ACTN/VN YANG Models

draft-ietf-teas-actn-vn-yang-09
draft-ietf-teas-actn-pm-telemetry-autonomics-03
draft-ietf-teas-te-service-mapping-yang-04

Dhruv Dhody, Young Lee, Daniele Ceccarelli, Igor Bryskin, Bin Yeong Yoon, Satish Karunanithi, Ricard Vilalta, Daniel King, Giuseppe Fioccola, Qin Wu, Jeff Tantsura
YANG model overview

- VN
  - ietf-vn

- KPI Telemetry
  - ietf-te-kpi-telemetry
  - ietf-vn-kpi-telemetry

- Service Mapping
  - ietf-te-service-mapping-types
  - ietf-l3sm-te-service-mapping
  - ietf-l2sm-te-service-mapping
  - ietf-l1csm-te-service-mapping
  - ietf-l3nm-te-service-mapping
  - ietf-l2nm-te-service-mapping
VN Yang

- **VN**
- **Single node in TE Topology**
- **abstract topology**
- **Native TE Topology**

Yang model for Virtual Network (VN) operations
- From the point of view of Customer

An abstraction over the TE-Topo and TE-Tunnel
- These models are from the point of view of Network

VN is a higher level of abstraction
- VN model depends tightly on the topology model!
- Use Connectivity Matrices
Updates since -07

• Typedef for vn-id, vn-member-id, access-point-id of type inet:uri
  • It was uint32 before
  • The precise structure is up to the implementation
  • In alignment with RFC 8345
• A new leaf max-bandwidth in VNAP
  • Comment from Kenichi Ogaki
  • In alignment with RFC 8453
• Reusing te-types:te-path-disjointness
• Appendix – How to set network performance constraints
• Editorial and YANG changes as per comments from Tom Petch
  • Further comments are pending
Suggested Change

- Operators from KDDI have a requirement for VN-Compute RPC
  - Allow this RPC to be used independently to get result in a single call
  - Currently this is done via two separate transactions
    - Create abstract topology and set constraints in connectivity-matrix
    - Call VN-Compute RPC

- Suggested change to “optionally” include two existing groupings in VN-Compute
  - uses te-types:generic-path-constraints
  - uses te-types:generic-path-optimization

- Authors consider this as a reasonable request and want to make this change in the next update. Any objections?
VN Compute Flow

Create a single node abstract topology and set the performance characteristics required in connectivity matrix

MSDC calls the VN Compute RPC with a reference to the abstract node and connectivity matrix

POST TE Topology

HTTP 200 OK

VN Compute RPC call

Computed VN

VN Compute RPC with constraint & optimization as part of the RPC

Computed VN
KPI Telemetry Yang

draft-ietf-teas-actn-pm-telemetry-autonomies-03
ietf-te-kpi-telemetry
ietf-vn-kpi-telemetry
YANG models for VN/TE Telemetry & Network Autonomics

• YANG data models that support: Performance Monitoring (PM) Telemetry and scaling intent mechanism for TE-Tunnels and VNs to allow customers to subscribe to certain KPI PM.
  • ietf-te-kpi-telemetry
  • ietf-vn-te-kpi-telemetry

• Customer to subscribe and monitor KPI of interest on a particular TE tunnel or a VN.

• Customer could also program autonomic scaling intent
Update since -01

• Various Editorial things
  • Requirement Language in the draft and the YANG
  • Updated Prefix and References Table

• Pending Comment from Greg Mirsky
  • The performance metrics at the VN level are aggregated values and thus need a reference to the measurement methodology
    • Applicable for latency jitter, and packet loss rate etc.
  • Add description in YANG to explain
  • Help / Suggestions / Thoughts ?

TEAS WG @ IETF 108
TE Service mapping YANG

draft-ietf-teas-te-service-mapping-yang-04

ietf-te-service-mapping-types
ietf-l3sm-te-service-mapping
ietf-l2sm-te-service-mapping
ietf-l1csm-te-service-mapping
ietf-l3nm-te-service-mapping
ietf-l2nm-te-service-mapping
TE Service Mapping Model

• The role of TE-service Mapping model is to create a mapping relationship between
  o Services – L3SM, L2SM, L1CSM, etc.
  o TE topo, TE tunnel and the VN

• This mapping facilitates a seamless service operation with underlay-TE network visibility and control

• Allow monitoring and diagnostics on how the service request are mapped to underlying TE resources

• Support for various map-types
Support for Network Models

• Two new models
  • ietf-l3nm-te-service-mapping
  • ietf-l2nm-te-service-mapping
• Augments
  • L3NM
  • L2NM
  • WG I-Ds in OPSAWG
• Reuse the grouping from common types
TE Mapping Template

• A Template containing TE constraints and optimization criteria
  • Using existing te-types groupings from RFC 8776
  • Added in the ietf-te-service-mapping-types

• This container allows a VPN service to provide TE mapping without first creating and committing TE resources using the TE-Tunnel/VN models.
  • Thus VPN services can be created by providing the TE constraints/criteria first
  • Later when the VN/TE tunnels are actually created, the mapping is changed from the template to the VN/TE tunnels.
Other update since -02

• Added support for mapping to SR-Policy
• Various Editorial things
  • Requirement Language in the draft and the YANG
  • Updated Prefix and References Table
  • YANG guidelines
• Pending
  • References for availability-type
• New contributors – Oscar, Anton, Samier and Carlo
Thank You!