UDP based Publication Channel for Streaming Telemetry

draft-ietf-netconf-udp-pub-channel-04

Guangying Zheng
Tianran Zhou
Alexander Clemm
Draft Dependencies

Multiple Stream Originators

YANG Push

UDP based Publication Channel

Subscription over NETCONF

Distributed extension
Design Goal

• UDP based transport for carrier routers
  – Data collector will suffer a lot of TCP connections from many line cards equipped on different devices.
  – As no connection state needs to be maintained, UDP encapsulation can be easily implemented by hardware which will further improve the performance.
  – Because of the lightweight UDP encapsulation, higher frequency and better transit performance can be achieved, which is important for streaming telemetry.

• Support multiple encodings (including Binary)
• Enable options for extensibility
• Facilitate distributed data export
Compare with Existing Transports

• IPFIX (RFC 7011) is designed for flow information export
  – Do not support multiple other encodings, e.g., xml, cbor, gpb.
  – No YANG to IPFIX encoding
  – No mechanism for block message fragmentation
  – No extension mechanism

• CoAP (RFC 7252) is an option for IoT
  – Designed for resource constrained device and network, not for carrier routers.
  – The Message ID in the fixed header is 16 bits. It will result in a frequent wind back for large amount of data, when used on carrier routers.
Manage UPC

• Augment the ietf-subscribed-notifications model
  – Now only configured subscription is implemented.

module: ietf-upc-subscribed-notifications
    augment /sn:subscriptions/sn:subscription/sn:receivers/sn:receiver:
      +-rw address? inet:ip-address
      +-rw port? inet:port-number
Next Step

- How to manage the dynamic subscription?
  - Augment the establish-subscription RPC with transport and receiver information.
- Update the subscription YANG model
  - Add the dynamic subscription support
  - Add the “encoding” attribute to the “receiver”
- Align the document name with other transport document.
- Anything else?
Thank you