Metaverse and Networking

Public Side Meeting at IETF 115

Hybrid, Nov 2022, IETF 115

Giuseppe Fioccola (Huawei)

Background

- ✓ 75% of global consumers say their everyday life depends on technology.
- ✓ Companies are developing the tech that will power 360-degree digital experiences.
- ✓ Gaming platforms are already being used to reimagine the entertainment industry

The immersive spaces powered by VR and AR can also be seen as a network problem:

Combined high bandwidth demands and high sensitivity to latency and dropped packets

- Adaptive Streaming helps but may not be enough
- Client-controlled HTTP streaming has limitations
- Intelligent QoE-centric approach can be complex to apply

Different technologies have been discussed in IETF recently dealing with media applications:

- ❑ **ICN** aims to put media contents as the central concept as opposed to the host
- ❑ **QuicR** uses delivery mechanisms similar to CDN and named objects to provide ultra low latency
- ❑ **Blockchain** ensures security, privacy, and trust among stakeholders
- ❑ **L4S** relies on ECN to indicate queue build-up in the radio access network to the application
- ❑ **APN** allows the network to provide fine-granularity and application group-level SLA
- ❑ **CAN** proposes to use dyncast to connect the distributed computing to the network
- ❑ **MSR6** extends Multicast to SRv6 to carry more real-time applications

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Agenda

1) **Introduction** - Giuseppe Fioccola, Huawei - 5min

2) **QuicR and standardization of the metaverse** - Cullen Jennings, Cisco - 10min

3) **ICN and networking for distributed AR/VR** - Dirk Kutscher, The Hong Kong University - 10min

4) **Low Latency, Low Loss, Scalable Throughput (L4S) Internet Service** - Koen De Schepper, Nokia - 10 min

5) **Network innovation and standardization for metaverse: CAN, MSR6, APN, Generalized IPv6** - Robin Li, Huawei - 10min

6) **Blockchain and metaverse** - Mike McBride, Futurewei - 10min

7) **Open Discussion** - 35min

Summary and Next Steps

The scope is to start the debate in IETF and try to understand what IETF can or cannot do on this topic

Create a mailing list to further discuss

Thank you