

YANG Data Models for TE and RSVP

draft-ietf-teas-yang-te-02

draft-ietf-teas-yang-rsvp-02

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Agenda

- Updates (from previous version)
- Open issues
- Next steps

Progress Update

- Weekly team meetings continued since IETF91
- Periodic sync-up meetings with Open-Config MPLS consolidated team
- Latest model at: <https://github.com/ietf-mpls-yang/te>

Update # 1

Regrouping into base and extended modules

- Base RSVP module:
 - contains core functionality needed to operate RSVP
 - avoids using “if-feature” – contains minimal set that must be supported
 - contains minimal elements per function – e.g. “enable” leaf to turn “on”/”off” functionality
 - defaults for “enable” are not explicitly set - left to vendor implementation
- Extended RSVP module:
 - Augments basic module to add more elements to control RSVP core features
 - Optional – operator may chose not to set such properties
 - Can use “if-feature” to control augmentation

Update # 2

Reusing TE Groupings by PCE Model

- PCE YANG model can benefit from reusing TE model defined tunnels/LSPs groupings
 - Issue: existing groupings for Tunnels/LSPs contains
 - device specific properties (e.g. incoming/outgoing interface)
 - Off the router model can not reference device specific properties
 - Solution: separate (non) device specific properties
 - PCE model can reference LSPs/tunnels state in the device module
 - TE model augments the additional device specific properties

Update # 3

RSVP augments IETF routing

- Similar to other protocols (e.g. OSPF), RSVP augments the IETF routing path:

```
module: ietf-rsvp
augment /rt:routing/rt:routing-instance/rt:routing-protocols/rt:routing-protocol:
  +--rw rsvp!
     +--rw globals
```

- Allows RSVP protocol in per routing instance

Update # 4

Ephemeral Tunnel/LSP states

- Ephemeral tunnel States

```
module: ietf-te
  +-rw te!
  ...
  +-rw tunnels
    +-rw tunnel
      +-rw config
        <<intended configuration>>
        +-ro state
          <<applied configuration>>
          <<derived state>>
```

- Ephemeral LSPs (protocol derived)

```
module: ietf-te
  +- rw te!
  ...
  +-ro lsp-state
    <<ephemeral LSPs>>
```

Open Issue # 1

Enabling RSVP Interface (Possible Options)

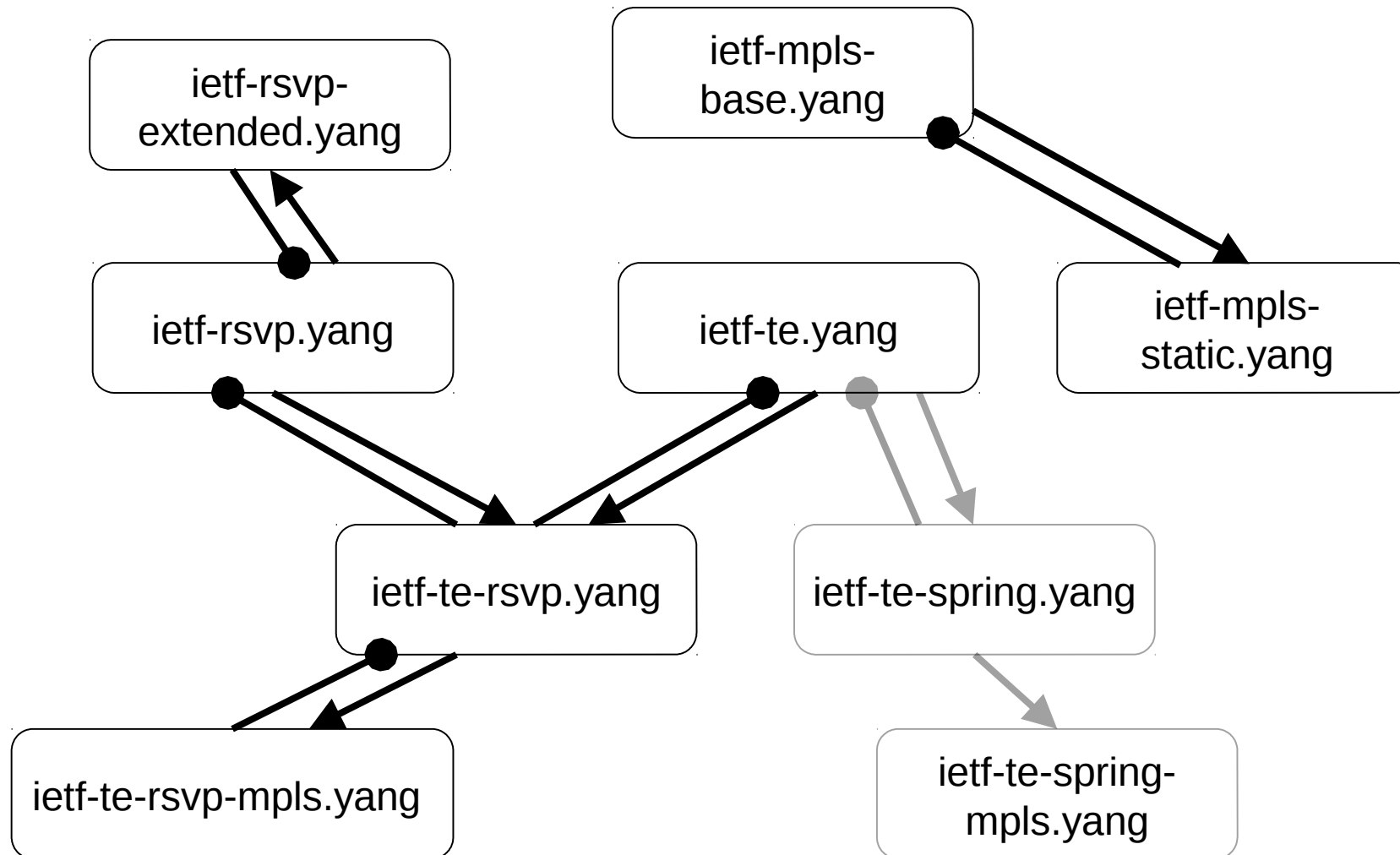
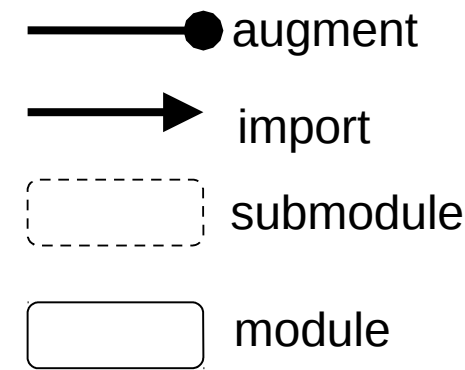
1. augment IETF routing interface list
 - enables RSVP for layer-3 interfaces of that specific routing instance
 - **Issue**: RSVP-TE LSP may span interfaces residing in multiple routing instances
 - RSVP state may have to cross routing instance boundary
2. augment IETF interfaces list
 - RSVP augmentation visible on all types of interface
 - can limit augmentation on IP-enabled interfaces only (“when” check)
3. augment IETF MPLS interfaces list
 - applicable to MPLS technology
 - RSVP can be enabled on interfaces that have MPLS pre-enabled
4. create separate RSVP interface list
 - RSVP model has its own list of interfaces (referencing IETF interface list)

Open Issue # 2

Enabling MPLS on MPLS RSVP-TE interface

- Explicit 2-step approach:
 - operator enables MPLS on interface (using ietf-mpls-base)
 - operator enables MPLS RSVP-TE (e.g. using ietf-rsvp-psc.yang)
 - add “must” check to ensure MPLS is previously enabled on interface
 - applicable to MPLS LDP too
- Implicit 1-step approach:
 - Implicitly enable MPLS whenever MPLS RSVP-TE and/or MPLS LDP is enabled on interface

TE/RSVP and MPLS YANG Modules Structure and Relationship



Next Steps

- Converge on the open issues
- Complete outstanding rpcs/notifications
- Define Segment Routing TE augmentation to TE generic model

Thank You