

CDNI CI/T v2

IETF 122

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RFC 8007bis v16

- **Published v16 on February 25th 2025:**

- <https://datatracker.ietf.org/doc/html/draft-ietf-cdni-ci-triggers-rfc8007bis-16>

- **Scope**

- Address issues found in internal review of v15 (spelling, grammatical, etc.)
- Incorporate review feedback from Brett Mertens: trigger spec constraints chapter and numerous miscellaneous fixes
- If-Modified-Since / Last-Modified conditional requests and examples
- Improved format of URLs in examples for clarity/consistency (use of UUIDv4 in examples, dCDN and uCDN domain separation)
- Strict requirement for dCDN to match trigger with uCDN configuration
- Review “legacy” areas: retire “diamond” configuration
- Extended examples
- Refactoring of filtered collections

Brett Mertens feedback

- Explicit constraints on trigger spec and trigger action combinations (Section 4.1.2.3)
- Remove “purge content acquired in the last X hours” example
- Remove composite data types for ctime/etime/mtime
- Site ID discussion: dCDN may need additional non-standard information to determine the configuration section that the trigger (e.g. purge command) applies to, can use the labels mechanism (Section 4.1.4)

Conditional Requests

Added examples of conditional requests/responses using If-Modified-Since and If-None-Match headers

```
GET /cit/327df5b8-1df8-4cff-92f8-fda27774c171 HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example
Accept: */*
If-None-Match: "6990548174277557683"
If-Modified-Since: Sun, 27 Oct 2024 08:49:10 GMT
```

RESPONSE:

```
HTTP/1.1 304 Not Modified
Content-Length: 0
Expires: Sun, 27 Oct 2024 08:49:24 GMT
Server: example-server/0.1
ETag: "554385204989405469"
Last-Modified: Sun, 27 Oct 2024 08:48:17 GMT
```

UUIDv4 and hostnames in examples

dCDN domain: dcdn.example

Use of UUIDv4 trigger identifiers

```
GET /cit/327df5b8-1df8-4cff-92f8-fda27774c171 HTTP/1.1
User-Agent: example-user-agent/0.1
Host: dcdn.example
Accept: */*
If-None-Match: "6990548174277557683"
If-Modified-Since: Sun, 27 Oct 2024 08:49:10 GMT
```

uCDN domain: example.com

```
[
  {
    "href": "https://example.com/hls/a36f764e/index.m3u8",
    "type": "hls"
  }
]
```

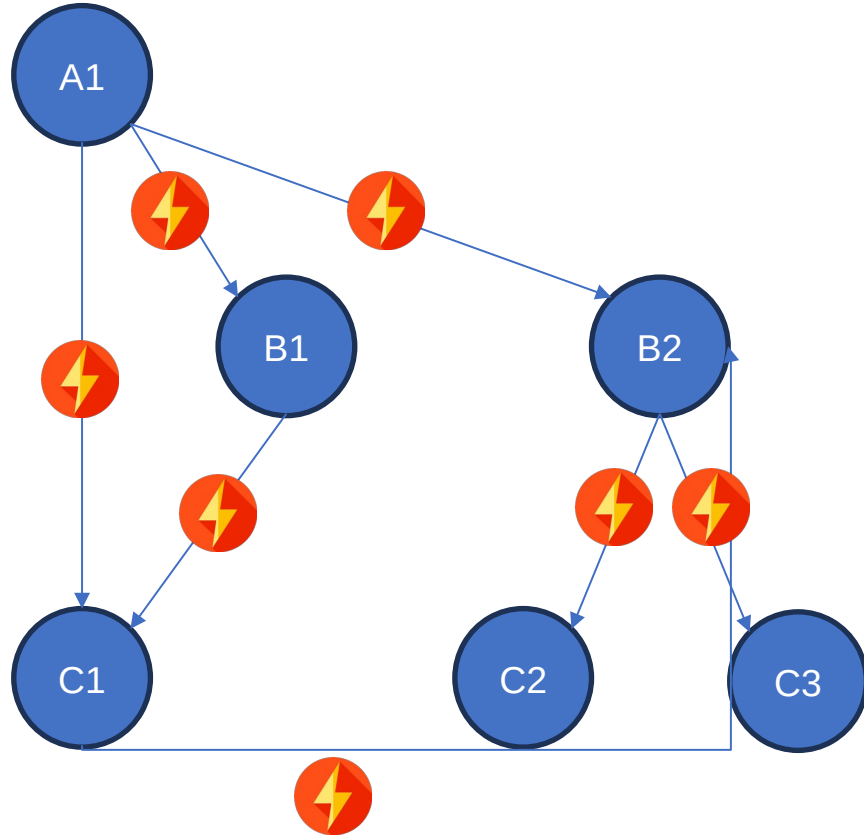
Match triggers against delivery metadata

dCDN MUST match associate content objects referenced in a trigger with existing CDNI metadata (HostIndex, HostMatch, HostMetadata, PathMatch, PatternMatch, and PathMetadata) that belongs to the same uCDN.

This particularly applies for prepositioning, so content objects cannot be prepositioned in absence of matching delivery configuration, but also applies to explicit rejection of purge and invalidate to prevent errors

Additional implication is that content objects become isolated by tenant, i.e. it's not possible for one uCDN to affect another uCDN cache.

Diamond configuration



Initial CDN architecture envisioned complex topological relationships between CDNs, that are not seen in practical implementations today

The diamond configuration allowed for same trigger to travel from uCDN A1 to dCDN C1 directly as well as via B1 and be processed twice

This would allow for race conditions for content and metadata and allows two uCDNs (A1 and B1) to publish overlapping delivery configuration
Draft 16 eliminates this option

Filtered collections refactoring

Draft 15 maintained filtered collections as distinct REST objects

Draft 16 refactors the filtered collections as representations of the main triggers collection object

The trigger collection object is created by dCDN for each active uCDN and is updated by it as triggers are created and deleted by uCDN or expired by dCDN

The filtered collections are representations of this root object, using “state” or “label” attributes as filters

```
{
  "cdn-id": "AS64496:0",
  "coll-state": [
    {
      "state": "pending",
      "uri": "/cit/state/pending"
    },
    {
      "state": "active",
      "uri": "/cit/state/active"
    },
    {
      "state": "complete",
      "uri": "/cit/state/complete"
    },
    {
      "state": "processed",
      "uri": "/cit/state/processed"
    },
    {
      "state": "failed",
      "uri": "/cit/state/failed"
    },
    {
      "state": "cancelling",
      "uri": "/cit/state/cancelling"
    },
    {
      "state": "cancelled",
      "uri": "/cit/state/cancelled"
    }
  ],
  "coll-label": [
    {
      "label": "type=video",
      "uri": "/cit/labels/type=video"
    }
  ],
  "staleresourcetime": 86400,
  "triggers": [
    "https://dcdn.example/cit/327df5b8-1df8-4cff-92f8-fda27774c171",
    "https://dcdn.example/cit/991b9fb9-d0be-4d05-be06-64c0e5c5a5f9",
    "https://dcdn.example/cit/86633e6e-d2da-4185-a285-b3d087a5d711"
  ]
}
```

Next Steps

- Review! Review!
- Working Group last call

