YANG Data Models for TE and RSVP

draft-ietf-teas-yang-te-21
draft-ietf-teas-yang-rsvp-11
draft-ietf-teas-yang-rsvp-te-07

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Agenda

- Updates to I-Ds (since IETF-104)
- Open issues and next steps

I-D: <draft-ietf-teas-yang-te-21>

- I-D contains following YANG modules
  - ietf-te.yang
  - ietf-te-device.yang

- Models cover:
  - TE tunnel(s), TE path(s), LSP(s) constructs and attributes
  - On device and on controller specific attributes

Open Issue # 1

I-D: < draft-ietf-teas-yang-te-21>

YANGDOCTORS Comments

- Received feedback from YANG Dr. review (On the Right Track) and comments
- Authors are working on addressing those

Open Issue # 2
Tunnel Name Collisions

I-D: < draft-ietf-teas-yang-te-21>

- Tunnel List:
  - Currently keyed by tunnel name (string)
- Tunnels can be:
  - Configured on the device
  - Configured on the controller
  - Learnt (state) on controller (ephemeral)
  - Learnt (state) on device (ephemeral or auto-created)
- A solution was discussed on the list

Open Issue # 2 I-D: < draft-ietf-teas-yang-te-21>

Tunnel Name Collisions – Solution

- Tunnel name collision can occur:
  - On controller: controller learns tunnels from different devices with same name
    - Proposed solution:
      Ephemeral learnt tunnels on controller are implicitly prepended with the tunnel ingress identity (e.g. R1-foo, R2-foo, etc.)
  - Operator configures a tunnel name matching an auto-created tunnel on device
    - Proposed solution:
      Introduce a configurable prefix “e.g. auto” for auto created tunnels
      Example: Tunnel=auto-bypass-Link1, vs. Tunnel=bypass-Link1
  - Controller learns of a tunnel on a device whose name matches a locally configured one on controller
    - Proposed solution:
      Use the configurable prefix (e.g. “**remote-**”) to distinguish locally configured from remote learnt Tunnels.
      For example: remote tunnels learnt on controller appear like: remote-R1-foo, remote-R2-foo

I-D: <draft-ietf-teas-yang-rsvp-11>

- I-D contains following YANG modules
  - ietf-rsvp.yang
  - ietf-rsvp-extended.yang

- Model covers:
  - RSVP protocol base and extended attributes: signaling parameters, timers, counters, feature enablement (authentication, bundling, Srefresh, Hello) etc.
  - Per session, neighbor and interface RSVP attributes

Update # 1

I-D: <draft-ietf-teas-yang-rsvp-11>

Addressed YANG Dr. Review Comments

- Edit nits
- NMDA and use of “state” container
- Expansion of leaf names (e.g. packet-len)
- Pluralization of counters names: e.g. 'in-error' vs. 'in-errors’
- Added normative references for imported modules

Update # 2
RSVP Sessions list

I-D: <draft-ietf-teas-yang-rsvp-11>
I-D: < draft-ietf-teas-yang-rsvp-te-05>

```
-      list session {                                    769 +      list session-ip {
-        key "local-index";                              770 +        key "destination protocol-id destination-port";
         config false;                                  771          config false;
         description                                    772          description
           "List of RSVP sessions";                     773            "List of RSVP sessions";
                                                        774
-        leaf local-index {                              775 +        uses session-attributes-state;
```

```
   /* add augmentation for sessions and neighbors */    377    /* add augmentation for sessions and neighbors */
   augment "/rt:routing/rt:control-plane-protocols/"    378    augment "/rt:routing/rt:control-plane-protocols/"
   + "rt:control-plane-protocol/rsvp:rsvp/rsvp:globals/" 379    + "rt:control-plane-protocol/rsvp:rsvp/rsvp:globals/"
-  + "rsvp:sessions/rsvp:session/rsvp:state/rsvp:psbs/rsvp:psb" {  380 +  + "rsvp:sessions" {
                                                        381 +    description
                                                        382 +      "RSVP-TE generic data augmentation pertaining to session";
                                                        383 +    list session-te {
                                                        384 +      key "tunnel-endpoint tunnel-id extended-tunnel-id";
```

- RSVP sessions list:
  - RSVP base model covers RSVP IP sessions as defined in RFC2205
  - RSVP-TE model covers RSVP-TE sessions as defined in RFC3209
- Before update:
  - Single list that includes both keyed by a locally generated unique index
  - Makes looking up a matching session tedious (walk is needed)
  - Does not perform well under scale
- After update:
  - Split RSVP IP sessions and RSVP-TE sessions into separate lists
    - RSVP-IP sessions list keyed by “destination protocol-id destination-port”
    - RSVP-TE sessions list keyed by “tunnel-endpoint tunnel-id extended-tunnel-id”

Update # 3

I-D: <draft-ietf-teas-yang-rsvp-11>

New RPCs and notifications

```
rpcs:
  +---x clear-session
  |  +---w input
  |     +---w routing-protocol-instance-name    leafref
  |     +---w (filter-type)
  |        +--:(match-all)
  |        |  +---w all                         empty
  |        +--:(match-one)
  |           +---w session-info
  |              +---w (session-type)
  |                 +--:(rsvp-session-ip)
  |                    +---w destination        leafref
  |                    +---w protocol-id        uint8
  |                    +---w destination-port   inet:ip-address
  +---x clear-neighbor
     +---w input
        +---w routing-protocol-instance-name    leafref
        +---w (filter-type)
           +--:(match-all)
           |  +---w all                         empty
           +--:(match-one)
              +---w neighbor-address           leafref
```

- RPCs: added two new RPCs:
  - clear rsvp session:
    - Match single session or all
  - clear rsvp neighbor
    - Match single session or all
- Notifications:
  - Added section describing leveraging [I-D.ietf-netconf-subscribed-notifications] and [I-D.ietf-netconf-yang-push] to subscribe on specific data nodes

Next Steps

- I-D: <draft-ietf-teas-yang-rsvp-11>:
  - YANGDOCTORS Review comments addressed
  - Another round of internal review and progress to WGLC
- I-D <draft-ietf-teas-yang-te>:
  - Address YANGDOCTORS review comments
  - Progress to WGLC
- I-D: <draft-ietf-teas-yang-rsvp-te-05> and

  I-D: <draft-ietf-teas-yang-te-mpls-01>
  - Another round of review calling for YANGDOCTORS review

Thank You