

MoQ BoF



Philadelphia
IETF 114

Note Well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
- If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.
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- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
- <https://www.ietf.org/privacy-policy/>(Privacy Policy)

Agenda

Administrivia

Charter Review

Discussion

BoF Questions

Time Permitting: technical presentations

BoF Questions (Preview)

Does the community think that the problem statement is clear, well-scoped, solvable, and useful to solve?

Can I see a show of hands of folk willing to review documents (or comment on the mailing list) if a working group is formed?

Does the community think that given any charter revisions discussed during the BOF (subject to review and finalization on the mailing list), a WG should be formed?

For anyone who does not think a WG should not be formed, do you wish to address the BoF explaining your concerns?

Charter

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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 support both web browsers 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:

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 use cases. 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 industry forum, and W3C WebTransport as appropriate.

Milestones--Adoption

- 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

Milestones---Completion

- 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

Discussion

- Remember to use MeetEcho queue
- Be brief and to the point
- If you are asking a question, please be clear who you expect to answer

BoF Questions

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Time Permitted? Technical presentations

Suhas Nandakumar:

QuicR Media delivery protocol over QUIC