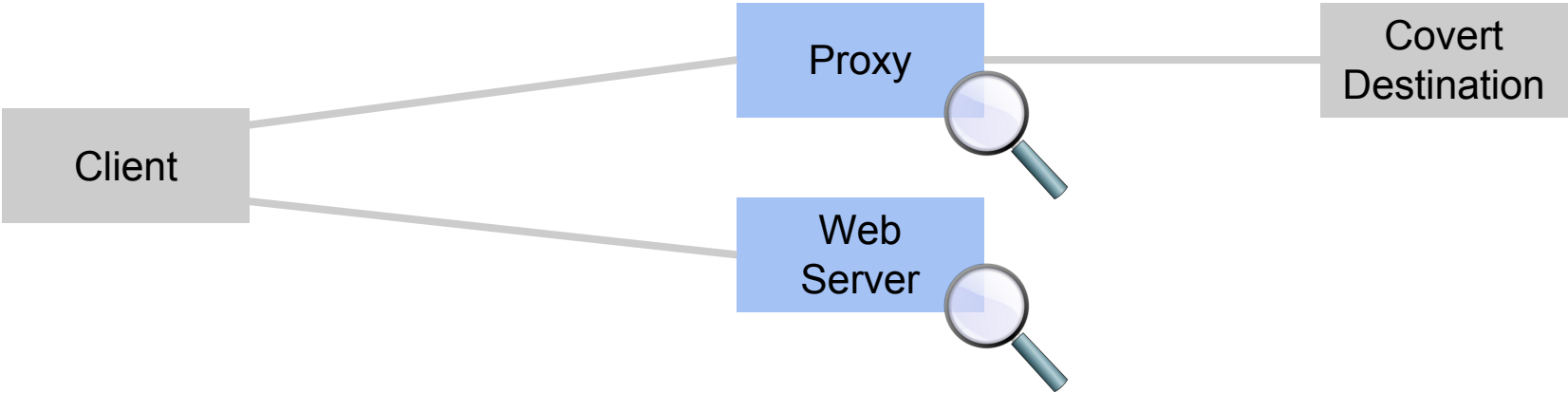
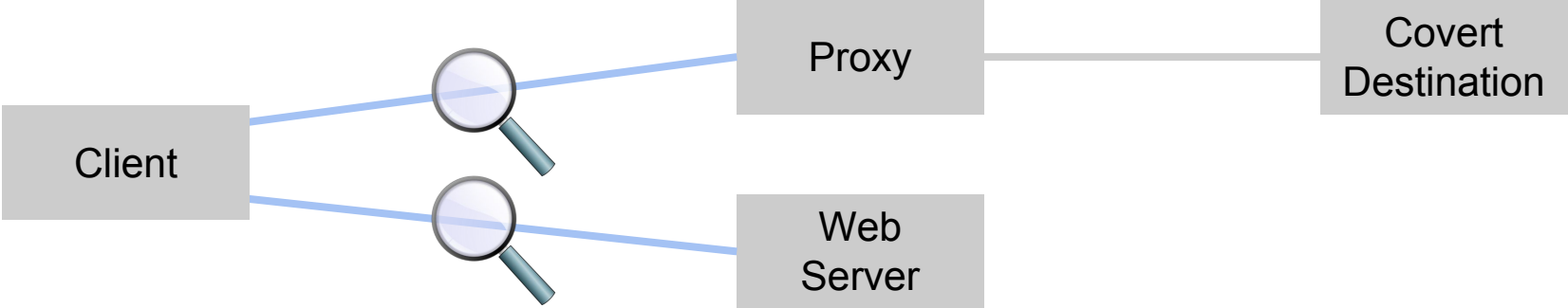


Feature Requests for Advanced UDP Proxying

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

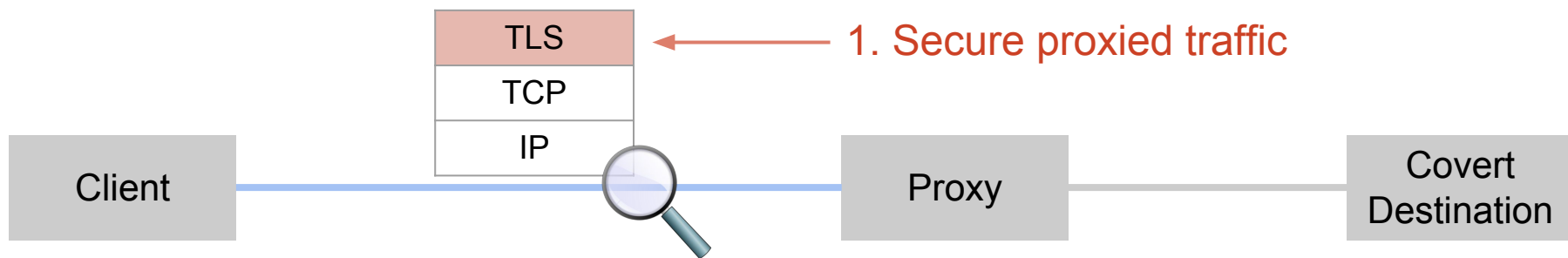
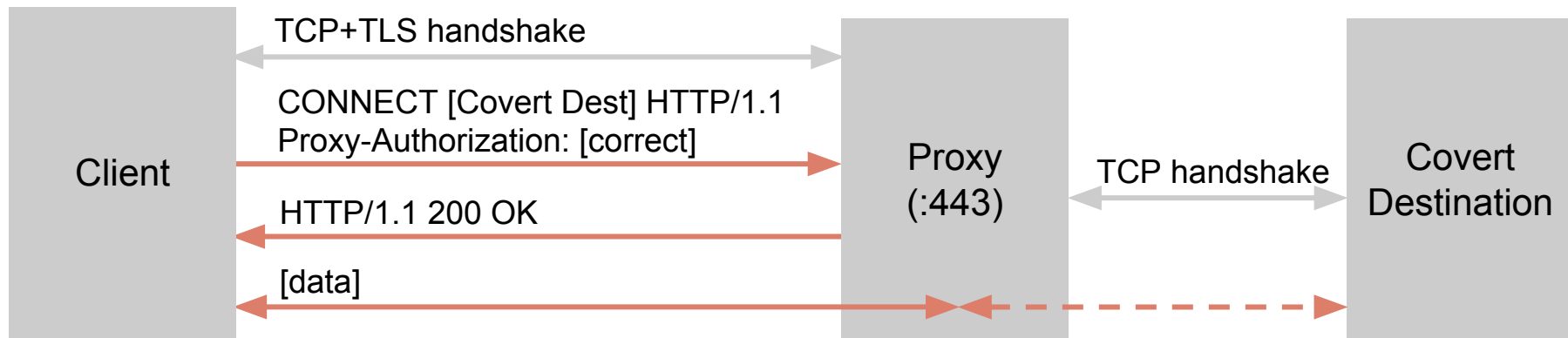
4. **Proxy authentication**

- The proxy can only be used by authorized clients

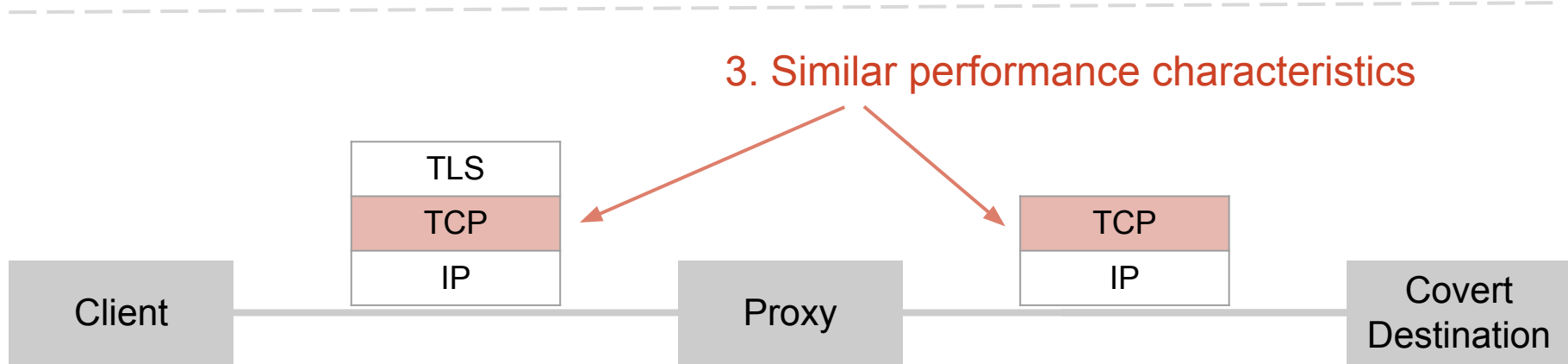
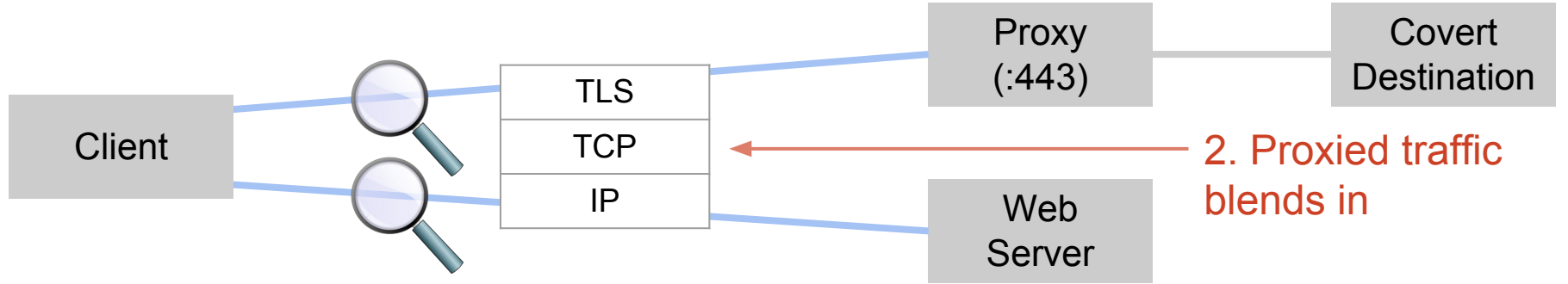
5. **Active probing resistance**

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

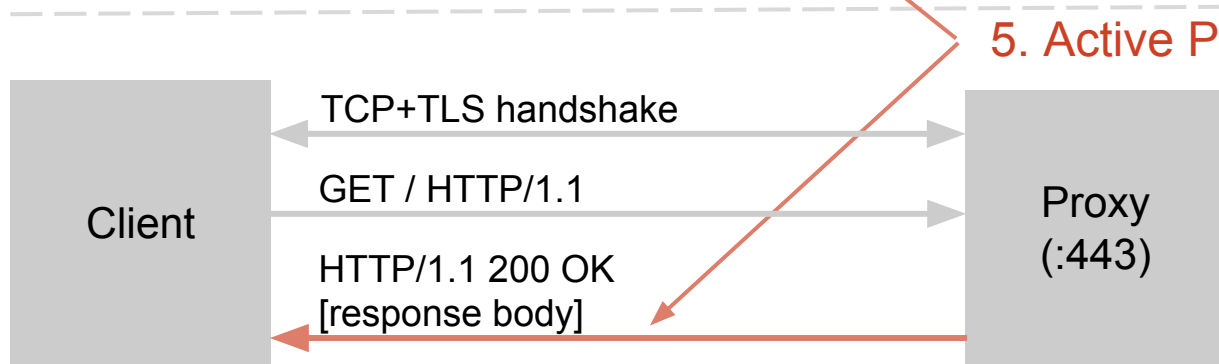
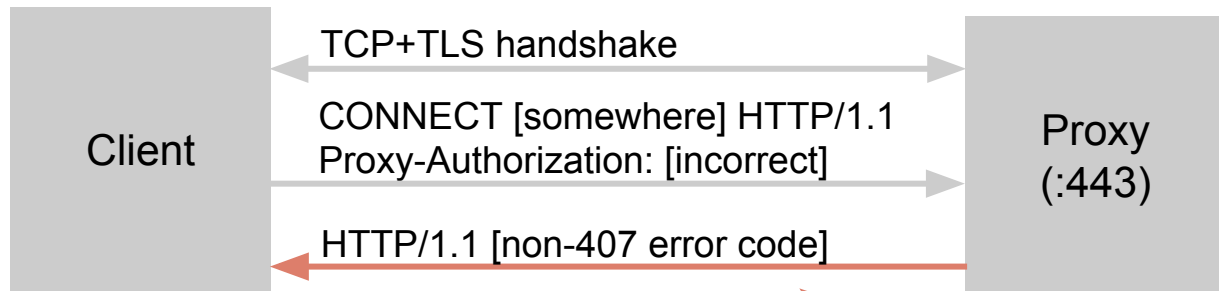
TCP Proxying



TCP Proxying, cont'd.



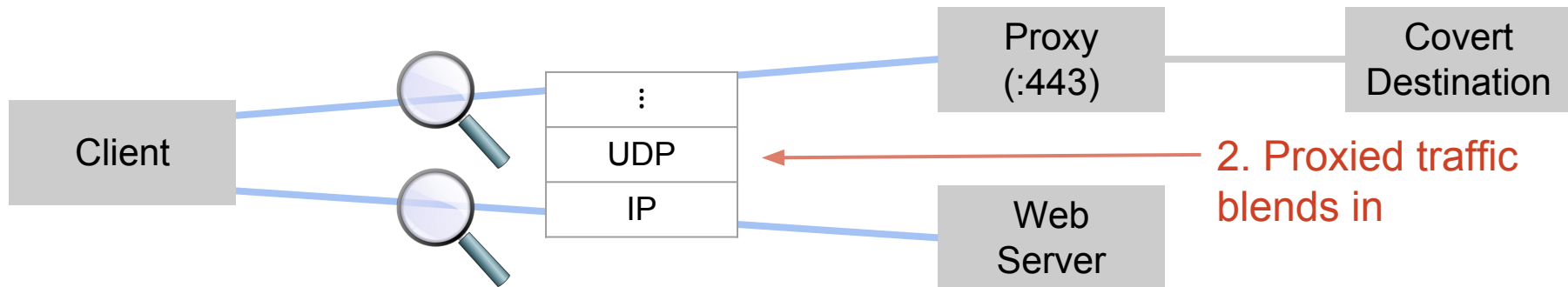
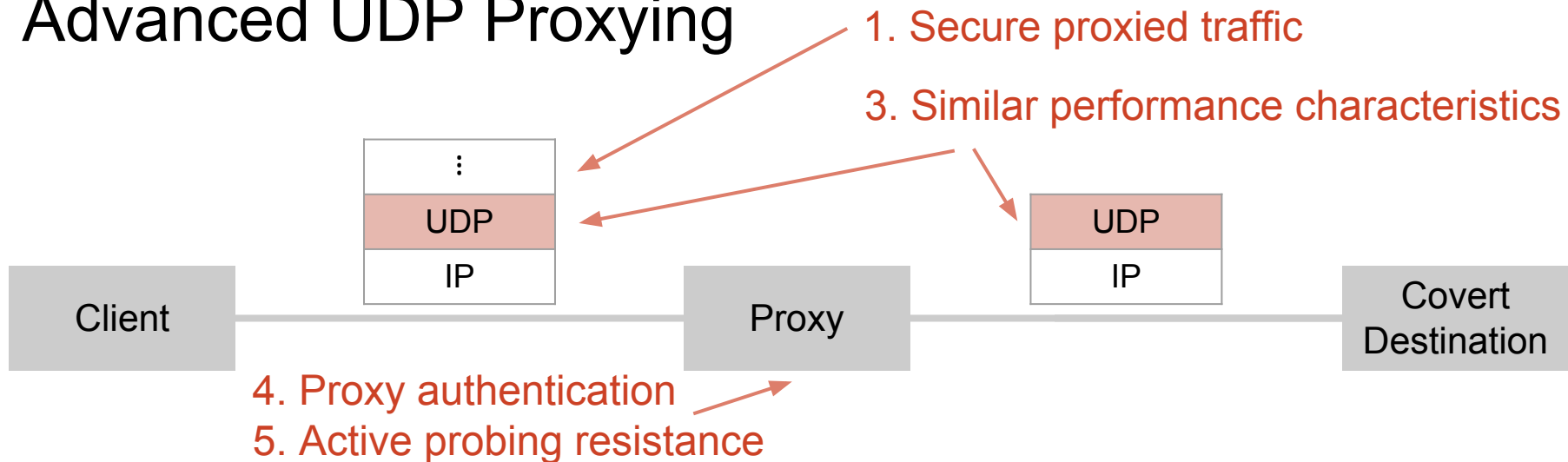
TCP Proxying, cont'd.



4. Proxy authentication

5. Active Probing Resistance

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