IETF Network Slice Service YANG Model

draft-ietf-teas-ietf-network-slice-nbi-yang

TEAS WG

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Network Slice Service model Status Summary

Rev-03 summary (draft-ietf-teas-ietf-network-slice-nbi-yang-03)

1. Add a new leaf “service-slo-sle-policy-override” to support **partial or full override** per-slice slo-sle-policy

2. Improve “slo-sle-template” to support **specifying the common attributes** of “service-slo-sle-police”

3. Add a new leaf “peer-sap-id” to facilitate PE ports identification in the case of SDPs in CEs

4. Add a reference to abstract TE topology to resolve **custom topology** extension

5. Add more examples when for CE-based SDP definition (the prime use-case for these examples is 3GPP 5G Network Slicing)

6. Editorial improvements

**Issues status**

- Open issues, 4 total open issues, 26 closed
- For more details of these issues, please visit [https://github.com/lana-wu/ietf-ns-nbi/issues](https://github.com/lana-wu/ietf-ns-nbi/issues)
Updates on “sap-id” association to SDP
(Raised by Ryan Hoffman from Telus)

• **Issue**: NS SDP needs SAP (Service Attachment Points) association in case on CE-based SDP
  - It will provide abstractions on the provider network
  - Note that the IETF NS framework has reference to SAP (see framework draft)

• **Proposal**: Following the advice from the authors of draft-ietf-opsawg-sap,
  - **Added new leaves “peer-sap-id”** under “SDP” and “attachment-circuit”. As “sap-id” is “node” local, “peer-sap-id” is the abstract identifier for remote association
Issue #1
Handling of custom topology as input in the NS service model


- **Proposal:**
  - The updates follow the same design as to ACTN VN type 2, adding a reference to a prebuilt abstract TE topology

- **Comments from draft-ietf-ccamp-yang-otn-slicing**
  - **Concern 1:** TE topology model is technology specific
    - **Argument:** TE generalization work is in discussion in TEAS WG, which is proposing TE topology also applicable to non-TE network
  - **Concern 2:** The reference to prebuilt TE topology involves two separate steps (i.e., create TE topology first and then IETF NS Service)
    - **Argument:** Try to avoid duplication, because rfc8795 (TE topology) has defined customized topology and VN YANG model use this way.

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**Issue #2**
“connection group” or a separate list “connectivity-construct”

- **Issue:** “connection group” should be optional and a new “connectivity-type at connectivity-construct adding “A2A-hub&spoke” in addition to “P2P, P2MP, A2A-mesh” as today

- **Arguments:**
  - “A2A-hub&spoke” not consistent with IETF NS framework
  - **Connection Group** provides a simple and clean design to satisfy the IETF NS Framework to support one or more slo/sla for an IETF network slice service
Issue #3
Technology agnostic attributes may cause interoperability difficult
(No progress since IETF 114)

https://github.com/lana-wu/ietf-ns-nbi/issues/23

**Issue**: To maintain technology agnostic nature of the YANG model we use

1. A pair of (identity, value (string)) to support many attributes;
   - a common practice, for instance different metric-types use a common leaf metric-value of uint64 (RFC8776).

2. Support for “opaque” attributes that can be configured without an identity
   - This allow new attributes to added with updating YANG model

• **Concern**: Using a string instead of an explicit type in YANG there could be interoperability issues. The use of opaque attributes that are not defined in YANG adds to this issue.

• **Proposal**: Ask feedback from the WG and Yang-Doctors on how to balance the need for a technology-agnostic model v/s the issues pointed out above.

```
--rw sd-p-peering
  +-rw protocol* [protocol-type]
    |   +-rw protocol-type  identityref
    |   +-rw attribute* [attribute-type]
    |     |   +-rw attribute-type identityref
    |     |       +-rw value  string
    +---rw opaque* [attribute-name]
       |   +-rw attribute-name string
       |   +-rw value  string

Identity peering-protocol-type:
  • peering-protocol-bgp
  • peering-static-routing

Identity peering-attribute-type:
  • remote-as
  • neighbor
  • local-as

RFC8776:
  +--ro path-metric* [metric-type]
  +--ro metric-type identityref
  +--ro accumulative-value? uint64
  ro path-affinities-values
  +--ro path-affinities-value* [usage]
    +--ro usage identityref
    +--ro value? admin-groups
```
Issue #4

Issue #4: IP address in "match-criterion“, identifier “service-source-ip-match”, “service-destination-ip-match” not clear

• **Proposal**: Replace them with “service-source-ip-prefix-match”, “service-destination-ip-prefix-match”
  • The new identity can be used for ip address and ip prefix
Next step

• Resolve the open issues
• Ready for WGLC