YANG Data Models for TE and RSVP
draft-ietf-teas-yang-te-09
draft-ietf-teas-yang-rsvp-08
draft-ietf-teas-yang-rsvp-te-02
code @ https://github.com/ietf-mpls-yang/te

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Agenda

• Updates to I-Ds (since IETF-99)

• Open issues

• Next steps
I-D: draft-ietf-teas-yang-te-09
Summary of Changes

• Credits:
  – Thanks to Sergio Belotti, Italo Busi, Carlo Perocchio, Francesco Lazzeri et. al for their feedback and review comments
  – Thanks to multi-vendor team (especially Aihua Guo) for the continued discussions during regular meetings

• High-level model changes:
  – NMDA compliance changes
  – Bidirectional LSP modeling
  – Protection and restoration changes
  – Per technology bandwidth
Update # 1
NMDA compliance changes (example)
Update # 1
NMDA compliance changes

• Removal of read-write “config” container and keep the leaves directly under the feature container
• Removal of reflected configuration leafs under the read-only “state” container
• Keep read-only “state” container to contain protocol and system generated state
Update # 2

TE tunnel bidirectional properties

- reverse primary path
  - child of (forward) primary path
- reverse secondary path
  - children of reverse primary path
- For co-routed bidirectional LSPs, reverse primary path can be auto-created to reflect the forward path
Update #3

Tunnel Protection and Restoration

- Protection:
  - Enabled explicitly by knob
  - protection-type:
    - hold-off and WTR configured on per tunnel and per path

- Restoration
  - Enabled explicitly by knob
  - restoration schemes
  - timers configured per tunnel or per path
Update # 3

LSP Protection and Restoration (State)

• Protection:
  – lockout-of-normal: normal traffic not allowed to be carried over this LSP
  – freeze: traffic is pinned to this LSP and not allowed to make any switching action (e.g. revert from secondary LSP to primary LSP)
  – lsp-protection-role: working or protecting
  – lsp-protection-state: The state of the APS state machine controlling which tunnels is using the resources of the protecting LSP
  – shared-resources-tunnels:
    • List of tunnels that share the resources locked on this tunnel secondary LSP path
Update # 3

LSP Protection and Restoration (Actions)

module: ietf-te
  +rw te!
  +rw globals

<snip>

  +rw protection-external-commands
  |     +w input
  |     +w protection-external-command? identityref
  |     +w tunnel-using-lsp-resources? te:tunnel-ref

identity action-lockout-of-protection {
  base protection-external-commands;
  description
  "A temporary configuration action initiated by an operator
  command to ensure that the protection transport entity is
  temporarily not available to transport a traffic signal
  (either normal or extra traffic);"
  reference
  "ITU-T G.808, RFC 4427;"
}

identity action-forced-switch {
  base protection-external-commands;
  description
  "A switch action initiated by an operator command to switch
  the extra traffic signal, the normal traffic signal, or the
  null signal to the protection transport entity, unless an
  equal or higher priority switch command is in effect;"
}

identity action-manual-switch {
  base protection-external-commands;
  description
  "A switch action initiated by an operator command to switch
  the extra traffic signal, the normal traffic signal, or the
  null signal to the protection transport entity, unless
  a fault condition exists on other transport entities or an
  equal or higher priority switch command is in effect;"
}

identity action-exercise {
  base protection-external-commands;
  description
  "An action to start testing if the APS communication is
  operating correctly. It is lower priority than any other
  state or command;"
}

identity clear {
  base protection-external-commands;
  description
  "An action that clears the active near-end lockout of
  protection, forced switch, manual switch, WTR state,
  or exercise command;"
}
Update # 4
Per Technology Bandwidth

• Per technology type bandwidth
  – covers specific technologies like PSC, OTN, LSC, and
  – generic TE bandwidth
I-D: draft-ietf-teas-yang-rsvp-08
I-D: draft-ietf-teas-yang-rsvp-te-02
Summary of Changes

• NMDA compliance changes
• Changes mostly editorial and to align with target augmentation path in TE model
Next Steps

• RSVP base/extended in I-D is stable and ready for WGLC

• Request further review and comments
Thank You
TE/RSVP and MPLS YANG Modules
Structure and Relationship

- ietf-te.yang
- ietf-rsvp.yang
- ietf-te-device.yang
- ietf-te-rsvp.yang
- ietf-te-rsvp-mpls.yang
- ietf-te-sr-mpls.yang
- ietf-mpls-base.yang
- ietf-otn-base.yang
- ietf-rsvp-ext.yang

Diagram:

- augment
- To be defined
- Defined
- YANG module