

Draft Charter for Media over QUIC

<https://github.com/moq-wg/moq-charter/blob/main/charter.md>

Media over QUIC (moq) will develop a simple low-latency media delivery solution for ingest and distribution. This solution may address use cases including live streaming, gaming, and media conferencing and will scale efficiently. The solution will be implementable in both browser and non-browser endpoints.

The work focuses on building protocol mechanisms for publication of media and means to identify and receive the media.

The media publication protocol will be a push protocol for sending media including audio, video, and timed metadata, such as closed captions and cue points. The common protocol for publishing media over ingest and distribution will support:

- one or more media formats,
- an interoperable way to request media and encodings,
- rate adaption strategies based on changing codec rates, changing chosen media encoding/qualities,
- cache friendly media mechanisms

The mechanism to name and receive media will enable:

- Requesting the server start sending media related to given point in the stream
- Selection of desired encoding (choosing language, bit rate, etc)

Media will be mapped onto underlying QUIC mechanisms (QUIC streams and/or QUIC datagrams) and can be used over raw QUIC or WebTransport.

The proposed solution will provide extensibility for supporting different media formats and shall specify a mandatory to implement media format to ensure interoperability. Support for multiple media types and media encodings shall be proposed. The solution will specify a simple method of authentication to access media, as well as a mechanism for carrying information enabling additional decryption of media payloads where required.

The working group will define MoQ so that the media publication protocol can leverage coordinating relays, caches, or replication points wherever applicable to improve the delivery performance. Media will be encrypted, possibly end-to-end encrypted for certain usecases. The keying mechanisms for media confidentiality is however outside the scope of this working group. Even when media is end-to-end encrypted, the relays can access metadata needed for caching (such as timestamp), making media forwarding decisions (such as drop or delay under congestion) and so on.

This working group will not propose changes to the underlying QUIC transport, but may propose

requirements for QUIC extensions to the QUIC WG. This working group will not define signaling mechanisms for discovery of relay or media producers or consumers.

This working group will coordinate with the QUIC and WebTransport working groups as needed. It will liaise with MPEG-DASH, DASH Industr Forum, and W3C WebTransport as appropriate.

Milestones

- WG adoption of Protocol Specification for Common Media Publication Protocol over QUIC
- WG adoption of Protocol Specification for Datagram Extension to Media Publication Protocol over QUIC
- WG adoption of Protocol Specification for Media Subscription Protocol over QUIC
- WG adoption of Architecture Specification for a Common Media Delivery Protocol over QUIC
- WG adoption of Usecases and Requirements document for Media Delivery over QUIC
- decision about whether to forward to IESG for publication to be made later, by WG consensus
- Forward Protocol Specification for Common Media Publication Protocol over QUIC draft to IESG
- Forward Protocol Specification for Datagram Extension to Media Publication Protocol over QUIC draft to IESG
- Forward Protocol Specification for Media Subscription Protocol over QUIC draft to IESG
- Forward Architecture Specification for a Common Media Delivery Protocol over QUIC draft to IESG