dnssd requirements
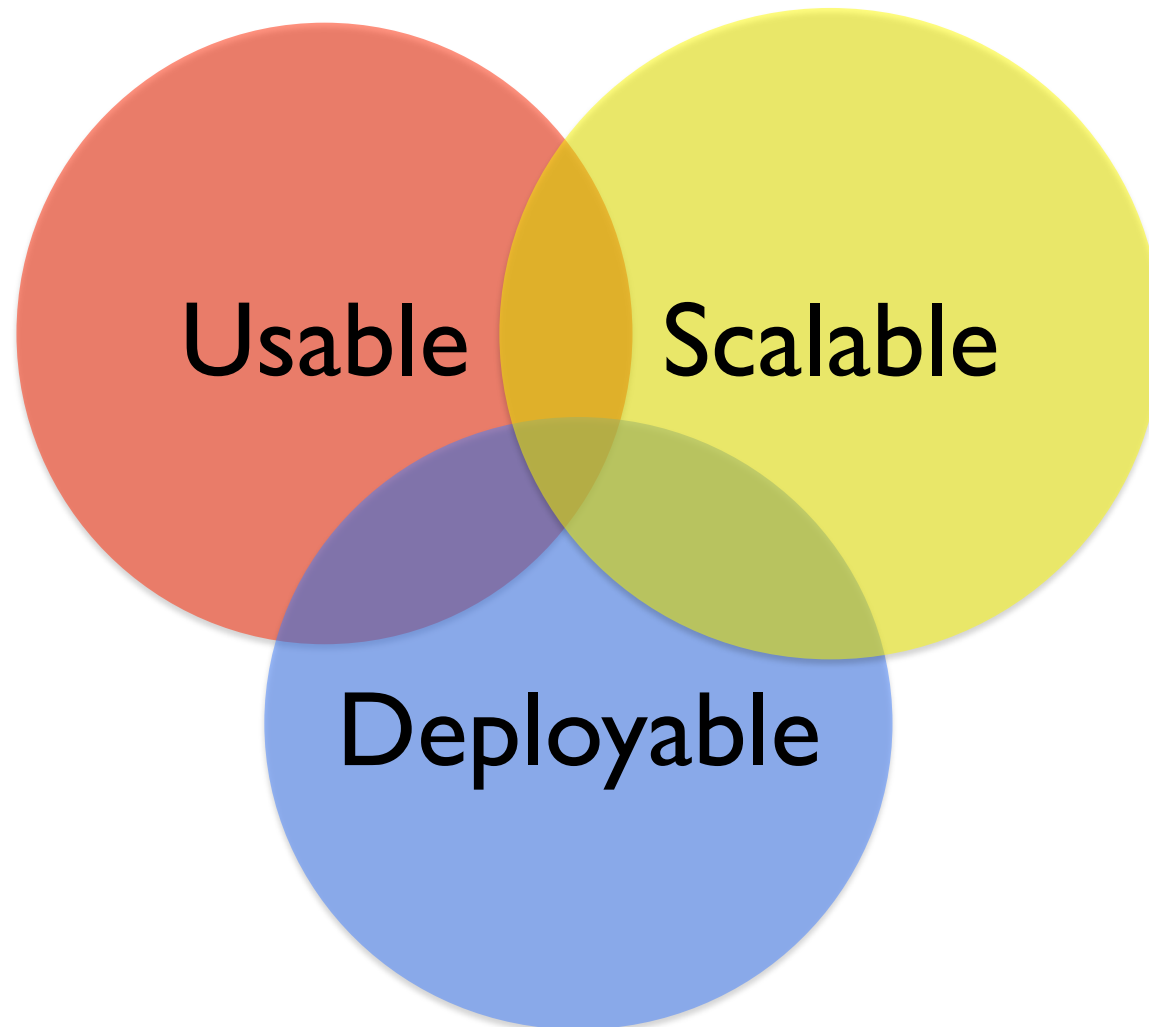
draft-lynn-dnssd-requirements-00

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Goals

- DNS-Based Service Discovery between links (including between differing link technologies)
  - Zero configuration (local)
  - Minimal configuration (global)
  - Administrative control where desired

dnssd requirements "tussle"

Usability

- Smooth continuum of user experience from single link to site to global
  - Principle of least astonishment
- Convenient user interface
  - Not long flat list of service names
  - Leverage file system browser experience?

Scalability

- In terms of:
  - Network traffic
  - CPU and memory requirements on network entities
  - Total number of services

Deployability

- Incremental deployability (e.g. "islands" of infrastructure-less functionality can be merged)

- Identify what changes to existing network elements will be required and attempt to minimize those changes (e.g. may be easier to revise clients than servers)

- Suitable out-of-the box defaults should enable zero-config use on many small- to medium-sized networks, while still allowing for administrative control in networks where that's appropriate

Security

- Authorization versus authentication (e.g. which services are authorized to advertise?)

- Avoid manual configuration of every service entry in a directory

- Avoid solving "new" security problems
  - Attempt to leverage existing solutions

Requirements Discussion

Changes since draft-02

- NB. previous version was under old BoF name
  - draft-lynn-mdnsext-requirements-02
- Minor edits for clarity
- Gathered some obvious requirements from the prose sections and made them explicit
- Added some additional thoughts to the Security section

REQ1

The scope of the discovery should
be automatically found by the
discovering devices and/or configured.

REQ2

For use cases A, B and C*,
there should be
a zero configuration operation.

A: Personal network
B: Small home network
C: Larger home network

REQ3

For use cases D and E*, there should
be a way to configure the scope
of the discovery and also support
both smaller (ex: department) and
larger (ex: campus-wide) discovery.
(Split into separate requirements?)

D: Enterprise networks
E: Higher Education

REQ4

For use cases D and E*, there should be
an incremental way to deploy the solution.

D: Enterprise networks
E: Higher Education

REQ5

The new solution should integrate or at least should not break any current link scope DNS-SD/mDNS protocols and deployments.

REQ6

The new solution MUST be capable of spanning multiple links (hops) and multiple network technologies.

REQ7

The new solution MUST be scalable to thousands of servers with minimal configuration and without degrading network performance.

REQ8

The new solution MUST provide a consistent user experience whether local or global services are being discovered.