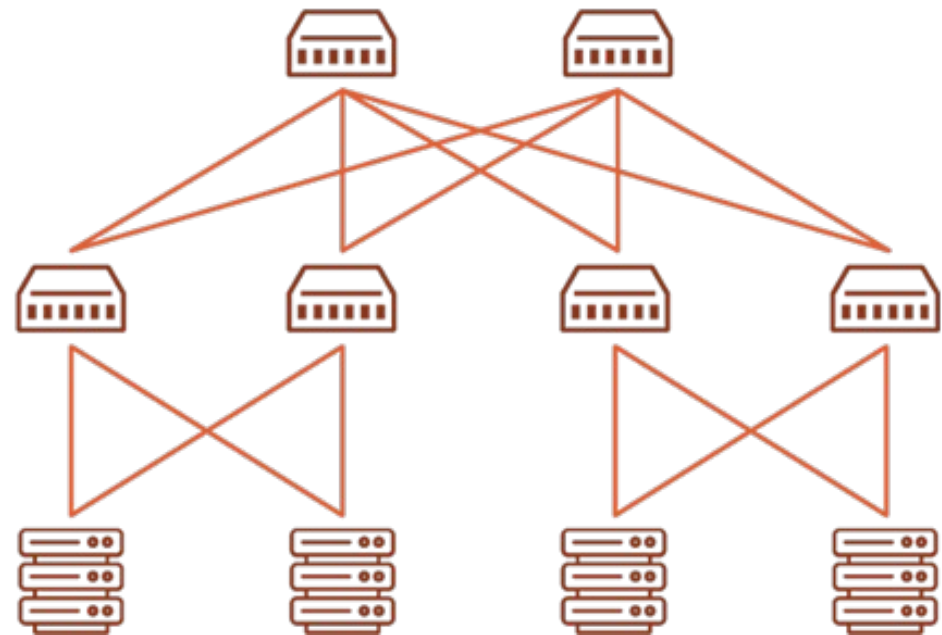




Webinar

June 22, 2023

Network Topology Design: Best Practices from Leading Enterprises



Today's Speakers



Ben Moore
VP Product
(moderator)



James Liao
Founder & CTO



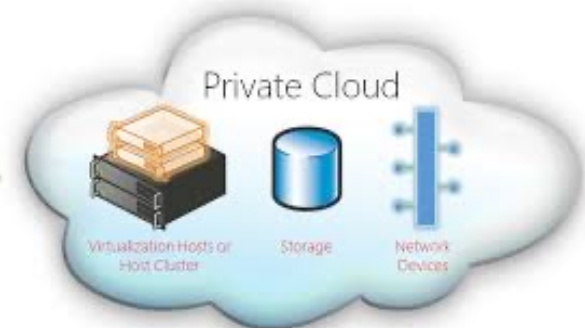
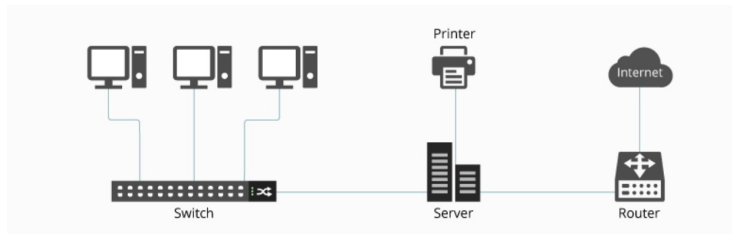
Neal Trieber
Solutions Engineer

What You Will Learn Today

- ✓ How to design an enterprise network – from Access to Data Centers
- ✓ When to consider network virtualization
- ✓ How to build a virtual network
- ✓ Which topologies work best for virtual networks

An Enterprise Network from Access to Data Centers

On-prem Access Network



Data Centers for applications and storages:

- Scalability – built with L3 fabric
- Secured – firewalled applications



On-prem access networks for users and IoT:

- Secured – gateway, firewall, Zero Trust, Network Access Control (NAC),
- Flexible – assignments of users, deployment of applications, moving of IoT

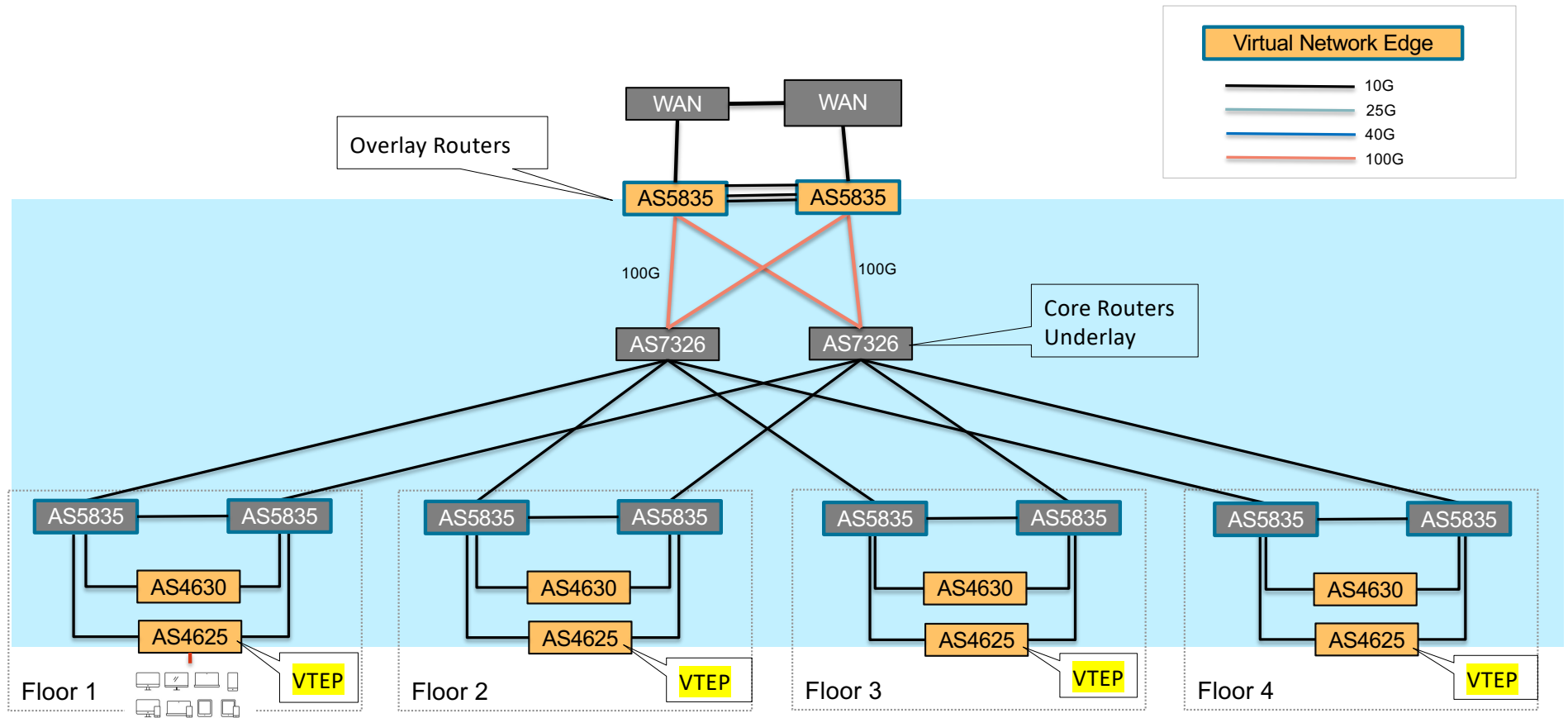
Major Consideration in Designing Enterprise Networks

- How do I operate the network?
 - Do I need to be on site most of the time?
 - Do I need other team to connect the cables?
 - Do I make every line of configuration changes?
- How to secure my access network?
 - How to add users or remove users without creating network problems?
 - How to create new organization without creating network problems?
 - How to move people between organizations without creating network problems?
- How do I scale my data center network?
 - How to ensure the network is stable with hundreds of switches?
 - How do I dynamically associate the applications together?
 - How do I design the gateway and firewall to route the traffic?

Network Virtualization with EVPN

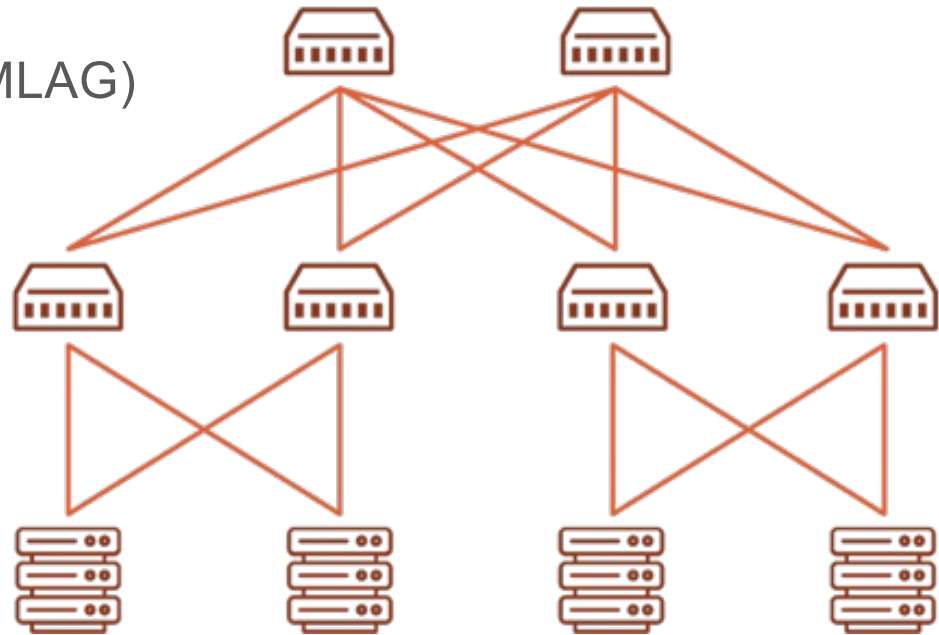
- It is critical to separate Underlay from Overlay
- Underlay should be secured, scalable, and stable
 - Built with L3 protocols
 - OSPF or BGP for control protocols
 - ECMP for redundancy and speed aggregation
 - No VRRP for Gateway
 - No MLAG
- Overlay should be dynamic, secured, and minimized fault-zone
 - VTEP should be at the Underlay L2/L3 boundary, bridging the virtual L2 with the access L2
 - L2/L3 Overlay is built on top of VTEP

Campus – From Access to Fabric

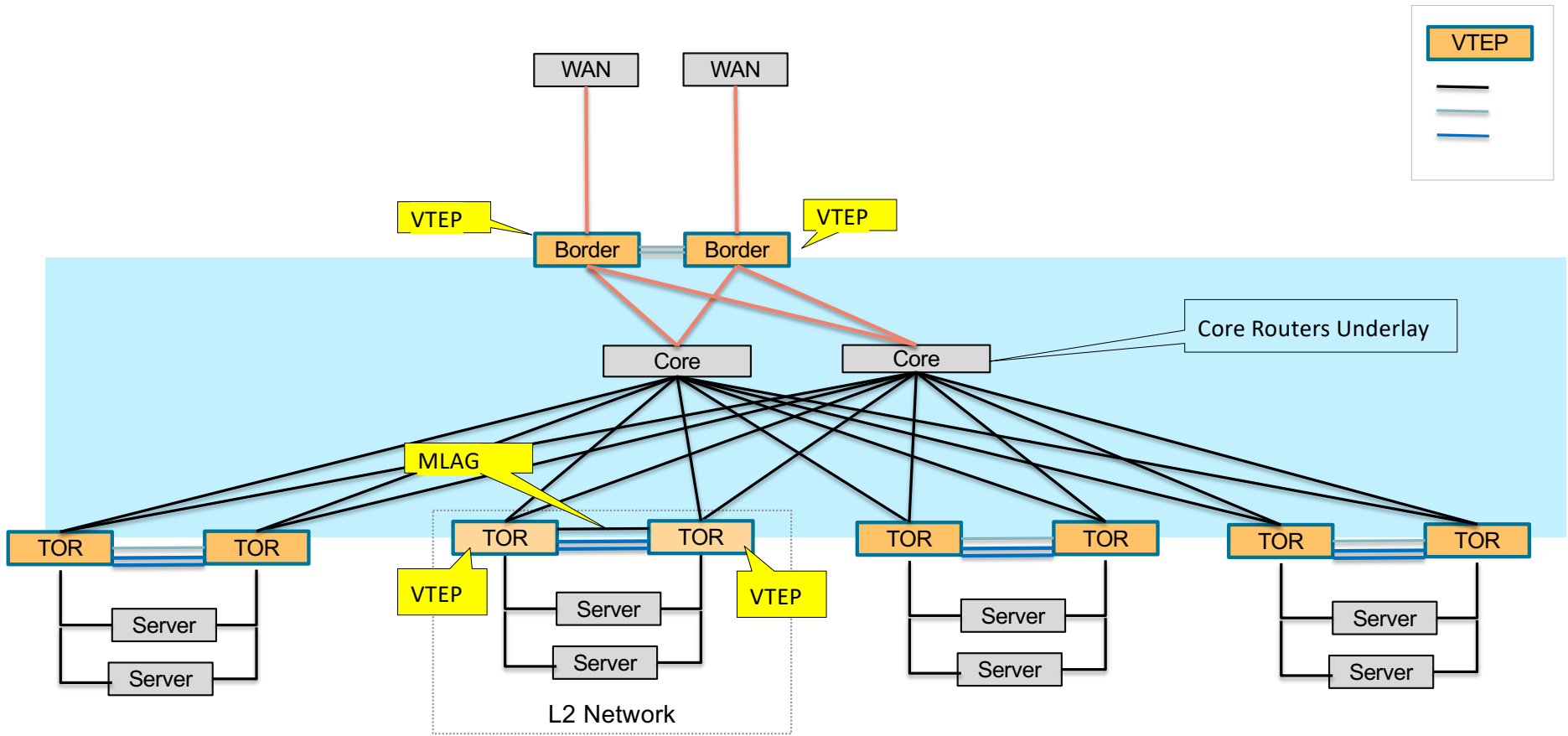


Data Centers – from Top of Rack (ToR) to Fabric

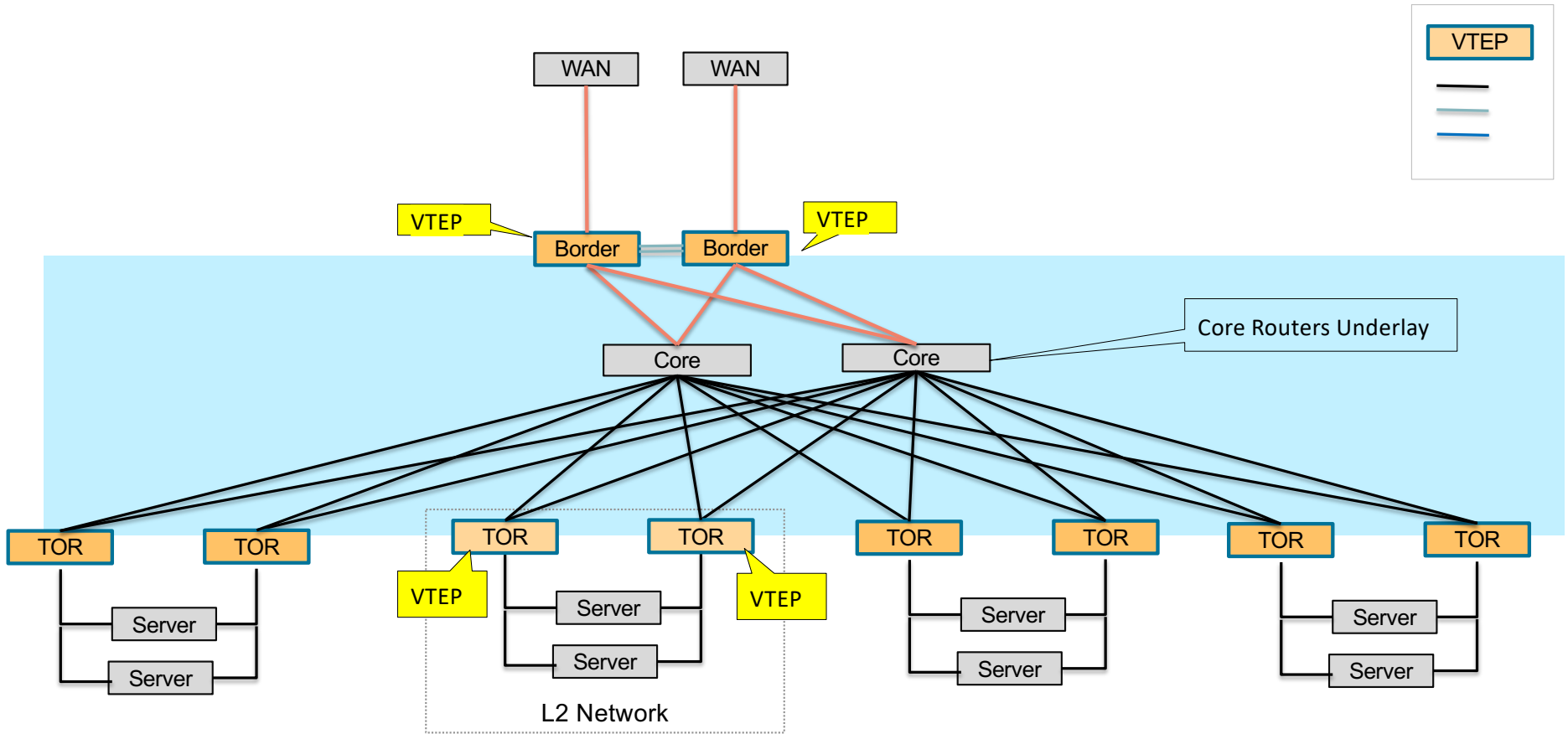
- Multi-chassis Link Aggregation (MLAG)
- Multi-homing
- Virtual Extensible LAN (VXLAN)



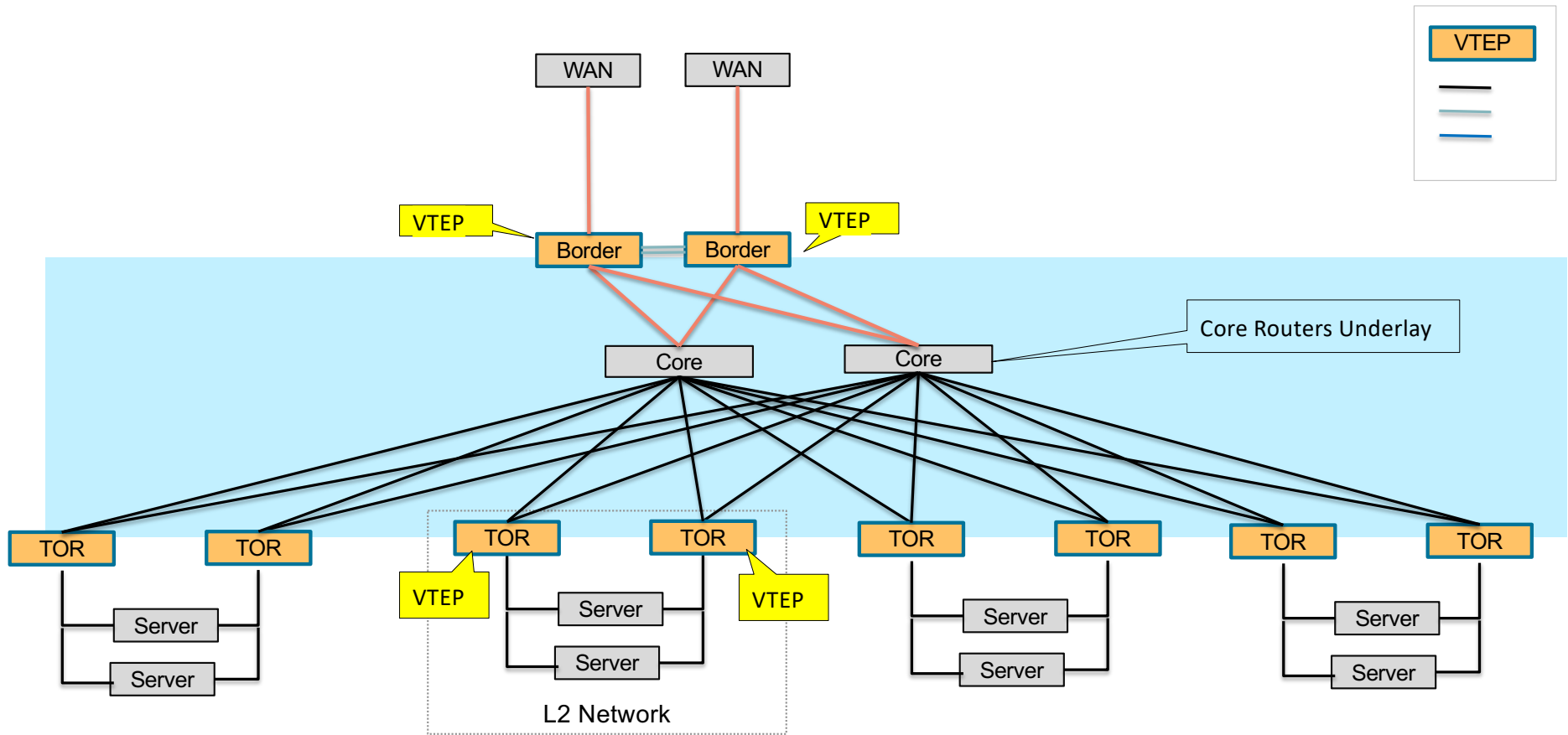
Data Center Network Virtualization (MLAG)



Data Center Network Virtualization (Multi-homing)



Data Center Network Virtualization (Generic VXLAN)



Designing a Modern Access Network

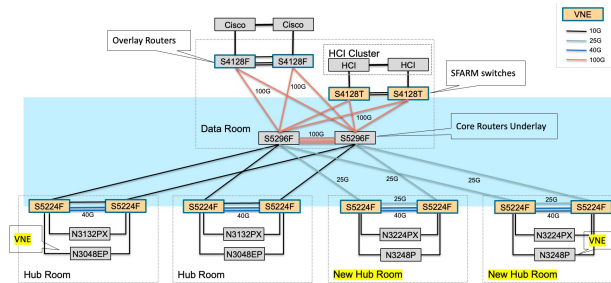
- Separate the underlay and overlay
- Underlay – stable and scalable
 - A spine-leaf L3 network
 - No shared L2 domains
- Overlay - Flexible and Minimized Fault domain
 - Changing the L2 network without touching the physical network
 - Adding the security functions without bringing down the network
- Build it with Open Network !!

Methodology

1



2



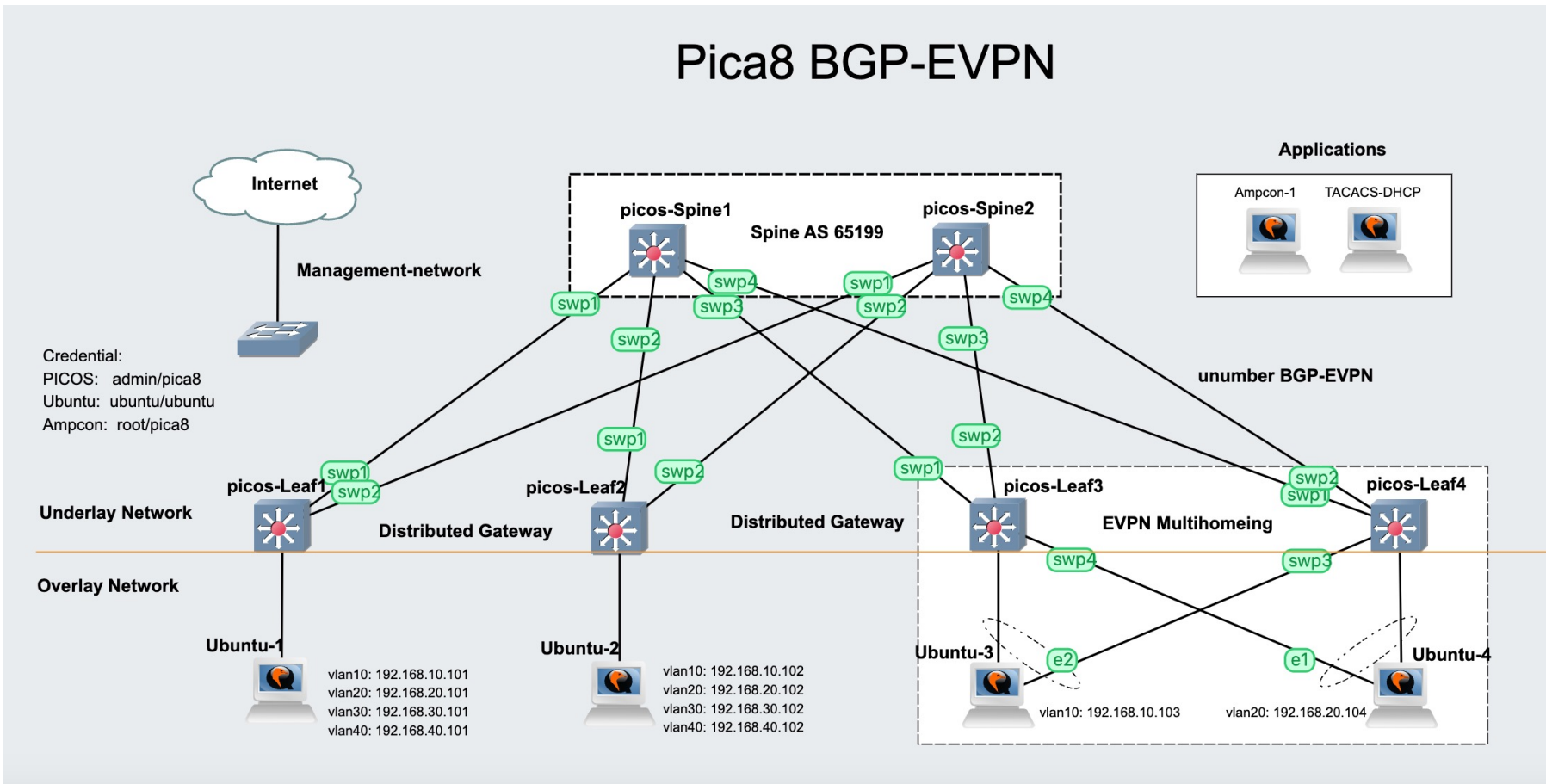
Design

3



EVPN Virtual Lab

Pica8 BGP-EVPN



Thank you for the discussion.

For additional comments or questions:

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Disclaimer

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