Simple ALTO (SALTO) Protocol
(formerly known as H12)

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Where we are?

• Departing from
  – original P4P protocol proposal
  – original Oracle proposal
  – evolved draft-penno-alto-protocol
  – and the H12 protocol (draft-kiesel-alto-h12)

• draft-kiesel-alto-salto wasn’t ready for IETF#76 deadline

• Main difference between SALTO and draft-penno-alto-protocol
  – operational model between client and server
Problem Space

• orthogonal issues
  – map download vs. oracle query
  – IP prefixes vs. "macros" (PIDs) on the wire (ALTO client protocol)
  – IP prefixes vs. "macros" (PIDs) inside the ALTO server

• penno-alto:
  – exposes too much server internal structure to the client (via the protocol)
  – separation between network map and cost map fine for the server and for load reduction
  – problematic if network maps aren’t as stable as assumed

• Network maps assume static network
  – isn’t this mandating too much to the operator?
  – are network maps really this static?
  – check out Cisco’s ODAP; dynamically assign IP blocks
    (http://www.cisco.com/en/US/docs/ios/12_2t/12_2t15/feature/guide/ftodapss.html)
SALTO Protocol

- implements H12
- Supports caching in network and in SALTO client
- Based on HTTP/1.1
- considering XML based message body for SALTO information
H is for Hemispheres

We, the P2P users and P2P vendors want to do ALTO, but we will not disclose info about the overlay.

We, the network operators want to do ALTO, but we will not disclose info about the network topology and state.

How to bring them together?
H12 Model

- client can send info
  - IP address, IP address prefixed (e.g., /24)
  - up to the client to decide how specific
- server works out his preferences by using client’s info
- server replies with specific guidance
  - can be a 1:1 answer of request (replying with /24)
  - can be much broader answer (replying with /16)
  - can be more narrow answer (replying with multiple /24)
Protocol Example

Start

P2P-Software

ALTO Client

ALTO Server

HTTP/1.1 GET /capabilities

200 OK; admin-info, rating-c, host-la, query-uris

GET /query; P1, P2, P3, … Pn

200 OK; P1*(P1, P2)|C1, P3|C3, … Pm|Cm, valid-for:60mins

Query IP Prefixes
P1, P2, P3, … Pn

Response

Cache

Query

IP Prefixes
P1, P5, P6

GET /query, P5, P6

200 OK; P5|C5, P6|C6, valid-for:30mins

Legend:
P: IP Prefix
C: “Cost” of P
Outlook

• SALTO is another way of ALTO
• Protocol draft to be submitted after IETF meeting
• Let’s discuss this
• First implementation ready
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