

# Routing Request Redirection for CDN Interconnection

draft-he-cdni-routing-request-redirection-03

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# Changes since -02

- Basic call flow:
  - RR in uCDN POSTs to RRRI interface in dCDN
    - JSON dictionary encapsulating UA request & additional parameters
  - dCDN does Request Routing and synchronously responds
    - JSON dictionary encapsulating response to send to UA
    - Response can have wider scope than request
      - E.g. Cacheability & IP address range the response can be reused for
- Significant edits
  - Document should be much 'cleaner' & easier to read
- Includes example RRRI Requests & Responses
  - Needs additional work to properly describe:
    - The Request/Response message body syntax/structure
    - The individual properties for DNS/HTTP based redirection

# Example call flow (DNS redirection)

POST /example/dcdn/rrri HTTP/1.1

```
{  
  "dns" : {  
    "resolverip" : "192.0.2.1",  
    "clientsubnet" : "198.51.100.1/24",,  
    "qtype" : "A",,  
    "qclass" : "IN",  
    "qname" : "www.example.com"  
  },  
  "metadata" :  
    "http://md.ucdn.example/www.example.com/"  
}
```

Encapsulation of UA request

Link to CDNI Metadata

HTTP POST

uCDN Request Router

CDNI Request Routing Redirection Interface

dCDN Request Router

200 OK

Cache-Control: public, max-age=600

Cacheability defined by HTTP headers

Encapsulation of response to send UA to redirect

Scope of response

```
{  
  "dns" : {  
    "rcode" : 0,  
    "name" : www.example.com,  
    "a" : ["192.0.2.200", "192.0.2.201"],  
    "aaaa" : ["2001:DB8::C8", "2001:DB8::C9"],  
    "ttl" : 60,  
  },  
  "scope" : {  
    "iprange" : "198.51.100.1/16"  
  }  
}
```

HTTP redirection is similar except it uses a http dictionary key containing HTTP specifics

# Open Questions / Future Work

- Align terminology with accepted DNS terminology
- Do we need a metadata link in the RRRI Request?
  - Request Router can determine CDNI MD to use for itself
- Loop detection?
- What extra properties/fields are required to cover all DNS/HTTP redirection cases?
  - Do we need Queries other than A/AAA & response other than A/AAAA/CNAME?
  - Response scopes other than IP address? (AS? URL match?)
- Clean up & expand protocol specification section
  - Provide explanation of request/response syntax & explanations of properties
- Security Considerations section
- WG Adoption?