

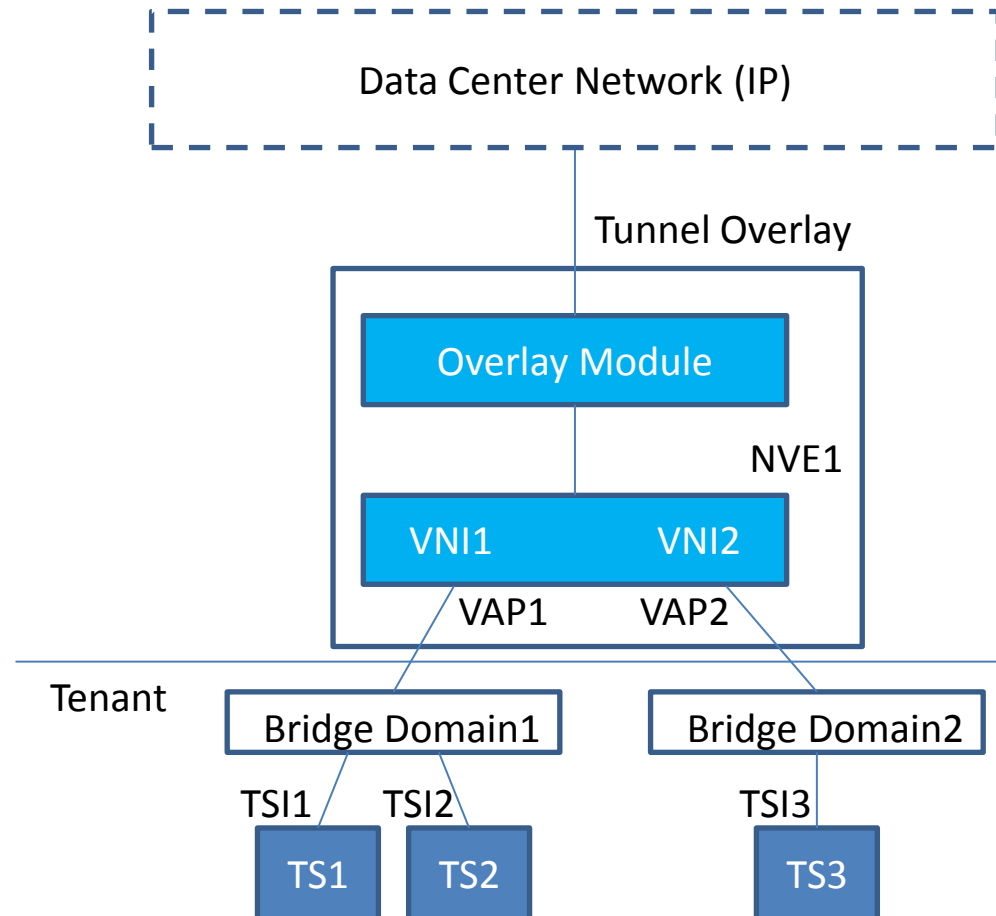
YANG Data Model for NVO3 Protocols

draft-zhang-nvo3-yang-cfg-01

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Reference Model

- The reference model for the NVO3 YANG Data model (adapted from draft-ietf-nvo3-arch).
- The terms in this model are defined as parameters in the YANG Data model.
- With the data model, operators can configure and manage their NVO3 overlay.



The Tree Structure of the Module

- Each NVE is identified using the 'srcAddr', which is the underlay IP address of the NVE.
- The value of 'encapType' determines the encapsulation. Currently, it includes VxLAN and NVGRE.
- For VxLAN, the source and destination UDP port can be configured.

```
+---rw nvo3Nves
| +---rw nvo3Nve* [ifName]
|   +---rw ifName      string
|   +---rw srcAddr?    inet:ip-address
|   +---rw (encapType)?
|       +---:(vxlan)
|           +---rw srcUdpPortGenRule?  uint8
|           +---rw destUdpPort?       Uint16
.....
```

Tree Structure of the Module (cont.)

- On each Virtual Access Point (VAP), a Virtual Network Instance (VNI) is assigned for the overlay.
- For the customer, a bridge domain ID is configured for the Tenant System. It is locally one-to-one mapped to the VNI.
- Depends on the encapsulation type, the flags of VxLAN or NVGRE will be configured.
- The model support two BUM modes: ingress replication and point-to-multipoint tunnels.
 - If ingress replication is used, the receiver addresses are listed in 'peerAddr'.
 - If the choice is point-to-multipoint tunnels, the multicast address is given as 'multiAddr'.

```
.....
|   +---rw members
|       +---rw member* [VNI]
|           +---rw VNI      uint32
|           +---rw bdlId    uint32
|           +---rw (encapType)?
|               | +---:(vxlan)
|                   | | +---rw vxlanFlag?  flags-vxlan
|                       | +---:(nvgre)
|                           | +---rw nvgreFlag?  flags-nvgre
|                               | +---rw flowId?   uint8
|                               +---rw (bumMode)?
|                                   +---:(headEnd)
|                                       | +---rw peerAddr*  inet:ip-address
|                                       +---:(multiGroup)
|                                           +---rw multiAddr?  inet:ip-address
.....
```

Tree Structure of the Module (cont.)

- Operators can enable the collection of statistic values on a per-VNI base.
 - This is achieved through configuring the statisticEnable parameter.

```
.....  
+--rw nvo3Infos  
| +--rw nvo3Info* [VNI]  
|   +--rw VNI          uint32  
|   +--rw statisticsEnable? enumeration  
|   +--ro status?      enumeration   .....
```

Tree Structure of the Module (cont.)

- The statistical information about the local NVEs, the remote NVEs, the flows and the MAC addresses can be collected.

```
.....  
+--rw nvo3Statistics  
  +--ro localNVE*  
.....  
  +--ro remoteNVE*  
.....  
  +--rw flowStatistics  
.....  
  +--rw MacStatistics  
.....
```

Next Step

- To incorporate the L3 service.
- Ask for YANG experts' directions.
- Contributions are welcome.
- Comments and suggestions.

Thanks!