Virtualized Overlay Network Architecture supporting Subnet

https://tools.ietf.org/html/draft-ao-nvo3-overlay-subnet-architecture-00

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As described in draft-defoy-coms-subnet-interconnection

- There are several possible reasons to split an end-to-end network slice for management, including:
  - To cross administrative domain boundaries
  - To interconnect parts deployed over different infrastructure technologies
  - To split a sliced system into smaller sections for sharing, reuse, scaling or facilitating management.

AS described in draft-ietf-nvo3-encap

- We have several overlay technologies: VxLAN-GPE, GENEVE, NVGRE ...
- Every technology has its customers
- For an e2e connection in a virtual network, customers from may use different technology on NVE, especially on vSwitch.
Background(2)

• Subnet
  • Cannot be activated in isolation – it must be interconnected with other subnets to form a virtual network or end-to-end connection.
  • We need to extend the NVO3 architecture to support subnet.

• Stitching
  • An operation to interconnect the subnets to form a virtual network or provide an e2e connection.
  • We need to add a new component to support the stitching operation.
Architecture supporting subnet in NVO3

• Introduce a new component, maybe on an NVE—sNVE (Stitching NVE)
  • As a Stitching Gateway for subnets
  • Stitching the tunnels to an e2e tunnel

• sNVE Stitching function
  • Supporting several technologies if needed
  • Identifying the customer traffic
  • Mapping for subnets
  • Translation between tunnels
  • Fault and performance monitoring for underlay and overlay networks
• sNVE and NVE1 belong to subnet1, sNVE and NVE2 belong to subnet2.
• sNVE provides the interconnection between subnet1 and subnet2 like a gateway, connecting VAP1 in NVE1 and VAP1 in NVE2, stitching tunnel1 and tunnel2.
• sNVE only forwards the traffic, and never terminate it in a virtual network.
Next Steps

- Comments, questions are always welcome and greatly appreciated