ALTO home proxy
draft-picconi-alto-home-proxy-00

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ALTO home proxy

- idea: run an ALTO proxy inside the home network

  - fetches ALTO information from ALTO server

  - replies to queries from local network devices

  - ideally runs on always-on device (home gateway or NAS)

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ALTO home proxy

- **benefits of ALTO home proxies**

    - reduces load on ALTO server (bandwidth and computation)
    - reduces query latency
    - easy to discover (SLP, uPnP, Bonjour)
    - fetches ALTO information updates during off-peak hours
    - performs redistribution (even if application does not)
    - enhances user privacy

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Devices to run home proxies

- ISP-managed home gateways
  - proxy installed through maintenance firmware upgrade

- user-managed devices (e.g., home NAS)
  - proxy installed through firmware upgrade or APT-style package

Proxy configuration parameters

- default ALTO proxy
  - user input, DHCP, reverse DNS lookup
    (see draft-ietf-alto-server-discovery-02)

- proxy behavior
  - caching proxy or local server

- other configuration parameters
  - maximum cache size, default expiration time, etc.

Proxy behavior

- **transparent vs. non-transparent**

  - transparent
    - proxy resides on home gateway
    - application is not aware of its presence

  - non-transparent
    - application is configured to use the proxy
    - useful if transparent proxy is not available

Proxy behavior

- **caching proxy vs. local server**

  - **caching proxy**
    - behaves as HTTP cache
    - pros: simplicity
    - cons: specific requests (e.g., filtered maps) generate cache miss

  - **local server**
    - behaves as remote ALTO proxy
    - pros: can serve client-specific requests locally
    - cons: may not be able to duplicate real server behavior (signed data, non-public cost models)

Security issues

- clients using SSL/TLS
    - cannot intercept request (transparent proxies)
    - cannot impersonate remote ALTO server
    - solutions:
        - switch back to HTTP (home network is typically trusted)
        - provide SSL/TLS + ALTO certificate to home proxy

- user privacy
    - application queries are NOT sent to remote ALTO server
    - home proxies should enhance user privacy

ALTO protocol

- do we need to modify the ALTO protocol?

- additional headers for proxies acting as local servers?
  - to control behavior of intercepting proxies?
  - to force update on ALTO information?

Questions?