

# Export of GTP-U Information in IPFIX

draft-ietf-opsawg-ipfix-gtpu-00

Enabling insights in GTP forwarding plane by adding GTP-U dimensions

daniel.voyer@bell.ca  
sriragop@cisco.com  
thomas.graf@swisscom.com  
benoit.claise@huawei.com  
vyasraj@juniper.net  
23 Oct 2024

# GTP-U @ IPFIX

Draft Status since last review @ IETF119

## Highlights since IETF119

- Draft is adopted by OPSAWG
- Many thanks Paul Aitken for the IPFIX doctor review.
- IANA assigned IE numbers for GTP fields are available; IE 505-510.
- Added a new section named 'Operational Considerations'
- Shared with DMM WG

# GTP-U @ IPFIX

## IPFIX entities in context of the GTP-U (1)

3GPP TS 29.281 version 17.4.0 Release 17

19

ETSI TS 129 281 V17.4.0 (2022-10)

- **gtpuFlags IE-505**

8-bit flags field defined in the GTP-U which indicates the version of GTP-U protocol, protocol type and presence of extension header, sequence number and N-PDU number in the GTP-U header.

- **gtpuMsgType IE-506**

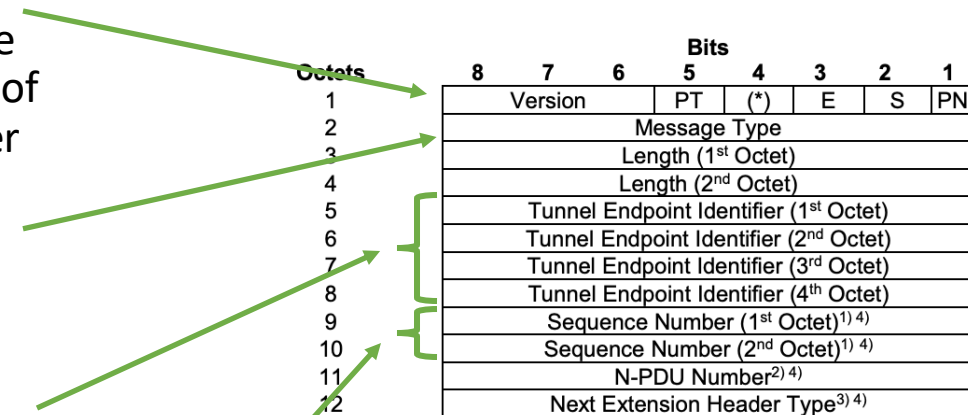
8-bit message type field defined in the GTP-U which indicates the type of GTP-U message.

- **gtpuTEid IE-507**

32-bit tunnel endpoint identifier field defined in GTP-U which unambiguously identifies a tunnel endpoint in the receiving GTP-U protocol entity for a given UDP/IP endpoint..

- **gtpuSequenceNum IE-508**

16-bit sequence number field defined in the GTP-U. This field is interpreted based on the corresponding flag value from gtpuFlags



NOTE 0: (\*) This bit is a spare bit. It shall be sent as '0'. The receiver shall not evaluate this bit.  
NOTE 1: 1) This field shall only be evaluated when indicated by the S flag set to 1.  
NOTE 2: 2) This field shall only be evaluated when indicated by the PN flag set to 1.  
NOTE 3: 3) This field shall only be evaluated when indicated by the E flag set to 1.  
NOTE 4: 4) This field shall be present if and only if any one or more of the S, PN and E flags are set.

Figure 5.1-1: Outline of the GTP-U Header

# GTP-U @ IPFIX

## IPFIX entities in context of the GTP-U (2)

- **gtpuQFI IE-509**

8-bit QoS flow identifier field defined in PDU Session Container extension header of GTP-U. This is defined in section 5.5.3 of PDU session spec [TS.38415]. This is used to determine the QoS flow and QoS profile which are associated with the received packet.

- **gtpuPduType IE-510**

8-bit PDU type field defined in PDU Session Container extension header of GTP-U. This is defined in section 5.5.3 of PDU session spec [TS.38415]. This field indicates the structure of the PDU session UP frame..

| Bits                       |     |                     |       |     |     |      |       | Number of Octets |
|----------------------------|-----|---------------------|-------|-----|-----|------|-------|------------------|
| 7                          | 6   | 5                   | 4     | 3   | 2   | 1    | 0     |                  |
| PDU Type (=0)              |     |                     |       | QMP | SNP | MSNP | Spare | 1                |
| PPP                        | RQI | QoS Flow Identifier |       |     |     |      |       | 1                |
| PPI                        |     |                     | Spare |     |     |      |       | 0 or 1           |
| DL Sending Time Stamp      |     |                     |       |     |     |      |       | 0 or 8           |
| DL QFI Sequence Number     |     |                     |       |     |     |      |       | 0 or 3           |
| DL MBS QFI Sequence Number |     |                     |       |     |     |      |       | 0 or 4           |
| Padding                    |     |                     |       |     |     |      |       | 0-3              |

# GTP-U @ IPFIX

## Next Steps

Request for comments and feedback

Thank you