

ALTO and Content Delivery Networks draft-penno-alto-cdn

Richard Alimi, rich@velvetsea.org
Jan Medved, jmedved@juniper.net
Reinaldo Penno, rpenno@juniper.net
Satish Raghunath, satishr@juniper.net
Stefano Previdi, sprevidi@cisco.com
Mayuresh Bakshi, mbakshi@juniper.net

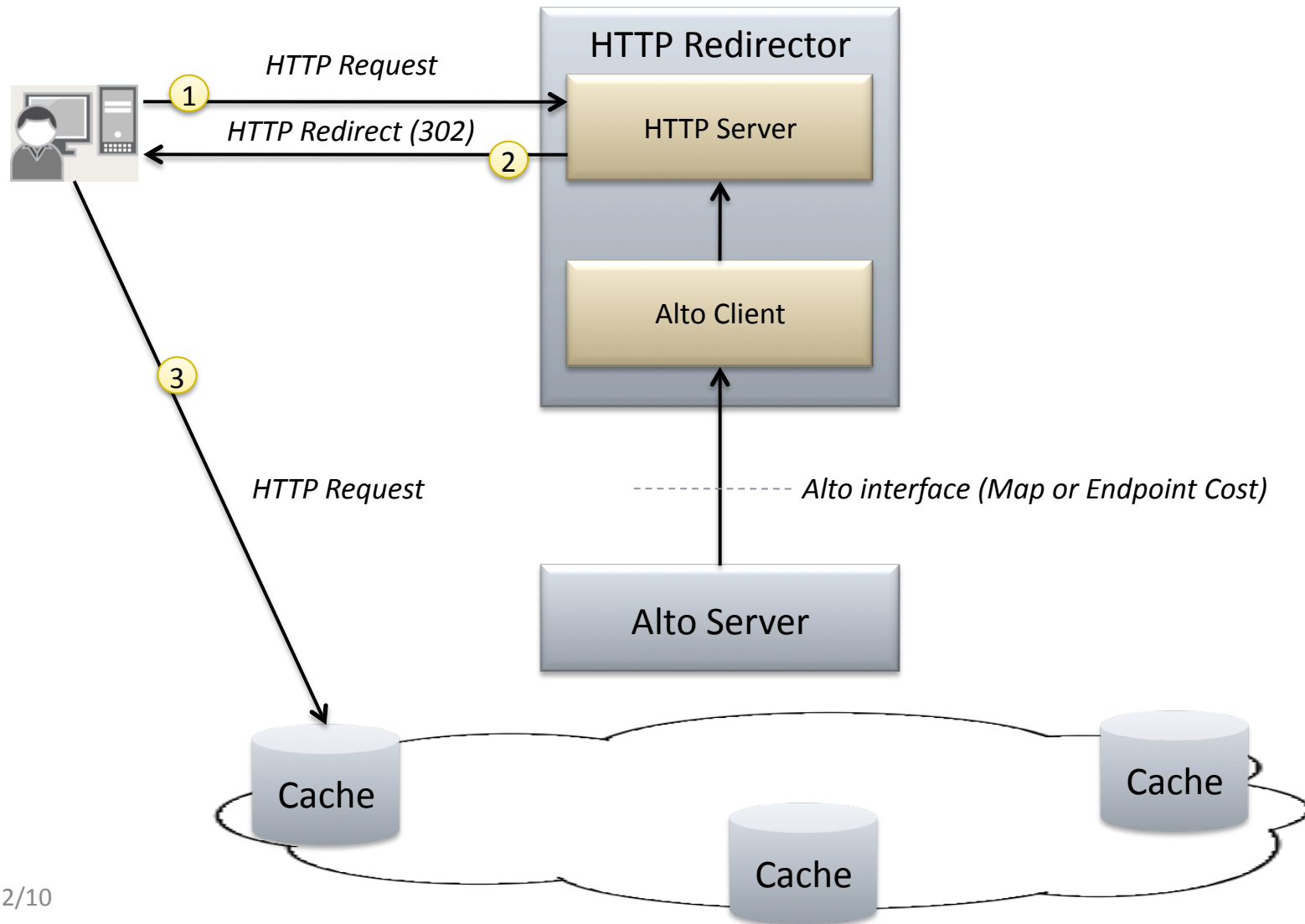
Alto Server and the CDN

- Goals:
 - Optimize traffic inside CDN
 - Improve global and local server load balancing
 - Facilitate topology & status information sharing between domains (e.g. CDN – ISP)

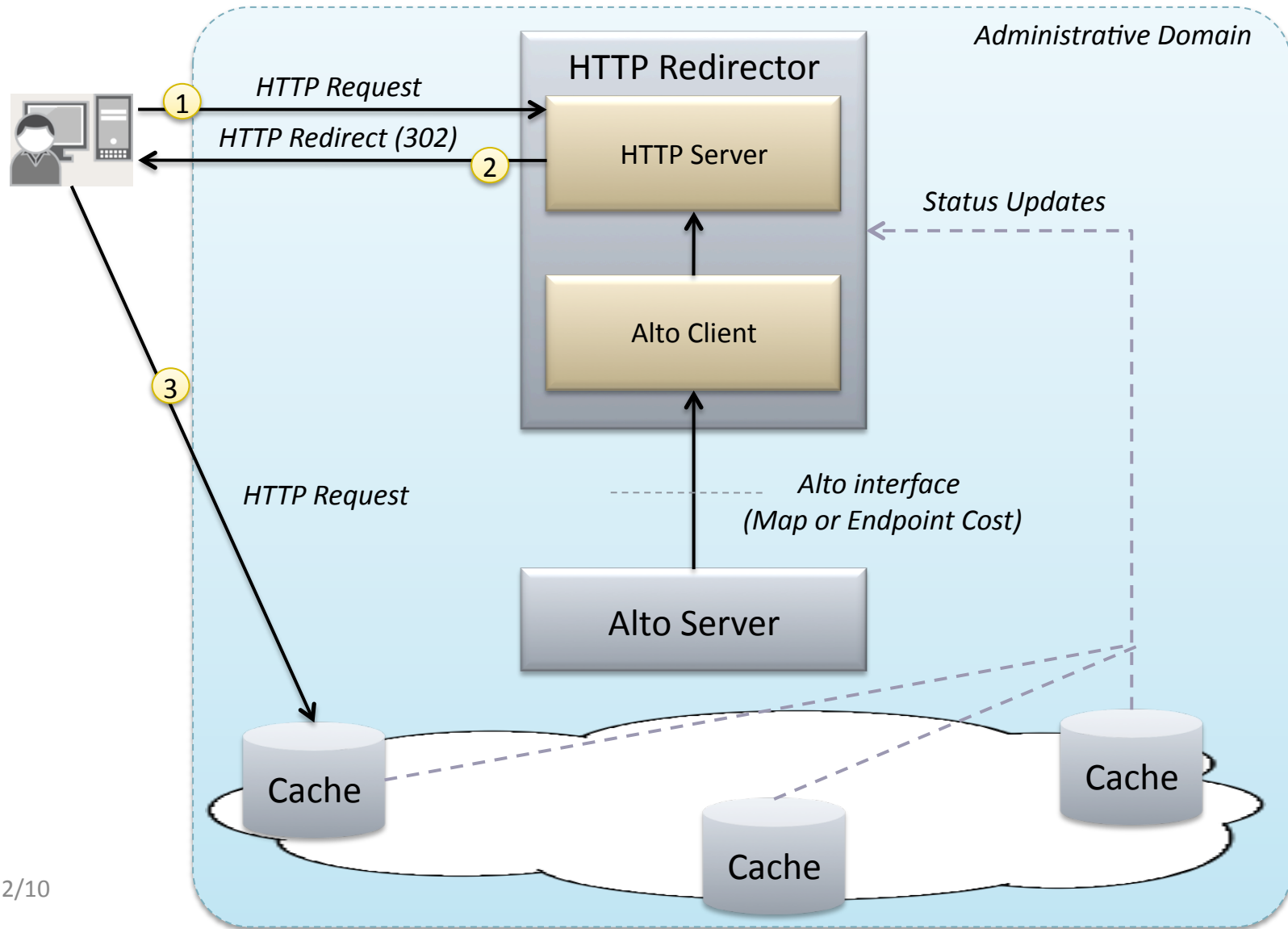
Alto Server and the CDN

- Scope:
 - Integration of the ALTO Service with the main CDN request routing / content location selection techniques
 - HTTP Redirect
 - DNS Integration
 - Multi-Domain Use Cases

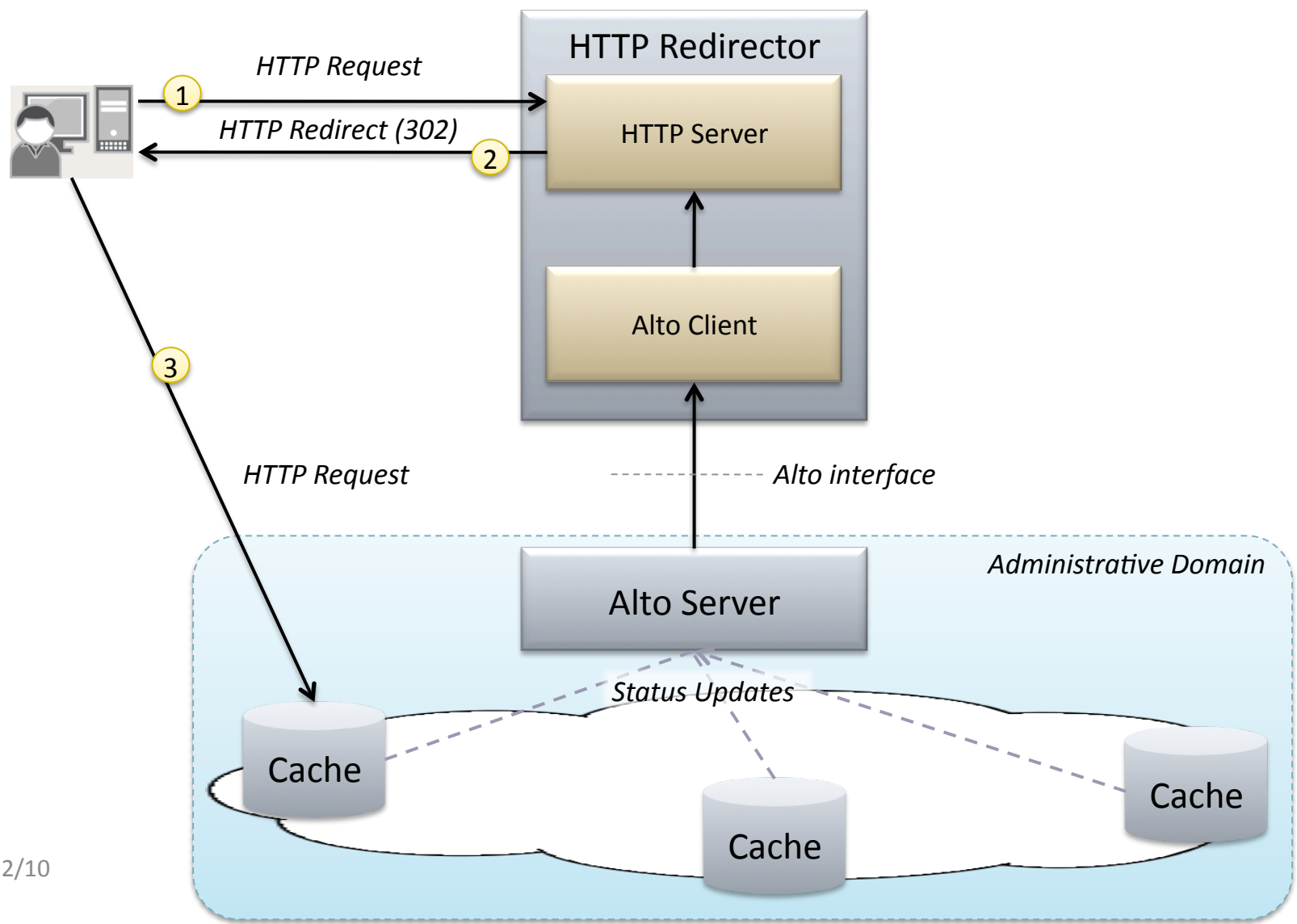
HTTP Redirector



HTTP Redirector (Status Updates)

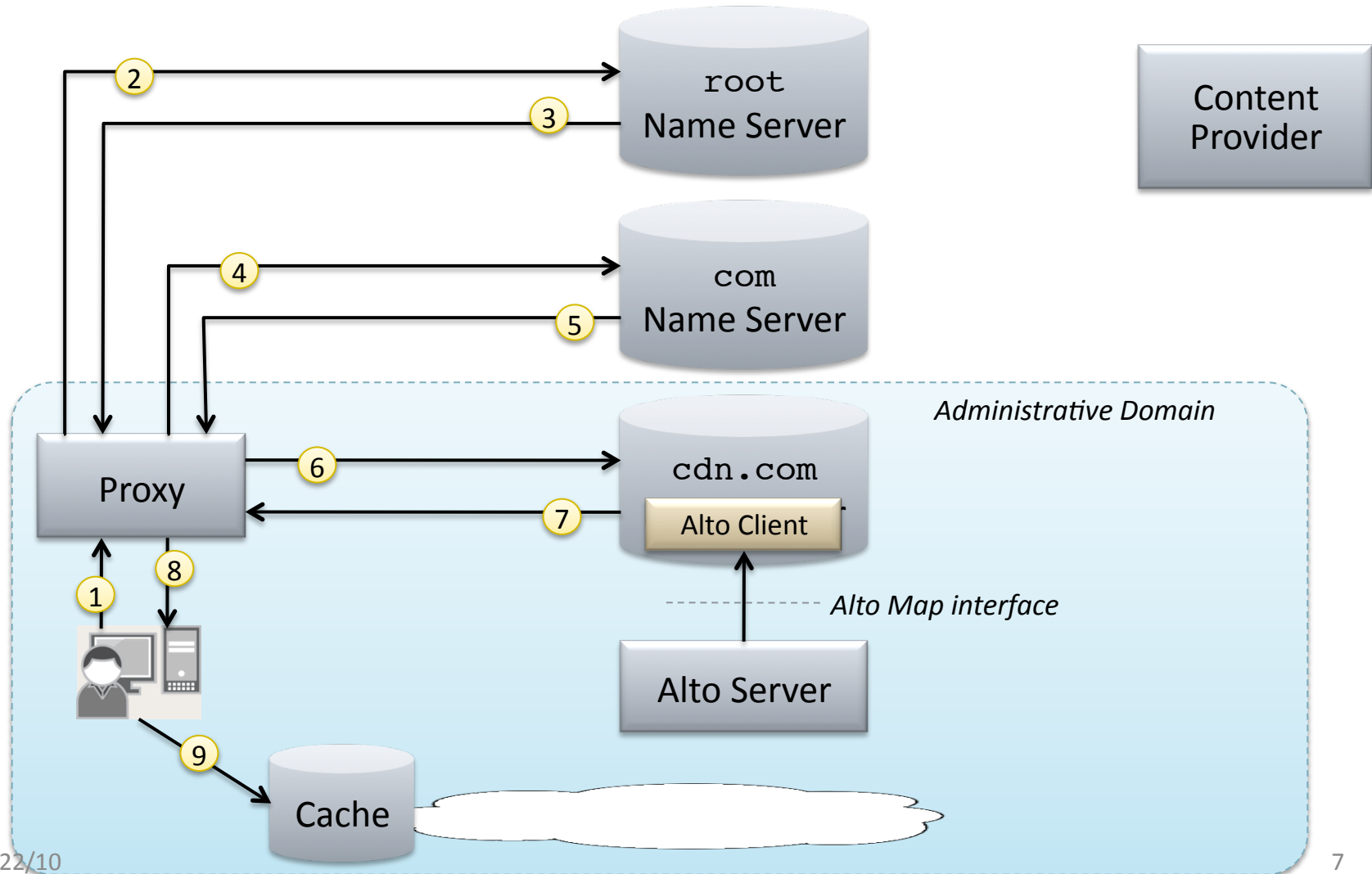


HTTP Redirector (Status Updates)



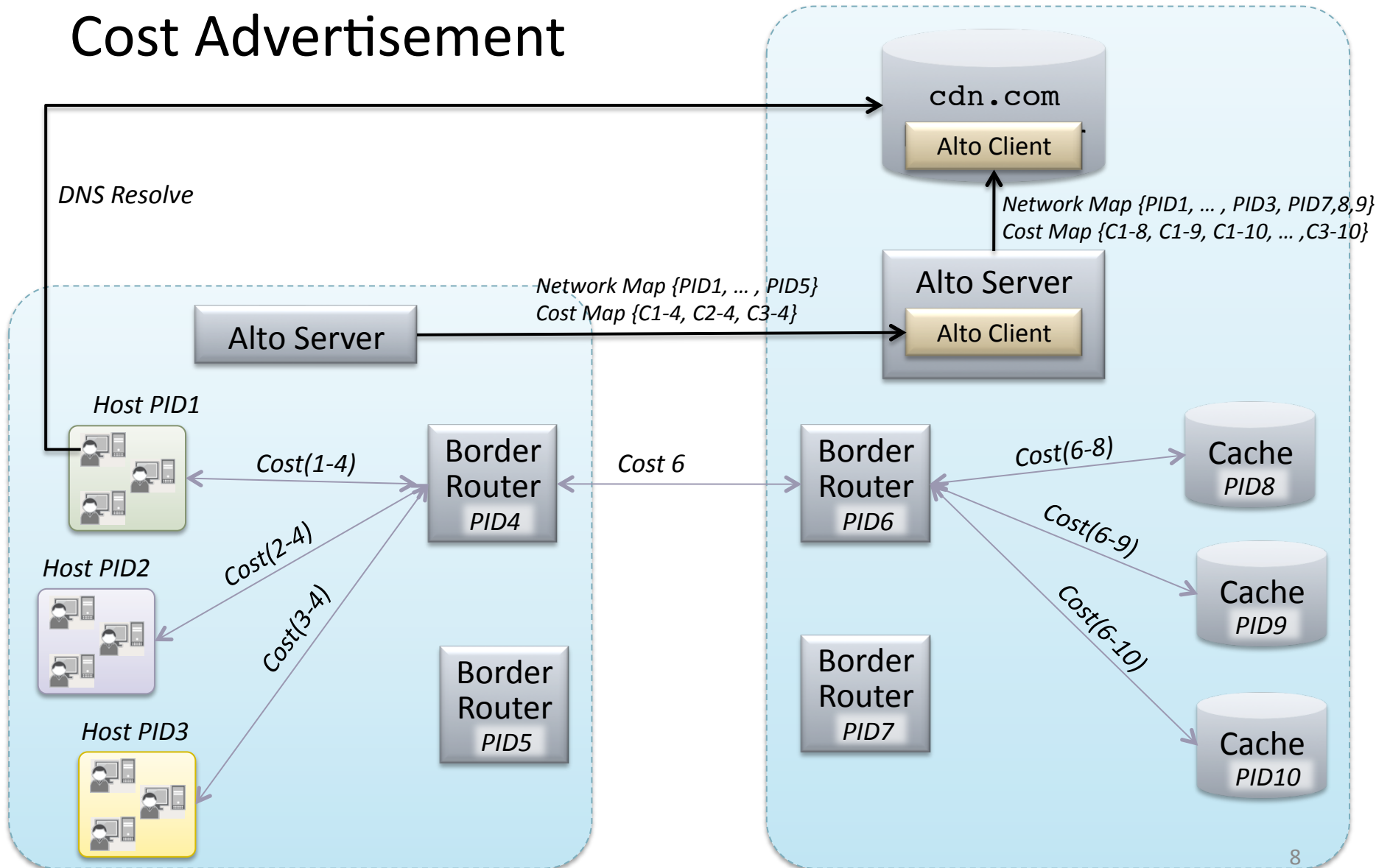
DNS Resolution

Single Administrative Domain



Multiple Admin Domains

Cost Advertisement



Additional ALTO Protocol Capabilities that May be Useful for CDNs

- **PID Attributes:** In order to disambiguate between PIDs that contain endpoints of a specific class, a PID property is needed. A PID can be classified as containing "CDN nodes", "Mobile Hosts", "Wireline Hosts", etc.
- **PID Attributes and Query:** PID attributes can be used by the Client to select a appropriate host and also passed as a constraint in the map filtering service.
- **Push Mechanism:** It is important for the ALTO Service through the ALTO protocol or a companion protocol to provide a push mechanism from server to client. The push mechanism can be a notification that new data is available or the data itself.
- **Incremental Map Updates:** A natural evolution to the protocol if maps are large and change often is to allow for incremental map updates. In this sense the map contained in the reply would be considered the delta from the previous version.
- There is a need to define how ALTO servers may communicate with each other in a federated model
- **ALTO Border Router PID attribute:** In order for administrative domains to collate costs across domain boundaries, the border routers may be placed in their own PIDs. Such PIDs may be identified by a Border Router attribute.