



SNEAK PEEK

Cisco Support Community Expert Series Webcast

Cisco Data Center Overlays with focus on VXLAN (Virtual Extensible Local Area Network)

October, 20 2015

with Vishal Mehta and Pranav Doshi

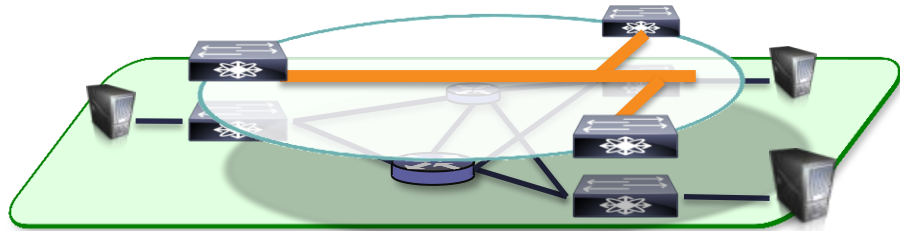
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Agenda

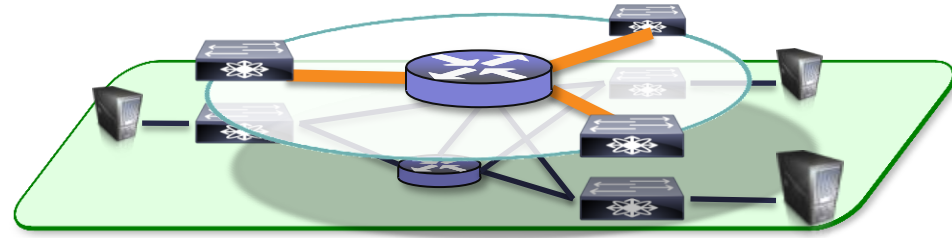
- Overlays in Data Center
- Why VXLAN
- VXLAN Evolution
- Deployment Scenarios
- Comparison

Types of Overlay Service



Layer 2 Overlays

- Emulate a LAN segment
- Transport Ethernet Frames (IP and non-IP)
- Single subnet mobility (L2 domain)
- Exposure to open L2 flooding
- Useful in emulating physical topologies



Layer 3 Overlays

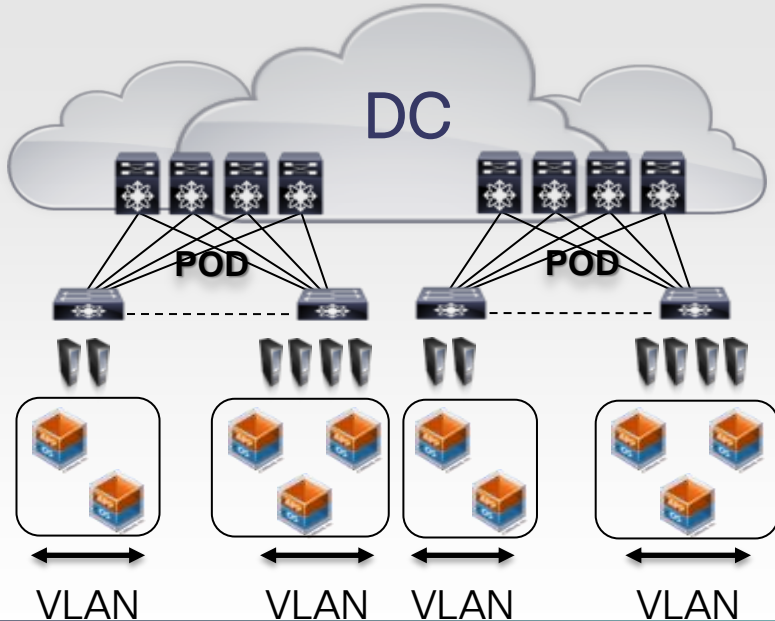
- Abstract IP based connectivity
- Transport IP Packets
- Full mobility regardless of subnets
- Contain network related failures (floods)
- Useful in abstracting connectivity and policy

Hybrid L2/L3 Overlays offer the best of both domains

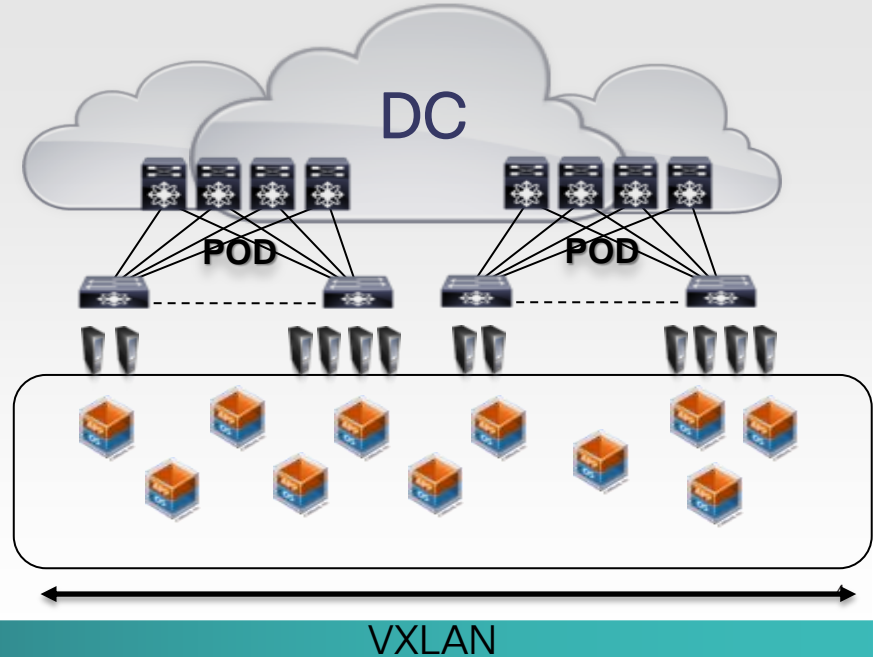
Why VXLAN

Standards based (VXLAN-RFC7348) Overlay with 16M identifiers
Leverages Layer-3 ECMP – all links forwarding
Integration of Physical and Virtual Nodes

Limited Rack-wide VM Mobility



Virtual/Cloud Data Center



Cisco VXLAN Portfolio

Cisco VXLAN Solutions

Scale

Secure
Multi-tenancy

Workload
Mobility

Workload
Anywhere



ASR1000
CSR1000

L2 Gateway



Nexus
1000

L3 Gateway



Nexus
3100

BGP EVPN
Control Plane



Nexus
5600



Nexus
7000

Anycast
Gateway



Nexus
9000

Head End
Replication



ASR9000

VXLAN Evolution

- Yesterday: VXLAN, yet another Overlay
 - Data-Plane only (Multicast based Flood & Learn)
- Today: VXLAN for the creation of scalable DC Fabrics – Intra-DC
 - Control-Plane, active VTEP discovery, Multicast and Unicast (Head-End Replication)
- Tomorrow: VXLAN for DCI – Inter-DC
 - DCI Enhancements (ARP caching/suppress, Multi-Homing, Failure Domain isolation, Loop Protection etc.)

VXLAN Design Considerations

VXLAN Mode:

- Flood-and-Learn
- With EVPN control Plane

BUM Traffic Handling:

- Multicast replication
- Unicast/ingress replication

Deployment Scenarios:

- Brown field vs green field
- Investment protection
- Multi-vendor environment?

Scalability:

- The number of VXLAN VNIs
- The number of VTEP peers
- The number of EVPN tenants
- The number of VXLAN Host IP routes
- The number of VXLAN Host MAC addresses
- The number of IPv4/IPv6 LPM routes
- The number of Ingress replication peers

Check out some additional information on Overlay VXLANs on the Cisco Support Community or Cisco.com

Virtual Extensible LAN (VXLAN) Best Practices

<http://www.cisco.com/c/en/us/products/collateral/switches/nexus-5000-series-switches/white-paper-c11-733618.html>

Data Center Overlay Technologies

<http://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/white-paper-c11-730116.html>

If you are not yet a registered user on the community, [Click here](#) to register and become an active participant on the community.



Hope you enjoyed this little peek into the webcast.
Remember it was just a peek. Oct 20, you get a chance to see the whole thing.



Register Now: <http://bit.ly/oct20webcast>

At the webcast you will be able to learn so much more and get a chance to submit questions for the expert to answer during the broadcast.
We'll see you there!