DNSSD Status Update

Stuart Cheshire, Apple

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Reminder
Why all this non-multicast discovery work?

On 10Mb/s coaxial Ethernet, multicast is cheap and easy

On many modern network technologies, multicast is expensive and/or unreliable

* Wi-Fi

* Advanced home networks with more than a single link

* Mesh networks like Thread

* Enterprise networks with thousands of Wi-Fi clients

Four New Documents

draft-cheshire-dnssd-roadmap-00

draft-sctl-service-registration-00

draft-sctl-discovery-broker-00

draft-sctl-dnssd-mdns-relay-00

Three Updated Documents

draft-ietf-dnssd-push-12

draft-ietf-dnsop-session-signal-03

draft-cheshire-edns0-owner-option-01

One Document Awaiting Others

draft-ietf-dnssd-hybrid-06

… depends on draft-ietf-dnssd-push

   … which depends on draft-ietf-dnsop-session-signal

      … which is stuck in debate in the DNSOP Working Group

Two Documents Not Written

Advertising Proxy

• Lets a remote device advertise using Multicast DNS
  on a link to which it is not directly connected

Zone Stitching

• Coordinates uniqueness of Multicast DNS names on separate links

Both of these become unnecessary as we move away from Multicast DNS

Overview

Service Discovery Road Map
draft-cheshire-dnssd-roadmap-00

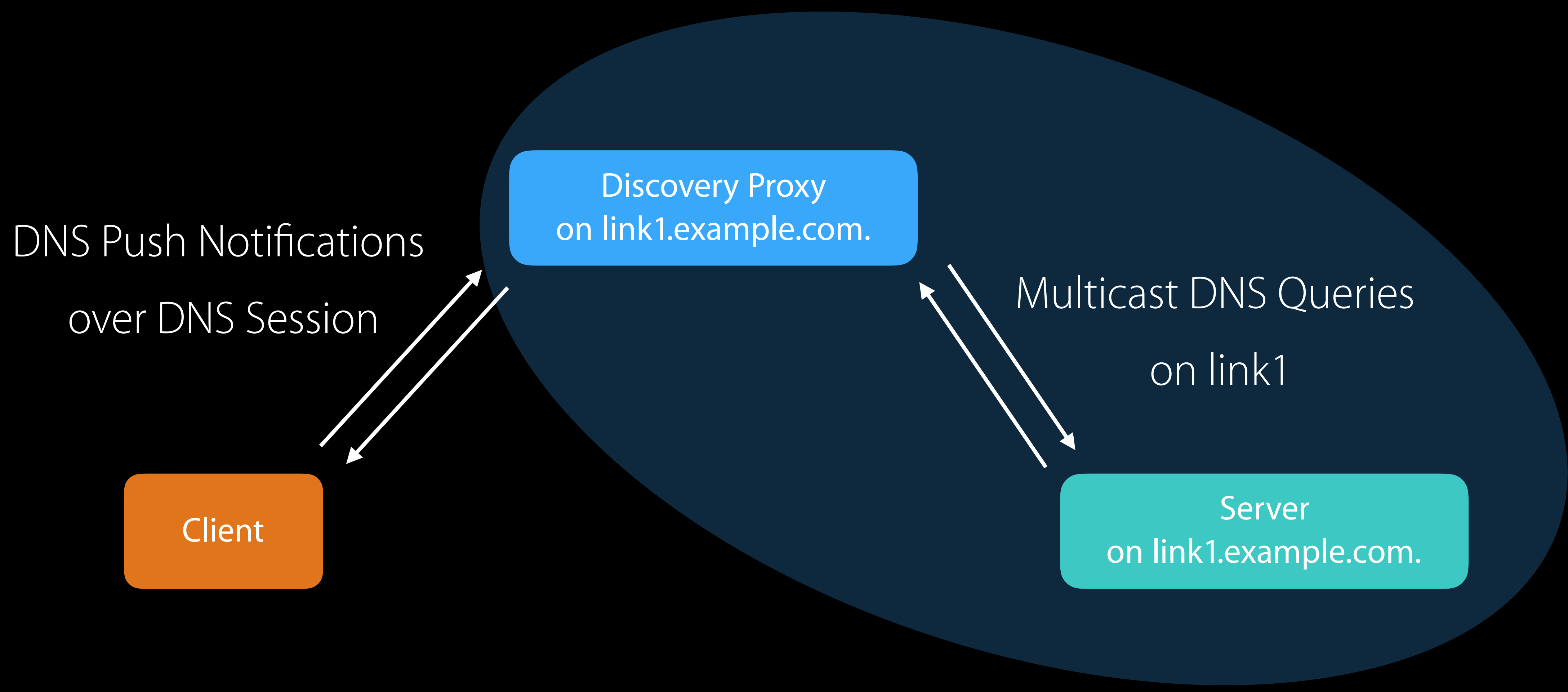Work has intentionally been broken into small independent components

- Modularity is a good thing

- But can be confusing

Road Map document explains how modules fit together

Client Config: (RFC 6763 Section 11)

Look for services in link1.example.com.

Client

DNS Push Notifications over DNS Session

Discovery Proxy
on link1.example.com.

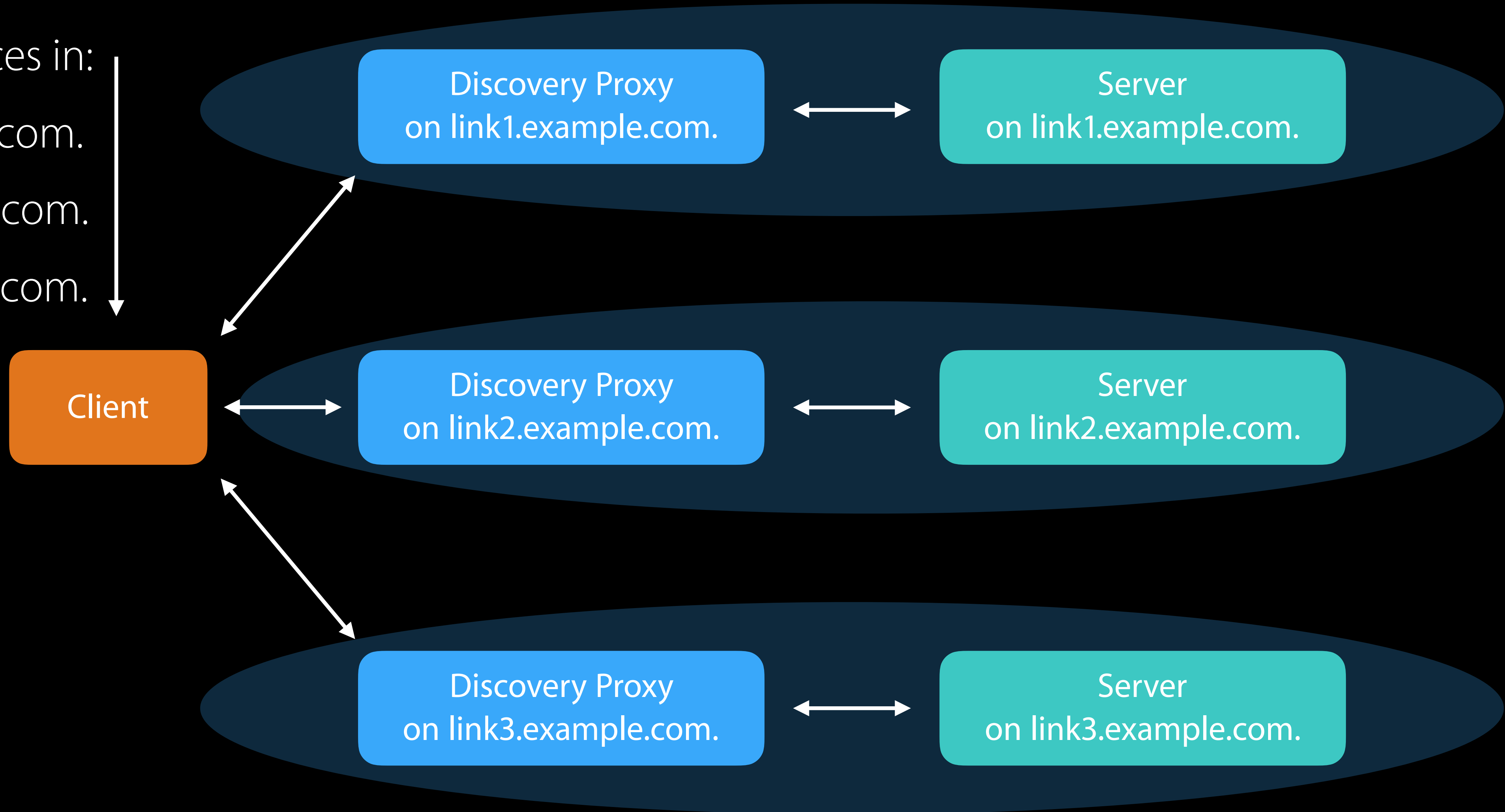Multicast DNS Queries on link1
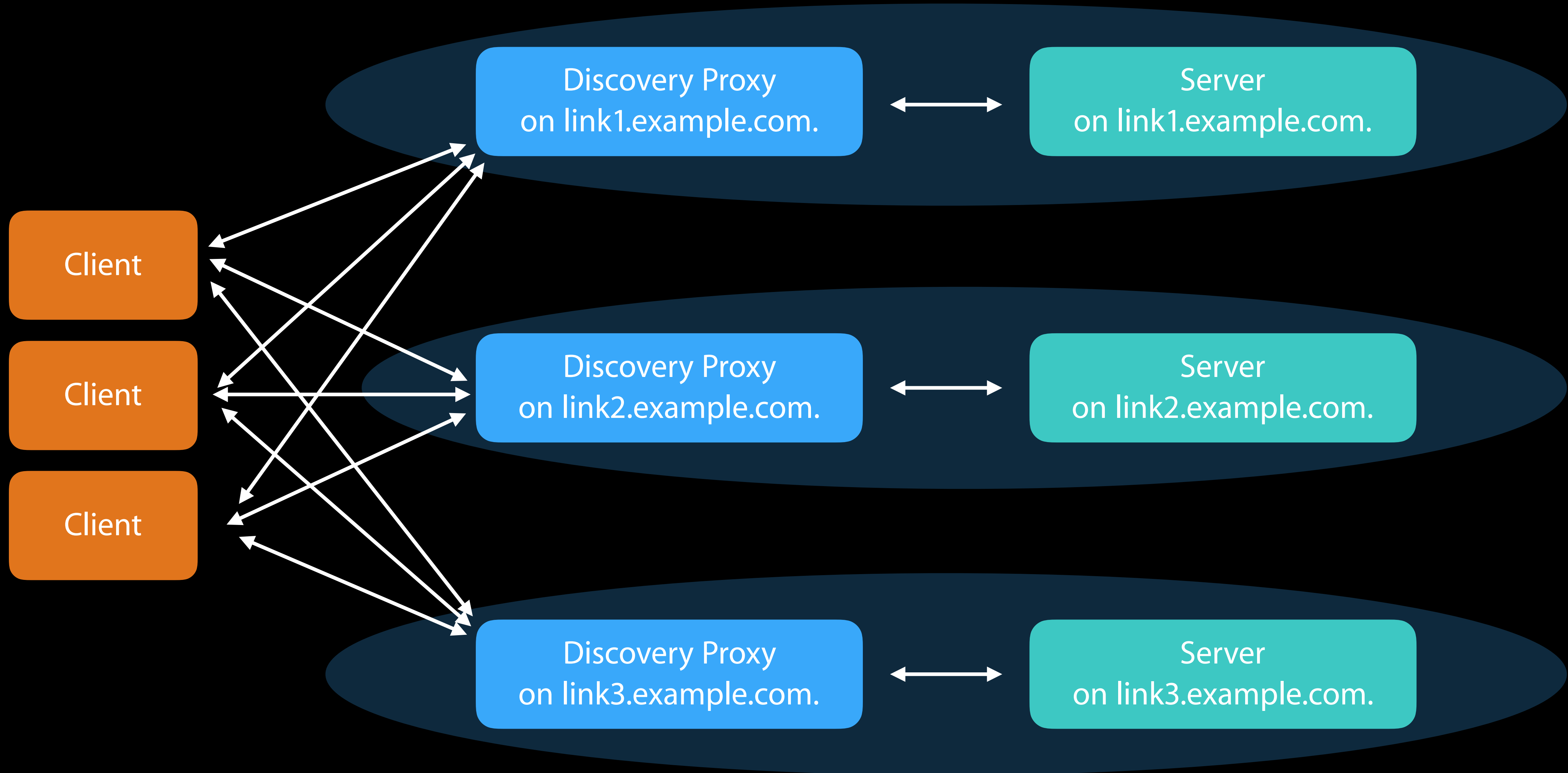
Client

Server
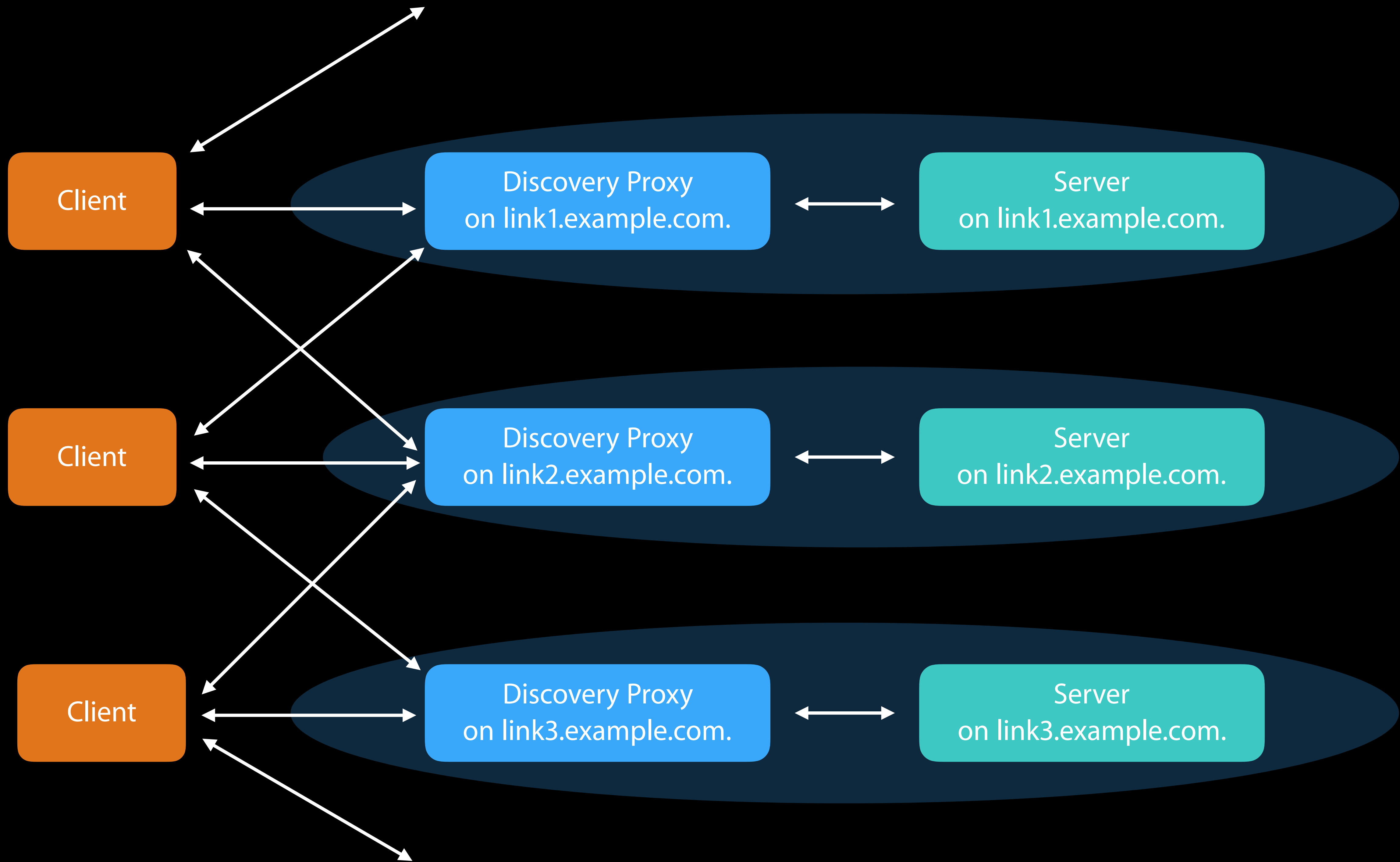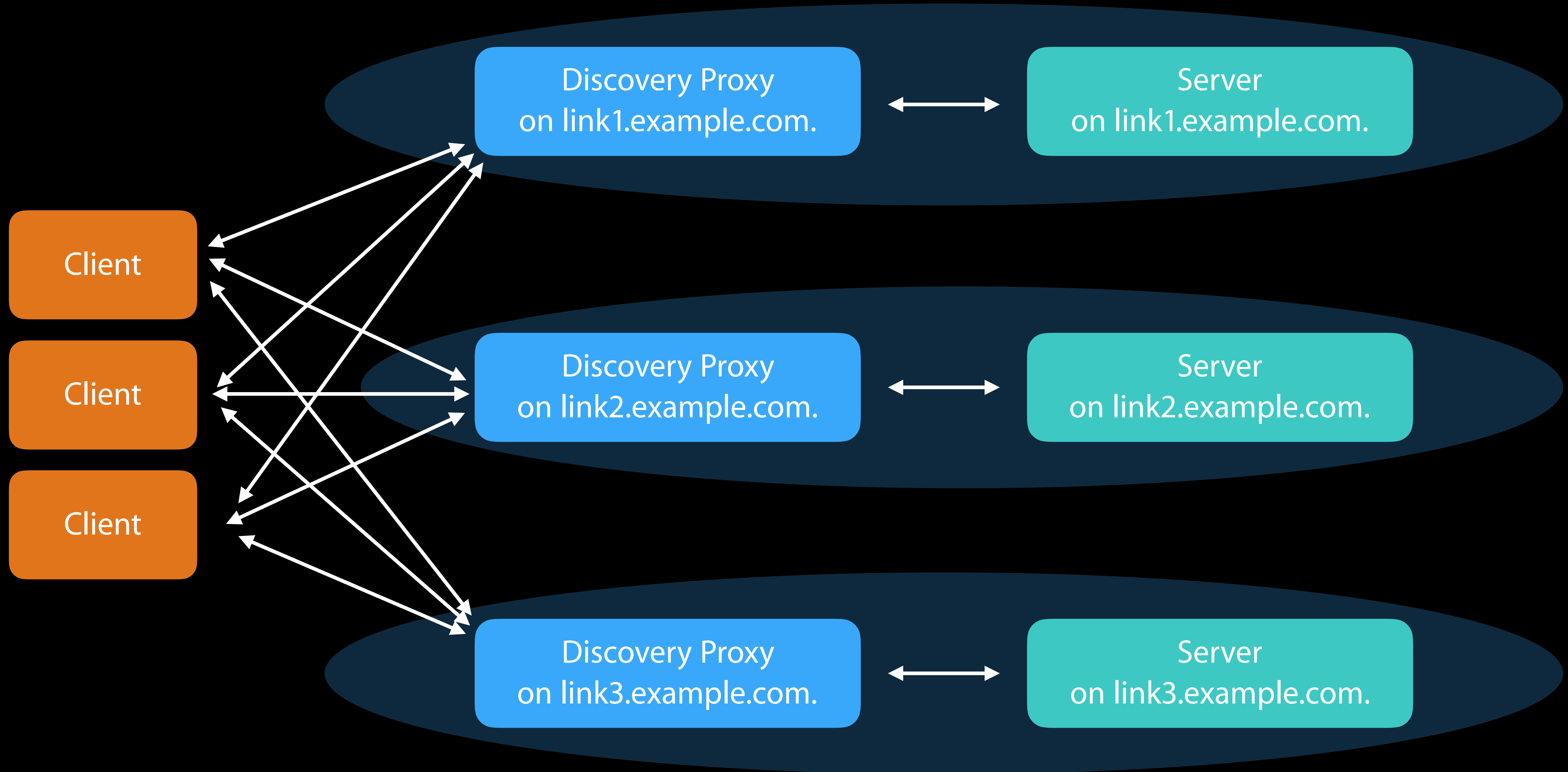on link1.example.com.

Client Config:

Look for services in:

link1.example.com.

link2.example.com.

link3.example.com.

Client

Client Config:

Look for services in:

link1.example.com.

link2.example.com.

link3.example.com.

Discovery Proxy
on link1.example.com.

Server
on link1.example.com.

Client

Discovery Proxy
on link2.example.com.

Server
on link2.example.com.

Discovery Proxy
on link3.example.com.

Server
on link3.example.com.

Client Config:

Look for services in:

services.example.com

Client

Client Config:

Look for services in:

services.example.com

```
Client  <──────>  Discovery Broker for
                  services.example.com
```
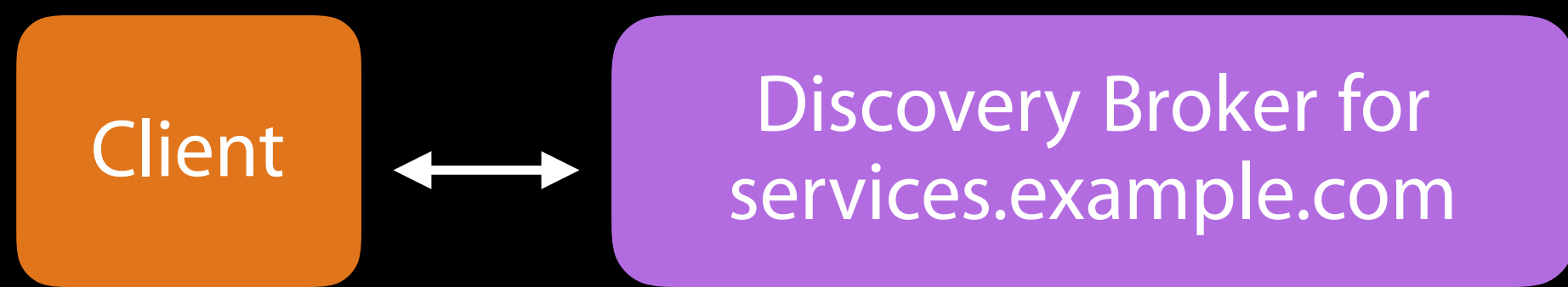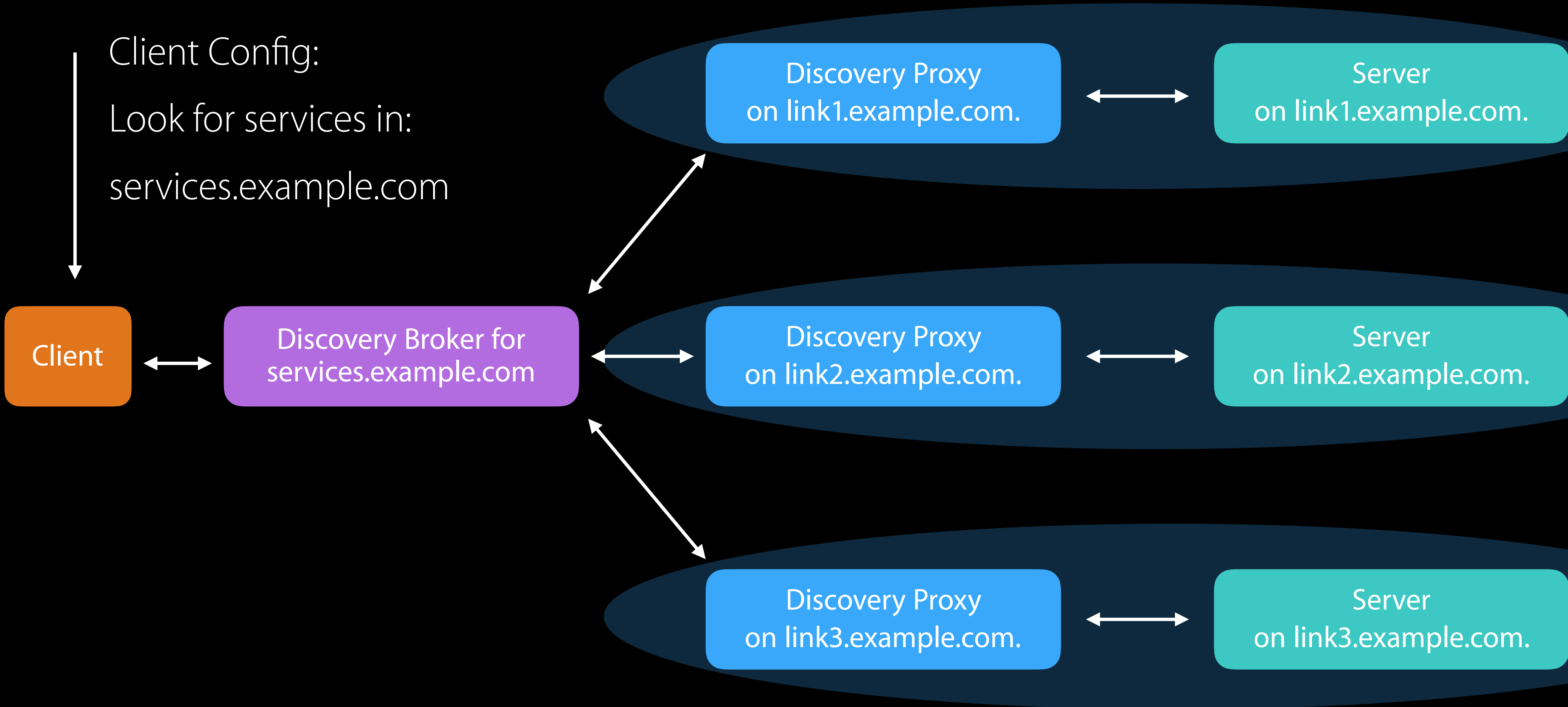
Client Config:

Look for services in:

services.example.com

Client ⟷ Discovery Broker for services.example.com

Discovery Proxy on link1.example.com. ⟷ Server on link1.example.com.

Discovery Proxy on link2.example.com. ⟷ Server on link2.example.com.

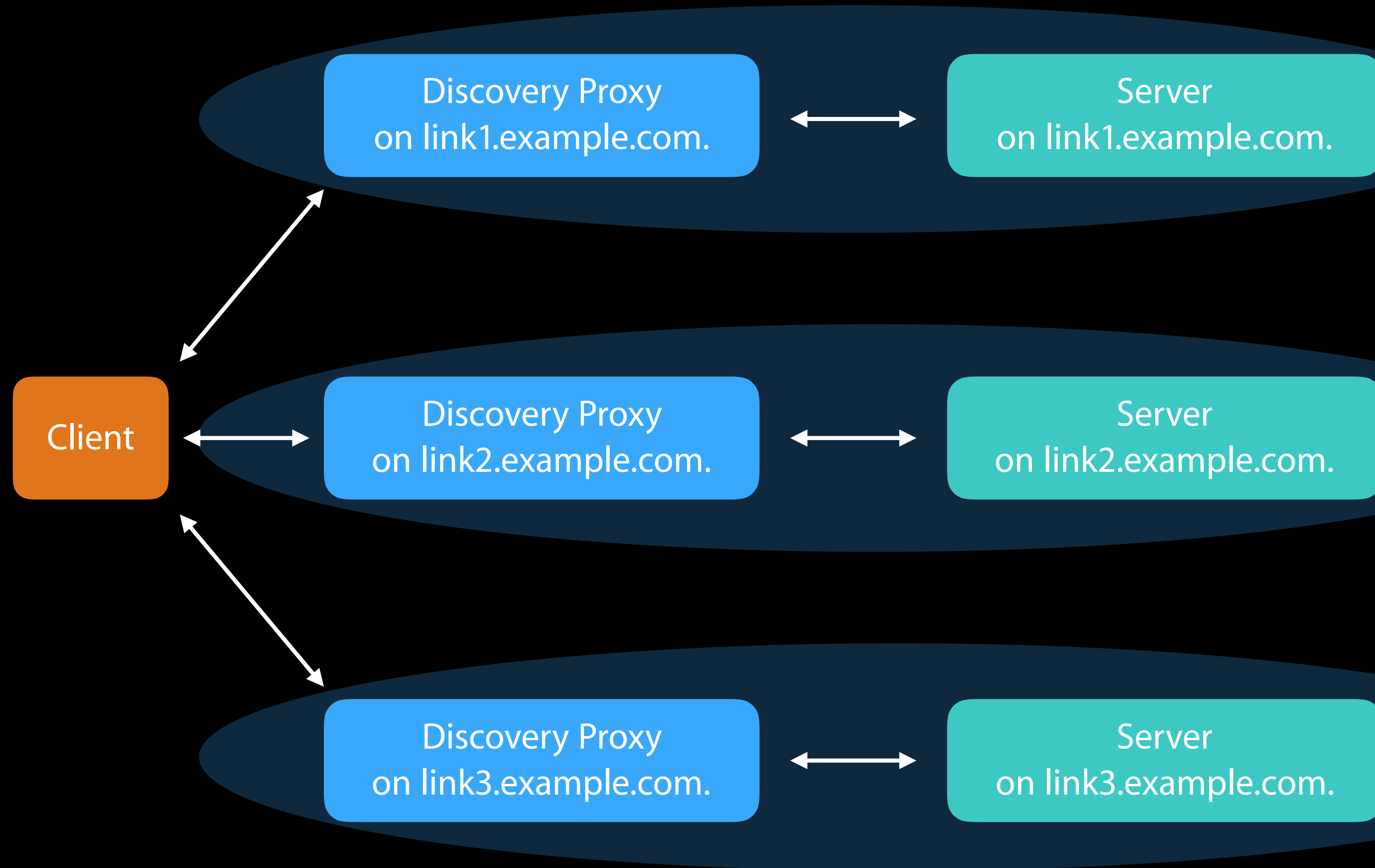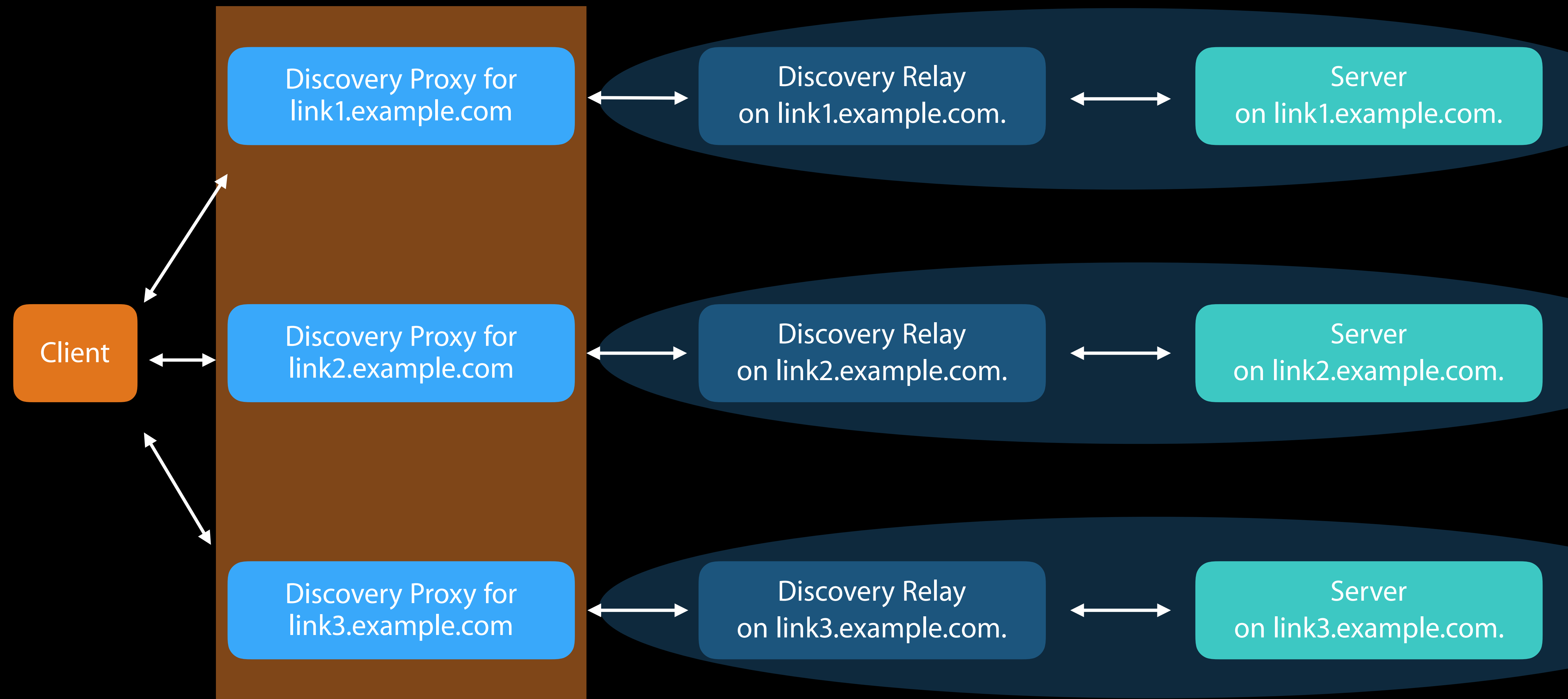Discovery Proxy on link3.example.com. ⟷ Server on link3.example.com.
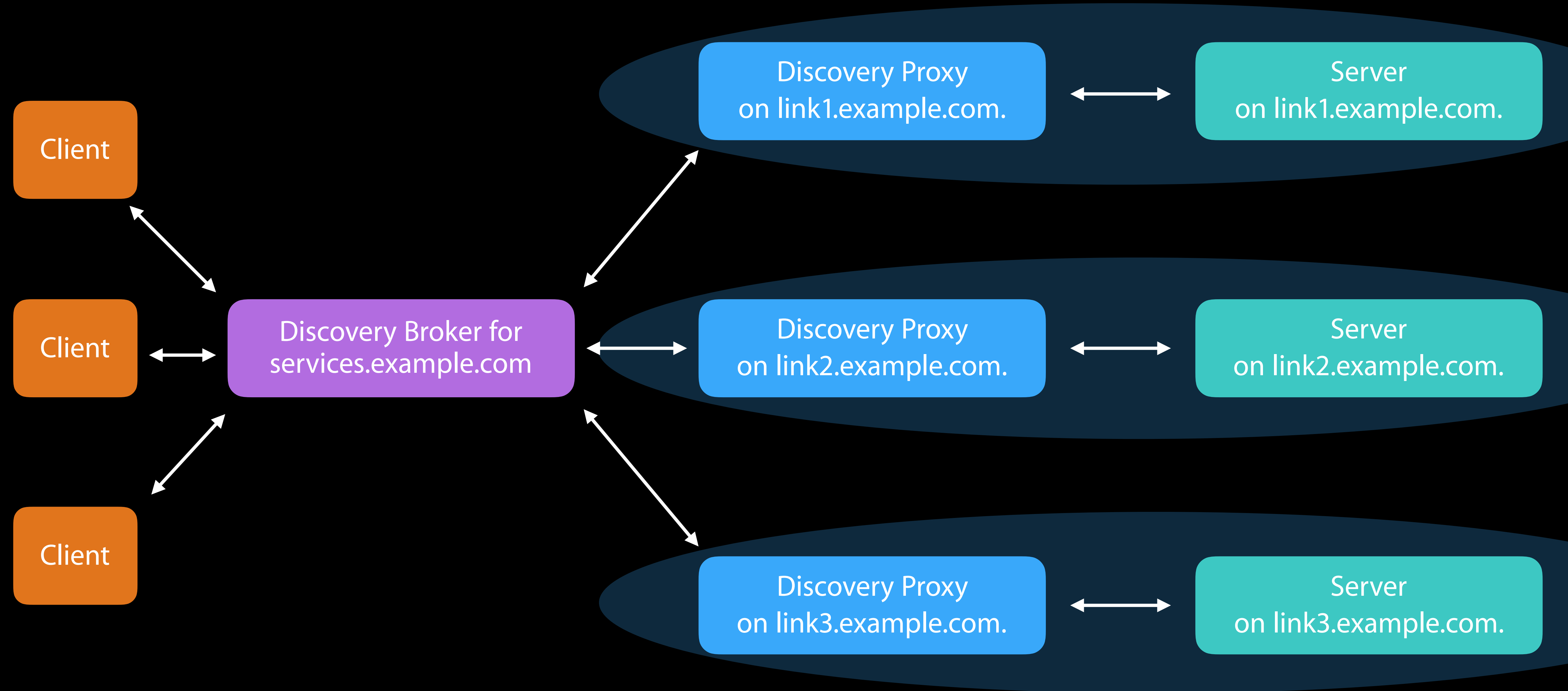
How data gets into the namespace, part 1: Legacy mDNS devices

Discovery Proxy
draft-ietf-dnssd-hybrid-06

Essential part of the backwards-compatibility story, for existing devices

Document finished and stable

Waiting for:

- draft-ietf-dnssd-push

- draft-ietf-dnsop-session-signal

Multicast DNS Discovery Relay
draft-sctl-dnssd-mdns-relay-00

Analogous to BOOTP relay agent for DHCP servers

Addition to Discovery Proxy (but doesn't block that document)

(Ted to say more on this shortly)

How data gets into the namespace, part 2: Active registration

Service Registration Protocol
draft-sctl-service-registration-00

Based on DNS Update (RFC 2136)

Plus automatic garbage collection

- Dynamic DNS Update Leases (draft-sekar-dns-ul-01)

Plus FCFS security

Plus support for energy saving (aka "Sleep Proxy")

- EDNS0 OWNER Option (draft-cheshire-edns0-owner-option-01)

How clients do queries

DNS Push Notifications
draft-ietf-dnssd-push-12

Facilitates asynchronous change notification (instead of expensive polling)

Builds on DNS Session Signaling (draft-ietf-dnsop-session-signal-03)

Service Discovery Broker
draft-sctl-discovery-broker-00

Provides 'bundling' of multiple domains into one

Meta Discovery Proxy

Network intermediary

- Looks like Discovery Proxy to clients

- Looks like client to Discovery Proxies and other servers

Improves efficiency

- Client talks to one Discovery Broker, which talks to several Discovery Proxies on its behalf

- Discovery Proxy on link can serve single Discovery Broker, which serves multiple clients

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