YANG model for NETCONF Event Notifications

draft-ahuang-netconf-notif-yang-05

The definition of this YANG model allows the encoding of NETCONF Event Notifications in YANG compatible encodings such as JSON and CBOR

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YANG model for NETCONF Event Notifications

Entire YANG-Push messages is modeled in YANG

```
module: ietf-notification

  structure notification:
    +-- eventTime     yang:date-and-time
```

```
{
      "ietf-notification:notification": {
          "eventTime": "2023-02-10T08:00:11.22Z",
          "ietf-yang-push:push-update": {
              "id": 1011,
              "datastore-contents": {
                  "ietf-interfaces:interfaces": [
                      {
                          "interface": {
                              "name": "eth0",
                              "oper-status": "up"
                          }
                      }
                  ]
              }
          }
      }
  }
```

- **YANG model for NETCONF Event Notifications,** draft-ahuang-netconf-notif-yang, updates RFC 5277 by defining the schema as a YANG module.
- Enables YANG-push to define YANG semantics for the entire YANG-push message to support other encodings than XML such as YANG-JSON RFC 7951 or YANG-CBOR RFC 9264.

```
notification push-update {
  description
    "This notification contains a push update that in turn contains data
     subscribed to via a subscription.  In the case of a periodic subscription,
     this notification is sent for periodic updates. It can also be used for
     synchronization updates of an on-change subscription.  This notification
     shall only be sent to receivers of a subscription.  It does not constitute
     a general-purpose notification that would be subscribable as part of the
     NETCONF event stream by any receiver.";
  leaf id {
    type sn:subscription-id;
    description
      "This references the subscription that drove the
       notification to be sent.";
  }
```

Notification groupings deafined in ietf-yang-push.yang of RFC 8641

YANG model for NETCONF Event Notifications

draft-ahuang-netconf-notif-yang-05 - Status and Next Steps

Current Status

- Push back from Mohamed Boucadair on -04 working group adoption call.
- -05 addresses the following points:
  - Document updates besides RFC 5277 now also RFC 8639, RFC 7951 and RFC 9254 since RFC 8639 applies the notification statement in YANG-Push and RFC 7951 and RFC 9254 misses the description how to encode the notification statement in JSON and CBOR.
  - Describes the relationship to RFC 5277, RFC 8639, RFC 7951 and RFC 9254 and excludes scoping for Restconf since Section 6 of RFC 8040 describes encoding in JSON.
  - Editorial changes such as examples are moved from the appendix to section 4.

Next Steps

➢ **Requesting feedback from the netconf working group and YANG-Push implementers.**

YANG-Push Implementation Status

IETF 120

	6WIND VSR	Huawei VRP	Cisco IOS XR
RFC 8639 YANG-Push Subscription	x	x	
RFC 8641 YANG-Push Notification	x	x	x
draft-ietf-netconf-udp-notif	x	x	
draft-ietf-netconf-distributed-notif	x	x	
draft-ietf-netconf-yang-notifications-versioning	x	x	
draft-tgraf-netconf-notif-sequencing	x		
draft-tgraf-netconf-yang-push-observation-time	x		
RFC 7895 YANG Module Library		x	
RFC 8525 YANG Library	x		x
draft-lincla-netconf-yang-library-augmentation			

Address YANG Specification and Integration Gaps

Aiming for an automated data processing pipeline

YANG Specifications Gaps:

- YANG model for NETCONF Event Notifications
  draft-ahuang-netconf-notif-yang
- Validating anydata in YANG Library context
  draft-aelhassany-anydata-validation

YANG Integration Gaps:

- Support of Network Observation Timestamping in YANG Notifications
  draft-tgraf-netconf-yang-push-observation-time
- Support of Hostname and Sequencing in YANG Notifications
  draft-tgraf-netconf-notif-sequencing
- Support of Versioning in YANG Notifications Subscription
  draft-ietf-netconf-yang-notifications-versioning
- Augmented-by Addition into the IETF-YANG-Library
  draft-lincla-netconf-yang-library-augmentation

« Addressing those gaps are a prerequisite to enable an automated data processing chain as described in draft-ietf-nmop-yang-message-broker-integration.

Please consider to attend IETF 120 NMOP working group session on Friday 13:00 – 15:00 or go onto the mailing list and contribute to the discussion. »