

Extensible YANG Model for Network Telemetry Notifications

draft-ietf-nmop-message-broker-telemetry-message

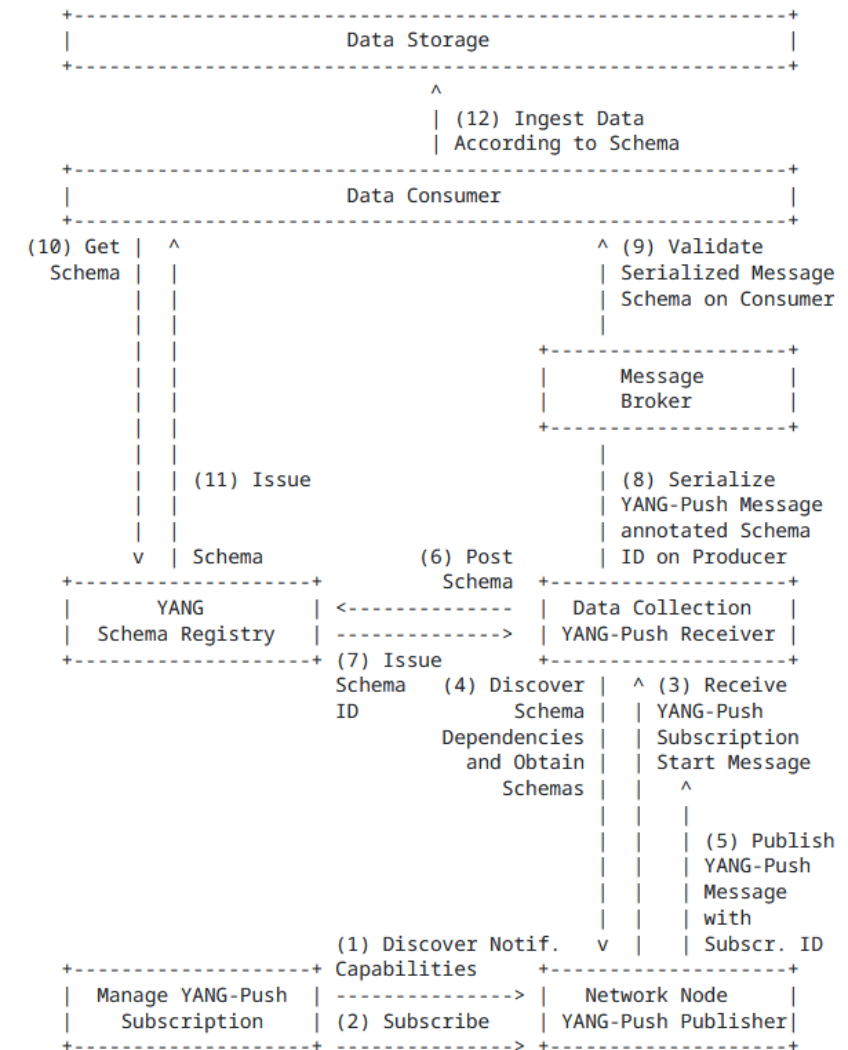
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YANG-Push to Message Broker Architecture

draft-ietf-nmop-message-broker-telemetry-message

- The integration architecture is defined in draft-ietf-nmop-yang-message-broker-integration
- The message produced by the **Data Collection YANG-Push receiver** towards the **Message Broker** is assumed to be the same as the one received from the router.
- In production networks, operators often enrich collected data with additional information such as collection time and the YANG-Push subscription path.



Feedback from NMOP

- Addressed all feedback from IETF 122 and on the NMOP mailing list.
 - Clear naming for leaves and containers.
 - Add feature flags for optional metadata: network-node-manifest and data-collection-manifest.
- Add information about implementation status and example produced messages.

ietf-telemetry-message YANG Schema Tree

draft-ietf-nmop-message-broker-telemetry-message

1. Optional network node and collector data manifest according to draft-ietf-opsawg-collected-data-manifest
2. Telemetry Protocol Metadata
3. Optional network operator metadata
4. YANG-Push message received from the router

```
module: ietf-telemetry-message
  +--ro message
    +---ro network-node-manifest {network-node-manifest}?
      | +--ro name? string
      | +--ro vendor? string
      | +--ro vendor-pen? uint32
      | +--ro software-version? string
      | +--ro software-flavor? string
      | +--ro os-version? string
      | +--ro os-type? string
    +---ro telemetry-message-metadata
      | +--ro node-export-timestamp? yang:date-and-time
      | +--ro collection-timestamp yang:date-and-time
      | +--ro session-protocol
      | | telemetry-session-protocol-type
      | +--ro export-address inet:host
      | +--ro export-port? inet:port-number
      | +--ro collection-address? inet:host
      | +--ro collection-port? inet:port-number
    +---ro data-collection-manifest {data-collection-manifest}?
      | +--ro name? string
      | +--ro vendor? string
      | +--ro vendor-pen? uint32
      | +--ro software-version? string
      | +--ro software-flavor? string
      | +--ro os-version? string
      | +--ro os-type? string
    +---ro network-operator-metadata
      | +--ro labels* [name]
      | | +--ro name string
      | | +--ro (value)
      | | +---:(string-choice)
      | | | +--ro (string-choice)?
      | | | +---:(string-value)
      | | | +--ro string-value? string
      | | +---:(anydata-choice)
      | | +--ro (anydata-choice)?
      | | +---:(anydata-values)
      | | +--ro anydata-values? <anydata>
    +---ro payload? <anydata>
```

1

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ietf-telemetry-message YANG Schema Tree

draft-ietf-nmop-message-broker-telemetry-message

1. Extends ietf-telemetry-message ietf-telemetry-message with YANG-Push subscription with information obtained from the YANG-Push subscription-started notification.
2. Previous implementation didn't specify the correct filters (thanks Rob).
3. Unlike YANG-Push, we use one spec for datastore and notifications with a target leaf to specify the use of the filter.
4. Added additional metadata that are useful: transport, encoding, purpose, module-version, etc..

```
module: ietf-yang-push-telemetry-message

augment /tm:message/tm:telemetry-message-metadata:
  +--ro yang-push-subscription
    +--ro id?                               sn:subscription-id
    +--ro (filter-spec)?
      | +--:(subtree-filter)
      | | +--ro subtree-filter?             <anydata>
      | +--:(xpath-filter)
      | | +--ro xpath-filter?               yang:xpath1.0
    +--ro (target)?
      | +--:(stream)
      | | +--ro stream?                     string
      | +--:(datastore)
      | | +--ro datastore?                  identityref
    +--ro transport?                        sn:transport
    +--ro encoding?                         sn:encoding
    +--ro purpose?                          string
    +--ro (update-trigger)?
      | +--:(periodic)
      | | +--ro periodic!
      | | | +--ro period?                    yp:centiseconds
      | | | +--ro anchor-time?               yang:date-and-time
      | +--:(on-change)
      | | +--ro on-change!
      | | | +--ro dampening-period?          yp:centiseconds
      | | | +--ro sync-on-start?             boolean
    +--ro module-version* [module-name]
      | +--ro module-name                    yang:yang-identifier
      | +--ro revision?                      rev:revision-date
      | +--ro revision-label?                ysver:version
    +--ro yang-library-content-id?          string
```

Next steps

- Validate consuming telemetry message with Blue Planet Unified Assurance and Analytics (UAA) and anomaly detection systems.



♥ Yang ♥♥♥
Kafka ♥