UDP based Publication Channel for Streaming Telemetry
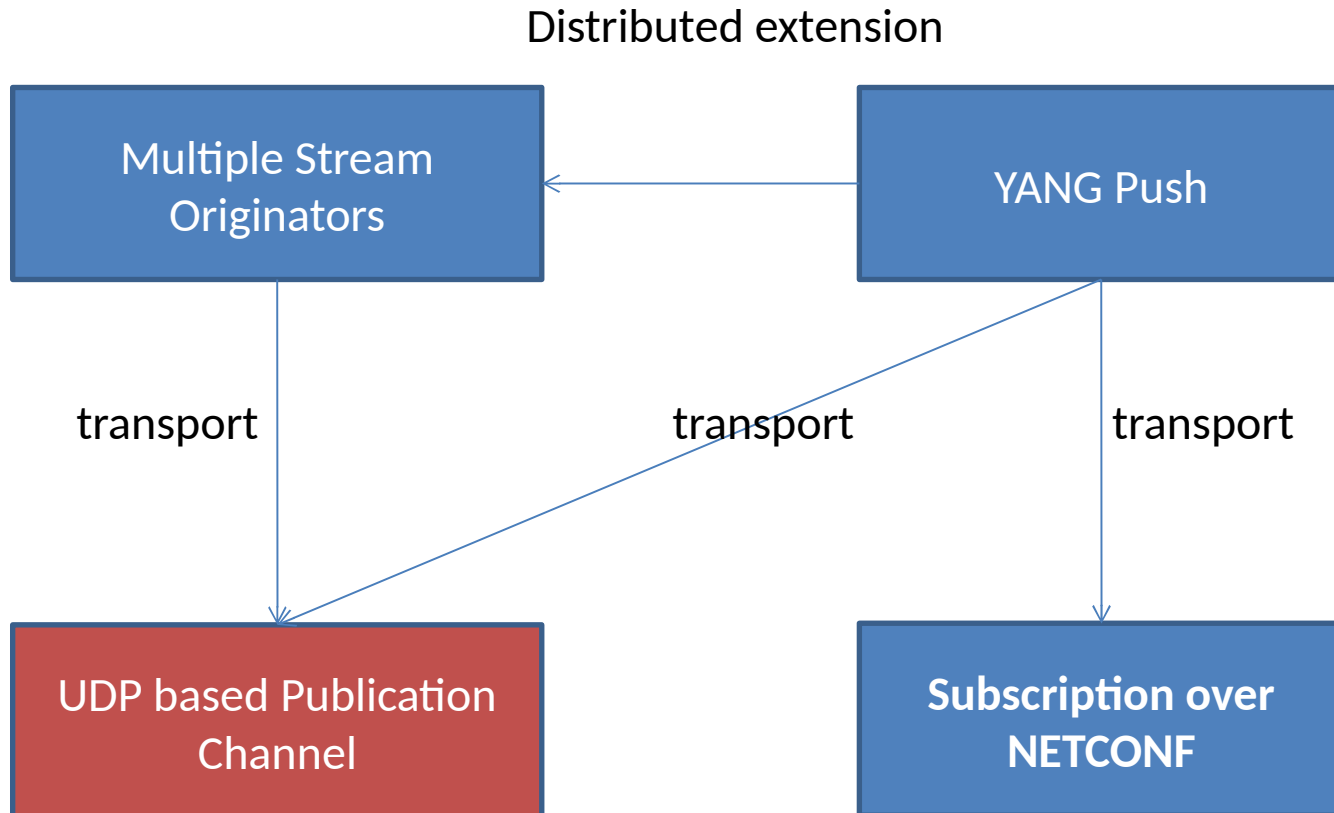
draft-ietf-netconf-udp-pub-channel-04

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Draft Dependencies

Distributed extension

Multiple Stream Originators

YANG Push

transport

transport

transport

UDP based Publication Channel

Subscription over NETCONF

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