

Support of **Network Observation Timestamping** in YANG Notifications

draft-tgraf-netconf-yang-push-observation-time-02

Adds observation timestamp and point-in-time objects to describe when metrics were observed

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Extend YANG-Push Notifications with **Observation Timestamping**

For push-update and push-change-update

```
module: ietf-yp-observation-time

augment /yp:push-update:
  +--ro observation-time?   yang:date-and-time
  +--ro point-in-time?     enumeration
augment /yp:push-change-update:
  +--ro observation-time?   yang:date-and-time
  +--ro point-in-time?     enumeration
augment /sysc:system-capabilities/notc:subscription-capabilities:
  +--ro yang-push-observation-supported?
      inotifyseq:notification-support
      {yang-push-observation-timestamp}?

{
  "ietf-notification:notification": {
    "eventTime": "2023-03-25T08:30:11.22Z",
    "ietf-notification-sequencing:sysName": "example-router",
    "ietf-notification-sequencing:sequenceNumber": 1,
    "ietf-yang-push:push-update": {
      "id": 6666,
      "ietf-yp-observation-time:observation-time": "2023-02-04T16:30:09.44Z",
      "ietf-yp-observation-time:point-in-time": "current-accounting",
      "datastore-contents": {
        "ietf-interfaces:interfaces": [
          {
            "interface": {
              "name": "eth0",
              "type": "iana-if-type:ethernetCsmacd",
              "oper-status": "up",
              "mtu": 1500
            }
          }
        ]
      }
    }
  }
}
```

- **To correlate network data** among different Network Telemetry planes as described in Section 3.1 of [RFC 9232](#) or among different YANG push subscription types defined in Section 3.1 of [RFC 8641](#), **network observation timestamping is needed to understand the timely relationship among these different planes and YANG push subscription types.**
- [draft-tgraf-netconf-yang-push-observation-time](#) extends the YANG push streaming update notification defined in [RFC 8641](#) with:
 - **observation-time:** Describes the measurement observation time for the "push-update" notification in a "periodical" and for the "push-change-update" notification in a "on-change" subscription.
 - **point-in-time:** Describes at which point in time the value of observation-time was observed.

Extend YANG-Push Notifications with **Observation Timestamping**

draft-tgraf-netconf-yang-push-observation-time-02 - Status and Next Steps

Current Status

- Changed semantics:
 - One observation-time timestamp describing when the metric was observed eases end to end integration into streaming processor and time series database.
 - Point-in-time describes at which point in time the value of observation-time was observed.
 - For "periodical" subscription, the "current-accounting" describes the **point in time where the metrics were polled and observed**.
 - For "on-change" subscriptions, the value of point-in-time is **"state-changed", when the state change was observed in real-time**.
 - For "on-change" subscriptions with the "sync on start option", the value of point-in-time **for the initial state is "initial-state"**.
- YANG-Push observation timestamping capability is now discoverable by extending YANG-related system capabilities defined in [RFC 9196](#).
- Minor editorial changes and operational considerations and implementation status section added.

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-linclanetconf-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. »