YANG Data Model for SD-WAN
OSE service delivery

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Motivation

The **Open SD-WAN Exchange (OSE)** is an open framework to allow for one vendor SD-WAN solution to federate and communicate with other vendor SD-WAN solutions that utilize different Overlay, Control and Management plane protocols. The “Open SD-WAN Exchange” use cases address marketplace M&A, business partner connectivity, Cloud/Service Provider network connectivity, technology transition and vendor interworking.
OSE Interworking Model – RFC Coverage Areas

Use Case 1: Path Management Policy and Enforcement

Use Case 2: Interdomain Reachability and Segmentation
The communication between client Orchestrator and SD-WAN manager is based on Restconf/YANG

**OSE-reachability-svc-model** functionality:
- Ose Gateway created in each domain
- Ose Gateway MP-BGP/BGP control plane peering configuration
- Underlay connection setup: VLAN or interface configuration
- Overlay Tunnel setup: GRE/IPsec parameters
- Segmentation instance creation, cross-connect

**OSE-Path-svc-model**
- Dynamic path selection for cross-domain traffic configuration
OSE Gateway Service Model design

• **Ose-gateway list**: Each domain has one or more OSE-Gateway to provide inter-domain interoperability

• **Peering list**:
  - Control-Plane configuration parameters
    - Option B: Reachability exchange between OSE Gateway: MP-BGP based EVPN or L3VPN exchange routes with additional reachability.
    - Option A: Use of separate instances of BGP to be configured on a per VRF basis.
  - Data-Plane configuration parameters
    - Option B: GRE encapsulation between SD-WAN islands. For added security IKE based IPSec can be used.
    - Option A: Alternatively, Use of VLAN tagging to separate traffic between tenants.

• **Segment mapping list**
  - Network segmentation for inter SD-WAN islands is required to ensure per per segment traffic flow separation while passing through sd-wan island boundaries
OSE Path management
service model design

- Path Management Policy is an ordered list
- Custom traffic classifier or application will be matched for the cross-domain traffic from a site
- The first match will be applied the link & path policy which is in the context of the Performance SLA associated to the links and paths
Open Items

• OSE Gateway control and data plane protocol will be specified when relevant protocols defined

• A method needs to be specified for budgeting end-to-end delay across multiple domains
  - delay/loss/jitter needs to be shared so that each domain can compute the total path, determine who’s violating and then execute path change.
Next Step

• Review feedback; adjust/improve models
• API definitions
• Create additional SDWAN service models to cover major use cases