

# ALTO Cost Schedule

[draft-randriamasy-alto-cost-schedule-00](#)

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# Outline

- Motivation
  - Use cases and I2aex related discussions
- Our Proposal:
  - ALTO Cost Schedule
- Conclusion

# Motivation

- ALTO supported applications spatially shift traffic between network regions
  - Lower routing cost for ISPs
- Many non-real time applications have degree of freedom on *when* to use a resource
  - Resource = content in a CDN, computation resource in a DC
  - Use = data transfer between caches, access a service, use a physical server for virtualized application, time shifted content delivery.

# Motivation

- Example use cases where scheduling is needed
  - Pre-population of caches
  - Data-replication across time-zones (DCs, SONs)
    - Need to avoid peak periods while using bandwidth letfovers (Netsticher)
  - Endsistemas with limited access to datacenters
    - Needing to schedule their access to resources
- ALTO extension to support time-shift of traffic
  - Lower traffic peaks & Save scarce resources for user QoE
  - Provide costs describing resources over a set of time periods
  - Need to keep resources information abstract enough
    - To protect confidentiality
- Well suited ALTO services
  - Endpoint cost service
  - Filtered cost map

# ALTO Cost Schedule

- Extend Cost Map in time horizon
  - Define slots (e.g. hourly) over a period of time (e.g. one day)
  - Per Cost-Type
- Add `"cost-mode" : ["schedule"]`
- Schedule scope defined in new IRD capability

```
"cost-scope": [{ "unit": ["hour", 1], "size": 24,
                  "begin": 0, "time zone": "GMT",
                  "lastupdate": mm/hh/dd/mm/yyyy,
                  "nextupdate": mm/hh/dd/mm/yyyy} ]
```

# Example

- Request:

```
POST /endpointcost/lookup HTTP/1.1
```

```
Content-Type: application/alto-endpointcostparams+json
```

```
{ "cost-type" : ["pathoccupationcost"],  
  "cost-mode" : ["schedule"] }
```

- Response:

```
HTTP/1.1 200 OK
```

```
Content-Type: application/alto-endpointcost+json
```

```
{ "meta" : {},  
  "data" : { "cost-type" : ["pathoccupationcost"],  
            "cost-mode" : ["schedule"],  
            "map" : { "ipv4:192.0.2.2":  
                    { "ipv4:192.0.2.89" : [7, ... 24 values],  
                      "ipv4:198.51.100.34" : [4, ... 24 values],  
                      "ipv4:203.0.113.45" : [2, ... 24 values] }  
                    }  
            }  
  } }
```

# Conclusion

- Current draft
  - Use cases
  - Specifies Cost Schedule
- Next steps: