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:
  mail.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.