

CDNi Control - Initialization and Bootstrapping

draft-choi-cdni-control-init-bootstrapping-01.txt

Taesang Choi (choits@etri.re.kr)
Young-IL Seo (yohan.seo@kt.com)
Jongmin Lee (jminlee@sk.com)
Ja-Ryeong Koo (wjbkoo@lguplus.co.kr)
John Dongho Shin (eastsky@solbox.com)
Yonghwan Bang (yjhvyp@gmail.com)

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Introduction

- Additional Related Requirements since -00 version: the CDNI Control interface may
 - allow discovery of the Request-Routing/Metadata/Content Acquisition/Logging protocol end-points
 - allow exchange and negotiation of delivery authorization mechanisms to be supported across the CDNs
- To meet such requirements, this document describes
 - Defines new trigger resources for discovery and negotiation
 - Provides discover and negotiate examples

Control Interface Initialization and Bootstrapping Additional Actions

- discover - used to instruct a recipient CDN to return the requested information to the originator. The recipient CDN then fill in the requested information for the discovery
- negotiate - used to instruct a recipient CDN to negotiate the requested information (e.g., authentication & request-routing methods, content acquisition protocol, log file format, log export method). The recipient CDN checks with originator's preference and fill in its responding preference

Properties of Trigger Requests

- Property: cdni.discover
Description: The information required for bootstrapping CDN interconnection such as various interface protocol end-points, protocols used for the interfaces or content acquisition.
Type: Discover
Mandatory: Yes

Example: Discover – Request/Response

REQUEST:

```
POST /triggers HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example.com
Accept: */*
Content-Type: application/vnd.cdni.control.trigger.request+json
Content-Length: xx
{
  "trigger" : {
    "type": "discover",
    "cdmd.endpoints" : [ "http://metadata.ucdn.com/ep" ],
    "rr.endpoints" : [ "http://rr.ucdn.com/ep" ],
    "log.endpoints" : [ "http://log.ucdn.com/ep" ]
  }
}
```

RESPONSE:

```
HTTP/1.1 201 Created
Date: Sat, 23 Feb 2013 14:20:06 GMT
Content-Length: 472
Content-Type: application/vnd.cdni.control.trigger.status+json
Location: http://dcdn.example.com/triggers/0
Server: example-server/0.1
{
  "ctime": 1361629206,
  "etime": 1361629214,
  "mtime": 1361629206,
  "status": "complete",
  "trigger" : {
    "cdmd.endpoints" : [ "http://metadata.ucdn.com/ep" ],
    "rr.endpoints" : [ "http://rr.ucdn.com/ep" ],
    "log.endpoints" : [ "http://log.ucdn.com/ep" ],
    "type": "discover"
  }
}
```

Example: Discover – get new protocol end-points information discovered

REQUEST:

```
GET /triggers/0 HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example.com
Accept: */*
```

RESPONSE:

```
HTTP/1.1 200 OK
Content-Length: 422
Expires: Sat, 23 Feb 2013 14:21:08 GMT
Server: example-server/0.1
ETag: "1484827667515030767"
Cache-Control: max-age=60
Date: Sat, 23 Feb 2013 14:20:08 GMT
Content-Type: application/vnd.cdni.control.trigger.collection+json
{
  "links": [
    {
      "href": "http://dcdn.example.com/triggers/0",
      "rel": "Trigger",
      "type": "application/vnd.cdni.control.trigger.status+json"
    }
  ],
  "staleresourcetime": 86400
}
```

Example: Negotiate **Fail Scenario** – Request/Response

REQUEST:

```
POST /triggers HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example.com
Accept: */*
Content-Type: application/vnd.cdni.control.trigger.request+json
Content-Length: xx
{
  "trigger" : {
    "type": "negotiate",
    "cmd.protocol" : [ "HTTP" ],
    "rr.protocol" : [ "DNS" ],
    "log.protocol" : [ "FTP" ]
  }
}
```

RESPONSE:

```
HTTP/1.1 201 Created
Date: Sat, 23 Feb 2013 14:20:06 GMT
Content-Length: 472
Content-Type: application/vnd.cdni.control.trigger.status+json
Location: http://dcdn.example.com/triggers/0
Server: example-server/0.1
{
  "ctime": 1361629206,
  "etime": 1361629214,
  "mtime": 1361629206,
  "status": "Failed",
  "trigger" : {
    "cmd.endpoints" : [ "http://metadata.ucdn.com/ep" ],
    "rr.endpoints" : [ "http://rr.ucdn.com/ep" ],
    "log.endpoints" : [ "http://log.ucdn.com/ep" ],
    "type": "negotiate"
  }
}
```

Example: Negotiate Success Scenario – Request/Response

REQUEST:

```
POST /triggers HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example.com
Accept: */*
Content-Type: application/vnd.cdni.control.trigger.request+json
Content-Length: xx
{
  "trigger" : {
    "type": "negotiate",
    "cmd.protocol" : [ "HTTP" ],
    "rr.protocol" : [ "DNS" ],
    "log.protocol" : [ "FTP" ]
  }
}
```

RESPONSE:

```
HTTP/1.1 201 Created
Date: Sat, 23 Feb 2013 14:20:06 GMT
Content-Length: 472
Content-Type: application/vnd.cdni.control.trigger.status+json
Location: http://dcdn.example.com/triggers/0
Server: example-server/0.1
{
  "ctime": 1361629206,
  "etime": 1361629214,
  "mtime": 1361629206,
  "status": "complete",
  "trigger" : {
    "cmd.endpoints" : [ "http://metadata.ucdn.com/ep" ],
    "rr.endpoints" : [ "http://rr.ucdn.com/ep" ],
    "log.endpoints" : [ "http://log.ucdn.com/ep" ],
    "type": "negotiate"
  }
}
```


Example: Negotiate - get new protocol end-points information discovered

REQUEST:

```
GET /triggers/0 HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example.com
Accept: */*
```

RESPONSE:

```
HTTP/1.1 200 OK
Content-Length: 422
Expires: Sat, 23 Feb 2013 14:21:08 GMT
Server: example-server/0.1
ETag: "1484827667515030767"
Cache-Control: max-age=60
Date: Sat, 23 Feb 2013 14:20:08 GMT
Content-Type: application/vnd.cdni.control.trigger.collection+json
{
  "links": [
    {
      "href": "http://dcdn.example.com/triggers/0",
      "rel": "Trigger",
      "type": "application/vnd.cdni.control.trigger.status+json"
    }
  ],
  "staleresourcetime": 86400
}
```

Summary

- This draft updated the following since -00 ver.
 - Additional actions of bootstrapping: discover and negotiate
 - Defines new trigger resources for bootstrapping (cdni.discover)
 - Provides discover and negotiate examples
- Any comments or suggestions for improvements are invited