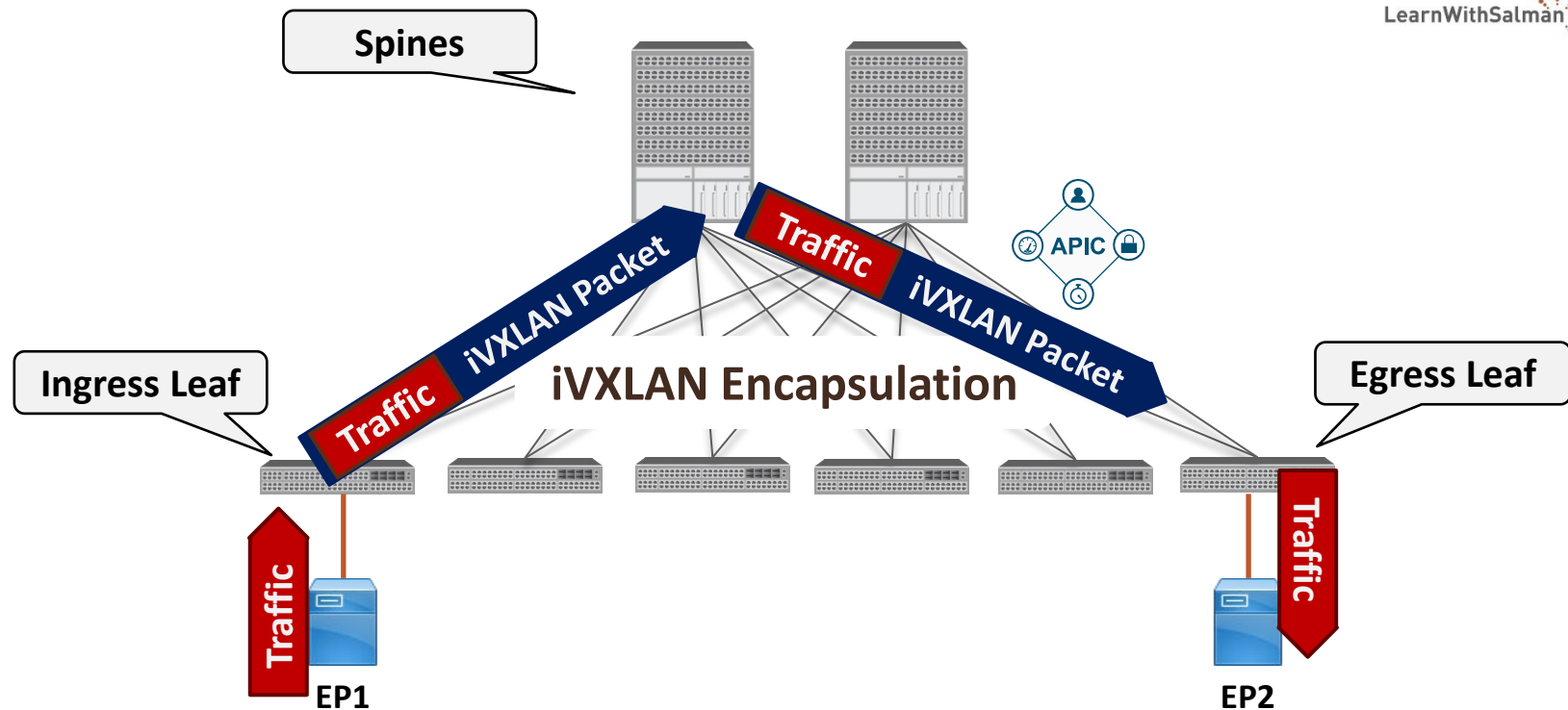


Cisco Data Centers
ACI CORE

ACI Packet Encapsulation & Format

ACI iVXLAN Encapsulation

- ACI is an overlay technology and it uses a custom VXLAN called iVXLAN for packet encapsulation.
- iVXLAN uses a custom UDP dst port, 48879, instead of the standard VXLAN UDP port 4789.
- All traffic in the ACI fabric is normalized as iVXLAN packets.
- Since every packet in the fabric carries ACI policy attributes, ACI can consistently enforce policy in a fully distributed manner.
- The additional iVXLAN encapsulation is 50 bytes.



Payload	IP	Ethernet	iVXLAN Packet			
Payload	IP	802.1Q	Ethernet	iVXLAN Packet		
Payload	IP	Ethernet	NVGRE	IP	Ethernet	iVXLAN Packet
Payload	IP	Ethernet	VXLAN	IP	Ethernet	iVXLAN Packet

Leaf & Spine Functions Overview

■ ACI ingress leaf functions:

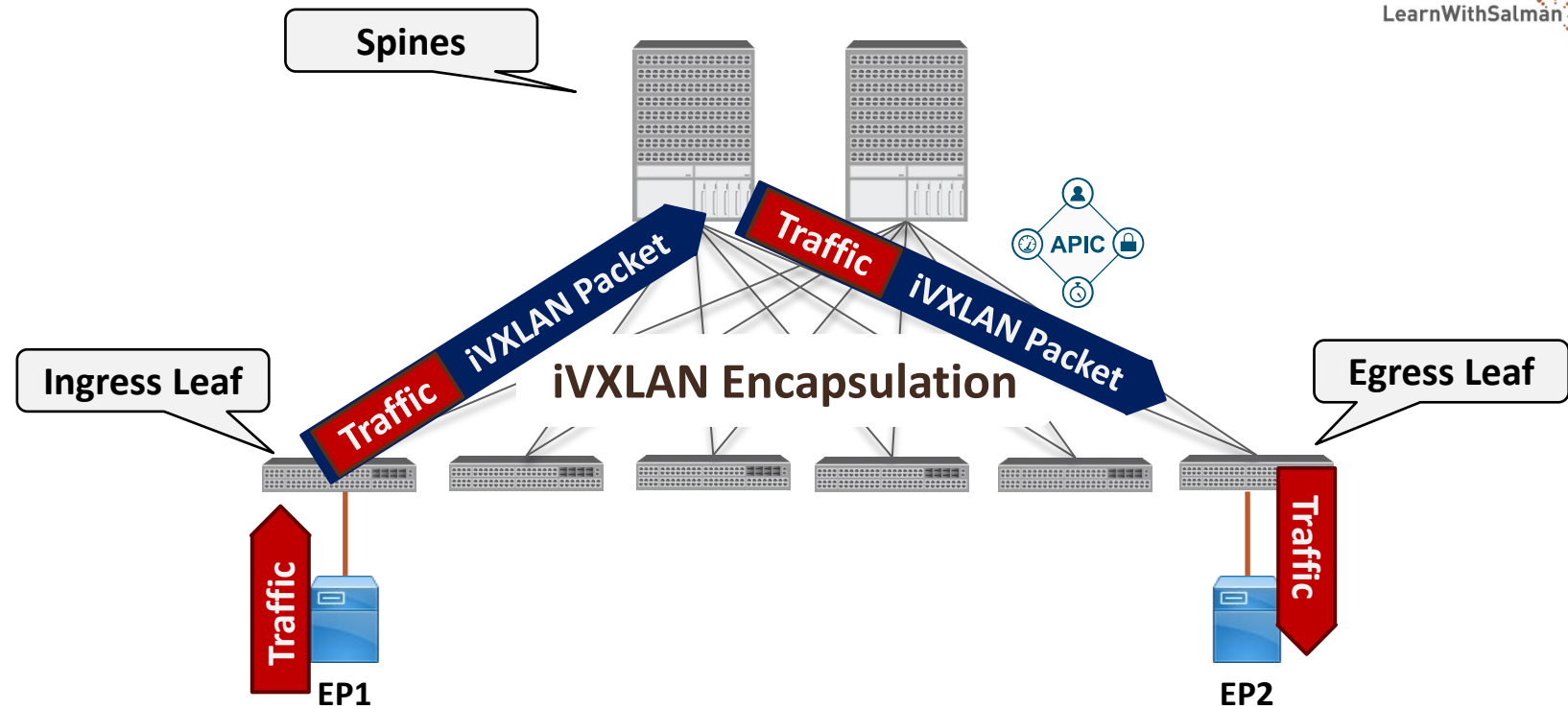
- Derive source EPG.
- Station Lookup.
- Policy Lookup.
- iVXLAN Encapsulation.
- Bounce.

■ ACI Egress leaf functions:

- iVXLAN Decapsulation (Termination).
- Station Lookup.
- Policy Lookup.
- Egress Port Selection.

■ ACI Spine Functions:

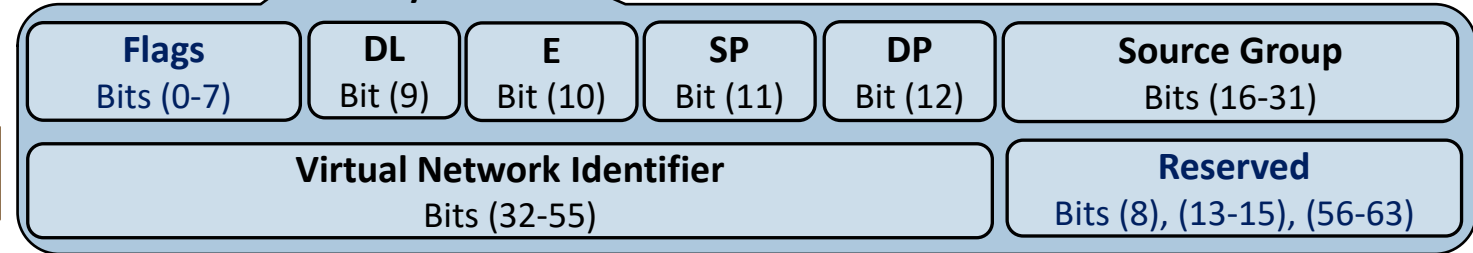
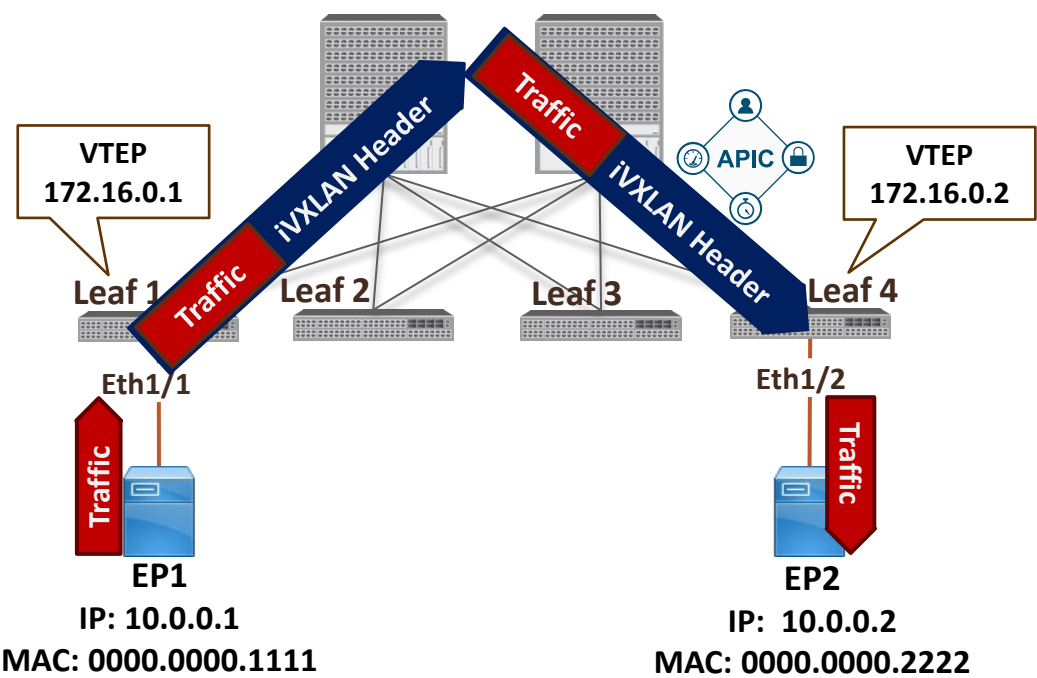
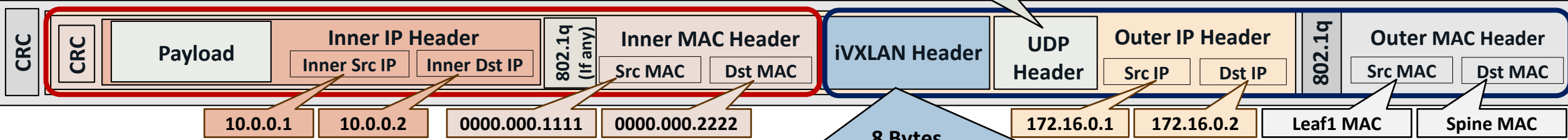
- Forward iVXLAN Packets.
- Proxy Lookup.
- Multicast Root.



Inner Header

Outer Header

Dst UDP port:
48879



- **DL (Don't learn):** informs remote leaf that it should not perform dataplane learning for this frame.
- **E (Exception):** set when frame has gone through proxy path.
- **SP (Source-policy-applied):** policy has already been applied to this frame.
- **DP (Destination-policy-applied):** policy to be applied in the egress leaf.
- **sClass/pcTag (Source group):** 16-bit policy control tag representing the EPG that sourced the frame.
- **Virtual network Identifier (VNID):** The 24-bit VXLAN ID represents the VRF segment ID in L3 forwarding or the BD segment ID in L2 forwarding.

ACI Packet Format

Thanks for watching!

