

Third-party ALTO server discovery

[draft-kiesel-alto-3pdisc-03.txt](#)

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Outline

- Types of ALTO server discovery
- Why DNS based alto discovery?
- ALTO service resource record format
- Lookup procedure
- Conclusion & Next steps

Types of ALTO server discovery

- “Normal” discovery

ALTO discovery entity is located in the resource consumer (peer), which will eventually access the resource

- scenario and candidate solution approaches discussed in `draft-song-alto-server-discovery-0{0,1,2,3}.txt`
- DNS SRV records listed as one promising approach amongst many others

- Third-party discovery

ALTO discovery entity is located in resource directory (tracker) and requests ALTO guidance on behalf of resource consumer

- the “normal” discovery above is a special case of that
- scenario and candidate solution approaches discussed in `draft-kiesel-alto-3pdisc-0{0,1,2}.txt`
- DNS SRV records is the only promising approach

- `draft-kiesel-alto-3pdisc-03.txt`:

First version of a **specification** of DNS based discovery, both for the “normal” and 3p discovery use case

Why DNS based also discovery?

- DNS is deployed all over the Internet.
 - DHCP and IP multicasting are not.
- Most residential gateways / broadband NAT-routers know how to forward DNS from the outside to the inside.
 - Critical for DHCP.
- User can influence ALTO service instance selection
 - by entering (parts of) a DNS domain name (see below), in-line with ARv05-23/24
- DNS allows queries between different operator's networks
 - important for 3rd party discovery
- DNS is a proven technology
 - operators are used to it
 - DNS SRV used by SIP, Jabber, etc.

ALTO service resource record format

- General SRV resource record format:

```
_Service._Proto.Name TTL Class SRV Priority Weight Port Target
```

- We define:

```
Service      alto
```

```
Proto        tcp
```

- Other fields according to standard DNS meaning [RFC2782]
- Example for querying the ALTO service record running in the domain myisp.net:

```
_alto._tcp.myisp.net IN SRV 1 0 80 alto-srv01.myisp.net
```

Lookup procedure

- Two use cases:
 - (a) ALTO service instance is provided by the access network provider
 - (b) User configures a specific ALTO service instance
- Step 1: Finding the IP address
 - Determine the IP address(es) of resource consumer
 - Use STUN or Bittorrent's BEP24 if needed
- Step 2: Determining the DNS suffix
 - (a) Resolve IP address by DNS PTR query to FQDN
A lookup for `d.c.b.a.in-addr.apra` might resolve to:
`d-c-b-a.dsl.westcoast.myisp.net`
 - (b) User specifies the DNS suffix on its own (e.g. in a config file option)
For example
`myaltoprovider.org`

Lookup procedure

- Step 3: Lookup SRV record
 - DNS suffix part not obvious. Possibly multiple SRV lookups needed to get a PTR reply
 - (a) Create SRV RR. Shorten by one part if lookup fails. For example:
 - `_alto._tcp.d-c-b-a.dsl.westcoast.myisp.net.`
 - `_alto._tcp.dsl.westcoast.myisp.net.`
 - `_alto._tcp.westcoast.myisp.net.`
 - (b) Extend the DNS suffix by IP address in reverse order. Shorten by one part if lookup fails. For example:
 - `_alto._tcp.d.c.b.a.myaltoprovider.org.`
 - `_alto._tcp.c.b.a.myaltoprovider.org.`
 - `_alto._tcp.b.a.myaltoprovider.org.`
- Step 4: Final lookup
 - Process PTR records
 - Perform final DNS lookup on A record
 - Forward the contact information to ALTO client

Conclusion & Further steps

- `draft-kiesel-alto-3pdisc-03.txt`:
 - First version of a **specification** of DNS based discovery
 - Covers both the "normal" discovery
 - and 3rd party discovery
- Adapt draft's name to new scope
- Probably incorporate overview text from draft-song...
- Refine the specification
- Adopt this draft as a WG item?

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