Support of Versioning in YANG Notifications Subscription

draft-ietf-netconf-yang-notifications-versioning-03

Adds semantics to the subscription process and notification message to enable automated data mesh integration
Extend Datastore Selection and Subscription State Change Notifications with module name, revision and revision-label

- Network operators need to control semantics in its data processing pipeline. That includes YANG push.
- This is today only possible during YANG push subscription but not when nodes are being upgraded or messages are being published for configured subscription.

  draft-ietf-netconf-yang-notifications-versioning extends the YANG push subscription and publishing mechanism defined in RFC8641:
  - By adding the ability to subscribe to a specific revision or latest-compatible-semversion of one or more yang modules.
  - By extending the YANG push Subscription State Change Notifications Message so that the YANG push receiver learns beside the xpath and the sub-tree filter also the yang module name, revision and revision-label.
Versioning in YANG Notifications Subscription
Status and Next Steps

• Feedback from Qiufang and Rob at IETF 117
  • Extend the Datastore Selection section now describes error handling. Error identities with examples for revision-unsupported, revision-label-unsupported and incompatible-revision-and-revision-label added.
  • Operational Section describes YANG package context; It offers a complementary information by describing how one specific YANG module revision is part of a set of YANG modules.

• All addressed in -03 revision
  -> Requesting feedback and comments.

• YANG @ Kafka side meeting today
  November 7th at 15:30 in room Palmovka 1/2.
  -> Updates on semantic YANG Push message validation outcome from hackathon activity

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Backup
When Big Data and Network becomes one
Marrying two messaging protocols

- **Data Mesh** is a big data architecture where different domains can exchange data with a **bounded context and SLO's** are defined in Data Products. **Same principle as in networks.**

- **Semantics** are needed to describe the data. A `gauge32` is not the same as `counter32`. Values can increase or decrease. Needs monotonic increasing counter normalization or not.

- **Versioning** is needed to not only understand that the semantic has changed, but also wherever the new semantic is backward compatible or not. **Preventing to break the data processing pipeline.**

- Hostname, publisher ID, sequence numbers and observation timestamping are needed to **measure loss and delay for SLO's.**

- **YANG push as defined in RFC8641 is missing** hostname, sequence numbers, observation timestamping and versioning. `draft-ahuang-netconf-notif-yang`, `draft-tgraf-netconf-notif-sequencing`, `draft-tgraf-netconf-yang-push-observation-time` and `draft-ietf-netconf-yang-notifications-versioning` addresses this.