Handling Large UDP Responses in SIP

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draft-gurbani-sip-large-udp-response-00

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Problem Statement

- SIP responses get bigger due to response aggregation resulting from forking, R-R headers with state information, other headers (Path, Service-Route, …), SDP in answer, …

- If response size > link MTU, fragmentation results; reassembly often not possible.

- Result: a failed session attempt over UDP, but may succeed over TCP.

- Fragmentation/reassembly problematic with middleboxes (draft-heffner-frag-harmful-02, http://www1.ietf.org/mail-archive/web/sip/current/msg17295.html).

- UDP deprecation will not happen overnight: in the meantime, better to diagnose when and how UDP is causing problems.

The Problem
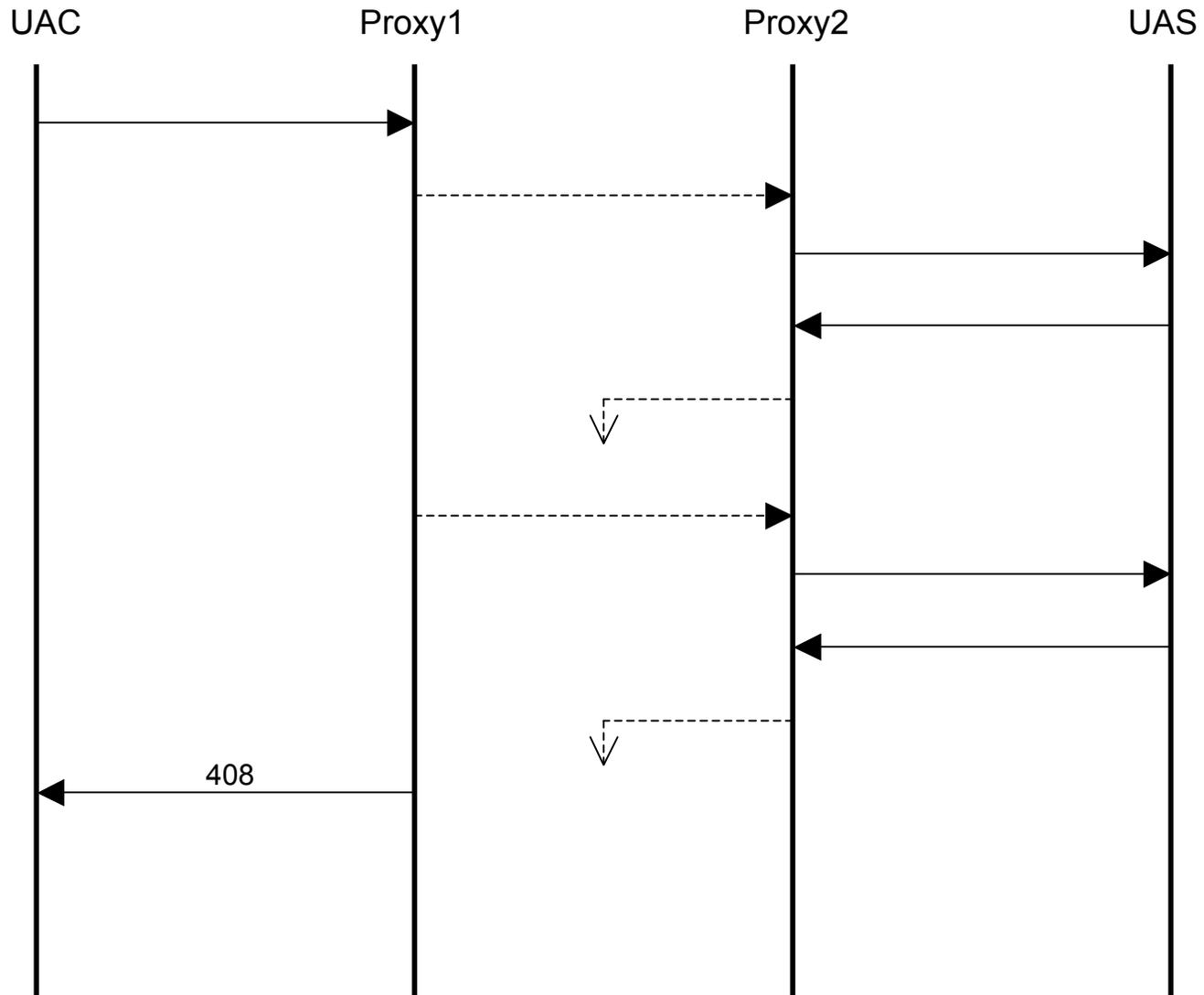
Possible Solutions

- Use provisional responses: 140, 141 (described later).

- A repairable final response (possibly 4xx).

  – Problems: HERFP, false positives.

- Use message/sipfrag in a 4xx (a la hop-limit-diagnostics).

  – Problems: What to prune in the response?

- Request in backwards direction.

  – Problems: No Contact to send the request to, UA may not be directly accessible (NATs), forking results in many requests coming back.

Solution: Provisional responses
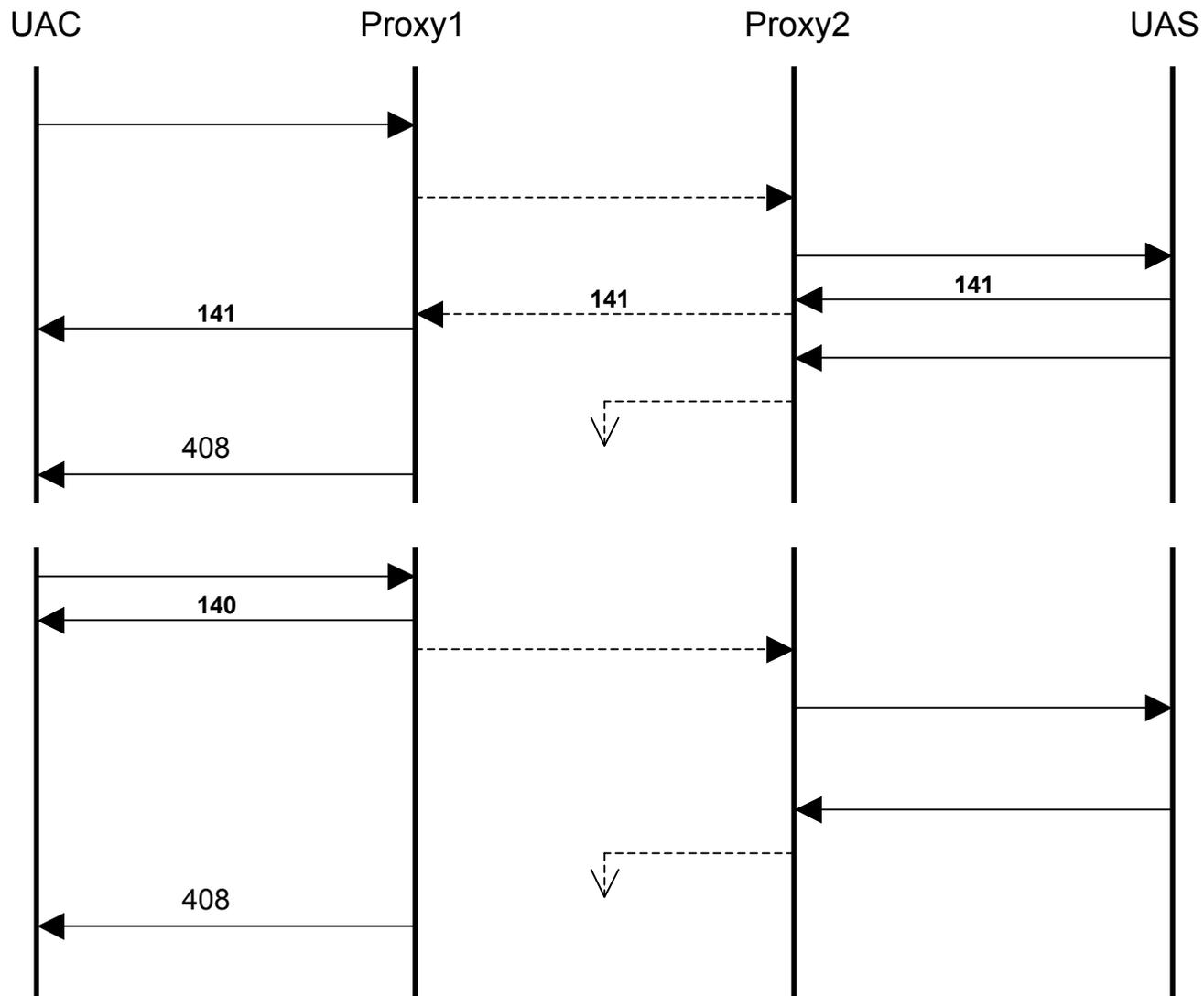
WG List Discussion – 14x approach

- Are both 140 (proxy) and 141 (uas) needed?
  Can one be suppressed?

  - The 140 is intended only for when the proxy is changing from UDP due to message size; not for all changes to UDP.

  - Incremental deployment argues for both

- Interaction with PRACK?

  - Can we send the 14x without 100rel without affecting UA state machines when other 1xx responses use it?

- Specifically requesting TCP all the way through.

  - Can do so for the R-URI with "transport=tcp" on the retried request, but what about intermediaries routing the request based on alternate logic?

WG List Discussion - alternatives

- In 4xx response solution, can we tolerate false positives (i.e., force a call to fail that would have otherwise succeeded)?

- Request in the backwards direction?

Next steps

- WG interest in pursuing this?

- WG item?

Diagnostic Responses for SIP Hop Limit Errors

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draft-hop-limit-diagnostics-03

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Recap

- When sending 483 Hop Limit Exceeded, Include the headers from the request as a message/sipfrag body

- Analogous to ICMP behavior used by traceroute

WG List Discussion

- Expands use of Warning to non-SDP errors

- Generates large responses
  Problematic for UDP

- Is this useful for other error responses as well?

- Request in reverse direction?