VXLAN Enhancements Overview

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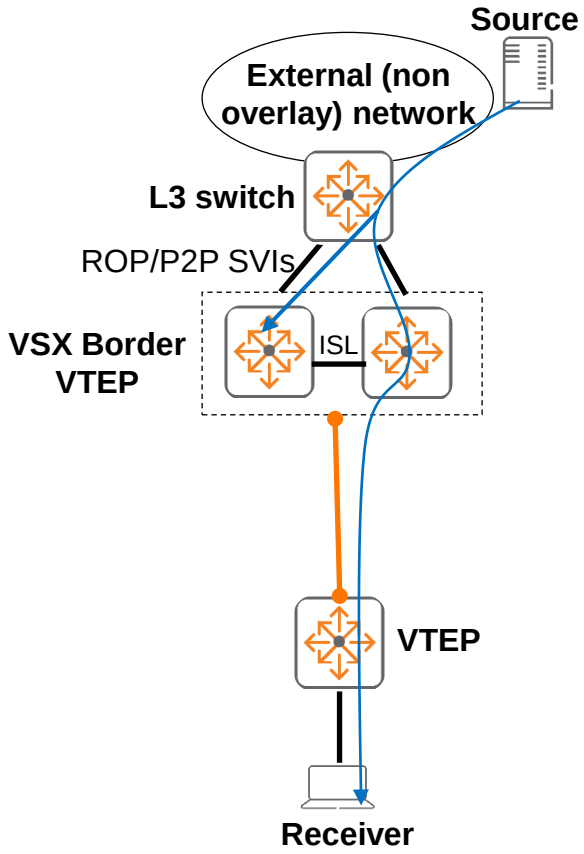
Multicast VXLAN

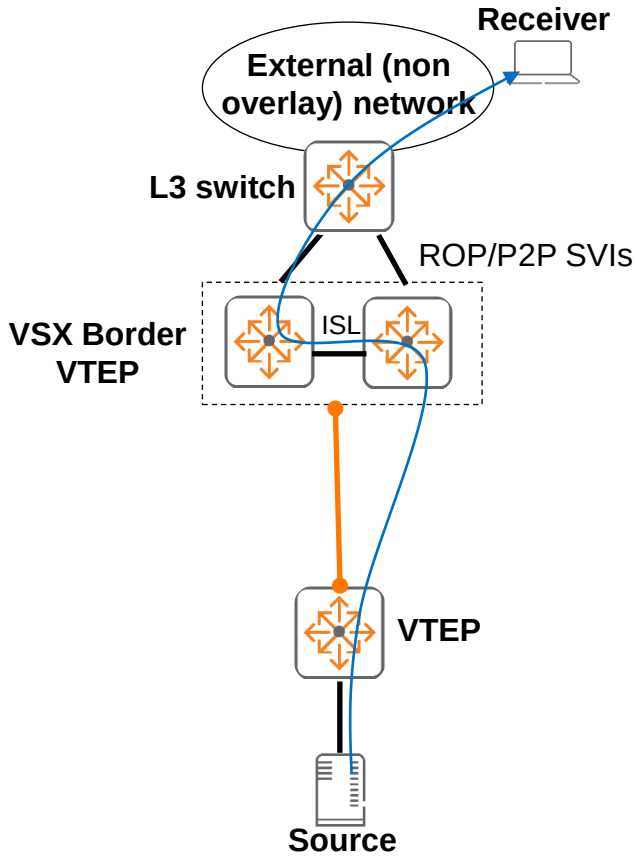
Multicast VXLAN – Border VTEP with ROP/P2P SVIs to receivers

- In 10.8, support for VSX border VTEP with Routed Only Port (ROP)/P2P SVIs + PIM-SM L3 extension to sources in external/non overlay network was introduced



- 10.9 adds support for VSX border VTEP with ROP/P2P SVIs + PIM-SM L3 extension to sources **and receivers** in external/non overlay network

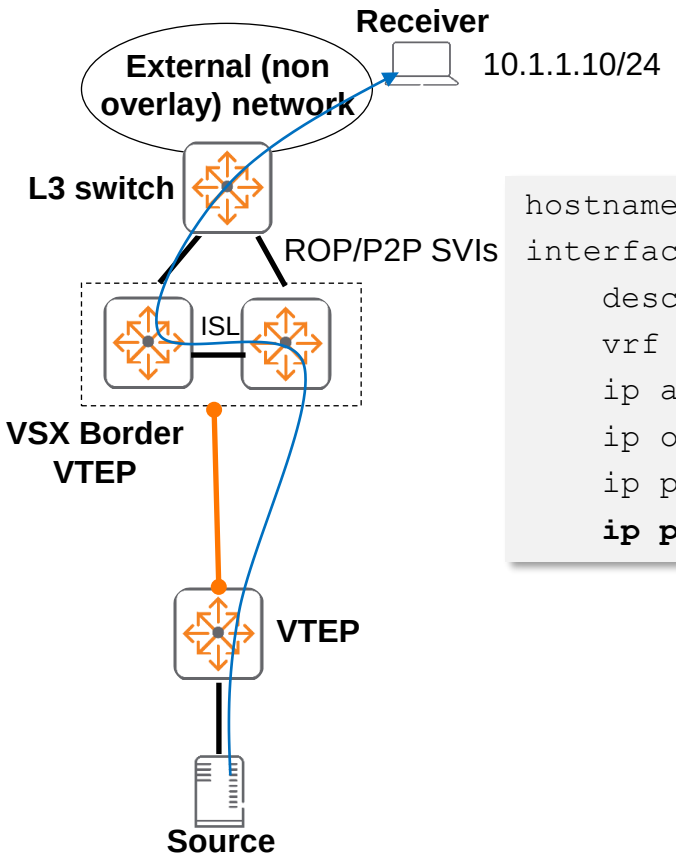
- Supported platforms:
  - 6300, 6400, 8325, 8360, 8400, CX 10000



Multicast VXLAN – Border VTEP with ROP/P2P SVIs to receivers

- Supports IPv4 multicast
- “ip pim-sparse datapath-auto-include” on transit SVI between ISL on VSX switches is required for this new functionality
  - This allows the VSX switches to be in the same multicast datapath state
  - If there are multiple VRFs, each VRF will need 1 transit VLAN with this CLI enabled

```
hostname BorderVTEP1A
interface vlan 1500
    description transit VLAN
    vrf attach VRF1
    ip address 1.1.2.1/30
    ip ospf 1 area 0.0.0.0
    ip pim-sparse enable
    ip pim-sparse datapath-auto-include
```



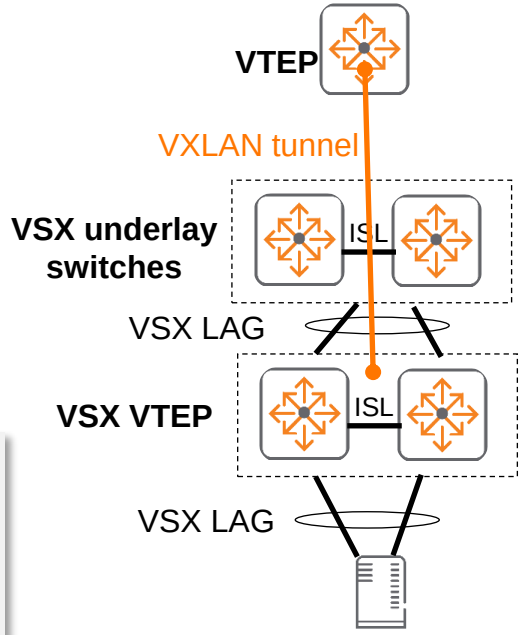

```
hostname BorderVTEP1B
interface vlan 1500
    description transit VLAN
    vrf attach VRF1
    ip address 1.1.2.2/30
    ip ospf 1 area 0.0.0.0
    ip pim-sparse enable
    ip pim-sparse datapath-auto-include
```

VSX Active Forwarding support for VXLAN underlay

VSX Active Forwarding support for VXLAN underlay

- 10.9 adds support for VSX VTEPs to utilize a VSX LAG as uplinks into the underlay network
- “vsx active-forwarding” will need to be enabled on the SVI used on uplink VSX LAG

- Supported platforms:
  - 6400, 8325, 8360, 8400, CX 10000




```
hostname VTEP1A
interface vlan 1500
    description Uplink VLAN
    ip address 1.1.2.1/29
    ip ospf 1 area 0.0.0.0
    vsx active-forwarding
```

```
hostname VTEP1B
interface vlan 1500
    description Uplink VLAN
    ip address 1.1.2.2/29
    ip ospf 1 area 0.0.0.0
    vsx active-forwarding
```

VXLAN PBR

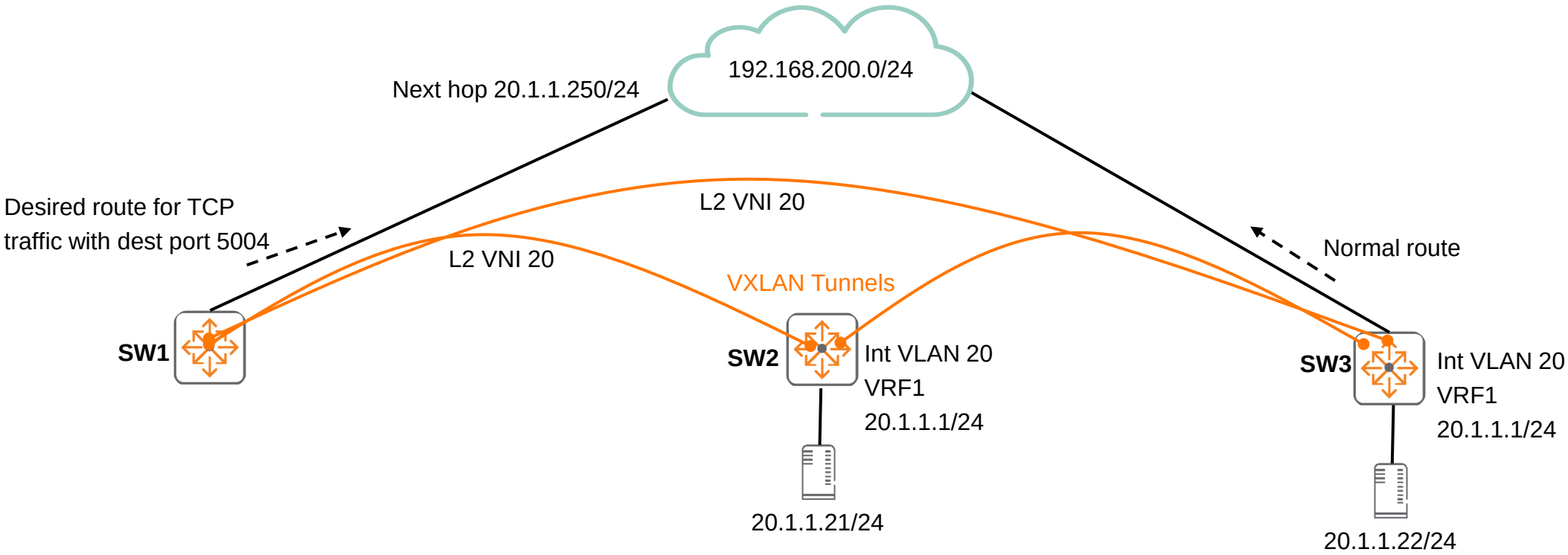
VXLAN PBR (Policy Based Routing) Overview

- 10.9 adds PBR support for VXLAN deployments
- Allows L3 VTEPs to redirect traffic to desired next hop IP over an L2 VNI
  - Unidirectional PBR policy is applied inbound on an SVI
  - Another PBR policy could be used for return traffic or firewall uses NAT IP

- Supported platforms:
  - 8325, 8360 and CX 10000

- Refer to VXLAN PBR session for details and caveats

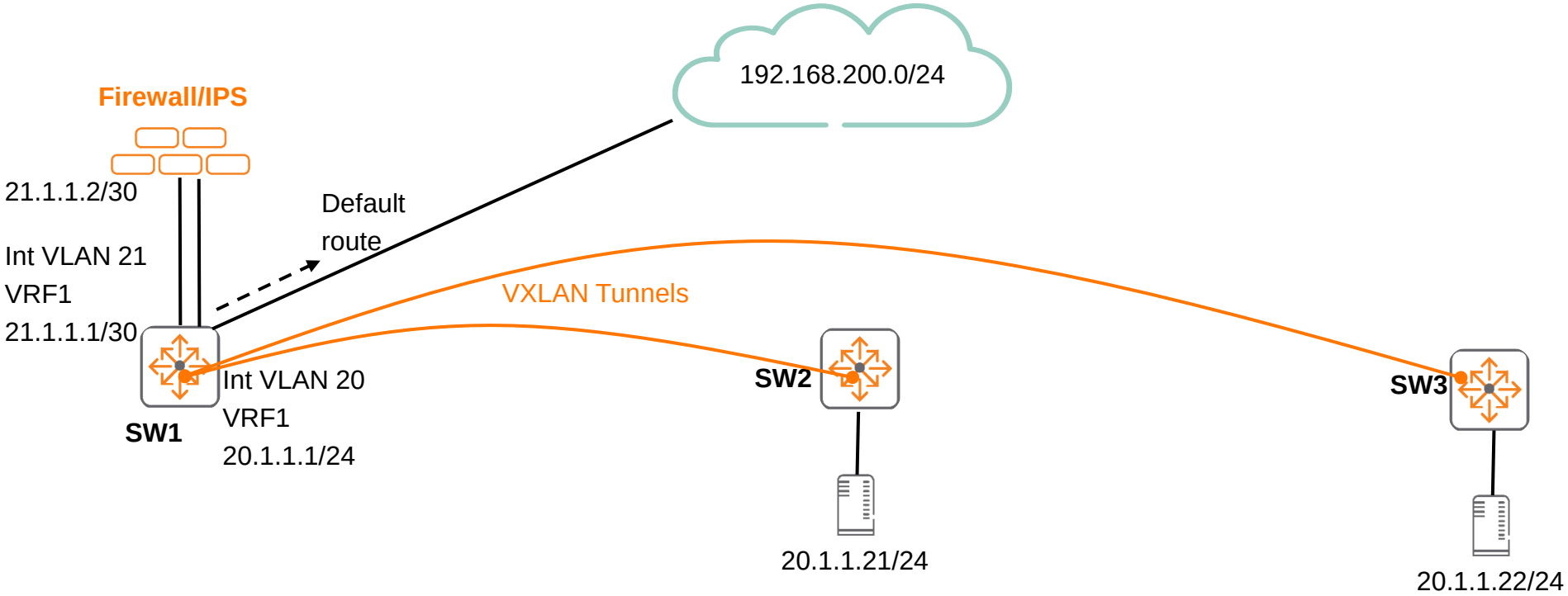
VXLAN PBR Use Case – Distributed L3 Gateways



- Traffic to 192.168.200.0/24 normally uses route on SW3
- Desire to use a different link to destination, only for certain traffic flows

- PBR policy applied inbound on **Int VLAN 20 of SW2 and SW3**
- Redirect **TCP traffic with destination port 5004** to next hop 20.1.1.250 connected to SW1
- All other traffic towards 192.168.200.0/24 continues to use SW3

VXLAN PBR Use Case – Centralized L3 Gateways



- Traffic to 192.168.200.0/24 normally uses default route on SW1
- Desire to inspect traffic from certain IPs

- PBR policy applied inbound on **Int VLAN 20 of SW1**
- Redirect **UDP traffic from both source IPs 20.1.1.21 and 20.1.1.22** to next hop 21.1.1.2 on Firewall/IPS connected to SW1
- All other source IPs towards 192.168.200.0/24 continues to use default route on SW1

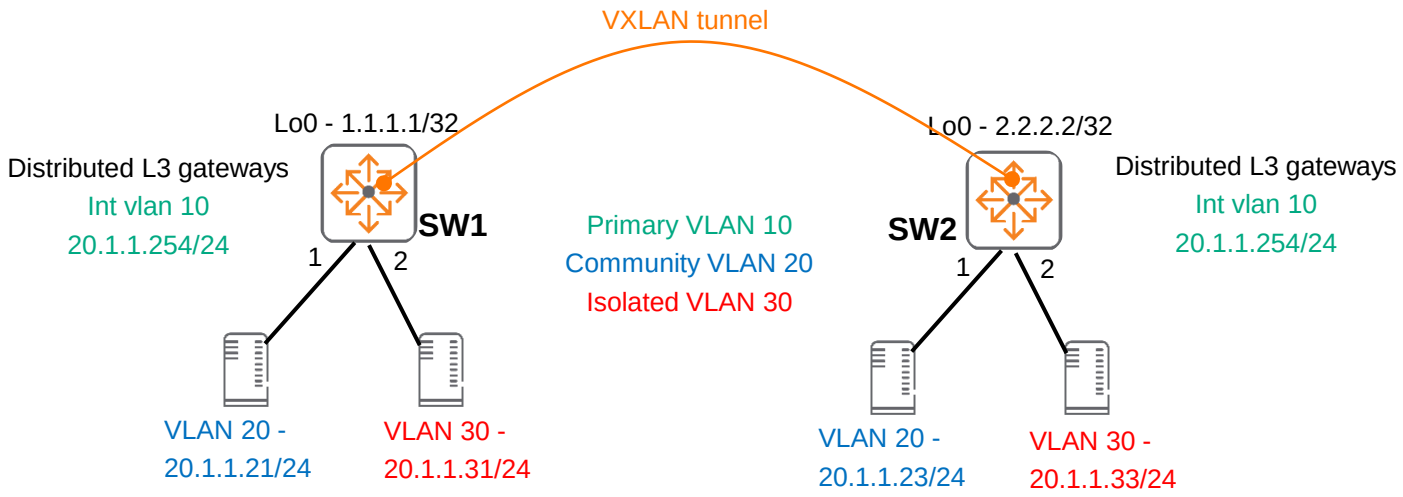
VXLAN PVLAN

VXLAN PVLAN

- VXLAN PVLAN provides L2 segmentation (IPv4/IPv6 unicast traffic only) between desired hosts on the same subnet
  - Hosts within the same community VLAN have network connectivity
  - Hosts in the isolated VLAN do not have network connectivity with other hosts
  - Hosts are able to reach their default gateway in primary VLAN

- Supported platforms:
  - 6300, 6400, 8325, 8360, 8400, CX 10000

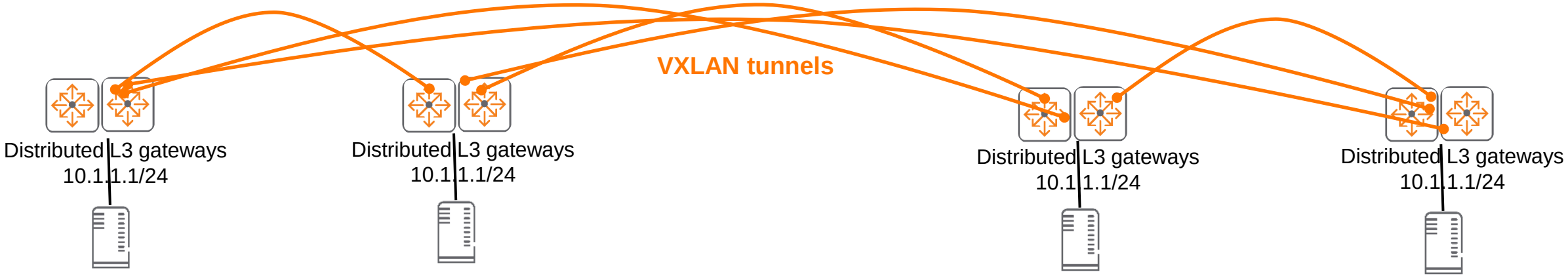
- Refer to PVLAN session for details and caveats



Supporting the same SVI/Active Gateway IP on Distributed L3 Gateways

Current Distributed L3 Gateway Deployments

- The same Active Gateway IP can be used on every VTEP
- A **unique SVI IP is required** on every VTEP




```
interface vlan 111
    vrf attach VRF1
    ip address 10.1.1.2/24
    active-gateway ip 10.1.1.1
```

```
interface vlan 111
    vrf attach VRF1
    ip address 10.1.1.4/24
    active-gateway ip 10.1.1.1
```

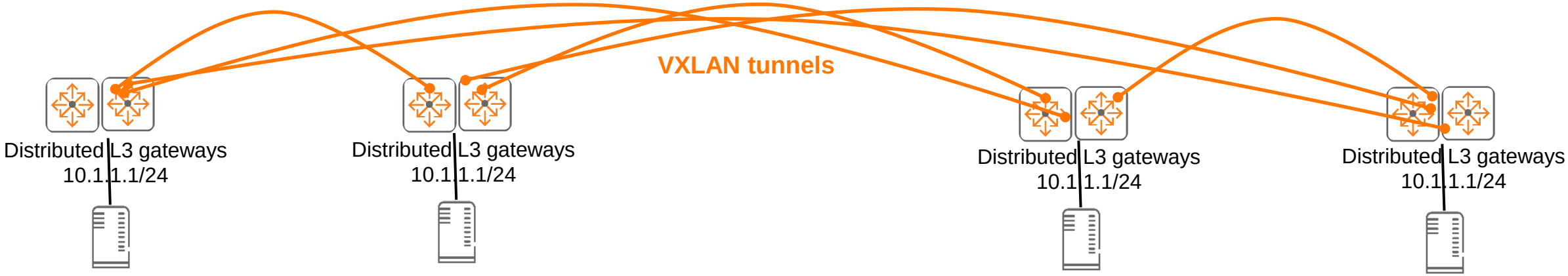
```
interface vlan 111
    vrf attach VRF1
    ip address 10.1.1.6/24
    active-gateway ip 10.1.1.1
```

```
interface vlan 111
    vrf attach VRF1
    ip address 10.1.1.8/24
    active-gateway ip 10.1.1.1
```

Planned for 10.9.10 CPE

- The same Active Gateway IP can be used on every VTEP
- The **same SVI IP can be used** on every VTEP
- Applicable to IPv4 unicast/multicast, IPv6 unicast, VSF/VSX VTEPs

- Supported platforms:
  - 6300, 6400, 8325, 8360, 8400, CX 10000

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