

CDNI Metadata Interface

(draft-liu-cdni-metadata-interface-01)

Xiaomei Liu (xiaomei.sc.liu@huawei.com)

Lakshminarayanan Gunaseelan(guna@huawei.com)

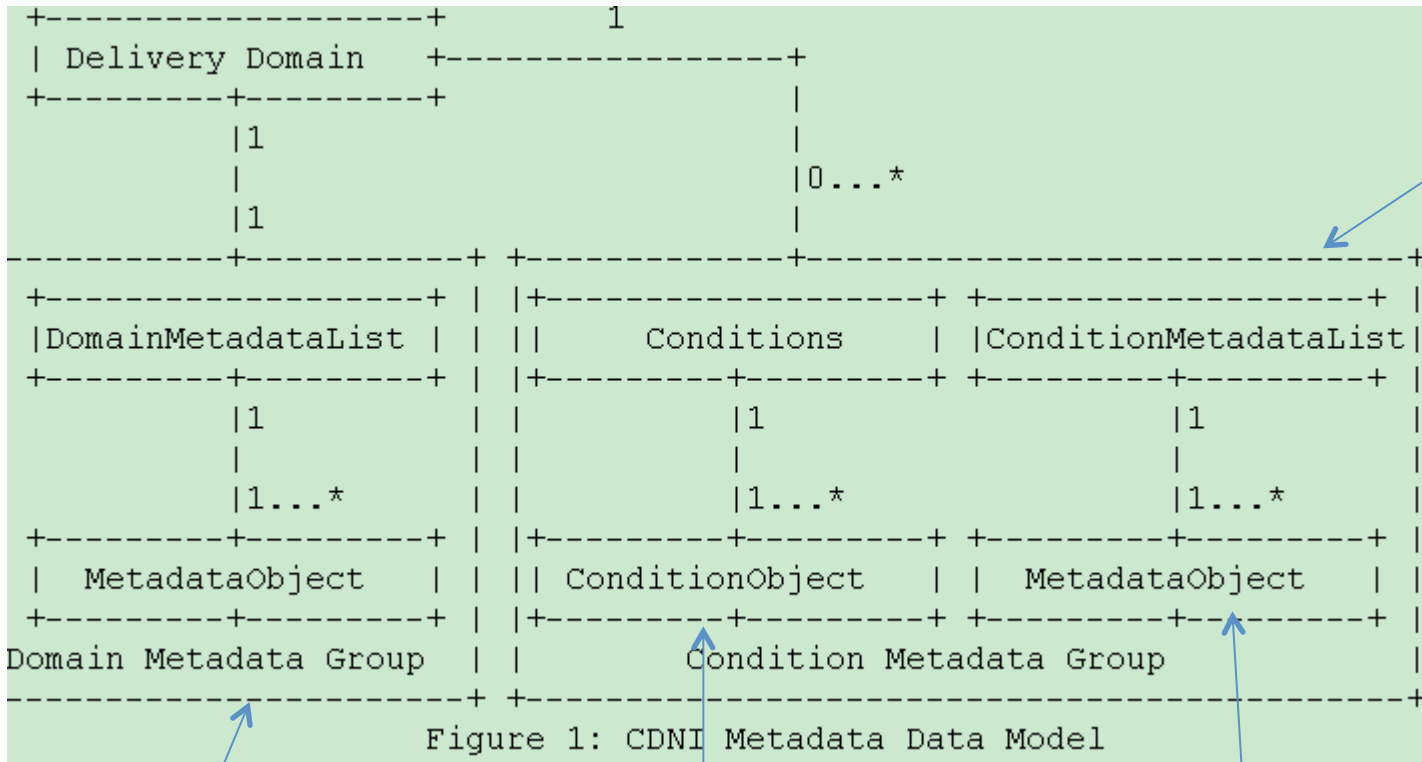
Xiaoyan He (hexiaoayan@huawei.com)

Jincheng Li (lijincheng@huawei.com)

Goals

- Define core set of metadata for interconnected CDNs
 - Content origin
 - Cache control policy
 - Access control
 - Delivery policy
- Define data model for structuring metadata
 - See next page
- Define encoding and transport mechanism
 - HTTP+JSON

Data Model



Condition metadata group is new in this draft and is the main different concept with other proposals.

Metadata with default scope: the delivery domain

Conditions need to be checked to reset some metadata against default values

Metadata only takes effect while conditions are met

Condition metadata introduction (1/2)

Purpose

To support finer control of the dCDN beyond the default metadata scope, e.g. cache of dCDN is turned on by default, while turned off if the content is private.

Rationale

- A condition metadata group includes a list of rule match conditions, and a corresponding list of metadata that takes effect if the conditions are met.
- Multiple conditions included in one condition metadata group are used in an **AND** relation.
- Multiple condition metadata groups is used to reset metadata with different conditions; in this case all these condition metadata groups are evaluated in the order received.
- When the same metadata is defined in both the domain metadata group and a condition metadata group with matching conditions, the condition metadata takes precedence over the default metadata.

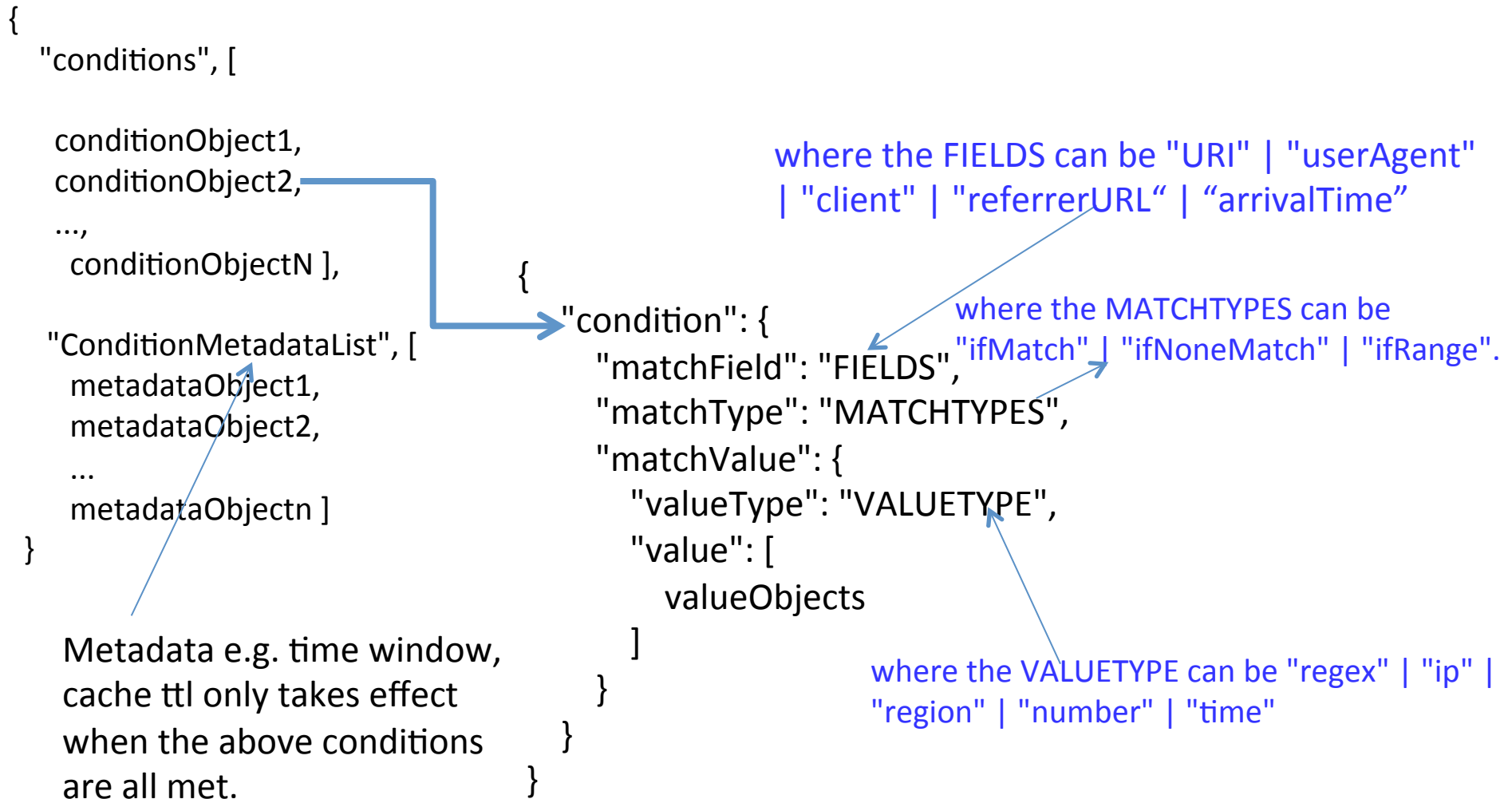
...Continued...

Condition metadata introduction (2/2)

Condition rule matching operation can be performed on the following information; it can also be extended to support any other information if needed:

- URI in a content request
- User agent header in a content request
- Referrer header in a content request
- Request arrival time
- Requesting client's information, e.g. IP address, region etc.

Encoding of condition metadata



Condition metadata example

Example 1: Restrict the content delivery to only California, United States:

```
"conditions": [  
  {  
    "condition": {  
      "matchField": "client",  
      "matchType": "ifNoneMatch",  
      "matchValue": {  
        "valueType": "region",  
        "value": [  
          {  
            "country": "US",  
            "region": "california"  
          }  
        ]  
      }  
    }  
  ],  
  "metadataList": [  
    {  
      "metadatatype":  
      "accessControl",  
      "object": {  
        "action": "deny"  
      }  
    }  
  ]  
}
```

3/29/12

Example 2: Set the cache TTL to 1 day for content whose URI has */movie/* in the path.

```
"conditions": [  
  {  
    "condition": {  
      "matchField": "URI",  
      "matchType": "ifMatch",  
      "matchValue": {  
        "valueType": "regex",  
        "value": [  
          {  
            "/movie/"  
          }  
        ]  
      }  
    }  
  ],  
  "metadataList": [  
    {  
      "metadatatype": "cacheTTL",  
      "object": {  
        "TTL": "3600"  
      }  
    }  
  ]  
}
```

Relation with other proposals

- draft-caulfield-cdni-metadata-core-00 defines a MetadataScope object to indicate a CDNI metadata applies to more than one content. But not the function that different value of the same CDNI metadata applies to the same content under different conditions.
- DeliveryGlob defined in draft-caulfield-cdni-metadata-core-00 may reset value of some CDNI metadata beyond the default value, but it is only a pattern based path match, can not be based on the request arrival time, nor the headers of the requests.

Questions

- What's the view of CDNI WG on condition metadata? Does the WG feel that the condition metadata proposed in this draft is more flexible for finer control of the dCDN?

Next step

- Asking for adoption as WG draft