MASQUE CONNECT-UDP Listener

draft-schinazi-connect-udp-listen

IETF 115 – London – 2022-11-09

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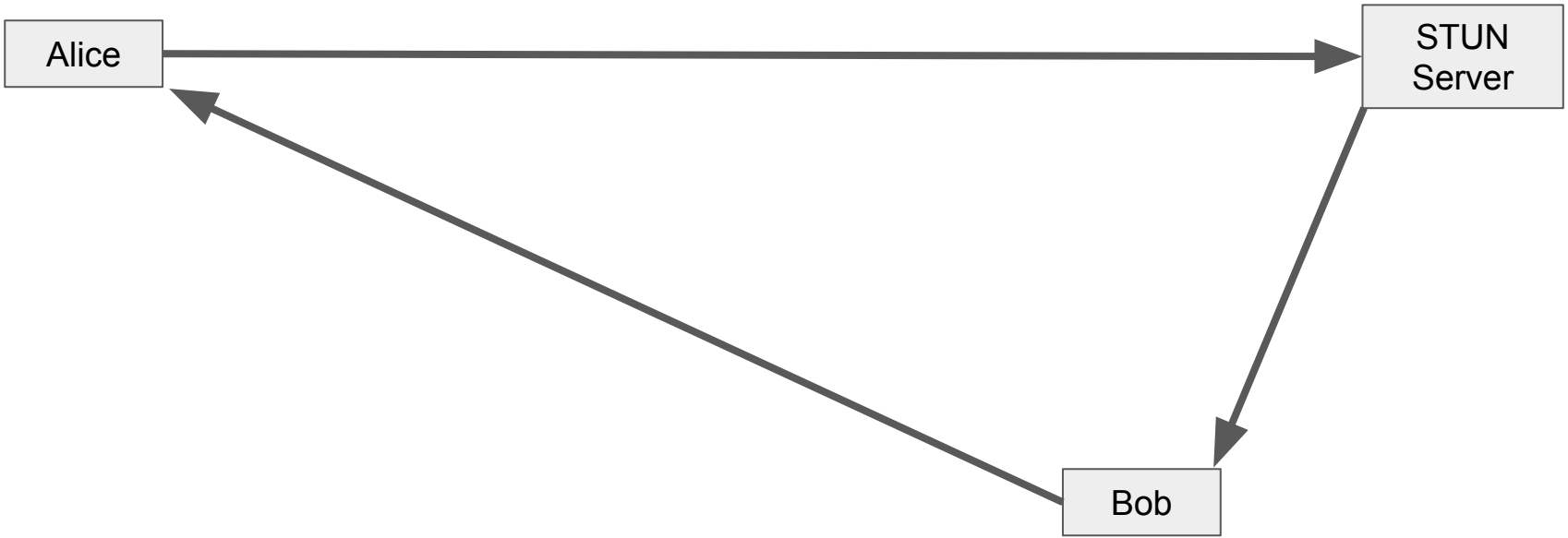
CONNECT-UDP as it stands..

Exclusively allows using a single 5-tuple

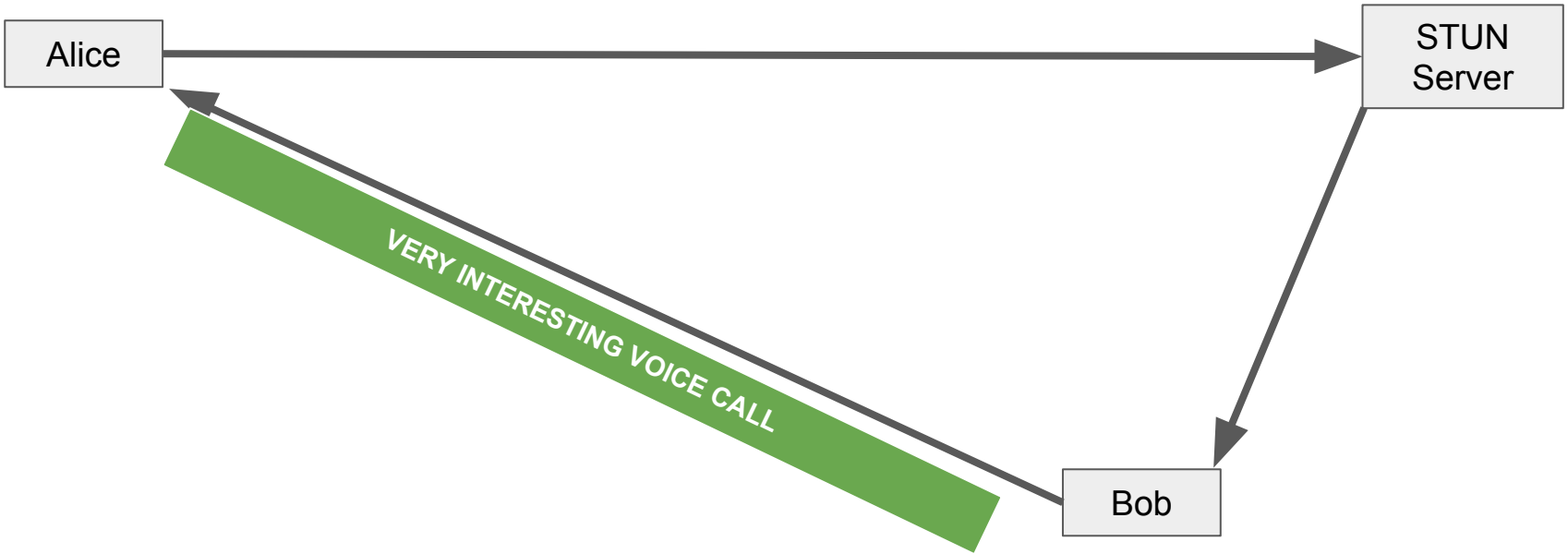
(Connected sockets only)

HEADERS
:method = CONNECT
:protocol = connect-udp
:scheme = https
:path = /.well-known/masque/udp/192.0.2.6/443/
:authority = example.org
capsule-protocol = ?1

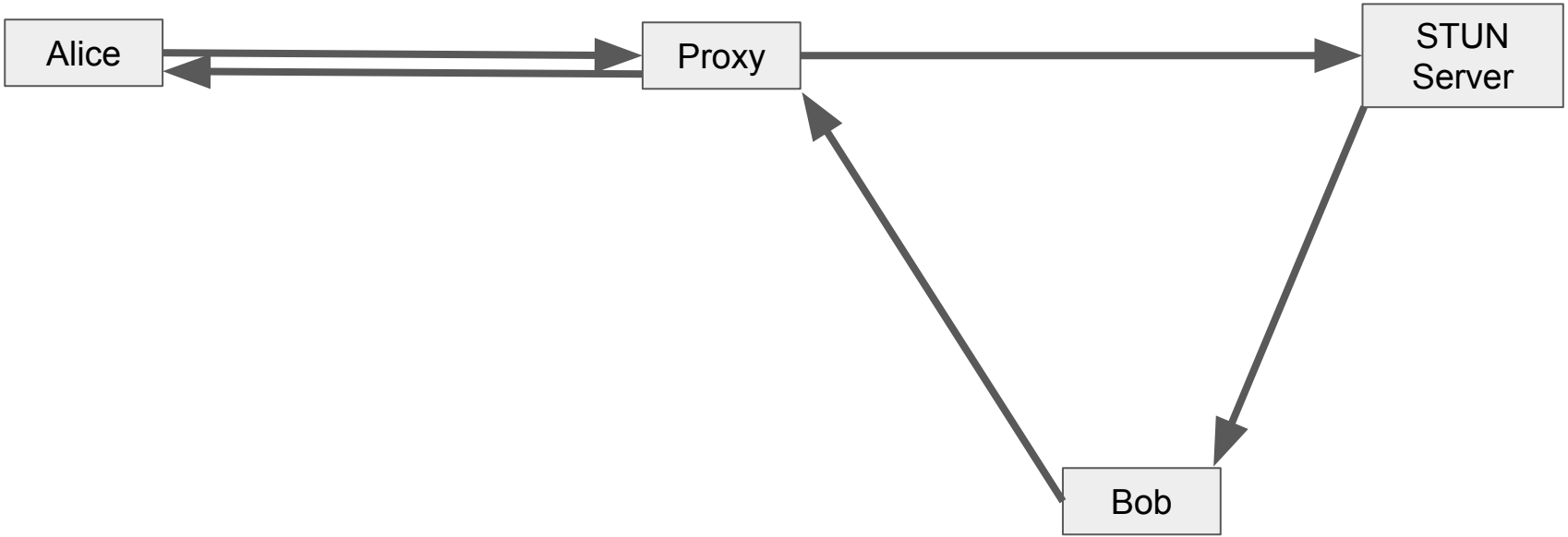
Example use-case: WebRTC



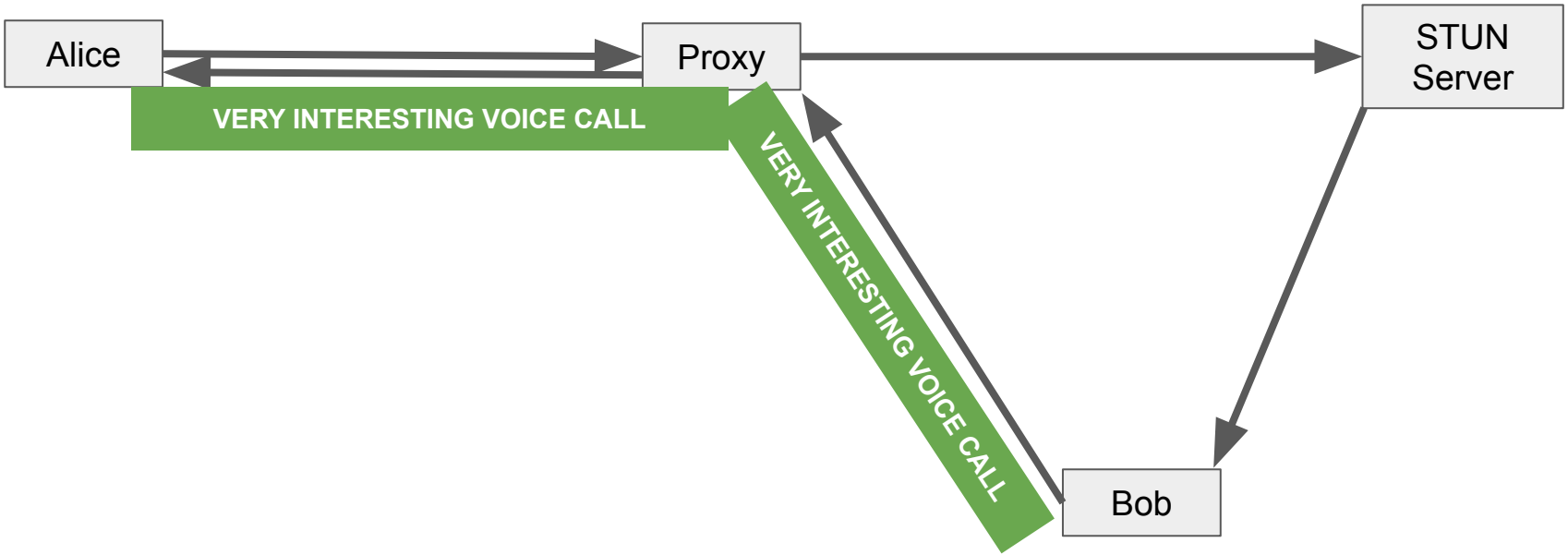
Example use-case: WebRTC



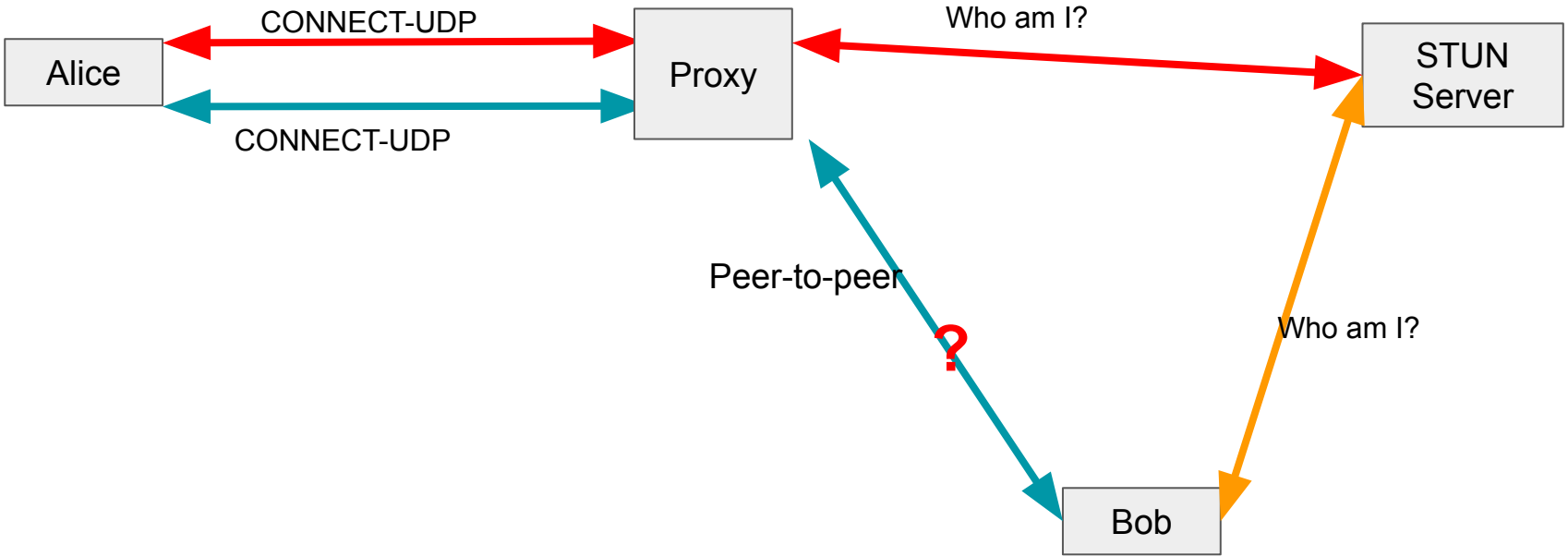
Example use-case: WebRTC with a Proxy



Example use-case: WebRTC with a Proxy



Why not just use multiple CONNECT-UDP connections?

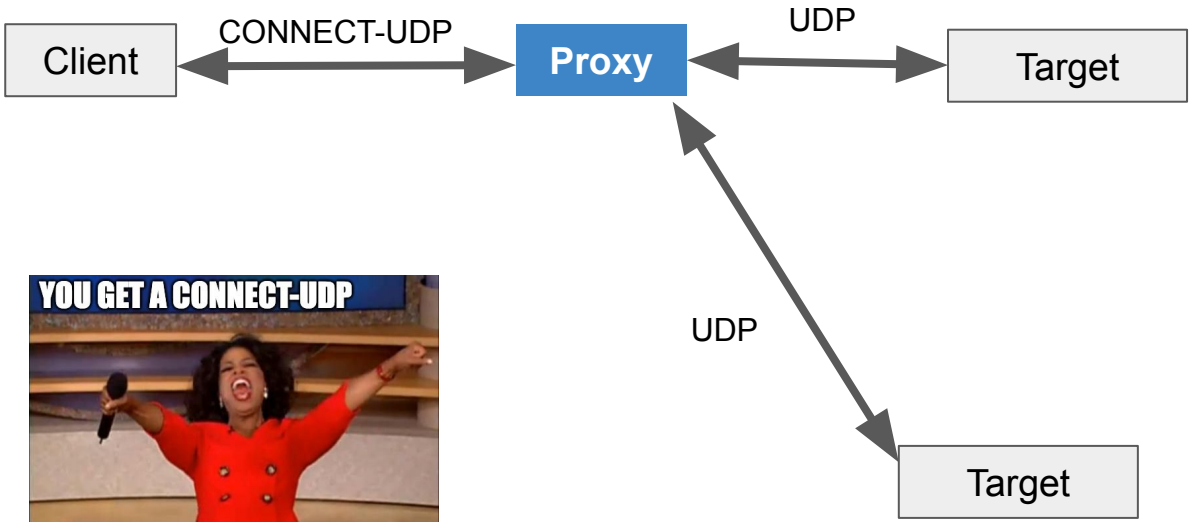


AN ICE BREAKER

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

CONNECT-UDP - with Listener support!

Now with ∞ 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
```

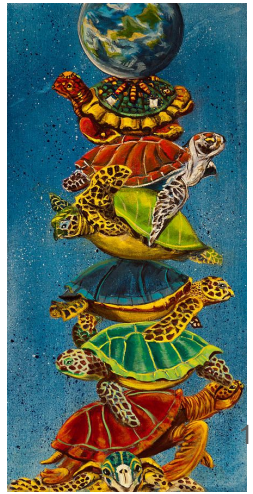
```
DATAGRAM QUIC Frame {
  Type (i) = 0x30..0x31,
  [Length (i)],
  Quarter Stream ID (i),
  Context ID (i) = 42,
  IP Version (8),
  IP Address (32..128),
  UDP Port (16),
  UDP Payload (..),
}
```

QUIC

HTTP/3

CONNECT-UDP

CONNECT-UDP-Listen



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

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?
```

Are we interested in adoption?

Extra security considerations may be necessary

WebRTC/TURN expertise would be very helpful!

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