

Track Switching in Media over QUIC Transport

Zafer Gürel, Ali Begen

Problem

- Relays are unaware when two tracks are alternates (no access to the catalog)
- SUBSCRIBE message does not indicate that the client is switching to a new track for the same media content.
- Resulting in two parallel tracks being transmitted from the relay.


Solution

- The end subscriber hints to the last-mile relay about its intent to switch to a new track
- The relay cancels the streaming of the current track when the new track is ready and then sends SUBSCRIBE_OK before streaming the new track
- When the client receives the SUBSCRIBE_OK it can switch seamlessly

Solution 1 (altTrackGroup)

```
SUBSCRIBE Message {  
  Subscribe ID (i),  
  Track Alias (i),  
  Track Namespace (b),  
  Track Name (b),  
  Filter Type (i),  
  [StartGroup (i),  
   StartObject (i)],  
  [EndGroup (i),  
   EndObject (i)],  
  [altTrackGroup (i)],  
  Number of Parameters (i),  
  Subscribe Parameters (..) ...  
}
```

altTrackGroup is the identifier for a group of alternative tracks within the scope of a track namespace.



Solution 2 (Switch Track Alias)

```
SUBSCRIBE Message {  
  Subscribe ID (i),  
  Track Alias (i),  
  Track Namespace (b),  
  Track Name (b),  
  Filter Type (i),  
  [StartGroup (i),  
   StartObject (i)],  
  [EndGroup (i),  
   EndObject (i)],  
  [Switch Track Alias (i)],  
  Number of Parameters (i),  
  Subscribe Parameters (..) ...  
}
```

Switch Track Alias = Track Alias of the active subscription

