MASQUE CONNECT-UDP Listener
draft-schinazi-connect-udp-listen

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CONNECT-UDP as it stands.

Exclusively allows using a single 5-tuple

(Connected sockets only)
Example use-case: WebRTC
Example use-case: WebRTC

Alice \rightarrow STUN Server \rightarrow Bob

VERY INTERESTING VOICE CALL
Example use-case: WebRTC with a Proxy

Alice

Proxy

STUN Server

Bob
Example use-case: WebRTC with a Proxy

Alice

Proxy

Bob

STUN Server

VERY INTERESTING VOICE CALL

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VERY INTERESTING VOICE CALL
Why not just use multiple CONNECT-UDP connections?

Alice → Proxy → STUN Server

Proxy → Bob

Peer-to-peer

Who am I?
AN ICE BREAKER

CONNECT-UDP

Alice

Proxy

CONNECT-UDP

Proxy

Who am I?

STUN Server

Peer-to-peer

P2P NOT GUARANTEED TO BE SERVICED BY THE SAME IP DUE TO HTTP SEMANTICS

Bob

Who am I?
CONNECT-UDP - with Listener support!

Now with $\infty$ more 5-tuples! With just one CONNECT-UDP connection!
How does it work?

HEADERS

:method = CONNECT
:protocol = connect-udp
:scheme = https
:path = /masque/udp/*/*/
:authority = proxy.org
capsule-protocol = ?1
connect-udp-listen = 42

Context ID registered by header – payload then contains IP & port

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More about the IP fields

IP Version (8),
IP Address (32..128),
UDP Port (16),

These Fields reflect:

client -> proxy
Target IP/Port PER PAYLOAD

proxy -> client
Source IP/Port PER PAYLOAD

Shall we validate source packets?
Open Issues

https://github.com/DavidSchinazi/draft-schinazi-connect-udp-listen/issues

- Feature request: compress away IP and port from each HTTP Datagram
  - #14 opened last week by DavidSchinazi

- Feature request: allow restricting accessible IPs
  - #13 opened last week by DavidSchinazi

- Feature request: allow proxy to send public IP and port to client
  - #12 opened last week by DavidSchinazi
Feature request: allow proxy to send public IP and port to client #12

https://github.com/DavidSchinazi/draft-schinazi-connect-udp-listen/issues/12

- Ability to retrieve the proxy’s public IP and port for the client
- Useful for ICE and would prevent TURN-like use of the proxy in some cases
Feature request: allow restricting accessible IPs #13


- **Question:** Do we allow all IPs to send to the client via proxy?
- Adding support for an allowlist of remote IPs that are allowed to send through the proxy to the client
- In TURN, this prevents the TURN server to be used as a server, and instead, simply as a mechanism to enable p2p connections
Feature request: compress away IP and port from each HTTP Datagram #14

https://github.com/DavidSchinazi/draft-schinazi-connect-udp-listen/issues/14

- Our proposed header adds 19 bytes of overhead per packet
- For compressed audio formats, it may represent >50% of net bandwidth.
- Need header compression. TURN uses channels for this purpose.

- Could be implemented e.g. by registering a context ID with associated 2-tuple
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