ALTO Requirements

`draft-ietf-alto-reqs-11`

Sebastian Kiesel ietf-alto@skiesel.de

Martin Stiemerling martin.stiemerling@neclab.eu

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Document Status

- WGLC on `draft-ietf-alto-reqs-07` 2011-02-10…25
  - Reviews from an author of each ALTO core document
  - Doc is generally in good shape, no major issues found
  - `draft-ietf-alto-reqs-08` fixed spelling and some nits
- IETF-80 (Prague)
  - Publish reqs doc soon, do not wait for reqs that might arise from the still young CDN (content delivery net) use case
  - BUT: double-check that the existing reqs won't harm future work on the CDN use case
  - Further reviews by Ben N.-J. and others, discussions about overload handling
- New versions: `-09` (May 10), `-10` (Jun 10), and `-11` (Jul 11)

Changes from -08 to -10

- The reqs document assumes that there can be multiple protocol specifications and implementations → change singular to plural at many occurrences
- Allow relying on underlying protocol layers for various mechanisms

Example:

- Old: The ALTO client protocol MUST support mechanisms for the authentication of ALTO servers.
- New: An ALTO client protocol specification MUST specify mechanisms for the authentication of ALTO clients, or how to leverage appropriate mechanisms provided by underlying protocol layers.

Disclosure of application type or content ID to ALTO server

2008: main use case for ALTO: optimize P2P file sharing

- We do not want to standardize "application profiles"

- Use "natural" metrics in cost maps instead

- ALTO clients do not want to disclose the resource / content identifier to the (untrusted) ALTO server

Now/future: new use case: CDN selection / optimization

- We still do not want to standardize "app. profiles"

- But maybe inform ALTO server about desired resource?

Disclosure of application type or content ID to ALTO server

New requirement:

REQ. ARv10-48: An ALTO client protocol MAY include mechanisms that can be used by the ALTO client when requesting guidance to specify the resource (e.g., content identifiers) it wants to access. An ALTO server MUST provide adequate guidance even if the ALTO client prefers not to specify the desired resource (e.g., keeps the data field empty). The mechanism MUST be designed in a way that the operator of the ALTO server cannot easily deduce the resource identifier (e.g., file name in P2P file sharing) if the ALTO client prefers not to specify it.

Changes from -10 to -11

- Remove the infamous self-referencing req:

  REQ. ARv10-5: The detailed specification of a protocol
  is out of the scope of this document. However, any
  protocol specification that claims to implement an ALTO
  client protocol MUST be compliant to the requirements
  itemized in this document.

- Reqs about overload handling: Explicitly state
  - HTTP's status code 503 + retry after header fulfill req about throttling
  - Existence of mechanisms in protocol spec does not imply that server must use them (it may prefer not to use them or it may be too overloaded to use them)

Overload and error handling

- ARv11-31 .. -36: Six rather verbose and redundant reqs:

  REQ. ARv11-31: An ALTO client protocol specification MUST specify mechanisms, or detail how to leverage appropriate mechanisms provided by underlying protocol layers, which can be used by an ALTO server to inform clients about an impending or occurring overload situation, and require them to throttle their query rate.

  {overload, error/maintenance} X {try later,redirect,terminate}

- Shorten? How?
  - Shorten the text only but keeping the detailed reqs?
  - Shorten the reqs themselves (e.g. "Protocol spec MUST detail how to handle overload and error/maintenance situations")

Conclusions & Next Steps

- In their "spirit" the set of requirements has been very stable for a long time, despite lots of text improvements and clarifications

- No known conflicts or issues with `draft-ietf-alto-protocol`

- It can be hardly imagined that the reqs will be in conflict with future CDN use cases and solutions

- Next step: maybe shorten overload section, submit `draft-ietf-alto-reqs-11(12?)` to IESG