MASQUE CONNECT-UDP

draft-ietf-masque-connect-udp

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The 5-second summary

CONNECT-UDP is like CONNECT, but for UDP!

When used in HTTP/3, it uses HTTP/3 Datagrams to avoid retransmissions
# Hackathon Interop Report


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GREAT SUCCESS!
According to HTTP Specs, methods are a fine extension point, we don't need a SETTING when defining a new method.

However, some HTTP/2 and HTTP/3 servers (which do not support CONNECT) do not send response until they've received a FIN on the request stream.

We have two options:

1) do not add a SETTING
   cleaner but clients might run into timeouts with broken servers

2) add a SETTING
   architecturally unpleasant, also causes CONNECT-UDP support to stick out
Issue #23 – Request target URI and scheme

The scheme does not convey any useful information here, and it is not needed for the protocol to work.

But, according to HTTP Semantics, all new methods MUST have a target URI.

There was an exception for CONNECT but it doesn't help with a new method.

Creating a new scheme would require significant work, for no clear benefit.

Proposal: let's just use "https"
Issue #37 – Negotiating flow IDs mid-stream

Currently flow IDs are negotiated in headers via the "Datagram-Flow-Id" header.

In order to avoid over-allocation, we could allocate on-demand mid-stream.

How do we convey this information?

Potential solution: HTTP/3 frames.

Downside: intermediaries now need to parse every single HTTP/3 frame.

Proposal: avoid complexity now and address this in a future extension.
Issue #38 – Replace chunk types with flow IDs

The stream encoding is currently different from the datagram encoding

That implies additional implementation work

However, the stream encoding doesn't have to handle demultiplexing

Also, the stream encoding needs to work when datagrams are not supported

Proposal: leave chunk types as they are now
Issues #14 and #42 – Migration

When the MASQUE connection migrates, it resets its congestion controller.

The target server is not aware of this.

The target could send a full window which would then be dropped by the proxy.

Proposal: add text mentioning that this can happen and suggest simple mitigations, e.g., proxy can change its target-facing port to signal the change.