ALTO Deployment Considerations
draft-stiemerling-alto-deployments-04

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Issues beyond ALTO-Protocol

- draft-ietf-alto-protocol defines the ALTO protocol
  - does not discuss deployments issues
  - deployment story not part of it
- number of general use cases discussed somewhere
  - P2P file sharing
  - P2P video streaming
  - locating the request source for CDNs
- number of varying applications of ALTO protocol discussed
  - when to use map or ranking service
  - limitations of map-based approaches
  - how to use the provisioned bandwidth option
- different use case will need different settings/constraints of ALTO, e.g.:
  - P2P file sharing: get closest peer with content
  - P2P video streaming: get peers with at least x kbit/s upload (lower bound)
  - CDN: where is the closest CDN cache
  - mobile networks: do not even try my IP addresses

Goal of the Deployment Draft

- A **single place** to document **deployment** related **issues** of ALTO
  - see list on slide before – listing examples
- Document deployment options
  - e.g. ALTO client at tracker vs. ALTO client at peers
  - deployment draft
- Document operational aspects
  - what combination may cause what range of load
  - how to avoid overloading
    - see also draft-stiemerling-alto-load-reduction
    - what to do when being overloaded?

- *Can be a starter document for late comers*
  - as more operational aspects are given & less protocol details

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Using ALTO for Peer-to-Peer

- Expectations
- Limitations/Risks

Using ALTO for CDNs

- Expectations
- Limitations/Risks

Cascading ALTO Servers

Known Limitations of ALTO

- Limitations of Map-based Approaches
- Limitations of Non-Map-based Approaches
- General Challenges

API between ALTO Client and Application

Security Considerations

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General Challenges – Load on Server

Map-based approach
- keeps load low at server, if maps are stable for long time

Non-map-based approaches
- comparable high load, if peers have to ask for each single IP address

Locating ALTO client on tracker
- rather low number of ALTO clients querying

Locating ALTO client on peers
- rather high load on ALTO server

Deciding for one way or the other may not be easy
- ALTO client at tracker with map-based might be good
- but not deployable by ISP
  - no way for force trackers to user ALTO server

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Documenting Issues

- "The main assumption for map-based approaches is that the information provided in these maps is static for a longer period of time"

- Fine, as long as the ISP is not changing its net parameters
  - ISP may reallocate IPv4 subnets
  - ISP may reallocate those subnets on very short time
  - IP prefix blocks may be assigned to a single BRAS which serves multiple (diverse) DSL deployments.

- These caveats have to be documented somewhere
- also true for other issues

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Outlook

Draft is a working document

- waiting for WG's input
- authors keep updating and documenting issues

Draft is supplement to ALTO protocol

Shall this become a WG item?

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