

GQOE KPI Message Format

Proposal for KPI message format for gaming QoE over 5G networks

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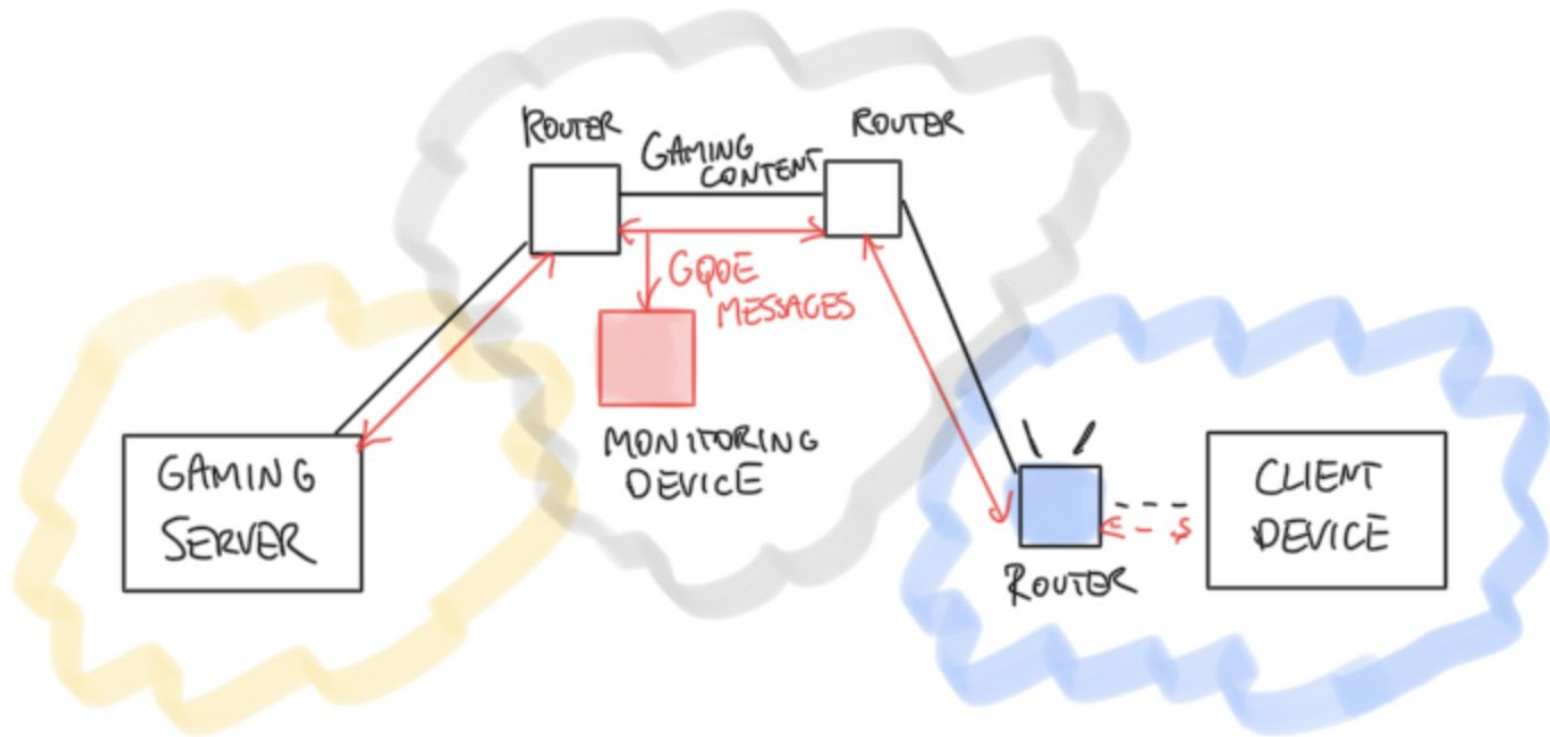
Purpose

Situation

- ISPs and network equipment operators want to keep Quality of Experience (QoE) of their customers high
- Especially for novel application areas like (VR) cloud gaming
- **Challenge: How to measure the quality of cloud gaming from the client or server side?**
- Application-specific information can be gathered in the software itself
- How do peers that simply route the traffic know the performance/quality?

→ We propose a UDP-based message for gaming-related KPIs

Architecture



Features

- Can be sent out-of-band over the wide-area network
- From the client to the server or vice-versa
- Specifically aimed at third party clients monitoring the service, but can also be used inside application

Based on the information from the messages, operators can make decisions on:

- Network shaping
- Packet prioritization

Data Format

- A JSON-like key-value object embedded in a UDP payload
- Specification draft including purpose and example results here:
[GQOE KPI Message Format — Draft](#)

Discussion

- QoE model:
 - G.1072 has been used for evaluation
 - Model not directly in scope, especially for VR gaming
 - Model has limited application range (≤ 60 fps, $\leq 1080p$, ...) and does not work well beyond these ranges
 - Better to collect all KPIs and calculate QoE “offline”
- Are there similar proposals, technologies already implemented?
- Are there any relevant fields missing?
- How likely are OTT operators to implement something like this?
 - Messages reveal (anonymized or at least pseudonymized) data from the user
 - Possibly more useful in a closed environment (e.g. operator’s own deployment)