

Request Routing Redirection
Interface for CDN Interconnection
draft-ietf-cdni-redirection-01
IETF 89

Ben Niven-Jenkins

Danhua Wang, Xiaoyan He, Chen Ge,
Wei Ni, Yunfei Zhang, , Spencer Dawkins

Update since IETF88

- Haven't published an updated draft
 - Lack of editor's time
- Gone over -01 and noted down updates that need to be done:
 - Editorial: Lots of fairly small edits & Francois' comments from 6th November need to be addressed
 - Specification details: Several areas need more work before the draft is ready for WG Last Call

Open specification details

- Additional examples of RI requests/responses (including errors).
- Specification of how to handle some situations
 - Presence of multiple instances of same header in UA requests?
 - Can dCDN return additional HTTP headers in the RI response?
 - Need to consider what advice to give uCDN
 - RI responses with overlapping scopes
 - Currently we say use longest prefix match, which approximates "most specific" response from the dCDN.
 - However, the most recent (freshest) response approximates the "latest" information from the dCDN.
 - All responses that have overlapping scopes will be for the same URI, so maybe "most recent" is preferable to "most specific"?
 - Extensions: Is current text sufficient?
- Security Considerations probably still needs more work
 - Are there any threats we have missed?
- IANA Considerations needs completing
 - Do we need to specify registries for error codes & anything else?
- Alignment with decisions on URI signing
 - Likely require additional machinery in RI to signal expected behavior of dCDN
- Errors - See next slide

RI errors

- Talked about how to handle RI errors at IETF88
- Should we use draft-nottingham-http-problem?
 - http-problem specifies the same fields as we do
 - Except it uses a Media Type instead of a numeric error code
 - http-problem does say this which appears to apply in our case:

“Note that problem details are (naturally) not the only way to convey the details of a problem in HTTP; if the response is still a representation of a resource, for example, it's often preferable to accommodate describing the relevant details in that application's format.”
 - **Recommendation:** Continue as we are, don't use http-problem.

RI errors

- Should only specify error codes for errors where uCDN can take some form of automated action to resolve the error
 - Does not preclude dCDNs inserting additional error codes/descriptions to help with debugging/etc but no need to formally specify those as they'll be 'read by humans'.
 - May need an IANA registry to avoid error code clashes.
 - Next slide outlines specific error cases I could think of.
- **Recommendation:**
 - Successful RI responses
 - MUST include one and only one of dns or http dictionary
 - MAY include an error dictionary with additional informational details (e.g. debug info or something)
 - RI clients MUST NOT assume a response with an error dictionary is a fatal error
 - Unsuccessful RI responses
 - MAY? include error dictionary
 - MAY include dns/http dictionary with response to return to UA.

RI errors the spec could standardize?

- dCDN doesn't support requested request routing protocol?
 - Example automatable action: uCDN could re-request with a different RR protocol if allowed by CSP policy.
- dCDN does not support required delivery protocol?
 - Example automatable action: uCDN could remember this result for future.
 - Error does not mean dCDN is out of capacity?
 - Scope is DeliveryACL associated with RR request?)
- dCDN detects an RI loop?
 - Example automatable resolution: uCDN may query a different dCDN that may not result in a loop?
- dCDN detects cdn-path is > max-hops?
 - Example automatable resolution: uCDN may be able to increase max-hops & make another RI request?
- dCDN cannot retrieve associated Metadata?
 - Example automatable action: uCDN might log as indication of a configuration error?
- dCDN cannot handle the request right now but might be able to in future (e.g. out of capacity)?
 - Example automatable action: uCDN could stop making RI requests to dCDN for a while?
 - Is this just a HTTP 503 error? Or do we need to scope it more tightly, e.g. scope of DeliveryACL
- **Should we specify some/all of the above errors in the draft?**
- **Are there other errors with automatable resolutions that I've missed?**