

# MASQUE CONNECT-UDP Listener

[draft-schinazi-connect-udp-listen](#)

IETF 116 – Yokohama – 2022-03-29

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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

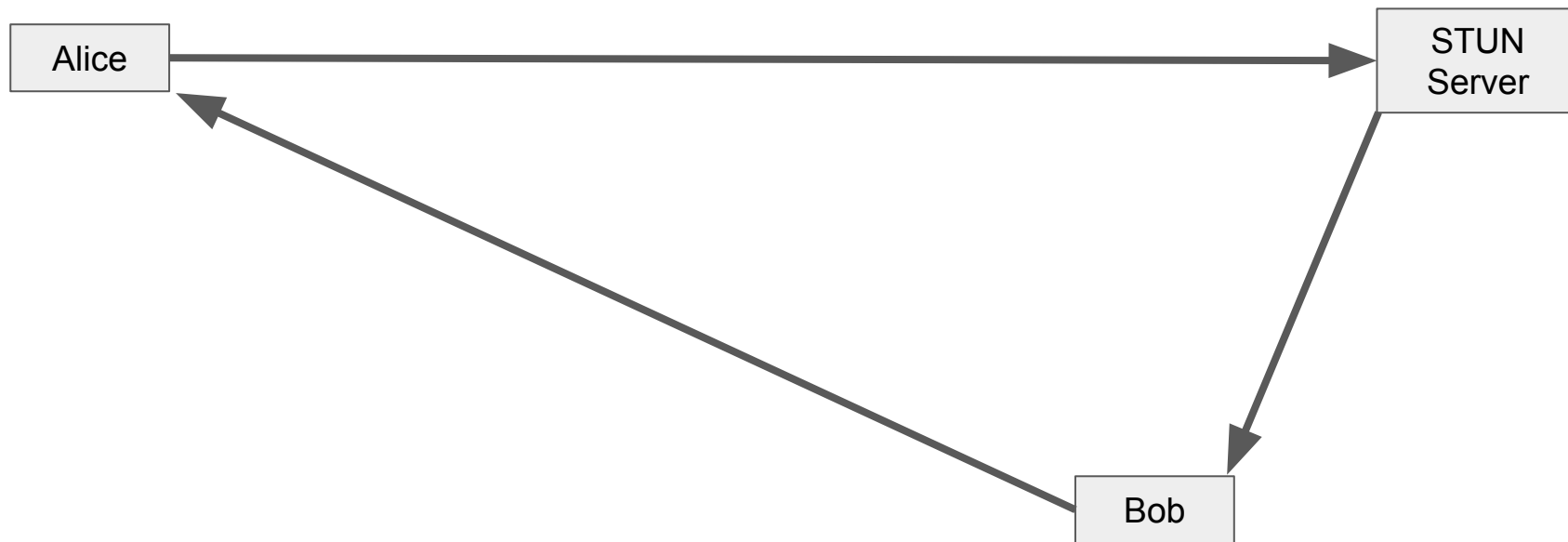
:scheme = https

:path = /.well-known/masque/udp/192.0.2.6/443/

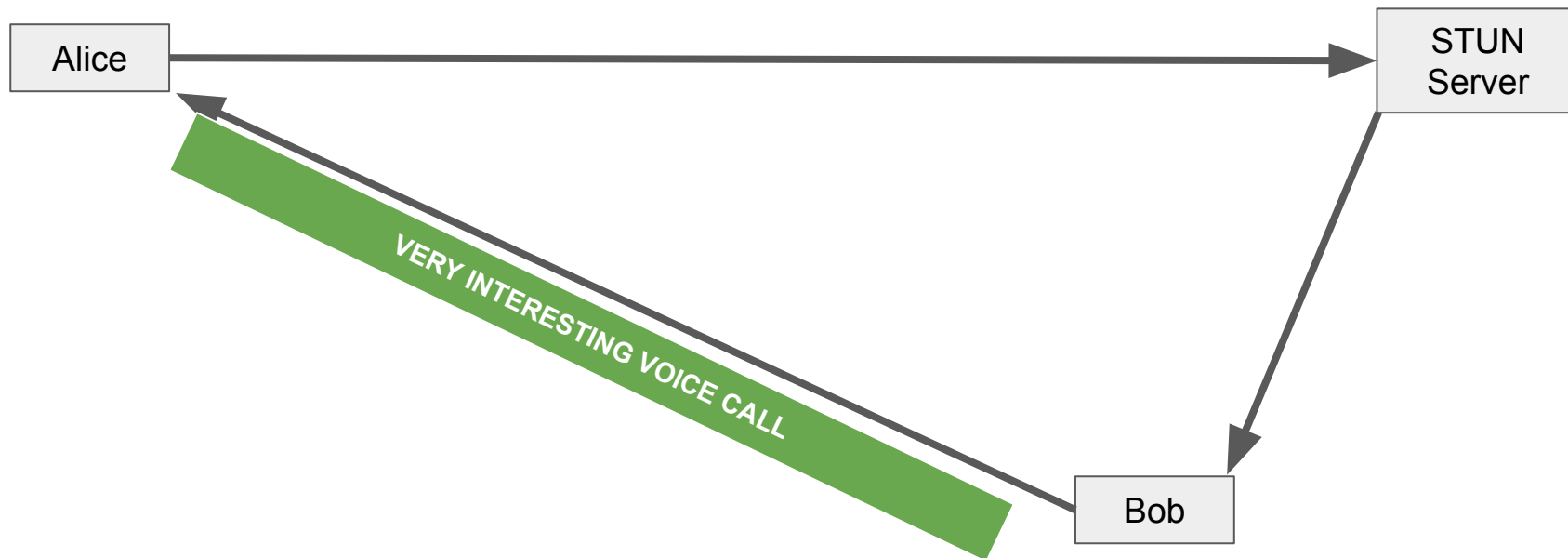
:authority = example.org

capsule-protocol = ?1

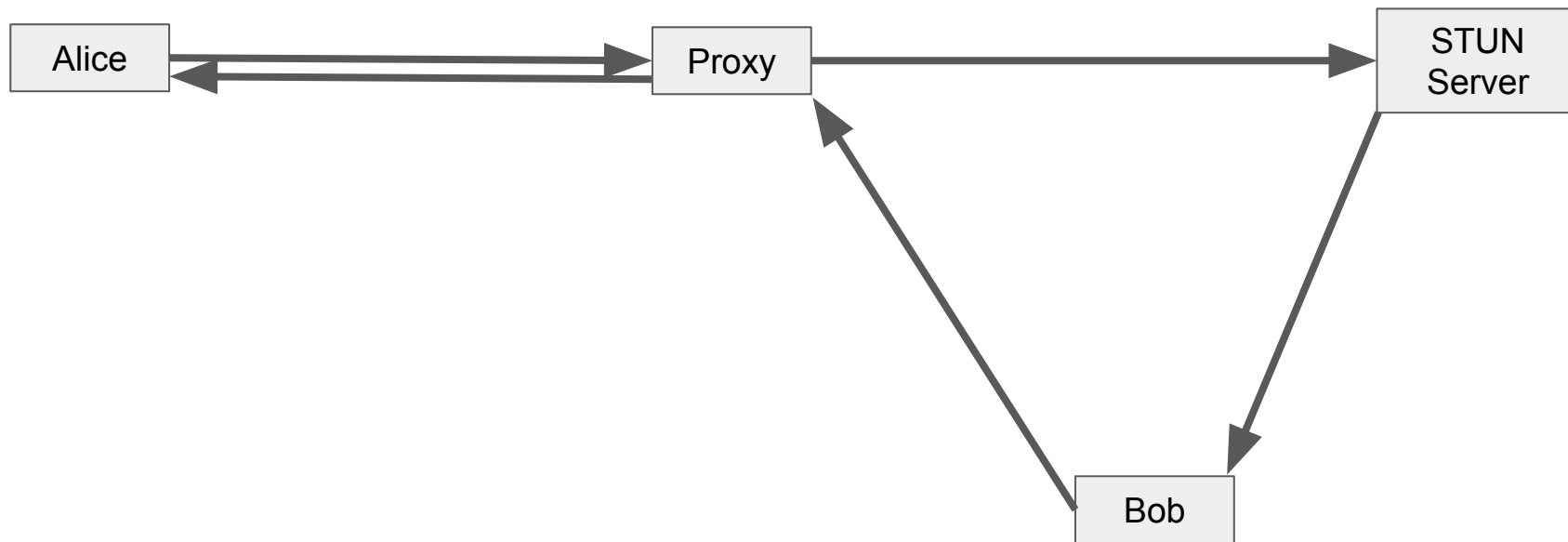
# Example use-case: WebRTC



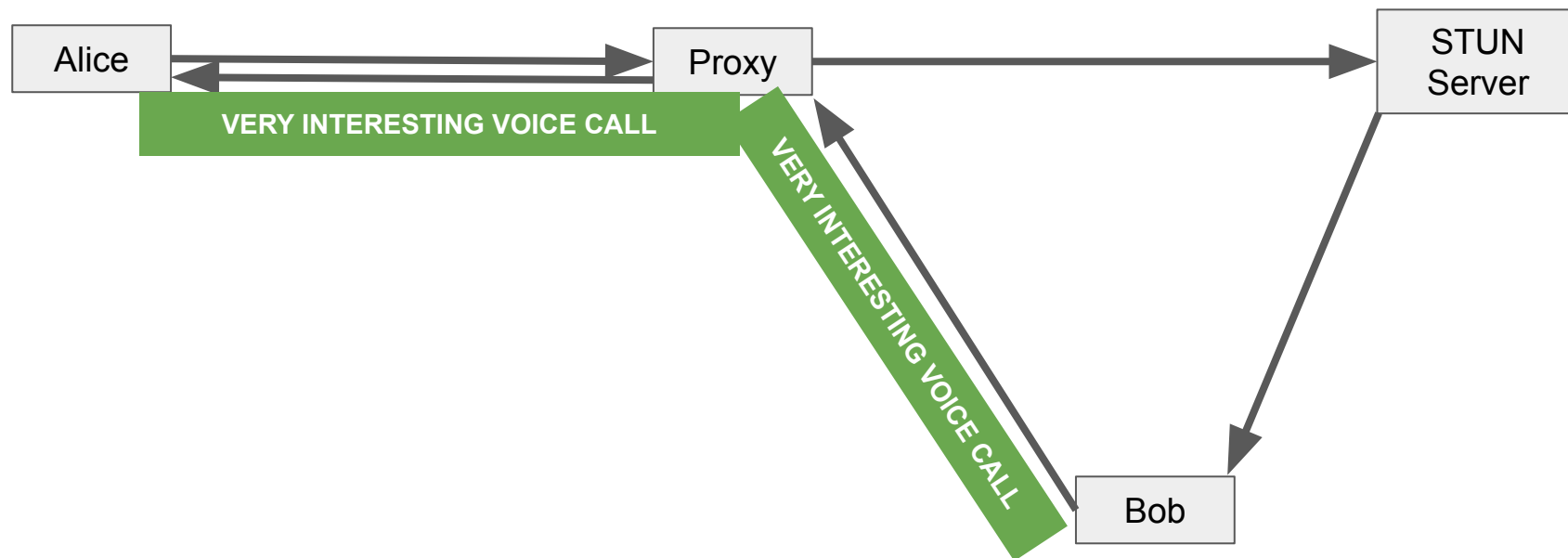
# Example use-case: WebRTC



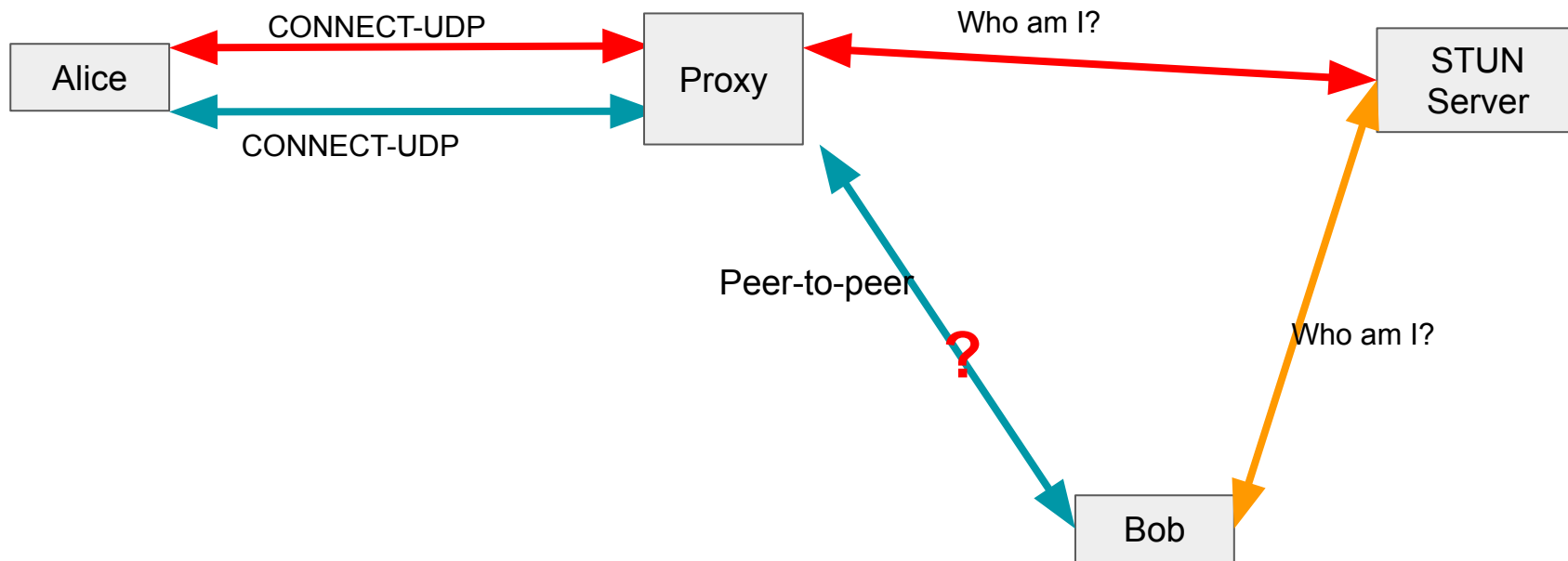
# Example use-case: WebRTC with a Proxy



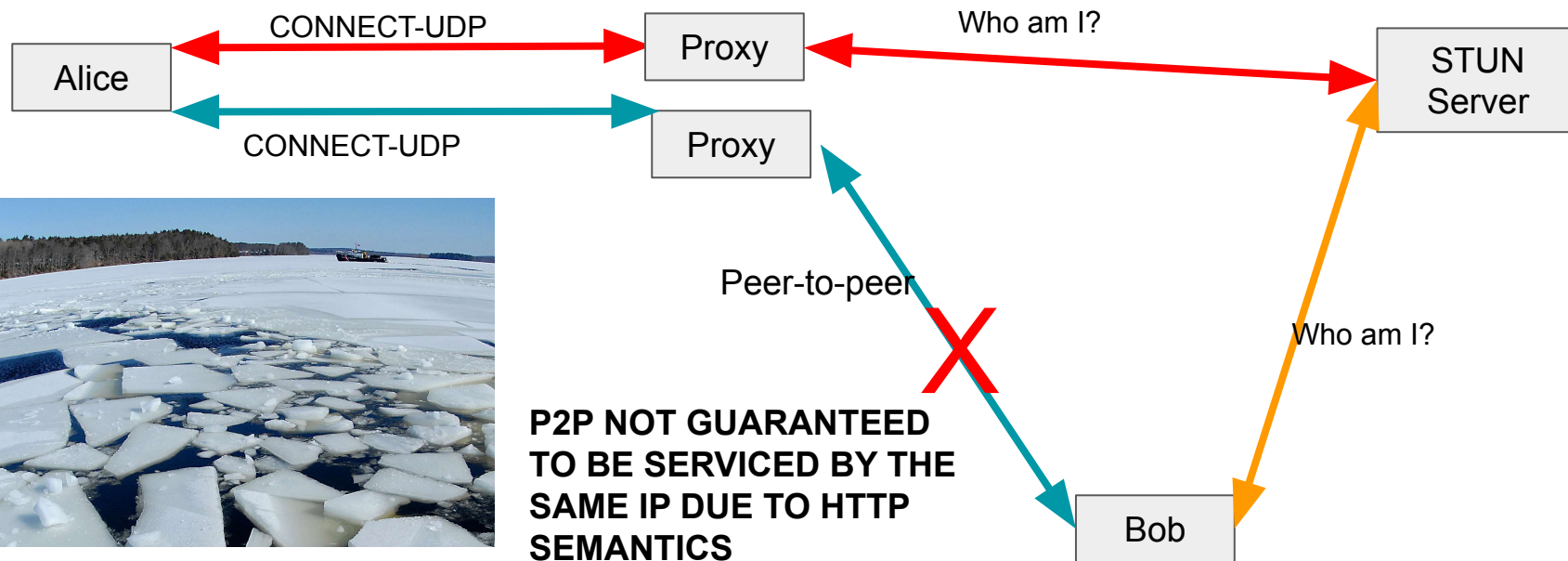
# Example use-case: WebRTC with a Proxy



# Why not just use multiple CONNECT-UDP connections?



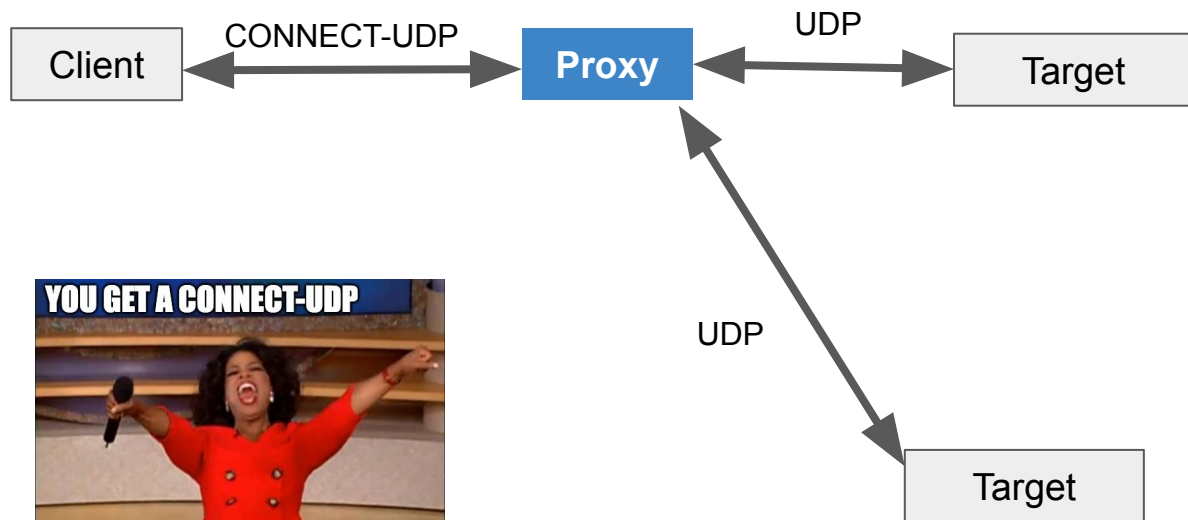
# AN ICE BREAKER





# 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
```

```
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 (..),
}
```

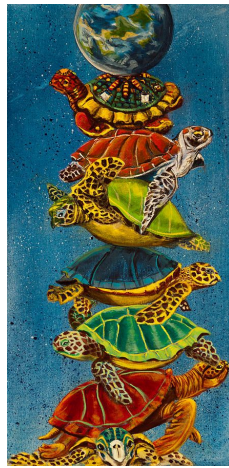
QUIC

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?

# 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

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