ALTO Server Discovery Protocol

draft-kiesel-alto-3pdisc-05.txt

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Outline

• History
• Protocol Overview
• Retrieving the Server URI by U-NAPTR
• Retrieving the Domain Name
• Deployment Considerations
• Conclusion
History

• Document represents merge of two previous drafts
  – draft-kiesel-alto-3pdisc-04
  – draft-song-alto-server-discovery-03

• Modifications
  – Added discovery scenario descriptions
  – Removed option to retrieve server URI by DHCP
  – Stop shortening of result of DNS reverse lookup after one iteration
  – Added deployment considerations
Protocol Overview

User Input -> DHCP -> Reverse DNS

Retrieving the DNS suffix

U-NAPTR

Retrieving ALTO Server URI

Final DNS lookup
Retrieving the URI by U-NAPTR

- U-NAPTR [RFC4848] Resolution for retrieval of ALTO Server URI in case of DHCP deployment issues based on draft-stiemerling-alto-dns-discovery-00.txt

- 2 Steps:
  - Retrieve domain name of access network
  - Retrieve ALTO Server URI through U-NAPTR resolution

- draft-kiesel-alto-3pdisc-05.txt specifies DNS entries for HTTP and HTTPS:
  ```
  example.com.
  IN NAPTR 100 10 "u" "ALTO:https"
  "!*https://altoserver.example.com/secure!" ""
  IN NAPTR 200 10 "u" "ALTO:http"
  "!*http://altoserver.example.com!" ""
  ```
Retrieving the Domain Name

- Access network domain name required as input for U-NAPTR
- Option 1: User Input
  - Allow user configuration of third party ALTO server instance
  - User specifies DNS suffix (e.g. `myaltoprovider.com`)
  - Use IP address as prefix (e.g. `d.c.b.a.myaltoprovider.com`)
  - Shorten domain name until successful U-NAPTR lookup
    - `d.c.b.a.myaltoprovider.com`
    - `c.b.a.myaltoprovider.com`
    - `b.a.myaltoprovider.com`
- Option 2: DHCP
  - Use DHCP option to retrieve access network domain name [RFC5986]
- Option 3: Reverse DNS Lookup
  - Resolve IP address to FQDN through DNS PTR lookup
    - (e.g. `d-c-b-a.dsl.westcoast.myisp.net`)
  - Shorten FQDN name for one succeeding U-NAPTR lookup
Deployment Considerations

• Private customers or small businesses
  – ISP provides DNS PTR lookup results, such as: p5B203EA1.dip.t-dialin.net.
  – Then ISP needs to configure U-NAPTR entries for: dip.t-dialin.net.

• Medium-size customer networks
  1. ISP my-isp.net assigns an IP address a.b.c.d to customer
  2. Customer decides reverse mapping for a.b.c.d is whatever.customerdomain.com
  3. Customer asks ISP for URI of ISP’s ALTO server, e.g.: http://altoserver.my-isp.net
     IN NAPTR 200 10 "u" "ALTO:http"
     "!*http://altoserver.my-isp.net!" ""

• Large customers
  – Have their own ALTO server and configure their DNS accordingly
Open Issues & Conclusion

• Open Issues
  – Reverse DNS lookup vor IPv6
  – Missing reverse DNS entries
  – Handling of multiple results
  – Suffix issues

• draft-kiesel-alto-3pdisc-05.txt:
  – Merge between draft-kiesel-alto-3pdisc-04 and draft-song-alto-server-discovery-03
  – Specification of DNS based discovery
  – Covers both, the "normal" and 3p discovery scenario

• Refine the specification

• Accept as a WG item?
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