Updated IETF TE Types

TEAS WG, IETF 114, Philadelphia + Virtual

draft-ietf-teas-rfc8776-update-00

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Background

• Need to support tiny updates on the ietf-te-types YANG module already published in RFC8776
  – Just defining a new typedef and a new grouping
• Issues with RFC8776-bis approach discussed at IETF 113
  – Individual I-D updated as suggested and WG adoption requested
• Adopted as WG document on July 11, with comments
  – Concerns on the need for a common encoding-and-switching-type grouping
  – Different opinions about the approach/process to be taken
    • Update RFC8776 (current approach)
    • Obsolete RFC8776 (RFC8776-bis)
    • Define a new YANG module
• Post-WG adoption comments
  – Move identities from ietf-te to ietf-te-types as part of WG LC for ietf-te
  – Comments from Chaode on TE topology identifiers
  – Comments from IANA early review
Encoding and Switching Type

• Issue
  – Who says that the switching or encoding definitions are going to stay the same for a wide variety of TEAS modules for many years to come?

• Reply
  – Path Computation RPC needs to be aligned with TE Tunnel model
    • Extensive discussion on TEAS WG mailing list about this requirement
    • Definition for encoding and switching type initially copied from ietf-te and immediately went out of synch
  – The grouping is already defined in ietf-te module and used by ietf-te-path-computation: the proposal is just to move it to ietf-te-types
    • Keeping the grouping in ietf-te module might require implementing the ietf-te module even when only this grouping is needed
    • Moving the grouping to ietf-te-type would not mandate other YANG models to use it, if not needed
    • The real issue is whether moving the grouping to ietf-te-types would delay the progress of ietf-te module (procedural and not technical issue)
Comments from Chaode

• Different identifiers for networks, nodes, links and termination points in network topology and TE topology models
  – For example:
    • node-id is an URI
    • te-node-id is a dotted-quad
  – Proposal: update the TE types to be an union with URI; for example:
    • te-node-id is an union between dotted-quad and URI

• Concerns with tunnel termination point (TTP) identifier defined as binary
  – Proposal: update the TTP identifier to be an union between binary and URI

• These proposals are broadening the scope of this update to ietf-te-types
Procedural approach (1)

• Options and issues described in the Introduction of v01 and removed in the v02 (polled for WG adoption)
  – Bring that text back in an Appendix, if the RFC8776 update approach is adopted (comment from Dhruv)

• Key question: do we need a lightweight approach to updating published YANG models?
  – The content is quite mature since moved from mature WG documents (some of which are ready for WG LC)
  – Risk to delay the progress of other WG documents otherwise
Procedural approach (2)

• Issues with the RFC8776-bis approach
  – RFC8776 contains another YANG module that do not need to be updated: how to deal with it?
    • Feedbacks from IETF 113: see RFC9127-bis
  – The review of text and YANG code which has been already published in RFC8776 would delay the approval process of the document:
    • Is it possible to limit the scope of the review to speed-up the process?

• Issues with defining a new YANG module
  – Proliferation of tiny YANG modules: ietf-te-types-delta, ietf-te-types-delta-2, ...
  – Difficult (and impossible in case of identities) to merge the YANG modules into a new revision of ietf-te-types at later stage
  – If RFC8876 were not published, these definitions would have been added to ietf-te-types straight
Procedural approach (3)

• Issues with the current approach
  – Highly unclear where the master of ietf-te-types lives and how "updates" should be interpreted
    • The YANG model is a complete revision (no other option is possible) and the latest revision statement points to RFCXXXX
    • The usual practice could be used to indicate that RFCXXXX is updating RFC8776 and how "updates" should be interpreted (i.e., what is updated and how)
    • No need to keep the notes to the RFC editor within the YANG module (comment from Dhruv) but, instead, add an appendix with the YANG model diffs and keep it in the published version (comment from Rakesh)
Next Step

• Address the technical and procedural comments
• Align dependent WG I-Ds
  – draft-ietf-teas-yang-te
  – draft-ietf-teas-yang-path-computation
  – draft-ietf-teas-yang-l3-te-topo
• Try to go in WG LC as quickly as possible not to delay progress of dependent WG I-Ds
  – Pending agreement on the procedural approach
Backup
Proposed Approach

RFC 8776
- ietf-te-types (v1.0.0)
- ietf-te-packet-types (v1.0.0)

This I-D
- ietf-te-types (v1.1.0-draft)

Fast standardization: not to delay progress

Imports:
- ietf-l3-te-topology (v1.0.0-draft)
- ietf-te (v1.0.0-draft)
- ietf-te-path-computation (v1.0.0-draft)
Keep current status

Diagram:
- RFC 8776
  - ietf-te-types (v1.0.0)
  - ietf-te-packet-types (v1.0.0)
- ietf-l3-te-topology (v1.0.0-draft)
- ietf-te (v1.0.0-draft)
- ietf-te-path-computation (v1.0.0-draft)
Issues with current status

• Defeating the value of common types modules
  – Trying to complete the common types would delay the process for work which is mature
  – Publishing common types step-by-step would cause spreading the additional common types in multiple modules just to avoid the process of updating the old version of common types
New YANG module

- RFC 8776
  - ietf-te-types (v1.0.0)
  - ietf-te-packet-types (v1.0.0)

- New I-D
  - ietf-te-types-ext (v1.0.0-draft)

- ietf-l3-te-topology (v1.0.0-draft)
- ietf-te (v1.0.0-draft)
- ietf-te-path-computation (v1.0.0-draft)
Issues with new YANG module

• Defeating the values of YANG module revisions
  – Proliferation of YANG modules providing few common types
    • ietf-te-types
    • ietf-te-types-ext
    • ietf-te-types-ext-ext
    • ...


RFC 8776-bis

RFC 8776

ietf-te-types (v1.0.0)

ietf-te-packet-types (v1.0.0)

imports

RFC 8776-bis

ietf-te-types (v1.1.0-draft)

imports

ietf-l3-te-topology (v1.0.0-draft)

ietf-te (v1.0.0-draft)

ietf-te-path-computation (v1.0.0-draft)
Issues with RFC 8776-bis

• How to ensure fast-track?
  – Difficult to limit the scope of review/comments
  – Difficult to mark the changes
  – Need to develop a long document for tiny updates

• What to do with ietf-te-packet-types YANG module?
  – No changes are needed
  – RFC 8776 is obsoloted so needs to be republished?
  – The reference to RFC 8776 would break?
  – A new YANG revision that just updates the reference?