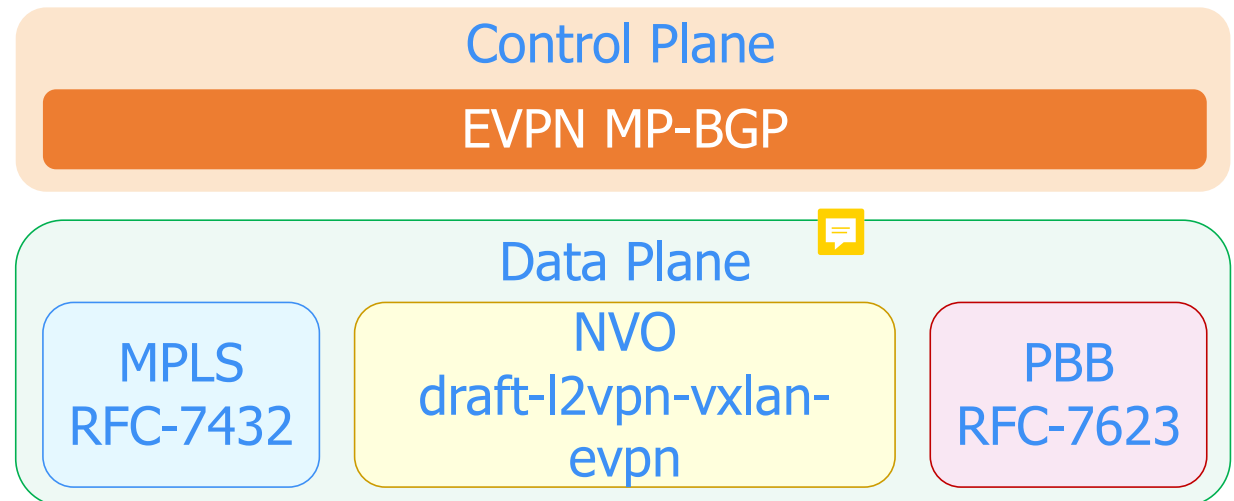# Ethernet VPN (EVPN)

- A technology for integrating dispersed multiple sites network as an Ethernet
  - To carry Layer 2 Ethernet traffic as **a virtual private network**
- EVPN Protocol Family
  - **Control Plane**: Multi-protocol BGP (MP-BGP)
  - **Data Plane**: Multiple encapsulations
    - Ethernet over MPLS
    - Ethernet over VXLAN
    - Ethernet over PBB

Control Plane

EVPN MP-BGP

Data Plane

MPLS RFC-7432	NVO draft-l2vpn-vxlan-evpn	PBB RFC-7623

- PBB: Provider Backbone Bridging combined with Ethernet VPN
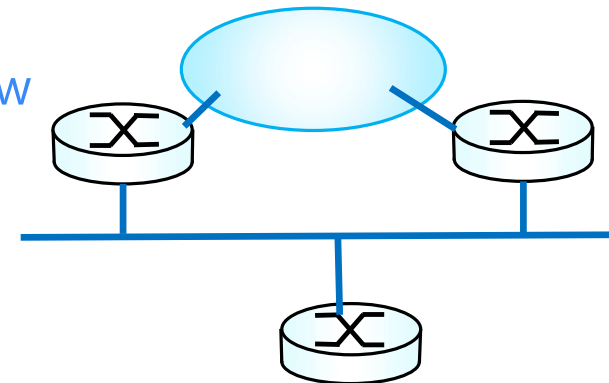
Ethernet VPN (EVPN)

- **Traditional Layer 2 networks**,
  reachability information is distributed in the **data plane** through **flooding**
- **Ethernet VPN networks**,
  reachability information is distributed in the **control plane** using MP-BGP
  - MP-BGP: Multiprotocol Extensions for BGP
  – But carry Layer 2 MACs and Layer 3 IPs
    of endpoints
  ➢ Treats MAC addresses as routes.

- https://www.juniper.net/us/en/products-services/what-is/evpn-vxlan/
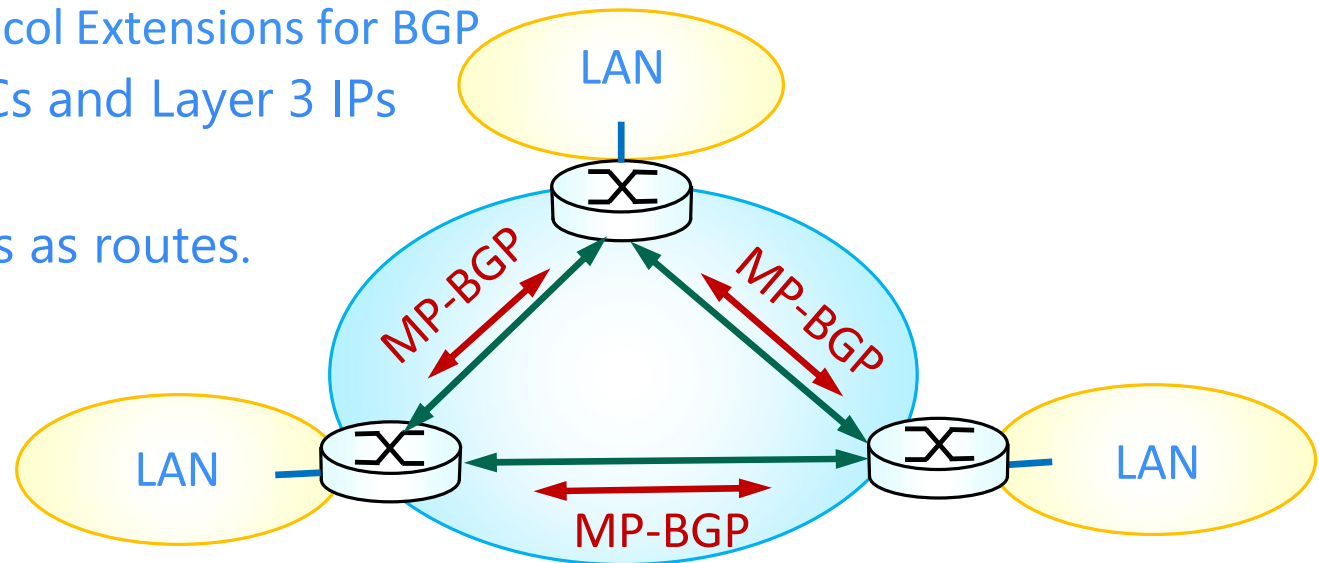
EVPN-VXLAN

- Use VXLAN to carry Layer 2 Ethernet Packet between VTEPs
- Use MG-BGP to exchange reachability information between VTEPs about their endpoints.
- Additional Features

  multipath forwarding and redundancy through an all-active multihoming model.

  – Multihoming:

  An endpoint or device can connect to **two or more upstream devices** and forward traffic **using all the links**.

  – If a link or device fails, traffic continues to flow using the remaining active links.

EVPN-VXLAN