

DNSSD

Implementation Report

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Specifications implemented

- RFC8490 (DNS Stateful Operations)
- draft-ietf-dnssd-hybrid (Discovery Proxy)
- draft-ietf-dnssd-push (DNS Push)
- draft-ietf-dnssd-srp (Service Registration Protocol)
- draft-ietf-dnssd-mdns-relay (Discovery Relay)

DNS Stateful Operations

- Implemented in mDNSResponder
- Code is here:
 - <https://github.com/IETF-Hackathon/mDNSResponder/tree/master/mDNSResponder/DSO>
- Currently used by:
 - Discovery Proxy (DNS Push)
 - Discovery Relay client
 - Discovery Relay server
- Remaining work:
 - Server-side keepalive code

Discovery Proxy

- Implemented as a standalone DNS proxy/authoritative server
- Relies on mDNSResponder daemon for mDNS resolution and caching
- Implements DNS Push
- Code is here:
 - <https://github.com/IETF-Hackathon/mDNSResponder/tree/master/mDNSResponder/ServiceRegistration>
- Remaining work:
 - Currently does not name individual links
 - Not yet packaged for use with OpenWRT

DNS Push

- Discovery Proxy implementation is a DNS Push server
- Open source mDNSResponder is a DNS Push client
- This code can be run on MacOS and works nicely
- Source here:
 - <https://github.com/IETF-Hackathon/mDNSResponder/tree/master/mDNSResponder>
- Remaining work:
 - DSO keepalive support for server implemented
 - DSO keepalive support for client tested

DNSSD Service Registration Protocol

- Simple SRP client
 - Updates default.service.arpa
 - Uses anycast to reach server
 - SIG(0) signature is done with ECDSA
 - SIG(0) signature has been successfully tested against BIND 9.
- SRP Proxy
 - Receives updates on port 53 from simple client
 - Validates update to make sure it is an SRP update (as specified)
 - Validates the signature on the update
- Remaining work:
 - SRP client that discovers SRP registration server rather than anycasting, and that can update the SRP registration domain
 - SRP proxy that actually issues DNS updates (possibly in mDNSResponder)
 - SRP support for BIND 9?
- Code is here:
 - <https://github.com/IETF-Hackathon/mDNSResponder/tree/master/mDNSResponder/ServiceRegistration>

DNSSD Discovery Relay

- Both client and server implemented
- Source code here:
 - <https://opensource.apple.com/tarballs/mDNSResponder/IETF/mDNSResponder-IETF103.tar.gz>
- Remaining work:
 - Integrate into current mDNSResponder source
 - TLS support

Lessons learned

- Numerous trivial issues and a few significant minor issues
- Drafts updated to address these issues
- Based on the implementation work we've done, we feel confident that the drafts are all ready
- Action items:
 - It would be nice to have second implementations
 - We request WGLC on:
 - draft-ietf-dnssd-mdns-relay (passed last call, but has been updated)
 - draft-ietf-dnssd-srp
 - draft-ietf-dnssd-push (some minor changes after WGLC, Stuart will discuss further)