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...?