

# Multiple ALTO Information Sources and Partitioned Knowledge draft-kiesel-alto-xdom-disc-01

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# Where are we?

- RFC 7285: defines the protocol between an ALTO client and one ALTO server
  - The client may ask questions about any endpoint or path
  - The server is able to answer any question (“I don’t know anything about this endpoint or path” is a valid answer 😊 )
  - Redirection only on the HTTP level
- RFC 7286: network operator may publish one ALTO URI via DHCP
- RFC 5693: “backend protocol(s)” to information source(s) are out of scope for standardization (it was a conscious decision)

# Problem Statement

- There are multiple information sources!
- ALTO clients often want to optimize traffic from/to the host they're running on, but not always!
- Even if an ALTO server knew “everything”, would it be willing to tell you?

→ We need to somehow push/pull information between multiple ALTO servers in different administrative domains

# Information replication or request forwarding

Approach	New protocol or protocol extension needed?	Server discovery, information availability & authority exchange?	Comments
1.1 Exchange & merge in provisioning protocol	Yes	Yes	Split backend in impl. specific parts and a new interdomain part
1.2 Inter-ALTO-Server replication	Maybe ... or use ALTO protocol	Yes	
2.1 Request forwarding	No (use ALTO protocol)	Yes	
2.2 Request redirecting	Yes (small extension)	Yes	
2.3 Web Search Engine for ALTO	No	No	Incentive to run such a search engine?
2.4 Client-side ALTO server selection	No	Yes	

Note: all approaches need algorithms to merge information expressed with different PIDs (netw. maps), metrics, ...

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- Lookup mechanism: (IP address, „ALTO“) → IRD's HTTP(s) URI
- Based on DNS, based on RFCs 7216 (LIS Disc.) and 7286 (ALTO Disc.)
  - Distributed, well-known entry point, hierarchical, rights delegation
- Prototype implementation
- Can be used immediately for client-based server selection
- May be the basis for future inter-ALTO-server-protocols
- Candidate for a chartered deliverable (apparently the only one)

One or more alternatives to the base ALTO server discovery mechanism (RFC-to-be) to accommodate environments where [...] it is desirable for an ALTO client to be able to discover an ALTO server outside its own domain. The WG will consider mechanisms that are in use or defined by other WGs. If such discovery mechanisms can be reused, the WG will produce one or more documents to specify how they may be adopted as additional or alternative ALTO server discovery mechanisms.

- Adopt as a WG item?