

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

Tarek Saad, Juniper Networks
Rakesh Gandhi, Cisco Systems
Vishnu Pavan Beeram, Juniper Networks
Xufeng Liu, Volta Networks
Igor Bryskin, Huawei

Himanshu Shah, Ciena

IETF-105, July 2019, Montreal



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 YANGDOCTORS Comments

 Received feedback from YANG Dr. review (On the Right Track) and comments

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

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

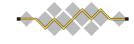
Model covers:

- 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 { - key "local-index"; - config false; - description - "List of RSVP sessions"; - leaf local-index { - list session-ip { - key "destination protocol-id destination-port"; - config false; - description - "List of RSVP sessions"; - leaf local-index { - vuses session-attributes-state;

```
- RSVP base model covers RSVP IP sessions as defined in RFC2205
```

 RSVP-TE model covers RSVP-TE sessions as defined in RFC3209

• Before update:

RSVP sessions list:

- 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 destinationport"
 - RSVP-TE sessions list keyed by "tunnel-endpoint tunnel-id extendedtunnel-id"



Update # 3 New RPCs and notifications

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

```
+---x clear-session
   +---w input
      +---w routing-protocol-instance-name
                                               leafref
     +---w (filter-type)
         +--:(match-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)
                                                empty
            +---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-subscribednotifications] and [I-D.ietf-netconfyang-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