

Aggregated Service Discovery

Problem Statement

Andrew Biggs
adb@cisco.com
IETF86, March 2013

Observations

- Providers offer a growing number of services.
Email, directory, calendaring, IM/P, voice, streaming, collaboration, file sharing.
- Users use a variety of clients and devices.
Smartphones, tablets, desktop apps, web browsers, phones, video endpoints.
- Users are mobile and access services from varied locations.
Inside the firewall, outside the firewall, main campus, branch office.
- How a client connects can be a function of user identity.
Organizationally distributed services, subscription services.
- Client configuration has become more complex.
Growing need to leverage automated service discovery.

Service Discovery Options

- Service discovery is not a new problem...
- **DHCP**
Good for discovering local network service instances, DNS, NTP, NIS, etc.
Limited to local network, app-level DHCP APIs not pervasive.
- **DNS SRV**
Good for discovering multiple instances of services, XMPP, CalDAV, etc.
Limited to hostname/port, security issues, not for browser-based apps.
- **DNS SD**
Great for advanced and custom configs, leverages existing DNS record types.
Not for user-specific or sensitive service access information.
- **WebFinger**
Extensible, secure, user-oriented, easily deployed and accessed.
Public directory geared toward linking together a user's resources.

Service Discovery Requirements

- **Keep it simple for end users.**
Minimize what users must provide in order to bootstrap discovery.
- **Enable adoption by client developers.**
Consider constrained clients, lower the barriers to adoption where possible.
- **Make basic deployment simple, advanced deployment possible.**
Support multiple service instances, prioritization, user/location/device-specific configs.
- **Consider user experience and mobile devices.**
Optimize for low latency, with minimal round-trips and aggregation.
- **It should be extensible.**
Support registered schemas for standard protocol configs as well as custom extensions.
- **It must be secure.**
Require secure channel, support authenticated access.