

Virtualized Overlay Network Architecture supporting Sub net

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

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Background(1)

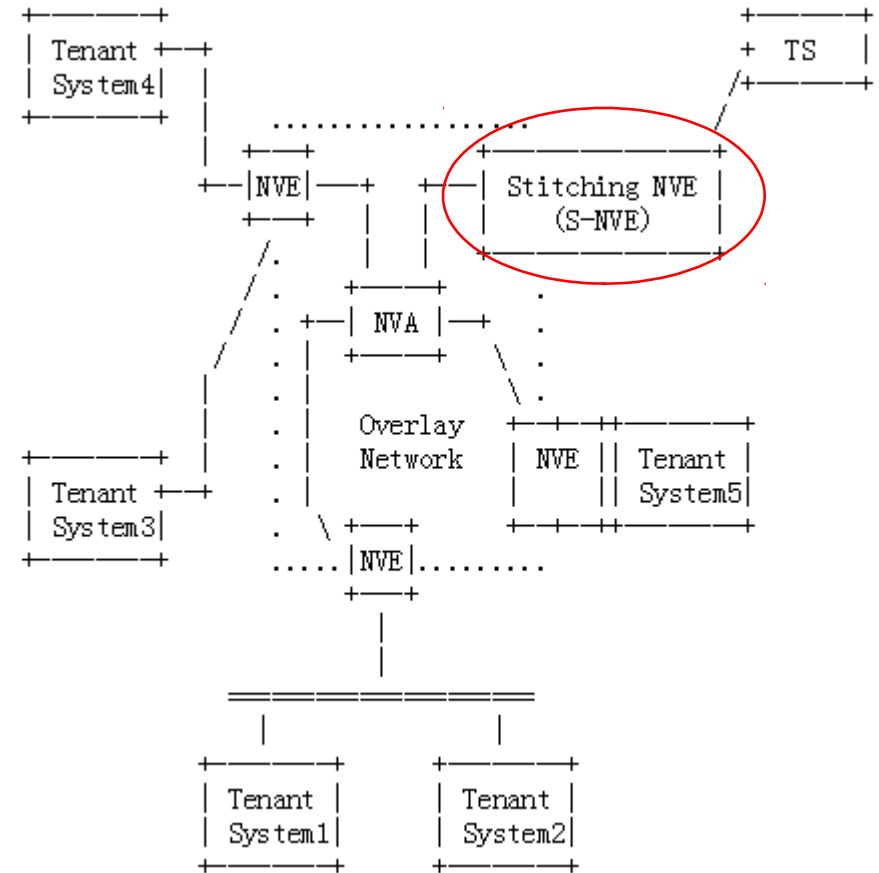
- As described in [draft-defoy-coms-subnet-interconnection](#)
 - There are several possible reasons to split an end-to-end network slice for management, including:
 - To cross administrative domain boundaries
 - To interconnect parts deployed over different infrastructure technologies
 - To split a 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)

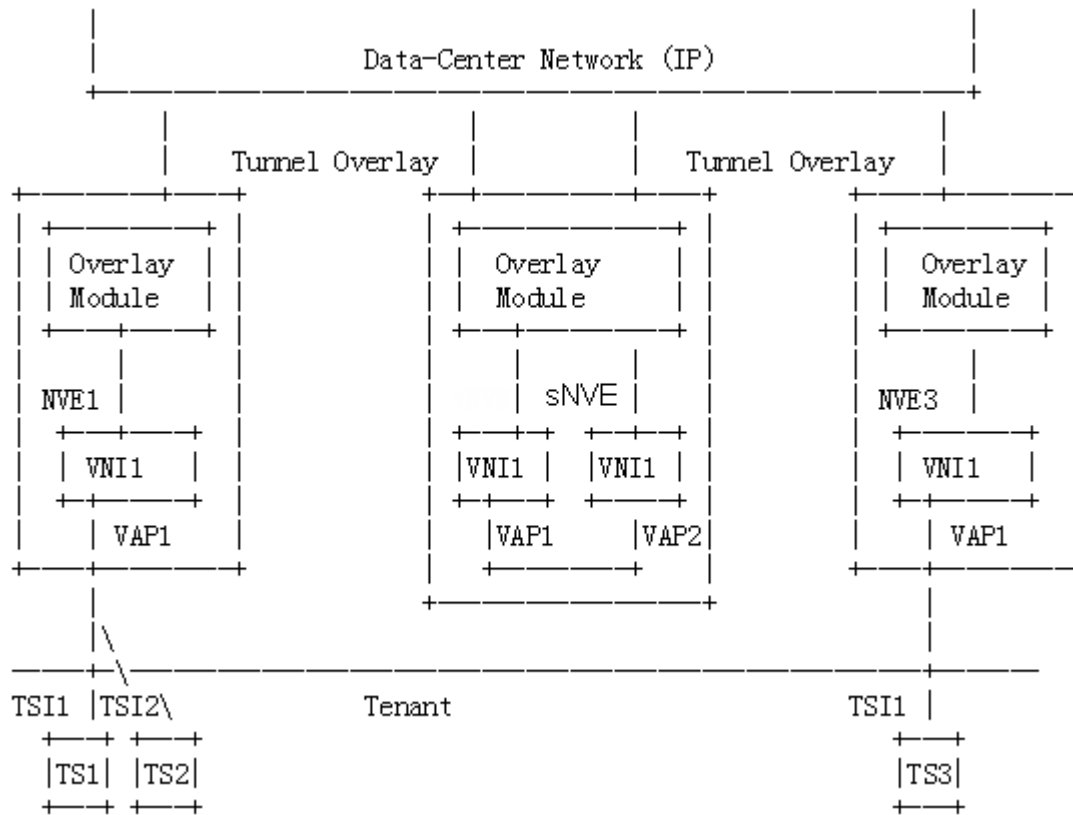
- Subnet
 - Cannot be activated in isolation – it must be interconnected with other subnets to form a virtual network or end-to-end connection.
 - We need to extend the NVO3 architecture to support subnet.
- Stitching
 - An operation to interconnect the subnets to form a virtual network or provide an 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 reference model



- 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