Naming and Service Discovery
What's the difference?

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Naming vs. Service Discovery

Summary:
Largely The Same Thing

Single Answer vs. Multiple Answers

- Naming — Single Answer

- Service Discovery — Multiple Answers

  - But… with multi-homed hosts, and/or IPv4/IPv6 dual-stack hosts, name queries also return multiple answers

  - So maybe that's not a difference

Naming or Service Discovery?

- Distinction is fuzzy:
www.apple.com.
time.apple.com.
mail.apple.com.
imap.apple.com.
smtp.apple.com.
ldap.apple.com.

- Are those host names, or service discovery?

Naming Comes in Many Guises

- DNS

  - Maps textual name to IP address(es)

- IPv4 ARP / IPv6 ND

  - Maps IP address to MAC address

Naming Comes in Many Guises

- Service Discovery

  - Maps conceptual service to instance name(s)

- DNS

  - Maps textual name to IP address(es)

- IPv4 ARP / IPv6 ND

  - Maps IP address to MAC address

Multicast vs. Repository

- Multicast (or Broadcast)

  - Good for zero configuration

  - Tends to be wasteful for name lookup

- Repository

  - More efficient

  - Requires infrastructure

Multicast vs. Repository

- But… sometimes
  the Multicast/Repository distinction is fuzzy

- E.g. ARP is defined as a broadcast protocol

- But… it's actually implemented on many Wi-Fi access points as a repository

- So… maybe the Multicast/Repository distinction is not an important difference either

Local vs. Global

- Local naming can be (mostly) zero-configuration

  - e.g. ".local" means names on local link

- Global names need to be globally-unique

  - Need user-involvement for meaningful names

  - A random hex string may be globally-unique, but not very useful

- This issue applies to both naming and service discovery

Naming & Service Discovery

Conclusion:
More similar than different.
We should take advantage
of that similarity.