

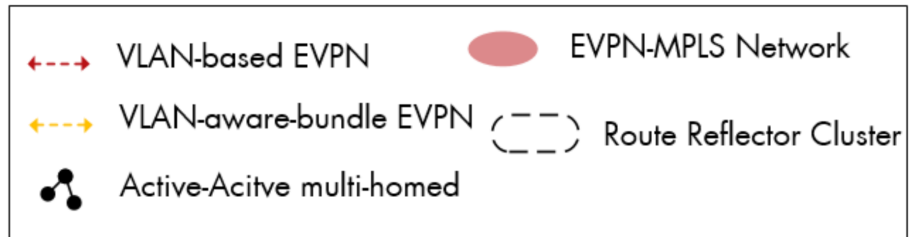
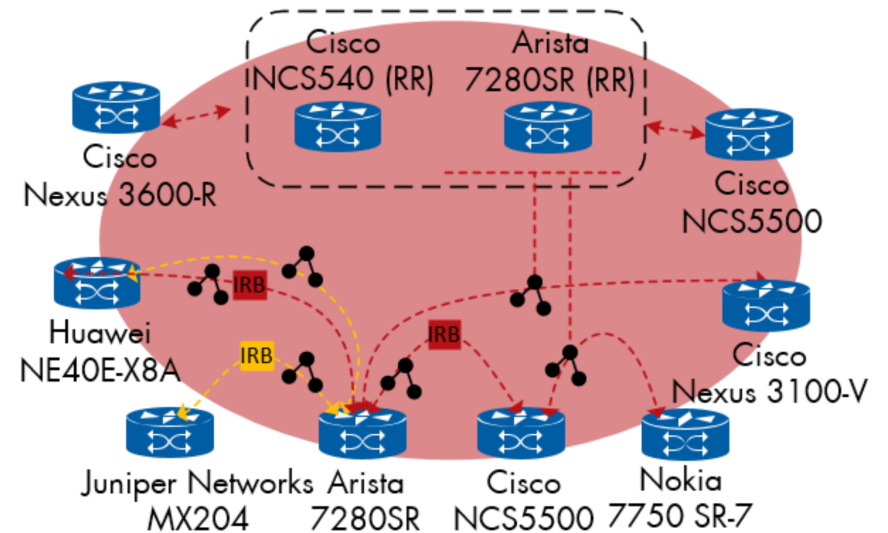
EVPN Routing & Switching : Active-Active Multi-homing

Test Goals

- **Verify A/A forwarding**
 - DF Election (BUM blocking)
 - MAC Learning
 - ARP Sync between site PEs
 - Layer 2 ECMP
 - Layer 3 ECMP
 - VLAN Based and VLAN aware bundle Service types

Participating Interop PE Vendors

- Arista 7280R
- Juniper MX
- Cisco NCS5500
- Nokia 7750
- Huawei NE40E



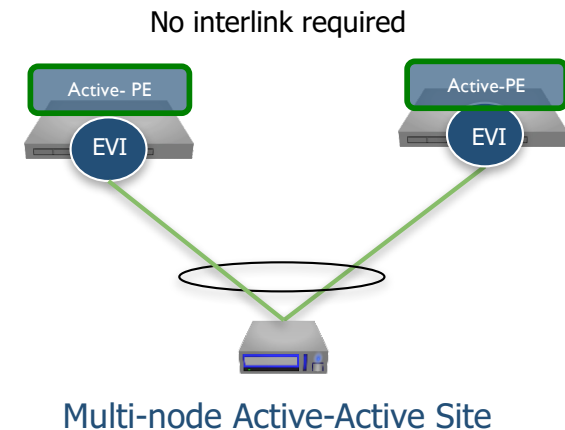
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Why EVPN Active-Active Multi-homing?

- Addresses the challenges with existing VPLS multi-homed site design
- ARP Suppression (with ARP sync)
- Layer 3 Awareness (IRB)

Benefits

- **BGP Control Plane**
 - Standardize, Interoperable
- **Efficient**
 - Multi-Homing Support with A/A Forwarding, Scaled ECMP



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EVPN Route Types

- **Type 1** – Auto-discover per ES and Auto discovery per EVI routes
- **Type 4** – Ethernet Segment Route

Route Type	Description
1	Auto-Discover Segment route – For multi-homing deployments to allow remote discovery of dual-homed Segments
2	MAC address Route - Advertisement of locally learnt/provisioned MAC address and optionally IP addresses.
3	Inclusive Multicast Ethernet Route - For advertisement EVI/VNI membership for the creation of ingress replication lists
4	Ethernet Segment Route – For multi-homing deployments to allow Peer discovery on same segment and DF election
5	IP prefix Route, advertisement of a IP prefix and next-hop, no MAC address for the route is advertised.

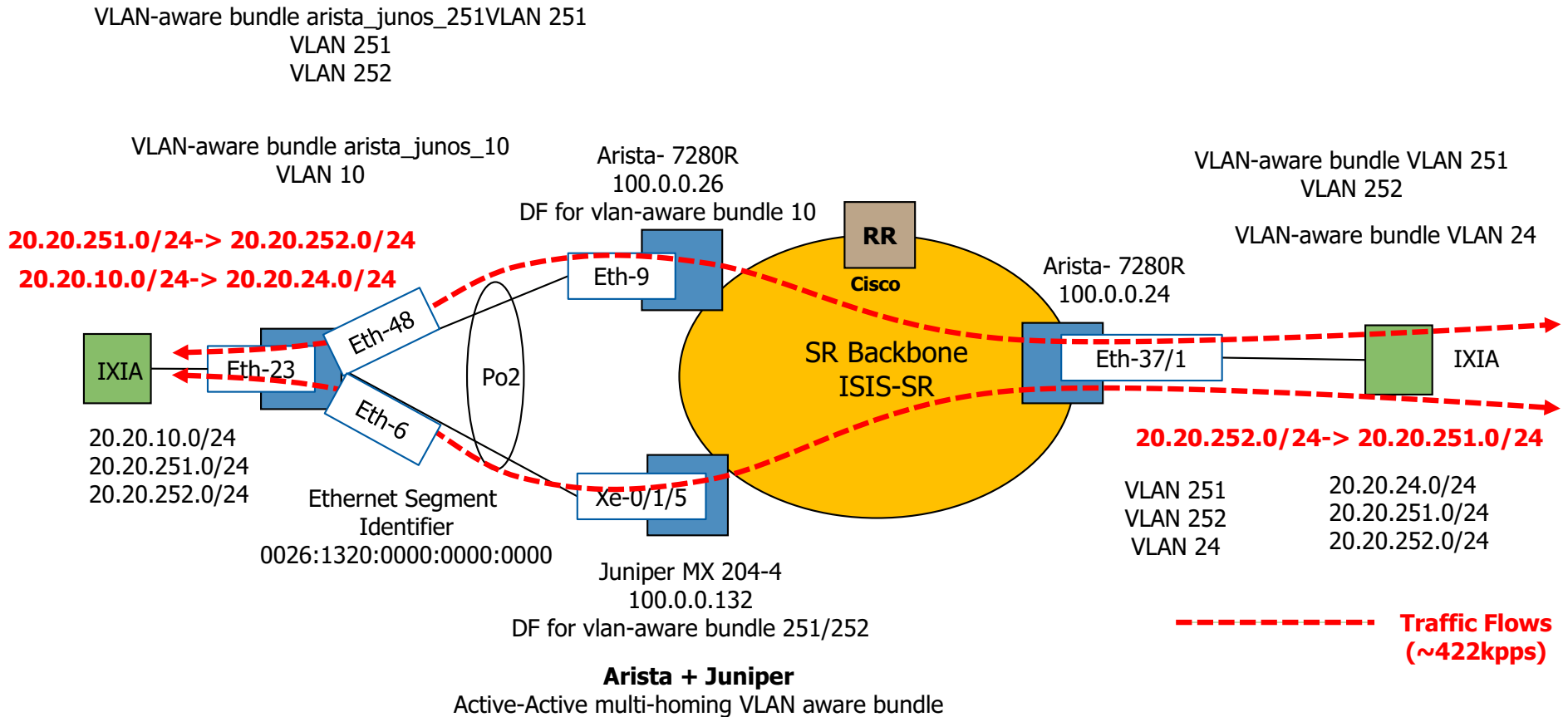
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EVPN Route Types

- **Type 2** – Advertising MACs and ARPs (MAC+IP). Used for ARP sync & suppression between site PEs
- **Type 5** – Advertising prefix routes and host routes. Used for ECMP routing to remote PEs

Route Type	Description
1	Auto-Discover Segment route – For multi-homing deployments to allow remote discovery of dual-homed Segments
2	MAC address Route - Advertisement of locally learnt/provisioned MAC address and optionally IP addresses.
3	Inclusive Multicast Ethernet Route - For advertisement EVI/VNI membership for the creation of ingress replication lists
4	Ethernet Segment Route – For multi-homing deployments to allow Peer discovery on same segment and DF election
5	IP prefix Route, advertisement of a IP prefix and next-hop

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Thank You