
DNSSD Directions

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Topics

- DNSSD on the Homenet
- DNSSD Discovery -> DNS
- DNSSD <-> Core Resource Directory
- DNSSD registration

DNSSD on the Homenet

- Homenet has to choose:
 - Simple DNSSD, basically DNSSD Discovery Proxy
 - Stateful DNSSD/DNS/publication of names
- Currently working on a simple naming/service discovery architecture: draft-tldm-simple-homenet-naming-00
- Previous work:
draft-lemon-homenet-naming-architecture-01

Simple Homenet naming

- Splits DNSSD Hybrid Proxy into two parts
 - Relay proxy (1 per link)
 - speaks mDNS to the link
 - speaks DNS to the aggregator
 - Not user-visible
 - Query proxy (1 or more per Homenet)
 - speaks DNS to hosts
 - supports DNS push
 - speaks DNS to relay proxies
 - aggregates responses from relay proxies
 - does all name rewriting

Simple Homenet Naming (2)

- Not stateful
- Names not published to the internet
- Link names are
 - machine generated
 - ugly
 - make no sense

Choices to make

- We need to figure out how to deal with name conflicts
 - present link names always?
 - present link names when ambiguous?
 - elide link names in answers when not ambiguous?
- Are we happy with this stateless approach?
- Is there a long-term way to fix some of the problems with registration?

DNSSD -> DNS problem

- Possible models:
 - Completely stateless (Discovery Proxy is NS)
 - Caching, no coherent zones (Discovery Proxy is NS)
 - Publish real DNS zones (is this meaningfully different than caching?)
- Could we do DNSSEC with stateless or caching models?
- Completely stateless requires multicast
- Any registration protocol is going to require changes to service publishers
- One strong motivation: IoT networking makes multicast undesirable

Stateful Approach

- Initial rough proposal presented in Yokohama:
 - draft-lemon-stateful-dnssd-00
 - no further work by me since then
- Problems to solve:
 - Unique identifier per service?
 - Unicast registration protocol?
 - Security (e.g., a way to authenticate that I am the server that asserted this name earlier)
 - State maintenance
 - Cleanup of left hosts
 - Renumbering

Existing work on registration

- Stuart has talked about ongoing work in the Thread group
- CoRE WG is working on a resource directory, which has a registration protocol
- Can we leverage this work for DNSSD?

Things I want to do or want done

- Decide how to deal with disambiguation problem
- Prototype a stateful DNSSD server and learn from experience (anyone interested?)
- Figure out if we can *leverage* CoRE work
- Figure out if we can *support* CoRE work
- Publish a secure zone using stateful DNSSD
- Others...?