Export of GTP-U Information in IPFIX
draft-voyersriram-opsawg-ipfix-gtpu-04

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

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GTP-U @ IPFIX

Data-Plane visibility is missing in GTP

- GTP is the protocol used by network mobile operators for cellular networks.
- Data-Plane visibility is missing in GTP-U and so unable to identify the transport performance of PDU Sessions with specific QoS within a slice or within a group of slices.
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IPFIX entities in context of the GTP-U (1)

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

- **gtpuTEid**
  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**
  16-bit sequence number field defined in the GTP-U. This field is interpreted based on the corresponding flag value from gtpuFlags
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IPFIX entities in context of the GTP-U (2)

- **gtpuQFI**
  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**
  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.
1. **gtpuFlags**
   - 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.

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

3. **gtpuTEid**
   - 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.

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

5. **gtpuQFI**
   - 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.

6. **gtpuPduType**
   - 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.
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Next Steps

• Data-Plane visibility is missing in GTP.
• Authors want to avoid private enterprise code points being used in GTP 5G deployments.
• During the IETF week, we will be requesting for IPFIX IANA allocation.
• This draft could progress to document the use cases and will be helpful for 3GPP references also.
• Call for adoption at OPSAWG at IETF 119.