

Naming and Service Discovery

(draft-troan-homenet-naming-and-sd)

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Authors:

Ole Trøan(Cisco)

Shwetha Bhandari (Cisco)

Stephen Orr(Cisco)

Problems

- *Discovery of Recursive DNS resolvers*
- *Internal naming*
- *External naming*
- Read:
<http://www.ietf.org/proceedings/85/slides/slides-85-mdnsext-1.pdf>

DNS recursive resolver discovery

- Part of “other configuration information” distribution. Flooding in the homenet control plane. Just like prefix assignment

-or-

- Homenet routers acts as hosts and do ND/DHCP to glean information, that is then re-advertised on downstream interfaces.

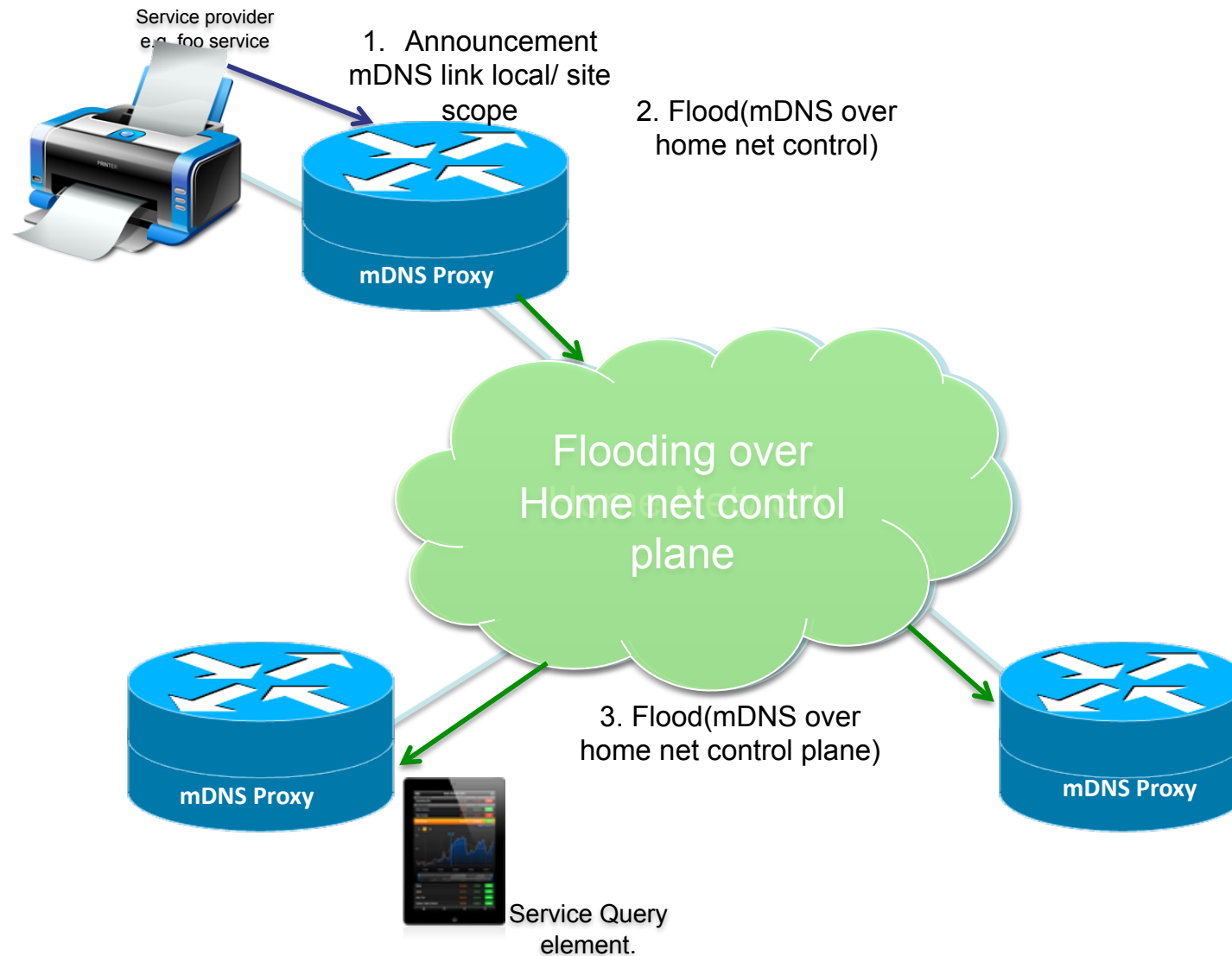
External naming

- Requires configuration
 - Domain name (might not be the local one)
- Client updates DNS directly or network does it on the clients behalf
- Authoritative name server
 - External, or on one or more home routers
- Reverse lookups?
 - Delegated to the DHCPv6 PD RR?
([draft-lemon-dhc-dns-pd](#))

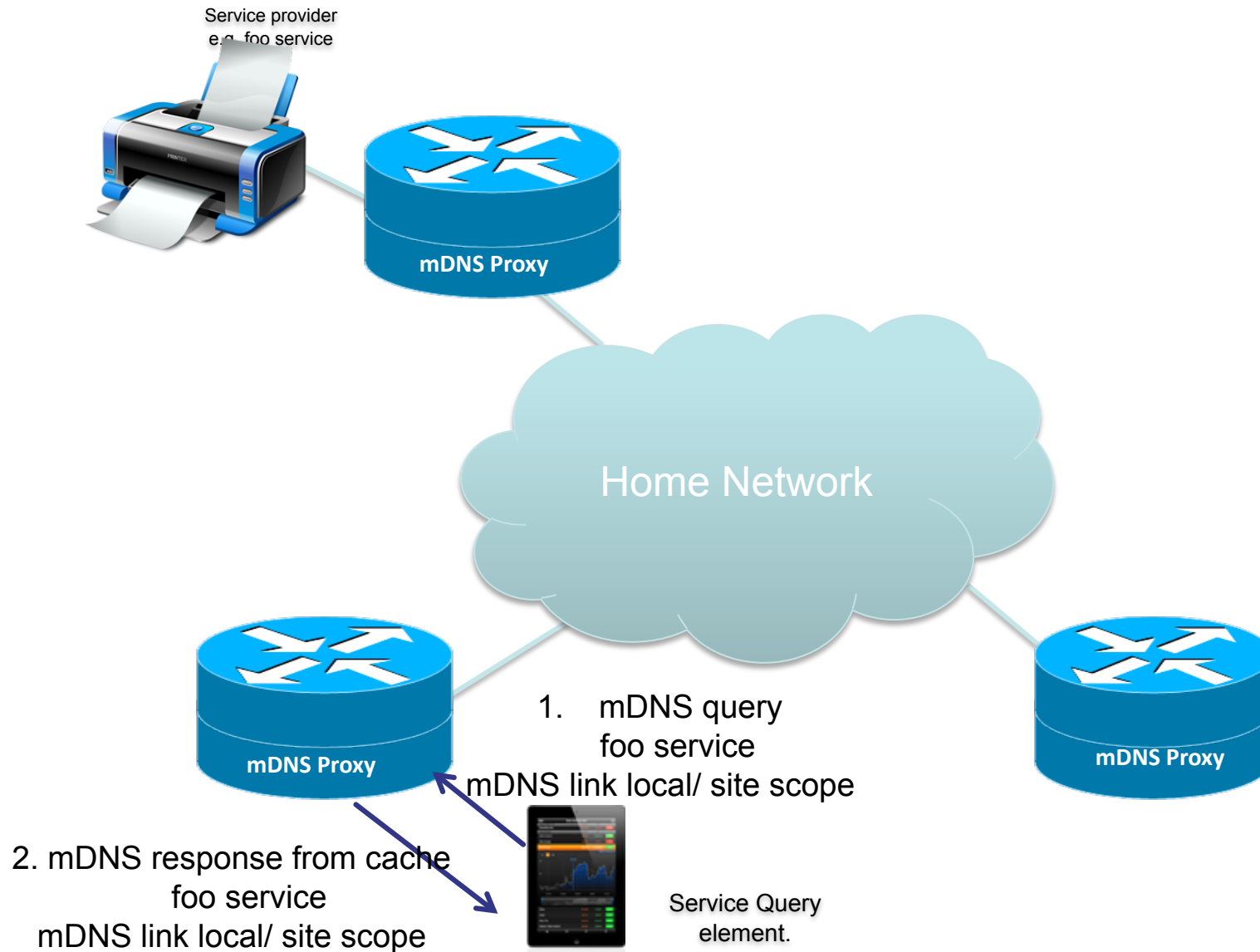
Internal naming - Solution space

- mDNS domains (.local) zones glued together with unicast DNS-SD
 - a) Central DNS server
 - b) DNS servers on every home router with distributed repository
- The home is one mDNS domain
- (mDNS domains could be extended:)
 - a) xmDNS (site-local multicast)
 - b) mDNS proxies
 - c) mDNS proxies with distributed repository / flooding

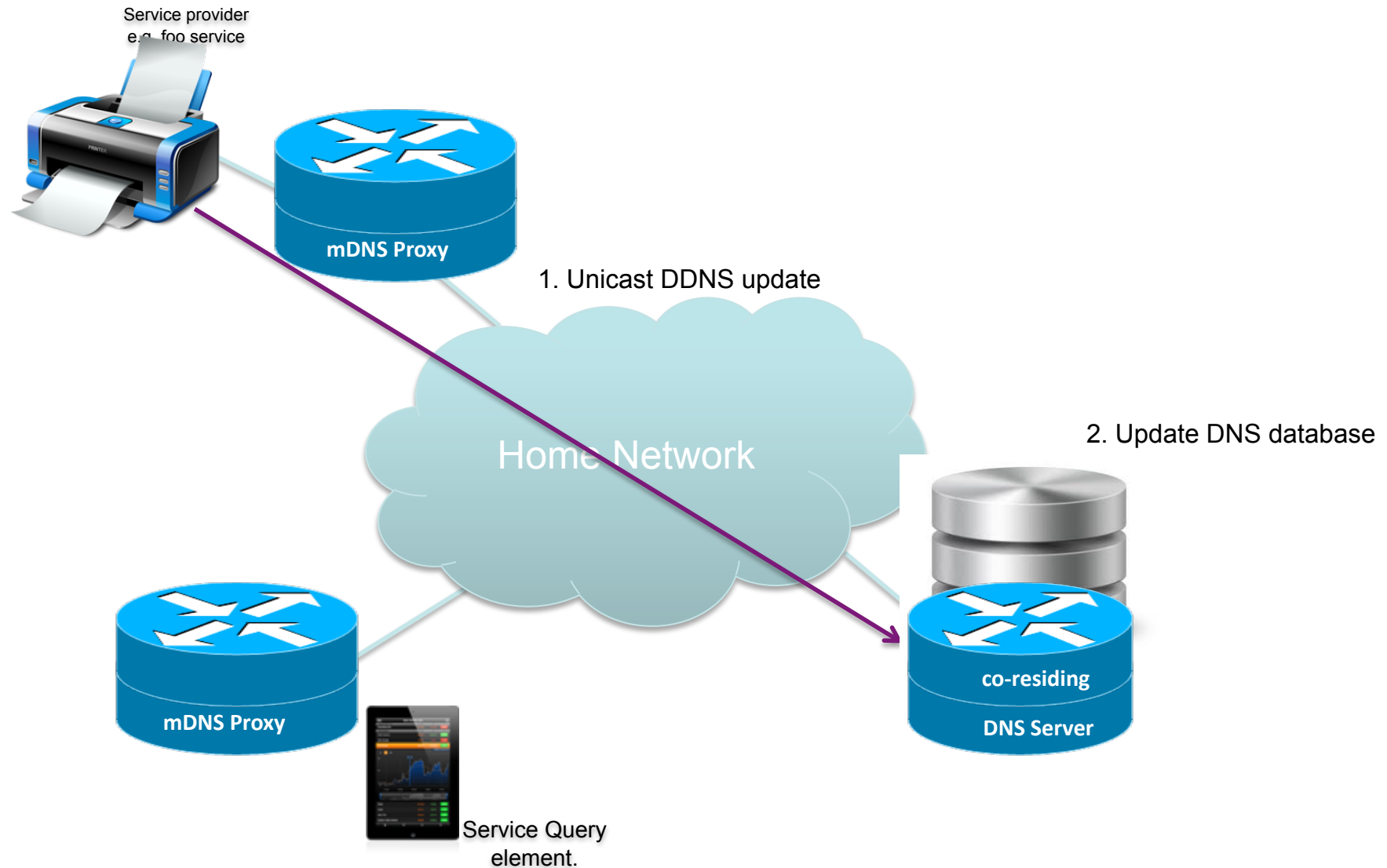
mDNS Service Announcement (Approach 1)



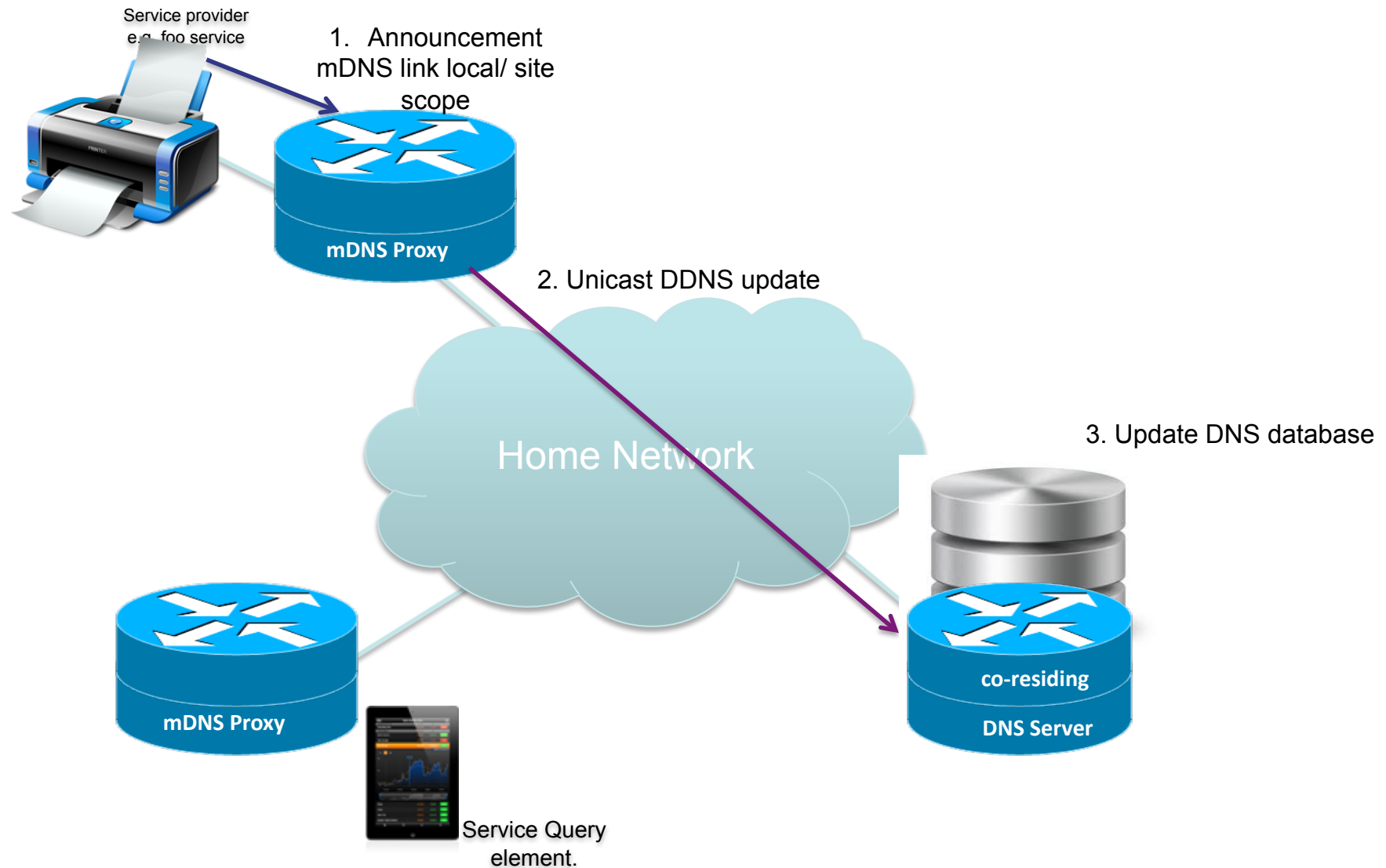
mDNS Service Query (Approach 1)



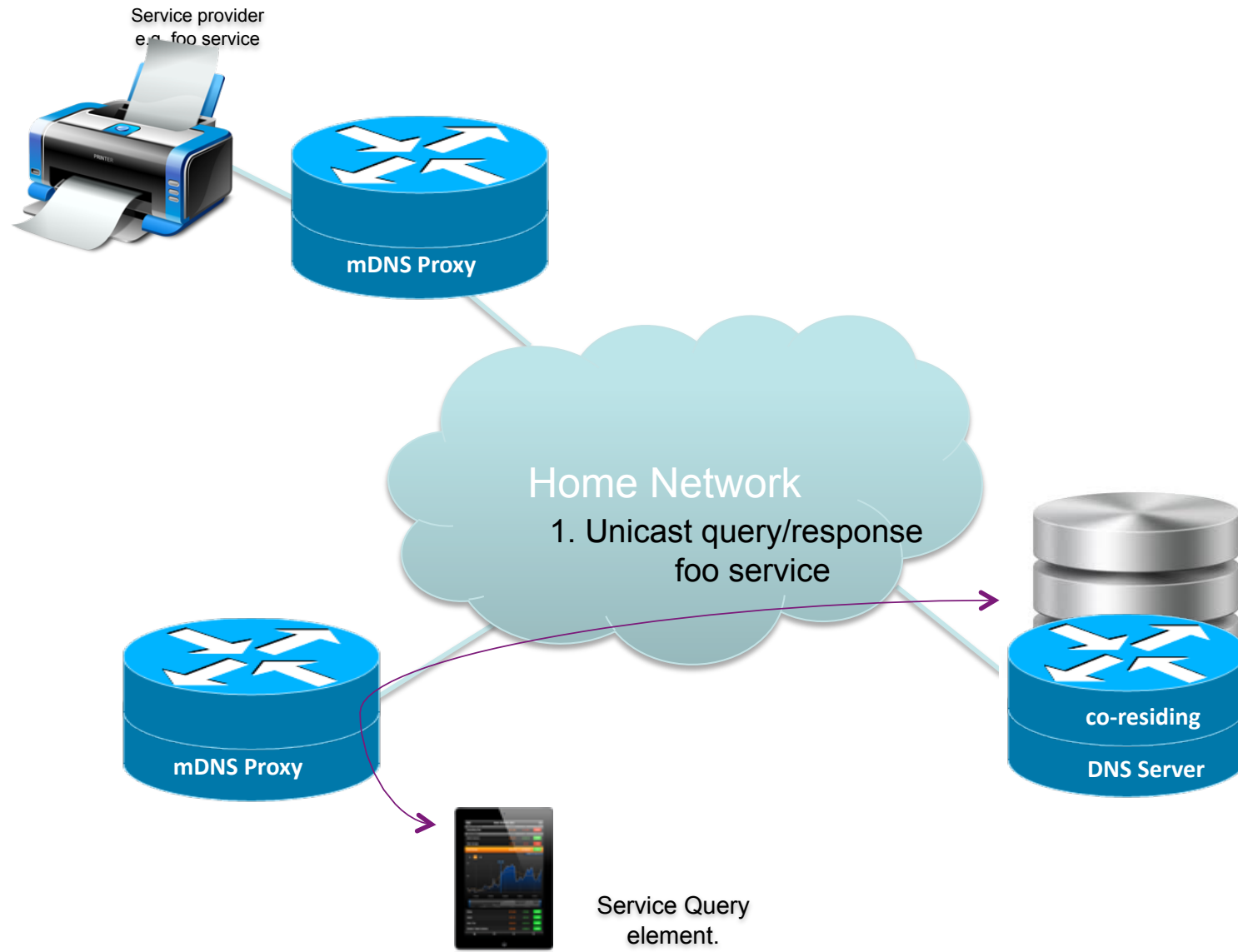
Service Announcement (Approach 2)



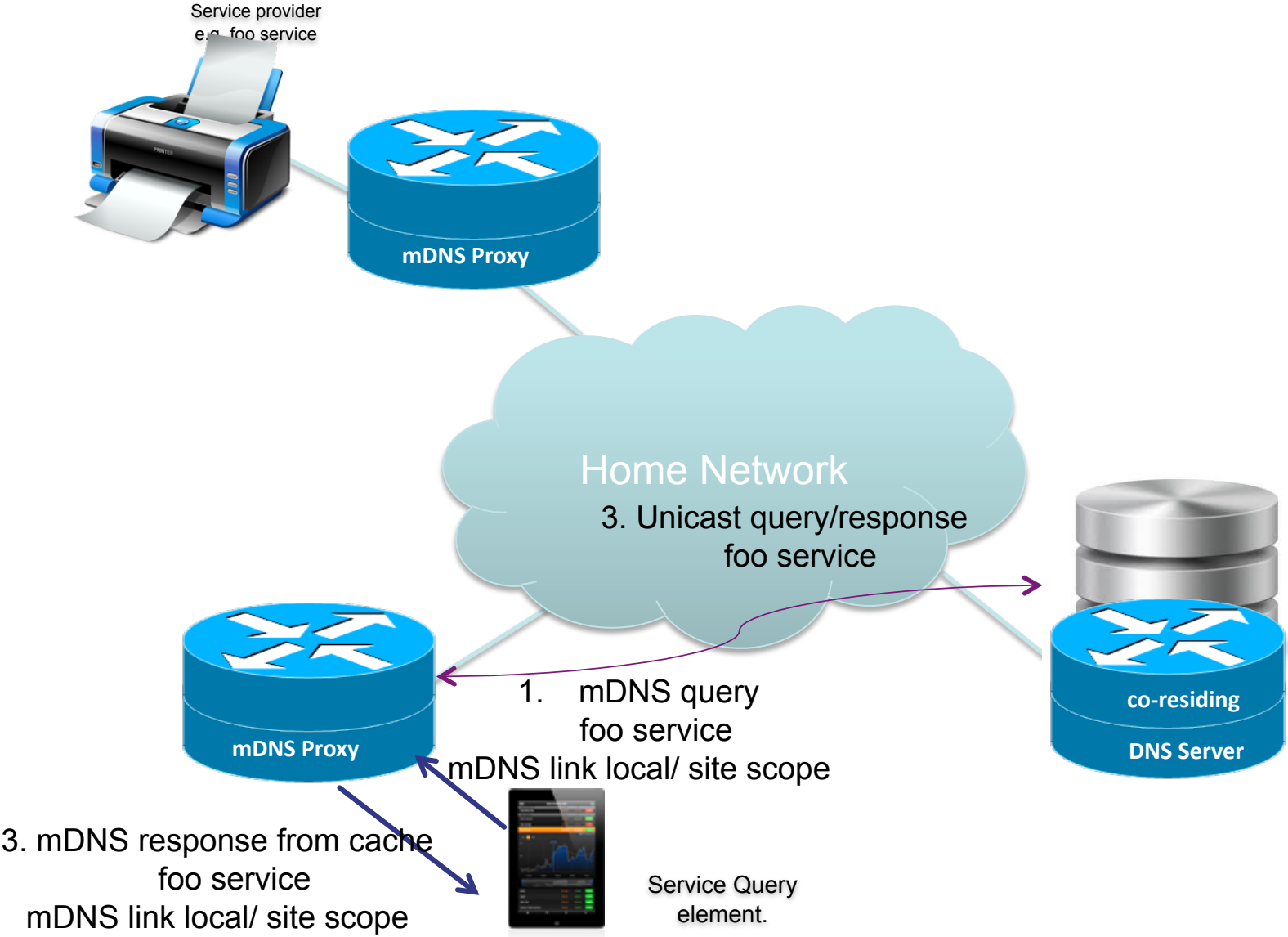
Service Announcement (Approach 2)



Service Query (Approach 2)



Service Query (Approach 2)



Considerations:

- Central DNS server:
 - Server election / failover / discovery
- Distributed repository
 - How to synchronize the databases?
- mDNS extensions
 - Need multicast routing
 - or flooding support
 - Need integration with unicast DNS anyway
- Encoding issues. UTF-8. Fix DNS?

Next steps: