draft-stephan-cdni-alto-session-ext-01
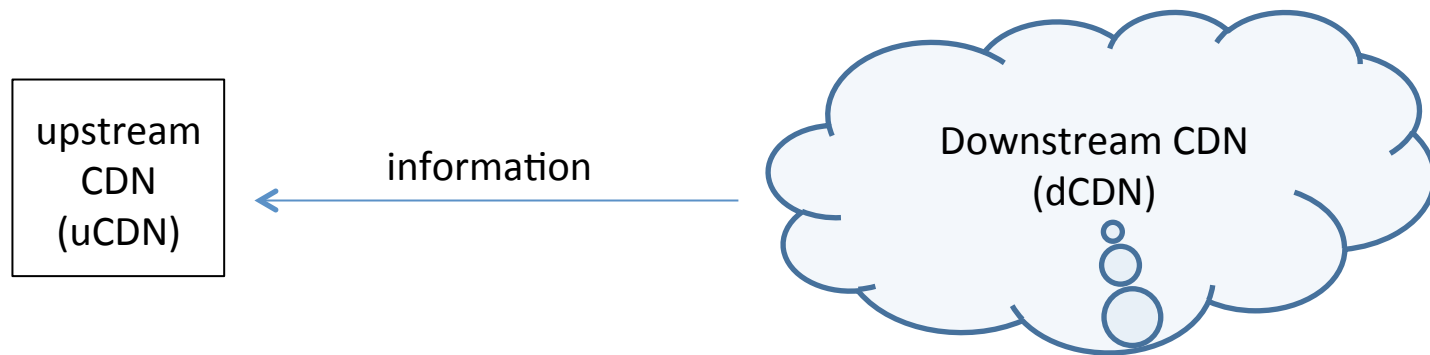
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Agenda

- Scope

- Motivation

- Multiple Interconnection Use Case
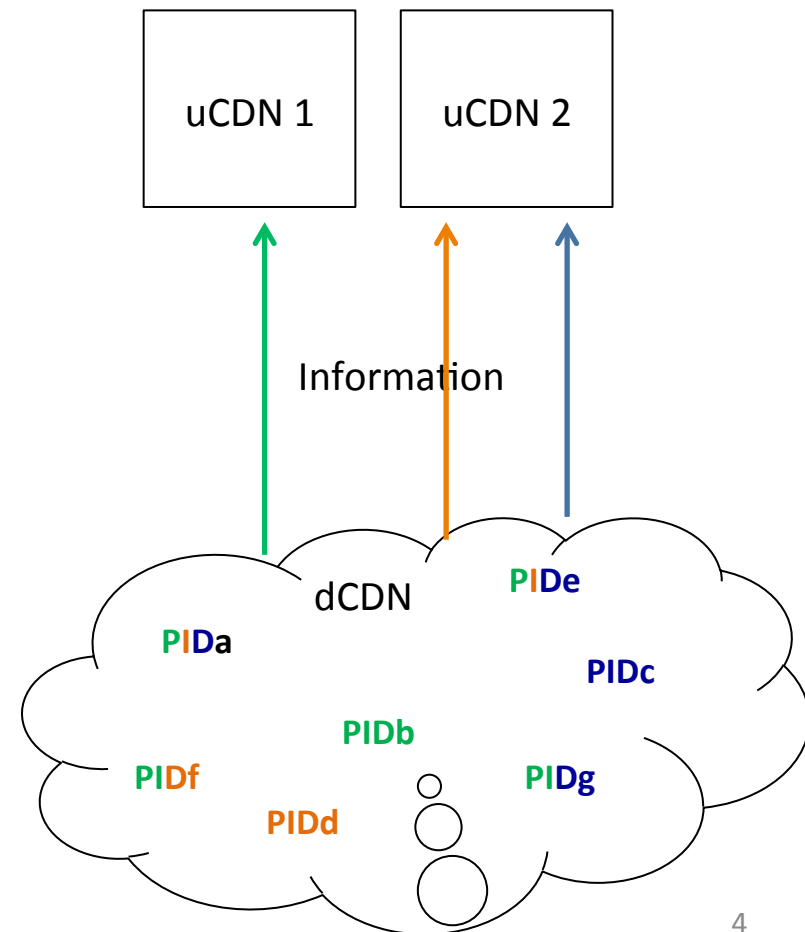
- Conclusion

CDNi ALTO Session Scope

- Control of the information exposed by a dCDN to an uCDN
- Limited to direct CDN interconnection use case

Motivation

Maintains the logical association and controls the information exchanged

- The information to exchange depends on each CDN interconnection:
    - A dCDN has explicit agreement with each uCDN it interconnects with.
    - Information to expose depends on each contract.
    - Interconnections differ (inter-affiliate, geographic extension, etc.; see draft-ietf-cdni-usecase);
- Reduce the amount of information to exchange.
    - dCDN does not want to be flooded with useless information

Use case

Interconnection with an affiliate and an CDN operated by another company.
- **CDN1 is looking for IPv4 information only**
- **CDN2 is looking for 2 different views:**
  - **FFTH customers only**
  - **IPv6 customers only**

```
                                +-------------------------------------------+
                                |                   NSP                     |
                                |                                           |
+-----------+      IPv4        |+--------------------+  +--------------+ |
|           |    Cost Map      ||  dCDN ALTO server  |  |     CDN0     | |
|   uCDN1   |<--------------       adCDN0            |  |              | |
|           |                  ||                    |  |              | |
|   ALTO    |   network Map    ||                    |  | +----------+ | |
|  Client   |<--------------     +--------------+    |  | |Monitoring| | |
|           |                  || |              |  |<----| info     | | |
+-----------+                  || |Interconnection| |  | +----------+ | |
                               || |  Policies     |  |  | +----------+ | |
+-----------+   FTTH & IPv6    || |              |  |<----|          | | |
|           |    Cost Map      || +--------------+  |  | | Routing  | | |
|   uCDN2   |<--------------       |              |  |  | |  Info    | | |
|           |                  ||                    |  | +----------+ | |
|   ALTO    |   network Map    ||                    |  |              | |
|  Client   |<--------------                         |  |              | |
|           |                  |+--------------------+  +--------------+ |
+-----------+                  +-------------------------------------------+
```

Use case Map

dCDN0 internal network map

```
"map" : {
      "PID_DSL" : {
        "ipv4" : [
          "192.0.2.0/24",
          "198.51.100.0/25"
        ],
        "ipv6": [
          "2001:db8:0:1::/64",
        ]
        },
      "PID_FTTH" : {
        "ipv4" : [
          "198.51.100.128/25"
        ],
        "ipv6": [
          "2001:db8:0:2::/64"
        ]
      }
    }
```

CDN1 IPv4 View

```
"filter": "map/PID_*/ipv4" ,
"map": "http://cdni.alto.example.com/CDN1/networkmap/ipv4"
```

```
"IPv4" : {
        "PID_DSL" : {
          "ipv4" : [
            "192.0.2.0/24",
            "198.51.100.0/25"
          ]
        },
        "PID_FTTH" : {
          "ipv4" : [
            "198.51.100.128/25"
          ]
        }
      }
```

CDN2 Views

"filter": "map/PID_FTTH"
"map": "http://cdni.alto.example.com/CDN2/networkmap/FTTH"

```
 "FTTH" : {
         "PID_FTTH" : {
           "ipv4" : [
             "198.51.100.128/25"
           ],
           "ipv6": [
             "2001:db8:0:2::/64"
           ]
         }
       }
```

```
 "IPv6" : {
         "PID_DSL" : {
           "ipv6": [
             "2001:db8:0:1::/64",
           ]
         },
         "PID_FTTH" : {
           "ipv6": [
             "2001:db8:0:2::/64"
           ]
         }
       }
```
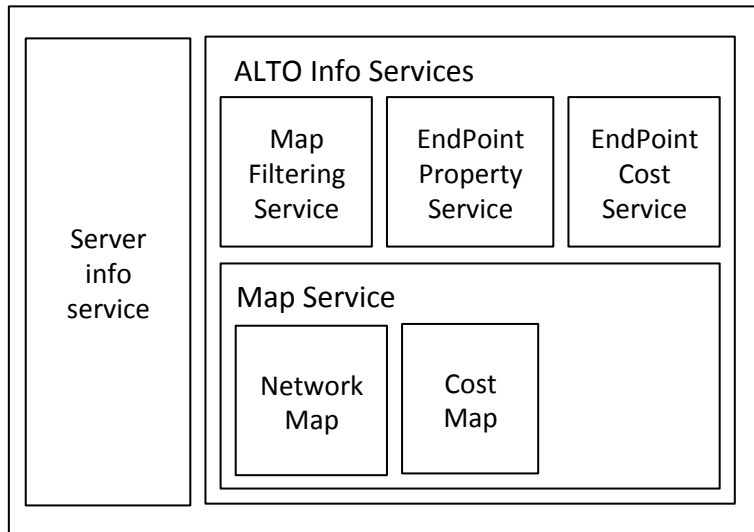
"filter": "map/PID_*/ipv6" ,
"map": "http://cdni.alto.example.com/CDN2/networkmap/ipv6"

Conclusion

- **In draft-stephan-cdni-alto-session-ext we specify 3 things:**

  - A profile for using ALTO protocol in CDNi

  - A session to maintain the logical association between uCDN and dCDN.

  - The logical association relies on Views which reflect concomitant contracts between an uCDN and a dCDN.

In a Nutschell

Current ALTO

Server info service

ALTO Info Services

Map Filtering Service

EndPoint Property Service

EndPoint Cost Service

Map Service

Network Map

Cost Map

ALTO Session

Network Map

Cost Map

Map Filtering logic

Session handler