draft-sajassi-l2vpn-evpn-inter-subnet-switching-03.txt

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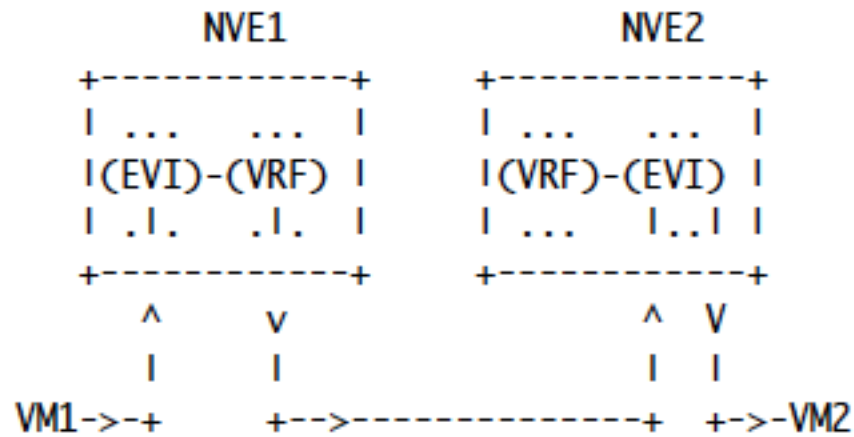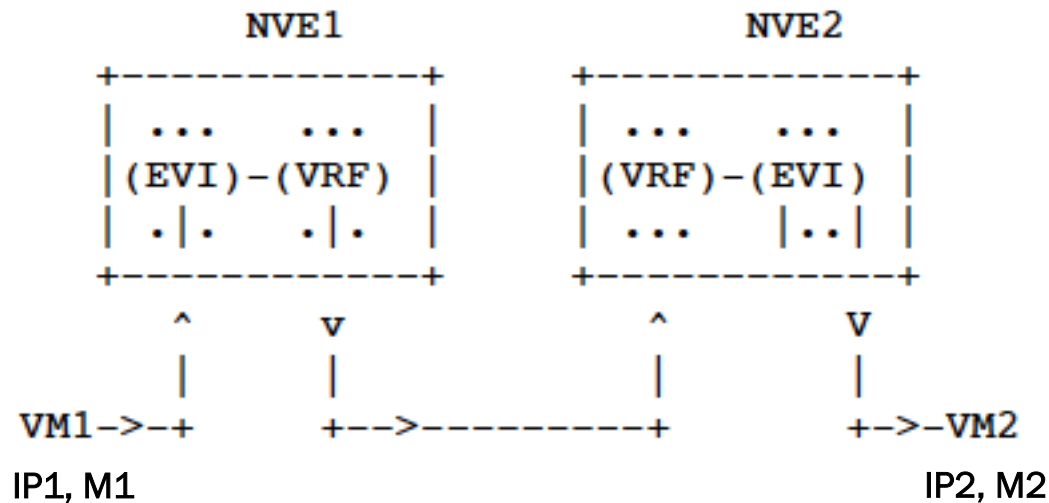
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Changes from rev02

- Rev02 covered only asymmetric IRB Scenarios where it was assumed when IRB functionality is present in PE devices, the ingress PE performs both L2 and L3 lookup; whereas, egress PE only performs L2 lookup

- This rev of the draft expands the scenarios to include symmetric IRB where both ingress and egress PE devices perform L2 & L3 lookup

Asymmetric IRB

```
            NVE1                      NVE2
    +------------+            +------------+
    |  ...    ...  |          |  ...    ...  |
    |(EVI)-(VRF)  |          |(VRF)-(EVI)  |
    |  .I.   .I.   |          |  ...    I..I |
    +------------+            +------------+
        ^     v                   ^    v
        |     |                   |    |
VM1->-+      +-->-------------+   +->-VM2
```

Symmetric IRB

```
              NVE1                          NVE2
+------------------+        +------------------+
|  ...      ...    |        |  ...      ...    |
| (EVI)-(VRF)      |        | (VRF)-(EVI)      |
|  .|.      .|.    |        |  ...      |..|   |
+------------------+        +------------------+
     ^         v                 ^         v
     |         |                 |         |
VM1->-+     +-->----------+   +->-VM2
  IP1, M1                              IP2, M2
```

Advantage of Symmetric IRB:
- No need to maintain the MAC addresses of all the remote hosts attached to other PEs in the local ARP table
- More efficient encapsulation where Ethernet header is not needed when forwarding packets between PEs

Operation

- NVE1 advertises IP1 route and M1 MAC address of VM1 along with their labels and their associated RTs to other NVEs

- NVE2 upon receiving this advertisement from NVE1, imports IP1 into its IP-VRF and M1 into its MAC-VRF

- When NVE2 wants to send an intra-subnet packet to VM1, it encapsulates it the Ethernet frame with MAC DA of M1 with label1

- When NVE2 wants to send an inter-subnet packet to VM1, it encapsulates the IP packet with IP DA of IP1 with label2

Next Steps

- The authors would like to request for WG call very soon