UDP-based Transport for Configured Subscriptions

draft-ietf-netconf-udp-notif-11

UDP-based protocol for YANG notifications
to collect data from networking devices

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26. October 2023

UDP-based Transport for Configured Subscriptions

Discussions from the ML

- Thanks Jurgen Schonwalder, Andy Bierman, Hannes Tschofenig, Benoit Claise and Kent Watsen for the discussions on the ML
- ISSUE 1: There are concerns about packet loss within the UDP transport
- ISSUE 2: Why segmentation cannot be implemented at lower level (IP level)?
- ISSUE 3: Header version number has not pointer to the IANA registry
- ISSUE 4: Other editorial feedback

UDP-based Transport for Configured Subscriptions

ISSUE 1: There are concerns about packet loss within the UDP transport

- Concerns about packet loss using UDP transport

  → UDP-notif is to be used with small messages; for large messages, HTTPS-notif should be used

  → There is a statement in Applicability Section stating that is to be used when the packet loss is not a concern.

  → “on-change” notifications where the message cannot be lost, reliable transport MUST be used.

Section 5. Applicability

The main use case of the proposed mechanism is the collection of statistical metrics for accounting purposes, where potential loss is not a concern, but should however be reported (such as IPFIX Flow Records exported with UDP [RFC7011]). Such metrics are typically exported in a periodical subscription as described in Section 3.1 of [RFC8641].

UDP-based Transport for Configured Subscriptions

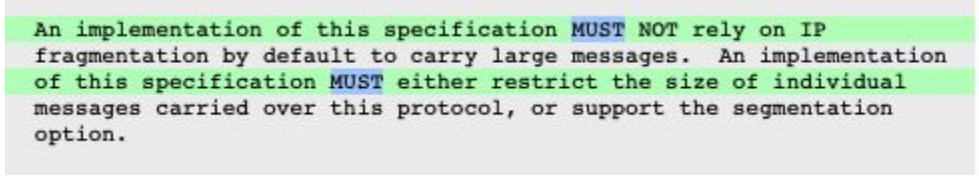
ISSUE 2: Why segmentation cannot be implemented at lower level?

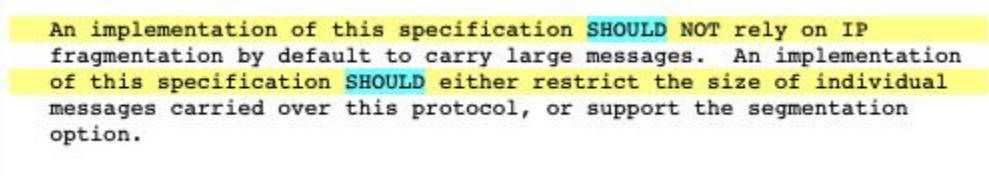
- Segmentation option is similar to IP fragmentation, why there is a need to have this approach at UDP-notif level?

  → RFC8085 (UDP Usage Guidelines) states that “an UDP application SHOULD NOT send UDP datagrams that result in IP packets that exceeds the MTU”

  → Performance tests from Hackathon 110: big drop of performance when IP fragmentation happens in Linux

  → We have completely aligned the draft with RFC8085 (UDP Usage Guidelines)





UDP-based Transport for Configured Subscriptions

ISSUE 3: Header version number has not pointer to the IANA registry

- Ver (protocol header) definition and IANA registry are not aligned

```
The Message Header contains the following field:

*  Ver represents the PDU (Protocol Data Unit) encoding version.  The
   current version value is 1.
```

```
The Message Header contains the following field:

*  Ver indicates the UDP-notif protocol header version.  The values
   are allocated by the IANA registry "UDP-notif header version".
   The current header version number is 1.
```

UDP-based Transport for Configured Subscriptions

ISSUE 4: Editorial changes based on feedback from the ML

- Message length definition clarified
  - Message length is the UDP datagram length and not the message length when it is segmented

> * Message Length is the total length of the UDP-notif message within one UDP datagram, measured in octets, including the message header. When the Notification Message is segmented using the Segmentation Options defined in Section 4.1 the Message Length is the total length of the current, segmented UDP-notif message, not the length of the entire Notification message.

- "Observation Domain ID" has been changed to "Message Publisher ID"
  - Aligned with latest update in terminology section of *draft-ietf-netconf-distributed-notif-08*
- Editorial changes on DTLS section stating that we are not extending DTLS 1.3
  (feedback from Hannes Tschofenig)

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Next Steps

- Requesting feedback from the working group and suggest that the netconf chairs reach out to the Transport Area Directorate (https://datatracker.ietf.org/group/tsvdir/email/) next and request an early review before the document is moving forward to working group last call.
- Open points to be addressed next
  - Externalize generic YANG module for UDP clients

    → *draft-ahuang-netconf-udp-client-server-00* has been submitted