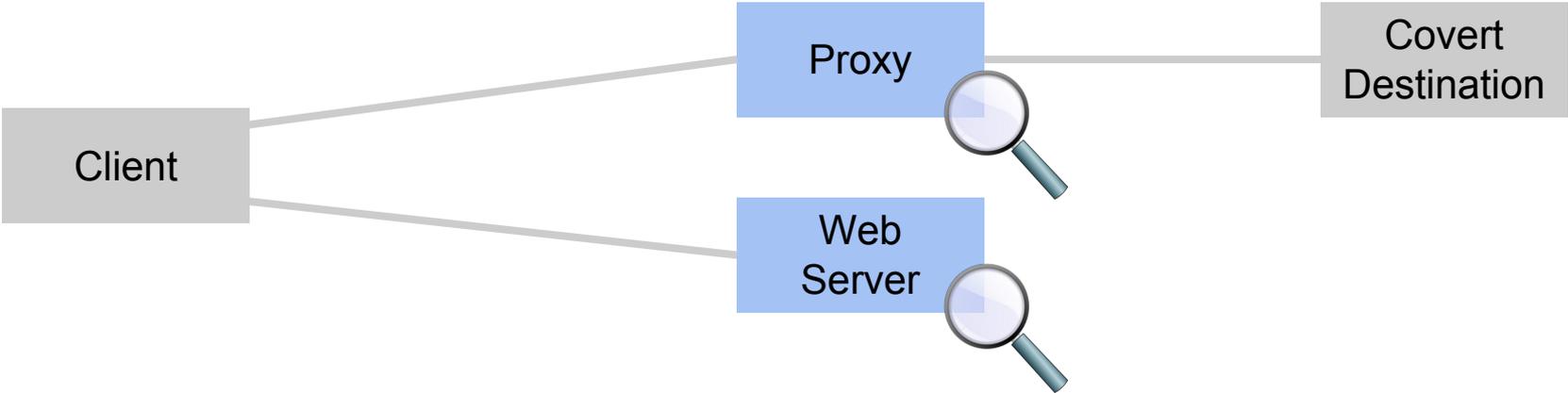
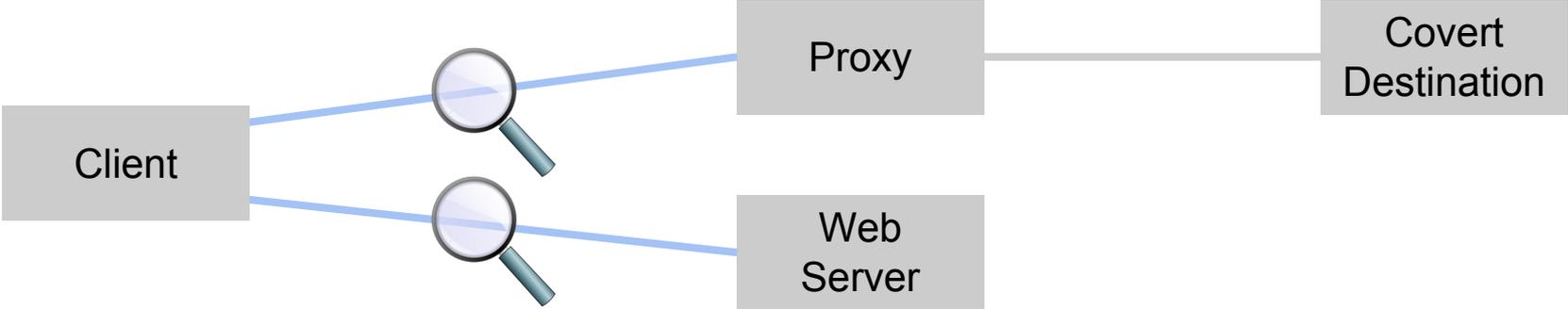


# Feature Requests for Advanced UDP Proxying

IETF 103, tsvarea  
Katharine Daly

# Inconspicuous Proxying



# Features

## 1. **Secure proxied traffic**

- The integrity, confidentiality, and authenticity of the proxied traffic is guaranteed

## 2. **Proxied traffic blends in**

- The proxied traffic ideally looks like web browsing traffic

## 3. **Similar performance characteristics**

- The performance characteristics of the original traffic should be retained as much as possible

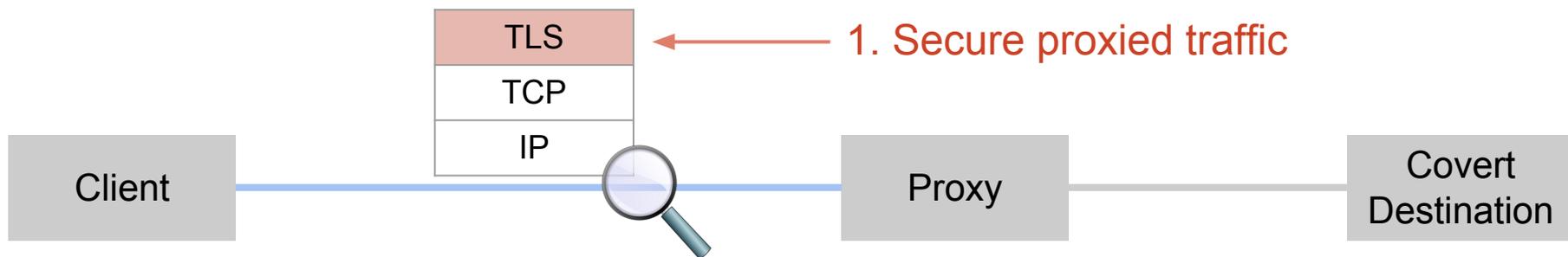
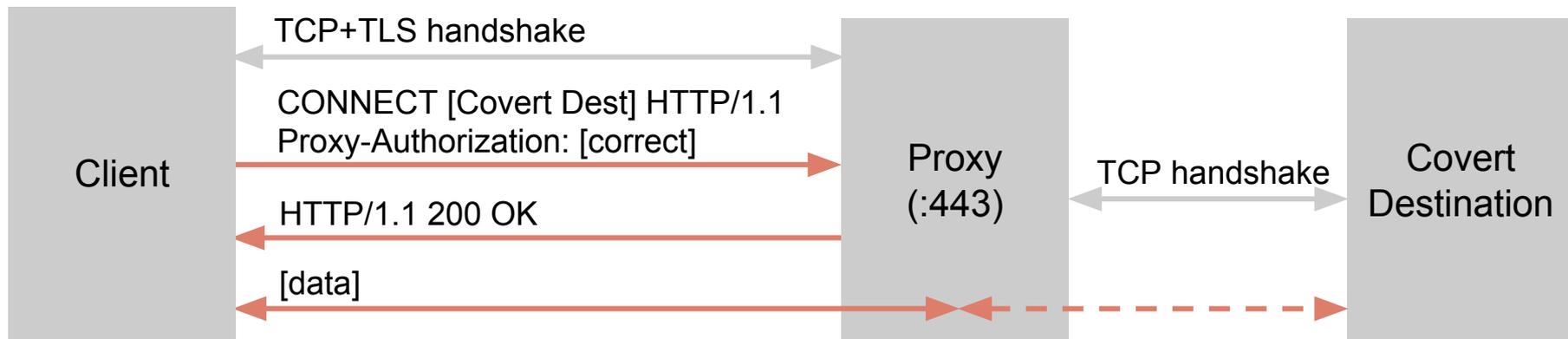
## 4. **Proxy authentication**

- The proxy can only be used by authorized clients

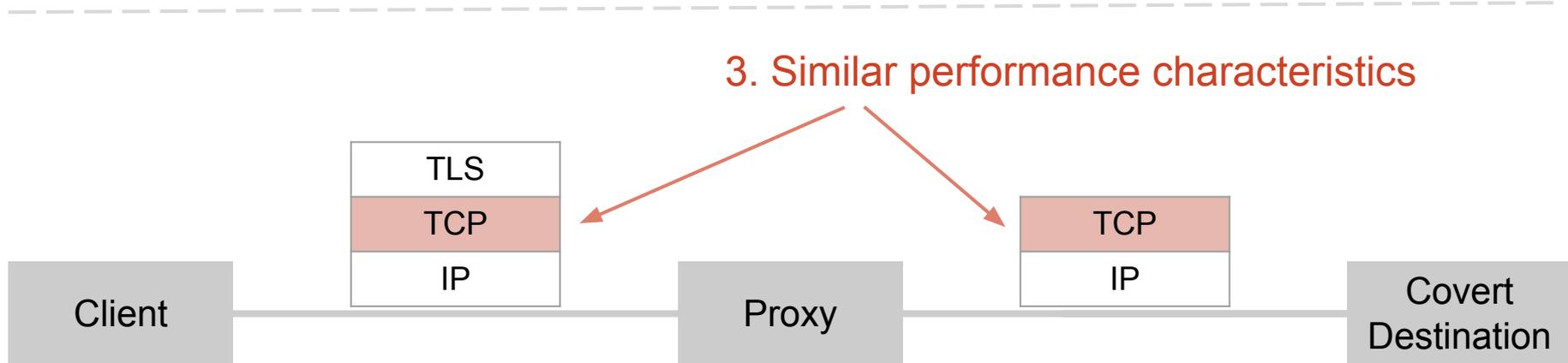
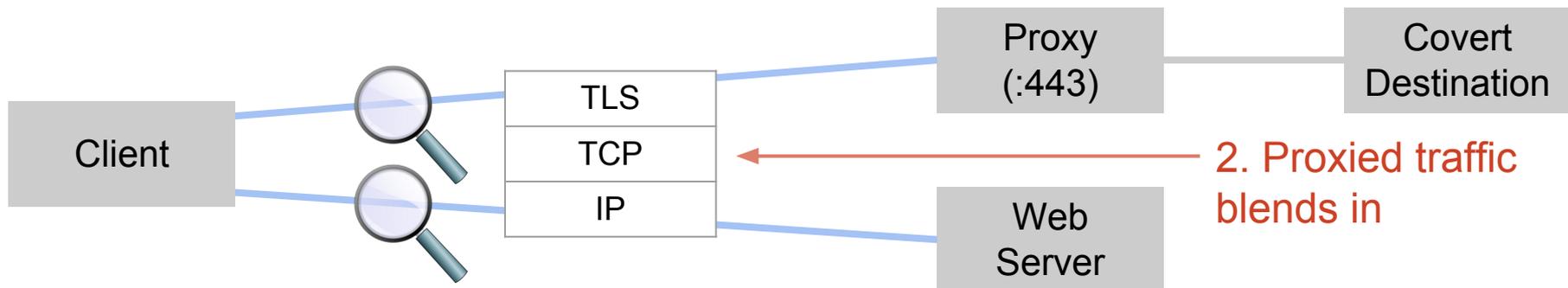
## 5. **Active probing resistance**

- The proxy cannot be identified as a proxy and ideally looks like a normal web server

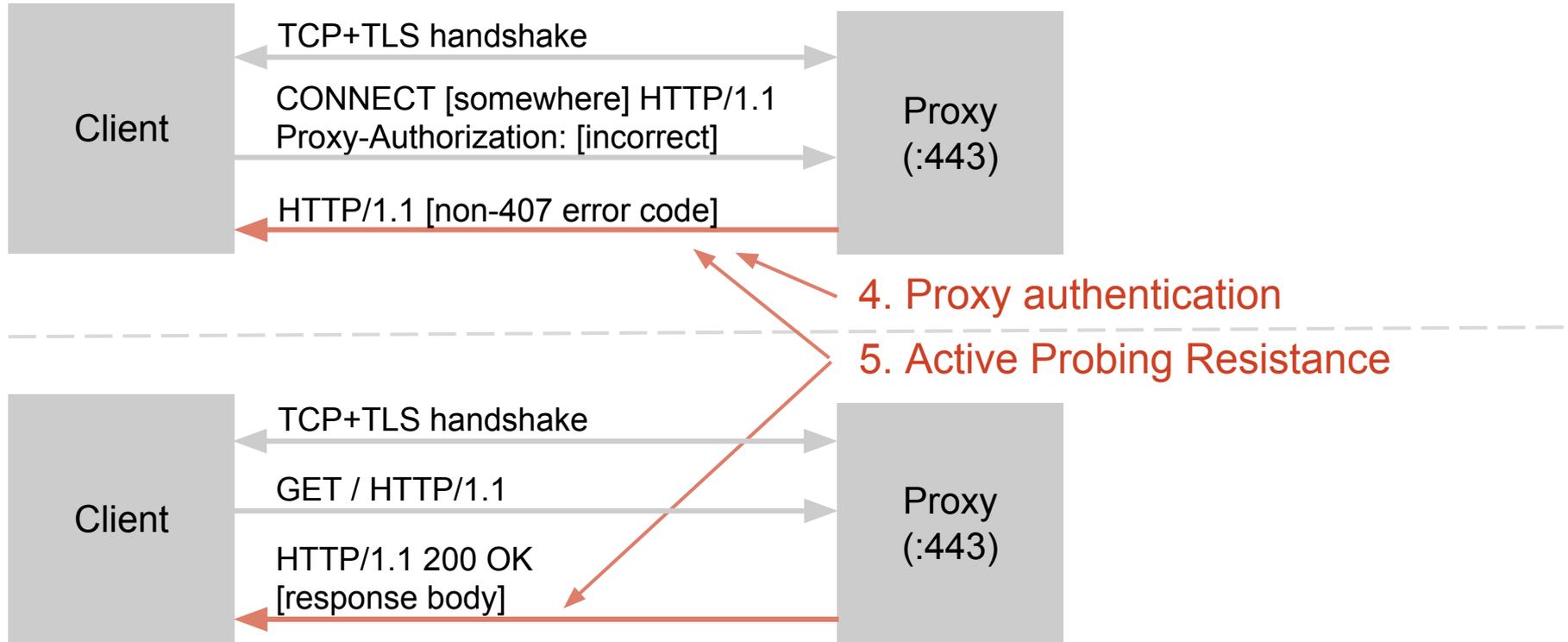
# TCP Proxying



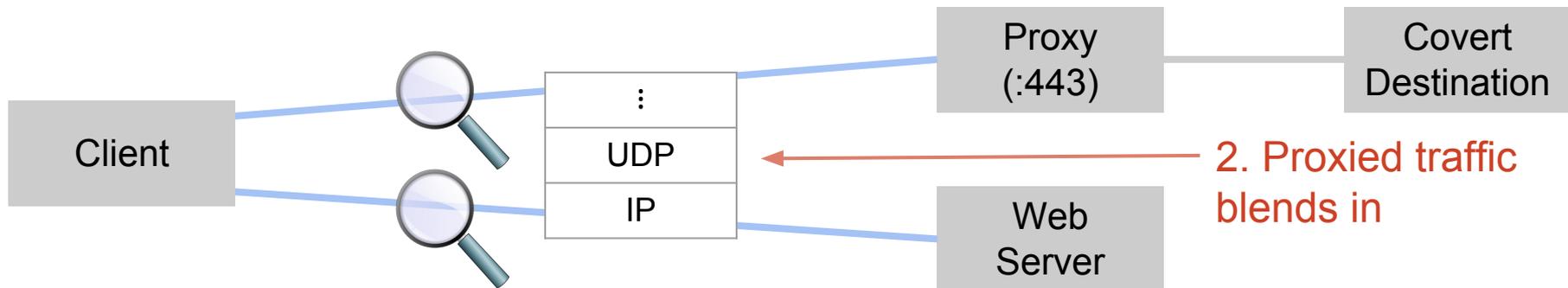
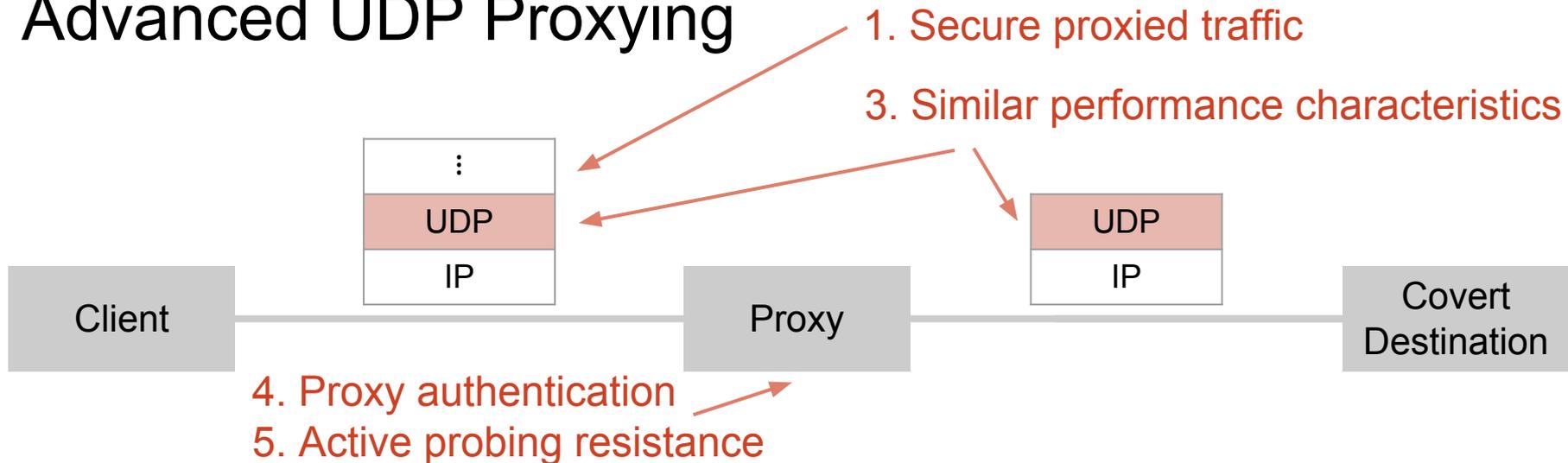
# TCP Proxying, cont'd.



# TCP Proxying, cont'd.



# Advanced UDP Proxying



# Some Existing UDP Proxying Solutions

- **TURN**
  - TURN traffic may not have sufficiently high collateral damage
  - Operating a TURN server that does not belong to a known service could be suspicious
- **SOCKS**
  - SOCKS6 UDP traffic (over DTLS) wouldn't blend in with QUIC traffic
  - Operating a web server on the same port would be difficult
- **Various existing VPN protocols**
  - UDP traffic is secured in ways that wouldn't blend in with QUIC traffic
  - Operating a web server on the same port would be difficult

Thank you

# Backup Slides

# Additional Considerations

- DNS resolution
  - Providing a way for the client to control which resolver/protocol the proxy uses to resolve DNS queries could be a worthwhile feature
- UDP Association
  - Control over the duration of the UDP association between the client and proxy is desirable
- Congestion control
  - The client-to-proxy and proxy-to-server links may have significantly different properties
  - Nesting transports with multiple congestion control mechanisms may require extra care
- IP proxying
  - It may be easy and worthwhile enough to include support for IP proxying
- Configuration and discovery of the proxy