

draft-rabadan-nvo3-evpn-applicability-00

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Introduction

- What it is:
 - Informational / Applicability document that intends to describe how to use EVPN as a control-plane protocol to address the requirements of NVO3 networks (at a high level)
 - A Reference Guide that points at the right document in BESS for the implementation details
- What it is not:
 - A Standards Track document
 - A document that specifies a protocol or protocol extension
- The assumptions it makes:
 - The NVEs exchange information via control-plane
 - That control-plane is based on EVPN

Why is EVPN needed

In NVO3 networks

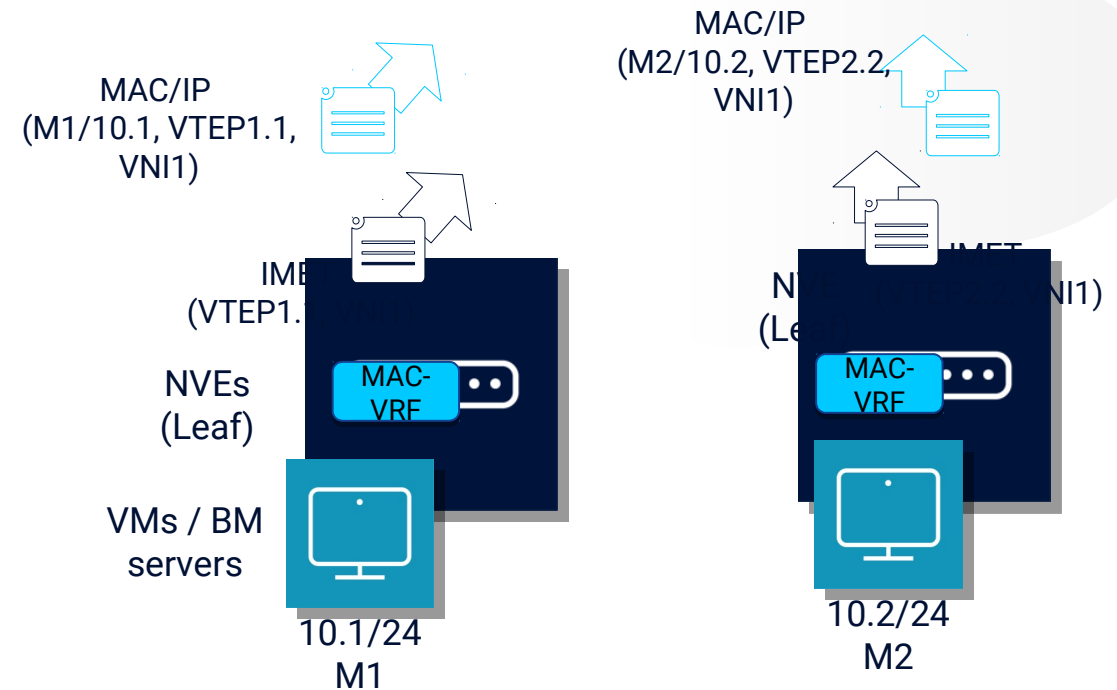
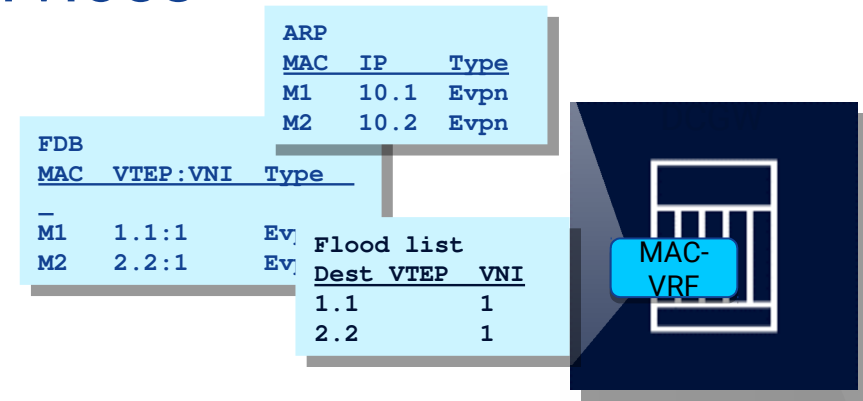
- A control-plane is needed in NVO3 networks for:
 - a) Auto-discovery of the remote NVEs that are attached to the same BD
 - b) Dissemination of the MAC/IP host information (mapping tables on remote NVEs)
 - c) Advanced features (MAC Mobility, MAC Protection, BUM traffic reduction/suppression, Multi-homing, etc.)
- Comparing "Flood and Learn" and EVPN

EVPN Basic Applicability For Layer-2 Services

EVPN provides the basic Control Plane needs...

- Auto-Provisioning of NVEs
- Auto-discovery of remote VTEPs through Inclusive Multicast Routes (IMET)
- Distribution of MAC/IP information in order to reduce/suppress flooding through MAC/IP routes

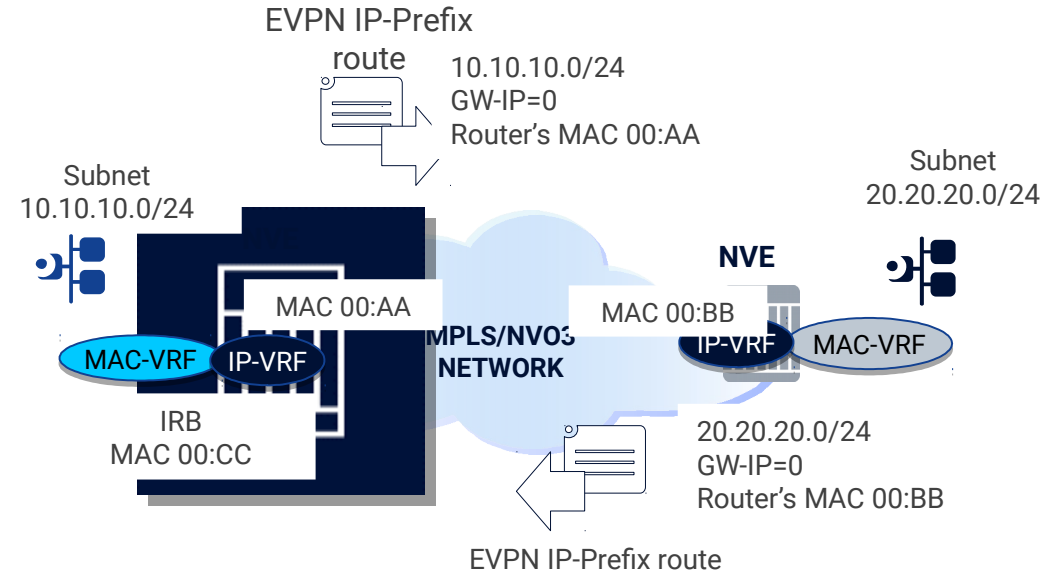
Reference documents
 RFC7432
 draft-ietf-bess-evpn-overlay



EVPN Basic Applicability For Layer-3 Services

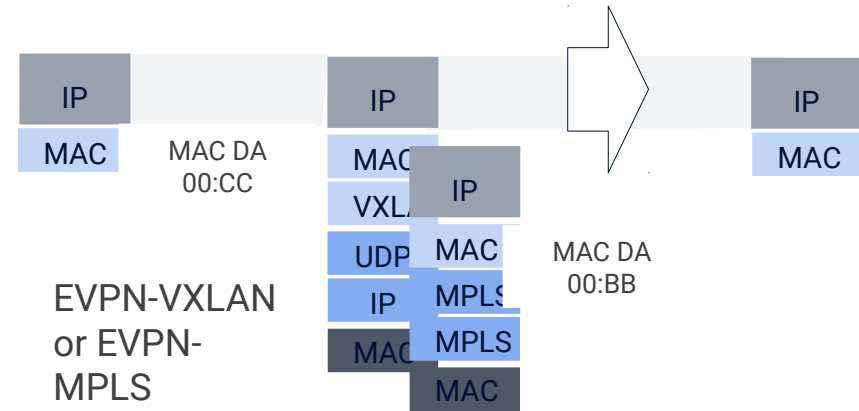
EVPN provides two basic models

- Asymmetric
 - All NVEs are attached to all subnets
 - At the egress NVE only MAC lookup is needed
- Symmetric
 - NVEs are attached to only subnets with connected hosts
 - Ingress/Egress NVE need (tenant) IP lookup.



Reference documents

draft-ietf-bess-evpn-prefix-advertisement
 draft-ietf-bess-evpn-inter-subnet-forwarding



Other Topics

In NVO3 networks

- Support for NVO3 encapsulations, in particular GENEVE
- OAM on NVO3

Reference documents Encaps

draft-ietf-bess-evpn-overlay

draft-ietf-nvo3-geneve

draft-ietf-idr-tunnel-encaps

Reference documents EVPN OAM

draft-jain-bess-evpn-lsp-ping

Advanced EVPN features

For NVO3 networks

- VM Mobility, MAC protection, Duplication Detection and Loop Protection
- Reduction / Suppression of BUM traffic in Broadcast Domains:
 - Proxy-ARP/ND
 - IGMP-MLD-PROXY
 - IGMP-PROXY
- Ingress Replication Optimization for BUM traffic
- EVPN Multi-Homing
- Recursive Resolution for Inter-Subnet Forwarding
- Optimized Inter-Subnet Multicast
- Data Center Interconnect

Reference documents - advanced EVPN

RFC7432

draft-ietf-bess-evpn-proxy-arp-nd
draft-snr-bess-evpn-loop-protect
draft-ietf-bess-evpn-igmp-ml-d-proxy
draft-skr- bess-evpn-pim-proxy-01

draft-ietf-bess-evpn-optimized-ir

draft-ietf-bess-evpn-overlay
draft-ietf-bess-evpn-df-election
draft-ietf-bess-evpn-pref-df
draft-ietf-bess-evpn-ac-df

draft-lin-bess-evpn-irb-mcast
draft-ietf-bess-dci-evpn-overlay
draft-rabadan-sajassi-bess-evpn-ipvpn-interworking

Next steps

The Authors would like to request feedback and discussion from the Working Group

Thank you