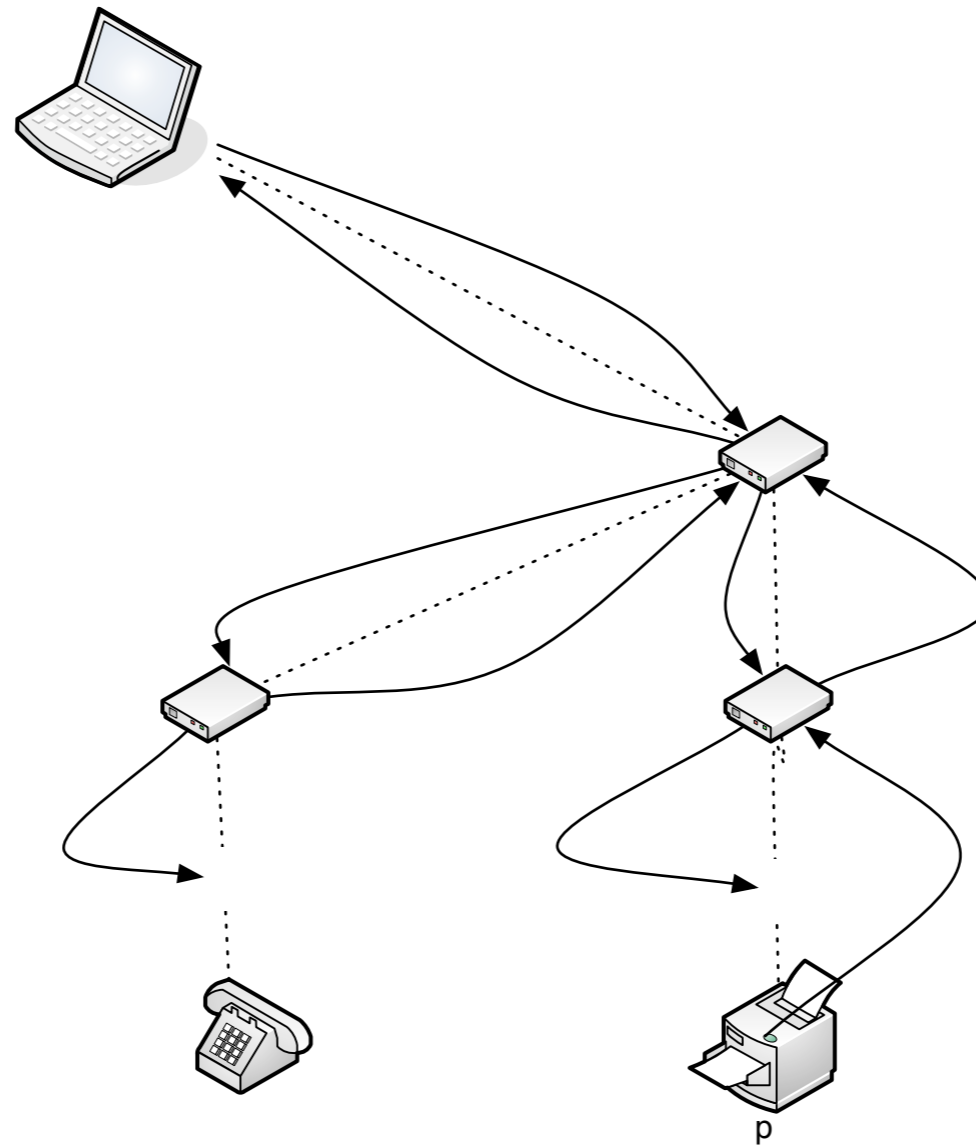# (DNS-SD/MDNS based) multi-router zeroconf service discovery

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Service discovery = ?
Let's try to find printers..

What is needed?

- Site-local SSDP/MDNS? (with what clients?)

- Bridged network? (not scalable - we want multiple links)

- mdns proxy? (broken by mdns design - naming conflicts, loops..)

- Or.. Case: DNS-SD service browsing with mDNS backend

    1. First-hop router provides DNS server/search path (DHCPv6/RA)

    2. Client queries b._dns-sd._udp.<domain> for each domain in search path

    3. Client receives <subdomain(s)>.<domain>

    4. Client queries every <service>.<subdomain>.<domain>

    5. .. request gets forwarded to router/hybrid proxy directly connected to corresponding link as DNS

    6. .. hybrid proxy converts.<subdomain>.<domain> to.<local> for a particular link

    7. MDNS clients respond as appropriate, or timeout occurs

    8. .. and response gets back to client, rewritten from .<local> to .<subdomain>.<domain>, and propagated via DNS
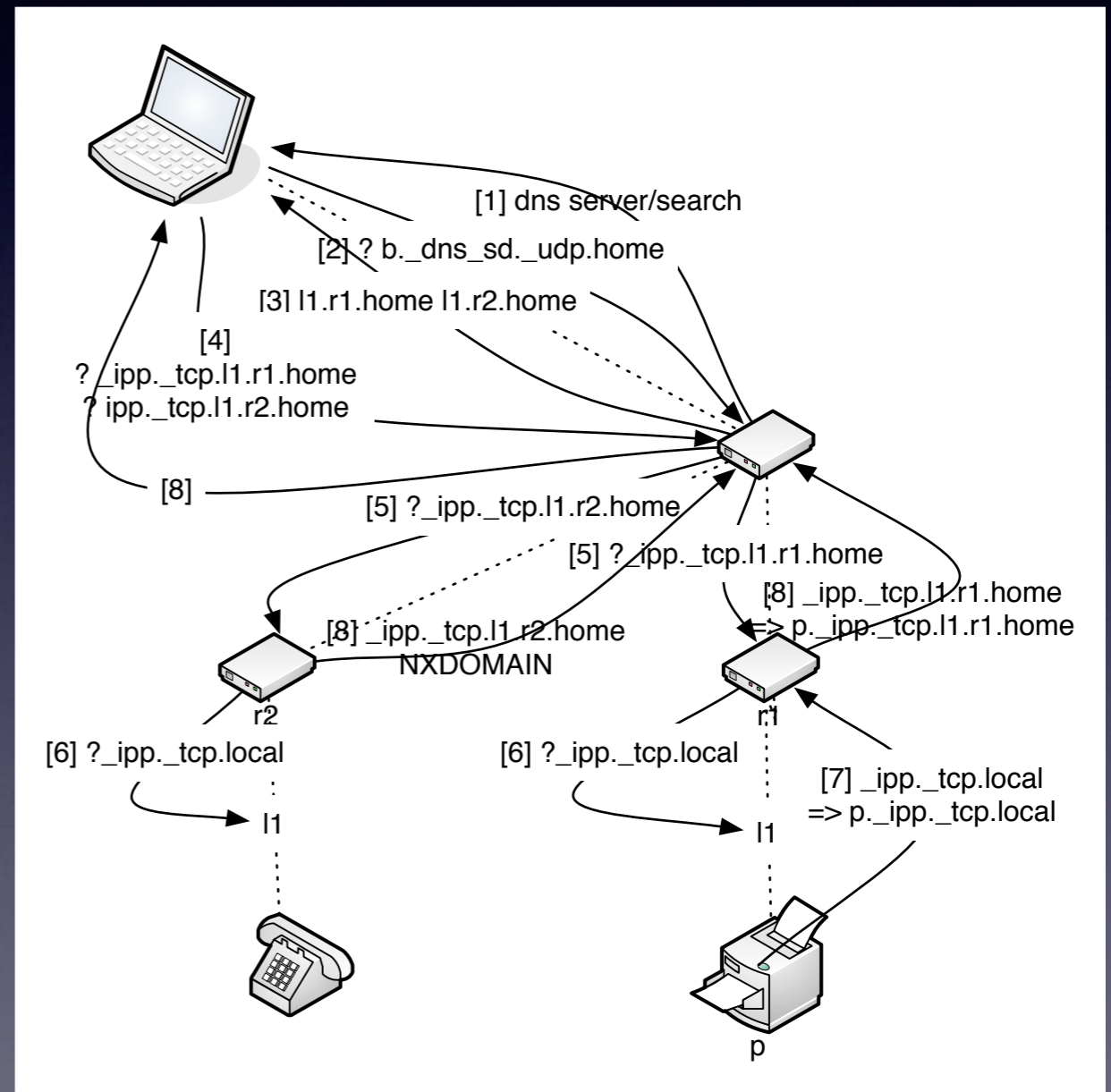
How can it be zeroconf?

- draft-stenberg-homenet-dnssd-hybrid-proxy-zeroconf-00 describes

  - data to be synchronized across set of routers (with hybrid proxies) and DNS servers (if separate)

    - DNS delegated zone TLV (MUST)

      - name of sub-zone (e.g. (subdomain).(domain), (…).ip.arpa or (…).ip6.arpa)

      - DNS server address who owns this zone (=~ NS+AAAA record)

      - B bit (should PTR to this be added to b._dns-sd._udp.(domain))

      - S bit (should this zone be added to DHCPv6 search list of clients)

    - DNS router name TLV (SHOULD)

    - DNS domain name TLV (SHOULD)

  - and how to synthesize (subdomain) from link- and router name information.

- draft-stenberg-homenet-hncp-00 describes

  - how the TLVs are actually encoded in HNCP

Questions?

(HNCP-based implementation of this and the related hybrid proxy implementation is at www.homewrt.org)