YANG Data Model for SD-WAN VPN service model delivery
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Overview of SD-WAN

• A new kind of VPN service provisioned by
  – Using Internet connection only or together with traditional transport techniques, such as MPLS VPN
  – Orchestrating function instance, i.e., vFW, vCE, on customer premise or cloud

• Rapid deployment, fast provisioning, i.e., within hours
Difference from L3SM, L2SM

• Difference
  – L3 VPN/L2 VPN: Provider provisioned, PE-based VPN and PE maintains VPN state
  – SD-WAN: CE-based overlay VPN, PE has no knowledge of it

• Association
  – SD-WAN can leverage L2VPN and L3VPN as underlay transport technologies
Why a service model is needed for SD-WAN?

• Service agility needs orchestration and automation
  – Dynamic, e.g. new branch, bandwidth adjust, holiday use
  – Cloud service extension
  – Service lifecycle management

• Abstraction of customer requirements to the service
  – no specific detail of protocol and NE configuration
SD-WAN service model overview

- The tree model architecture complies with L3SM&L2SM, but add two major components:
  - Segment network: Customer could have multiple virtual network which are not allowed to communicate with each other
  - Policies: Policy could be applied per segment or per site in application or flow granularity
Segment network

- Ensure per segment traffic separation
  - site to site connection
  - site to external network interconnection (Internet, public cloud)
Path selection policy

- Path selection policy main parameters
  - Customers define their own applications and flow classification
    - Voice, video, game, critical data
  - Application or flow SLA
    - Monitor the delay, jitter or packet of application or flow
  - Path selection: based on the status, steer the traffic to appropriate transport network link

Application or flow classification
Path selection :
Primary path
Secondary path
Path selection policy
Path-selection-profile->
Application SLA Measurement

Application or flow classification
Application or flow SLA
Primary path or secondary path
Next steps

• The authors appreciate thoughts, feedback, and text on the content of the documents.
• And then prepare another version.