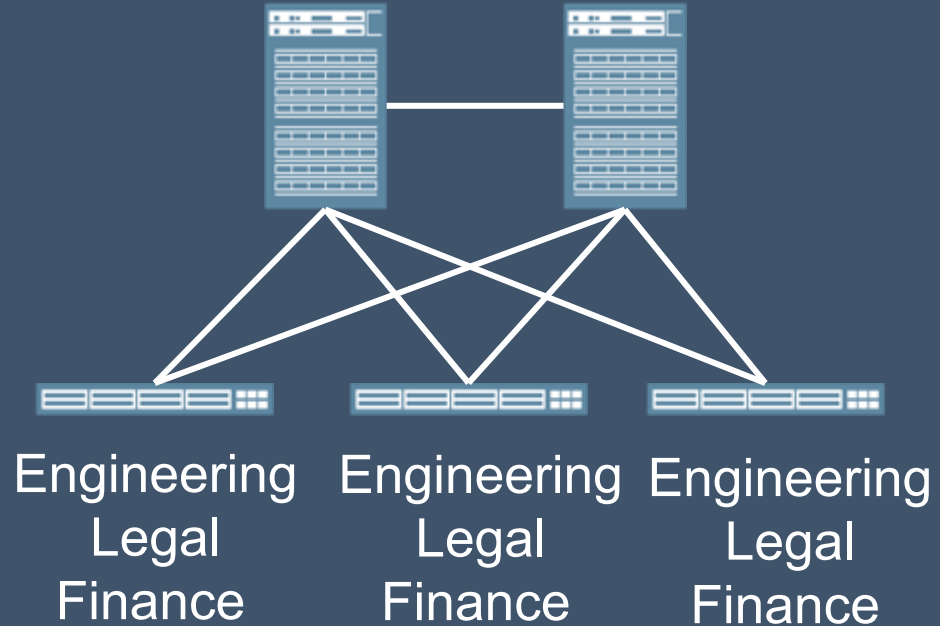
- 1) Underlay
- 2) Overlay - EVPN/VXLAN
- 3) VRF Segmentation
- 4) ESI-LAG
- 5) Anycast Gateway

Underlay

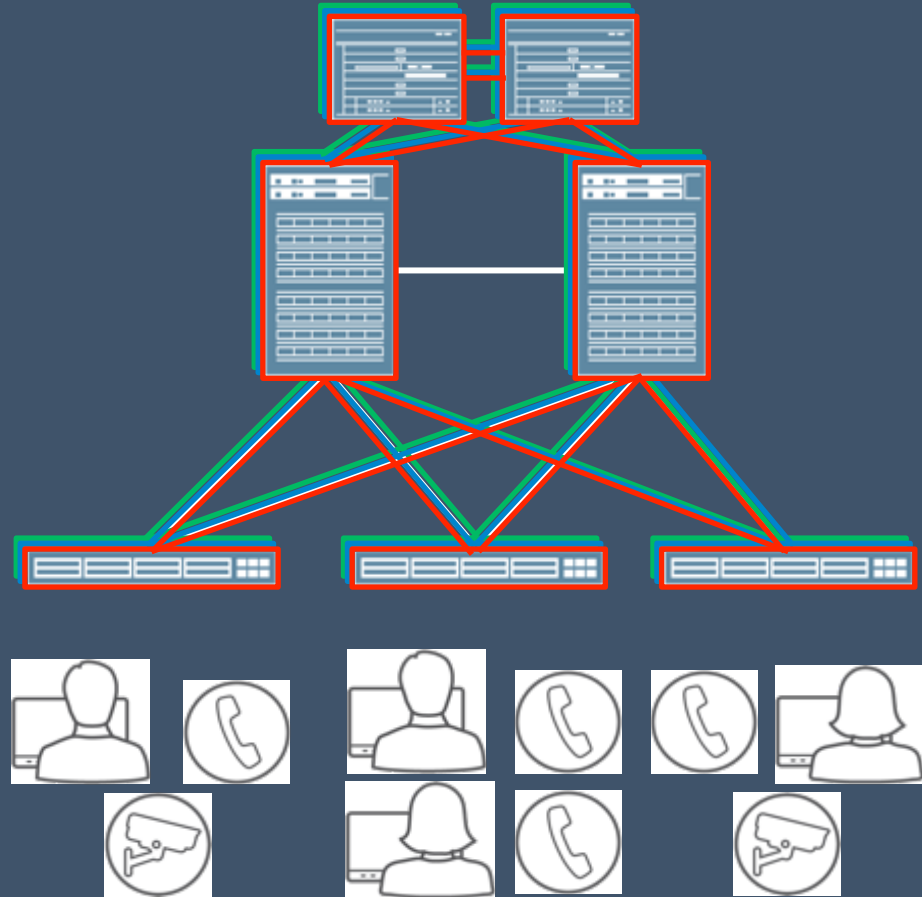
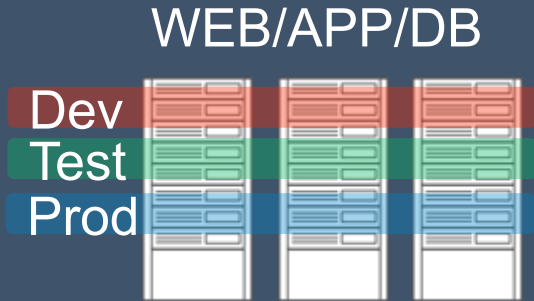


Overlay – EVPN/VXLAN

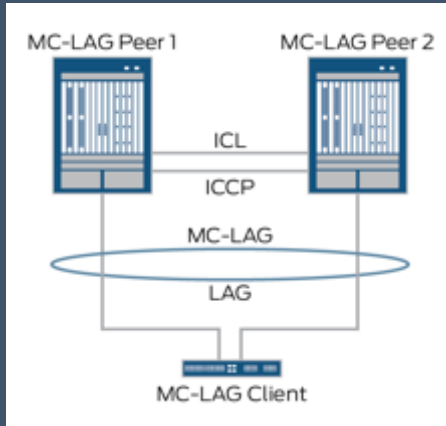
WEB
APP
DB



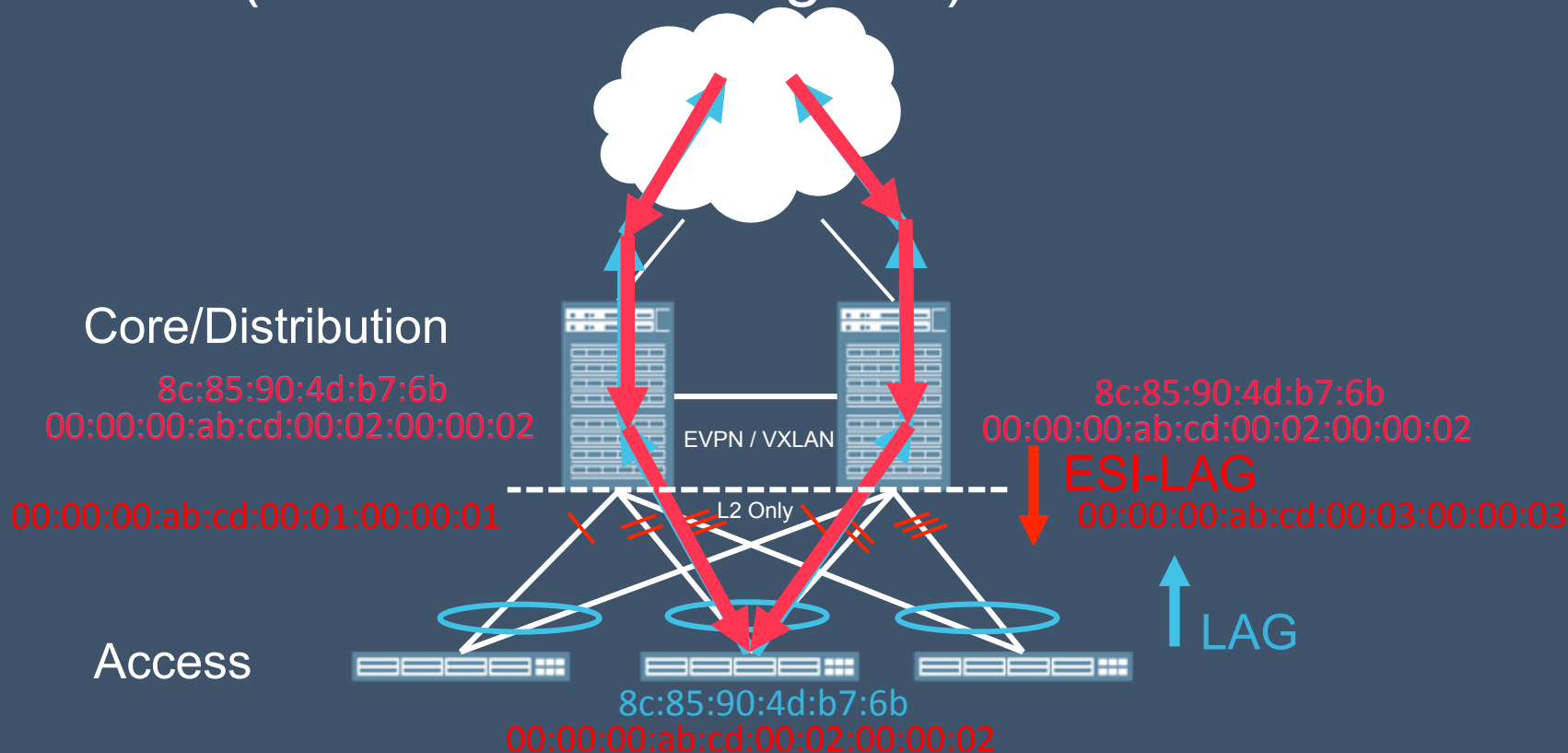
VRF Segmentation



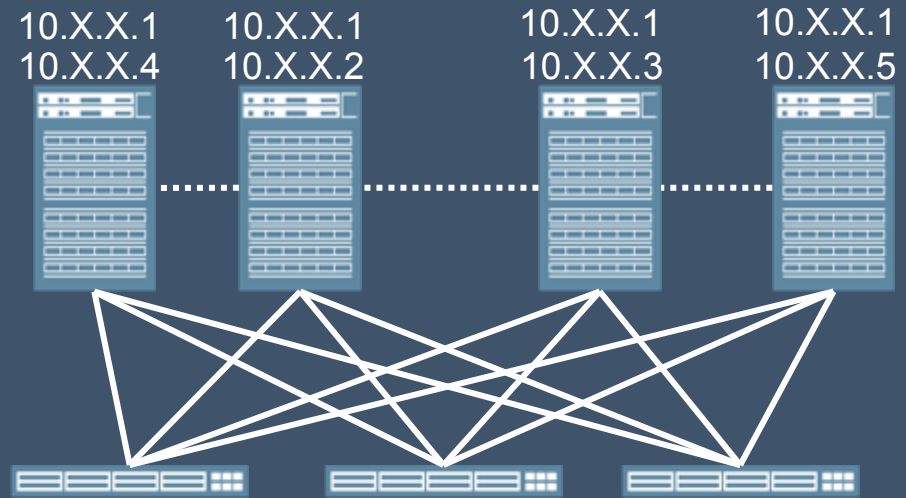
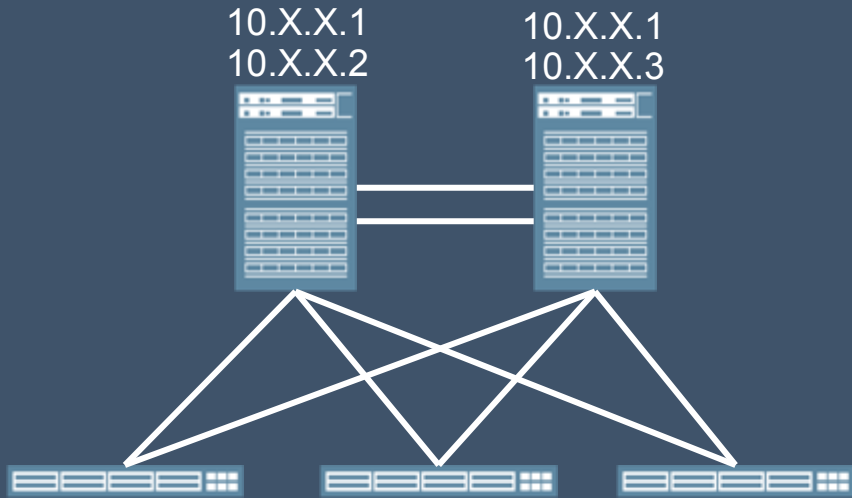
ESI-LAG (EVPN Multihoming A/A)



ESI-LAG (EVPN Multihoming A/A)



Anycast Gateway



NXT Steps - How Do I move to an ECC Architecture

is here.

FUTURE

MACHINE LEARNING

BIG DATA

INTERNET OF THINGS

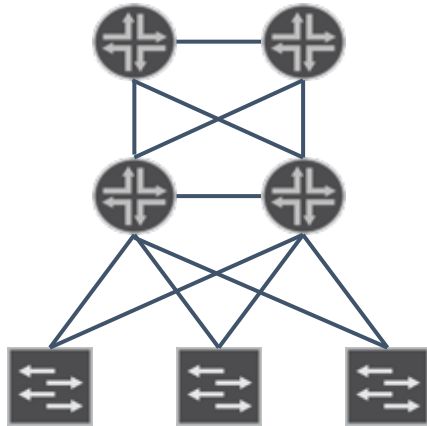
DIGITAL COESION

AUTOMATION

SECURITY

BUILD MORE THAN A NETWORK™

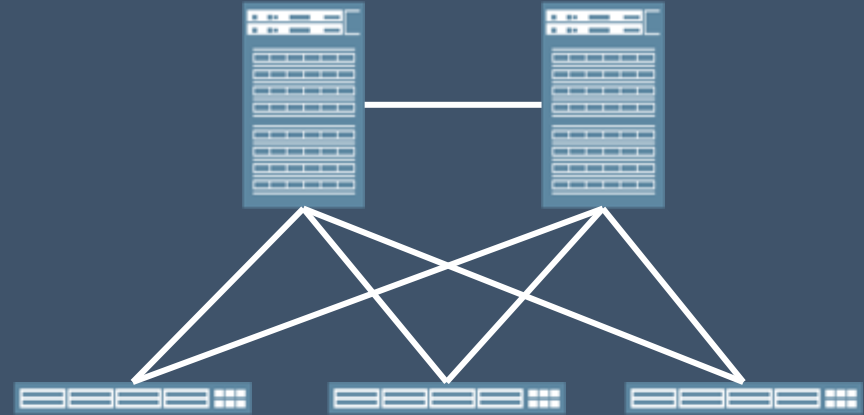
Physical



Core

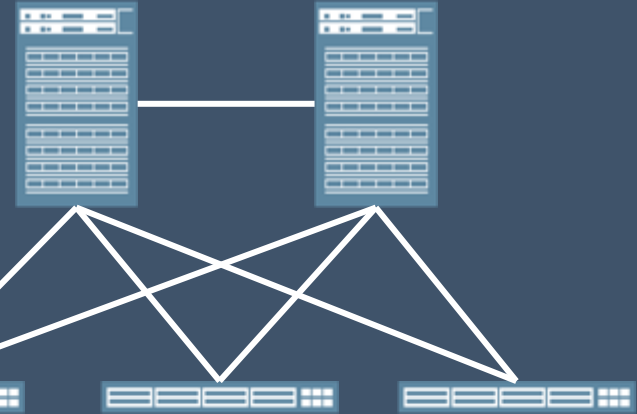
Distribution

Access



Hardware & Software

EVPN + L2/L3 VXLAN Gateway

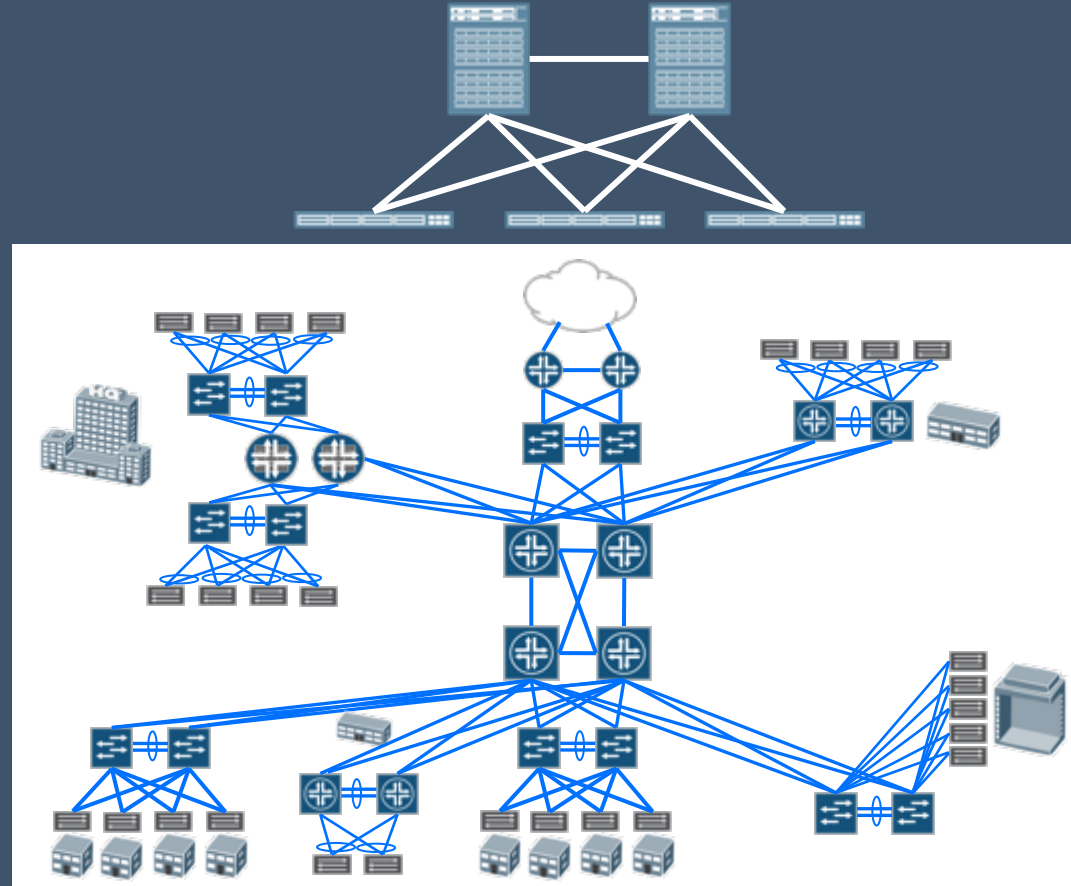


Any Vendor – LAG/LACP/VLANS

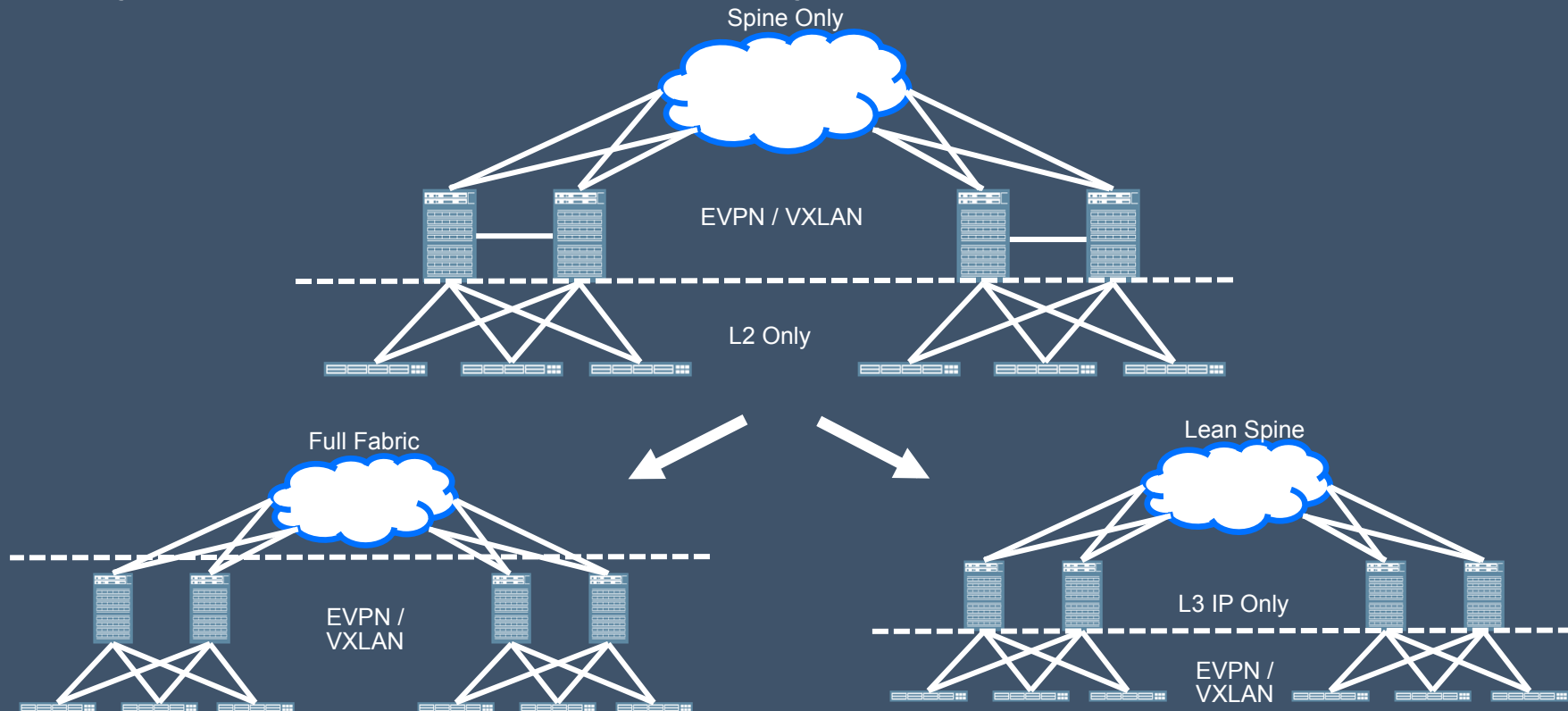


ECC Configuration

- 1) Underlay
- 2) Overlay - EVPN/VXLAN
- 3) VRF Segmentation
- 4) ESI-LAG
- 5) Anycast Gateway



Day 0 Considerations - Day N Options



ECC (Evolved Campus Core) - Takeaways



- Why ECC
 - Redundancy – eliminate spanning tree
 - Users – L2 adjacency / segmentation
- ECC Concepts
 - Underlay
 - Overlay - EVPN/VXLAN
 - VRF Segmentation
 - ESI-LAG
 - Anycast Gateway
- Migration
 - Physical
 - EVPN/VXLAN Core HW/SW
 - Enable ECC

An aerial night view of a city skyline, likely Chicago, with a network of glowing white lines and nodes overlaid on the image. The lines connect various points across the city, suggesting a global or regional network. The sky is a deep blue with some clouds, and the city lights are visible in the background.

Q&A

Thank you

Vcelindro@juniper.net
Network /R/evolutionist
<https://youtu.be/2HgS9e5qkAw>