CoRE

2019-02-20 virtual interim

Agenda

Admin

— OSCORE: Still in IESG (waiting for Ekr)
— ERT: Waiting for authors' reaction to chair's review
— senml-etch: Waiting for authors' reaction to chair's review
— hop-limit: Waiting for chair's review (sorry, again)
— RD: Waiting for chair's review
— CoID: probably goes through secdispatch now (ace or core?)

Tech

— Content Negotiation and application/multipart-core

Content Negotiation

Basic REST concept:

— Server can provide multiple variants of a resource
— Client can ask for specific variant

HTTP:

— Accept-Language: user's language preferences
— Accept: media types (content types) supported
— Accept-Charset: (overtaken by events)
— Accept-Encoding: indicate compression schemes

Proactive vs Reactive Content Negotiation

"proactive": server selects the representation based upon the user agent's stated preferences

— really about client's (or user's) capabilities

— hard to describe (and to act on by server)

"reactive": server provides a list of representations for the user agent to choose from

— hypermedia style

HTTP

Browser Web: Proactive Content Negotiation hindered by large amount of choices

Web APIs: Accept header often used to select specific form (e.g., serialization)

CoAP

Tried to simplify:

— Only one choice can be expressed in Accept Option

— Selected choice is a **mandatory** request
(4.06 otherwise)

— Using Content-Format number as opposed to content-type spec (media-type + parameters) + content-coding

Multipart-core

Media types can nest
(also true for senml-ct)

Now how to do content negotiation?

— outer level (governed by Accept)

— inner level (???)

Bigger picture

— Composition (embedding content-formats in other content-formats)

— Inheritance
(e.g., both `application/cbor` and `application/foo+cbor`)

— Choice

— Serialization (and other client capabilities)

Fix now: EST-CoAPs

Want solution now!

Express selection of embedded content-formats in query parameters?

?ct=4711

Define new option Accept-Embedded?

One approach: Accept-Embedded Option

The Accept-Embedded Option is a request option that provides a hint which Content-Formats the client would like to see within the response. Accept-Embedded is repeatable so more than one Content-Format can be given.
When used with the Accept Option, the client can request a specific Content-Format using the Accept Option, as well as provide hints about which Content-Formats it would prefer to be embedded in the response.
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For example, an Accept Option with value 62 could be used to request a response of the media-type application/multipart-core, and two Accept-Embedded Options with values 281 and 284 could be used to hint that an "application/pkcs7-mime; smime-type=certs-only" and an "application/pkcs8" object should be embedded in the response object. Note that, while Accept is a strict request, the Accept-Embedded Option is a hint, so the server may embed objects of different Content-Formats instead (such as an error object).
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When used without an Accept Option, one of the Content-Formats given in the Accept-Embedded Options may also be employed as the Content-Format of the entire response object itself.

Would that be fluff?

Are query parameters good enough for EST-CoAPs?

Just add a separate resource?
Need to consider extensibility to future media types
Needs to work with discovery -- mirror this into rt?

Respond with a menu of resource variants, linked to?

(cf. Pubsub no-data case -- not equivalent to conneg)