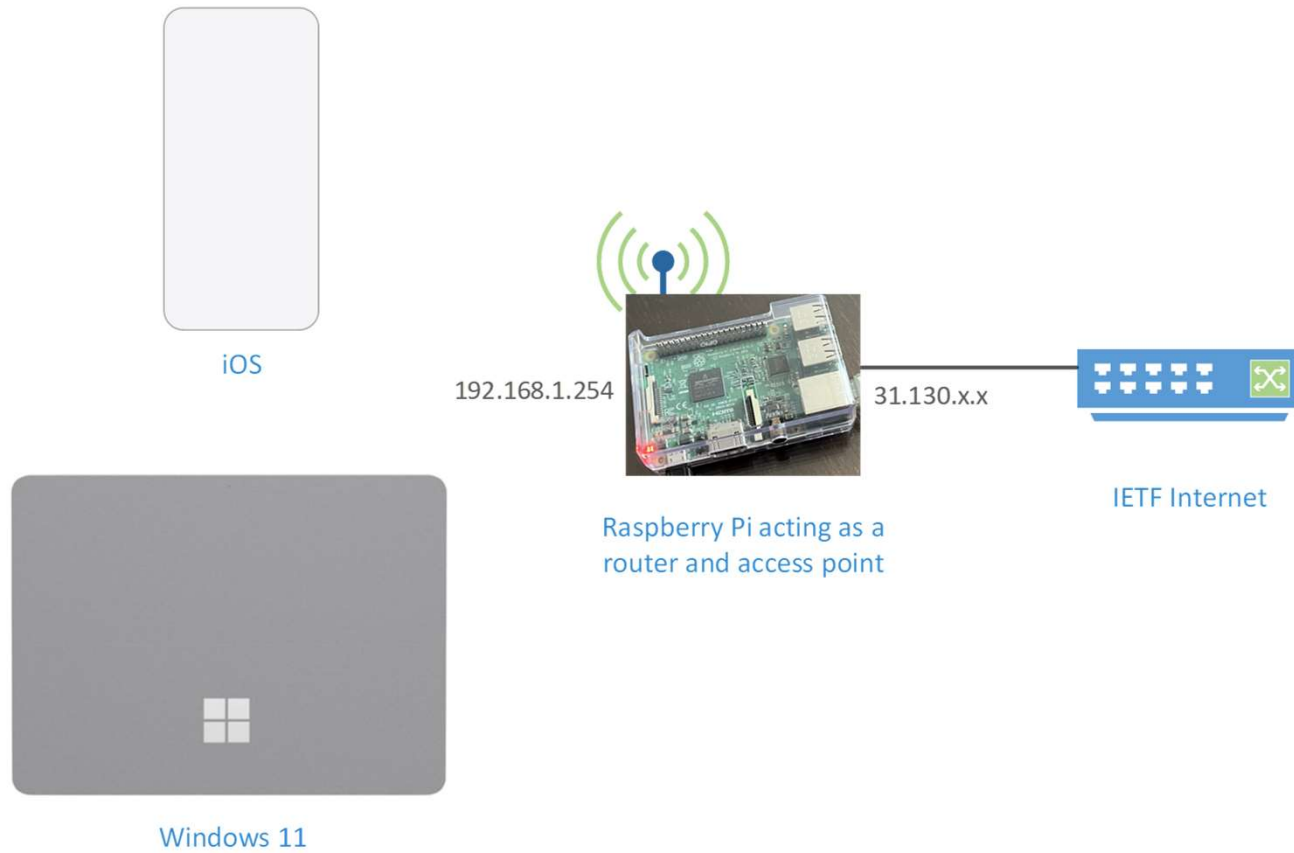


Discovery of Network-designated Resolvers

IETF 118 Hackathon, Prague



Setup



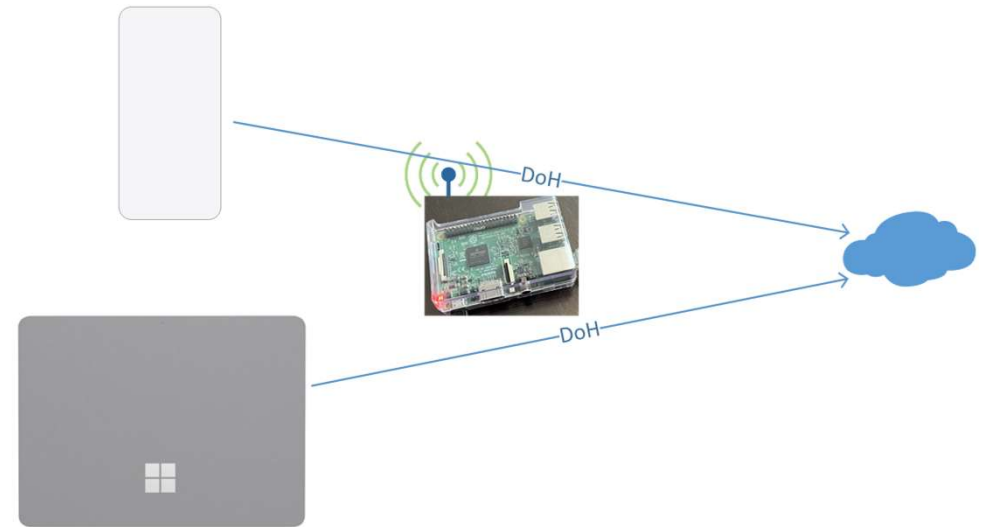
Tommy Pauly not shown

Deployment 1: direct to cloud

Both clients used DHCPv4, requesting option 162.

Dnsmasq responded with:

Name	Value (in wire encoding)
Service Priority	1
ADN	doh.bt.com
IP Address	81.130.111.251
SvcParams	alpn=h2 dohpath=/dns-query{?dns}



Including the router

If we deploy in a way that the router is included in DNS resolution, then private names that it knows can be resolved, and public names can be cached.

DNSdist 1.8.2 was compiled for the Pi, with relevant features.

It was then configured to:

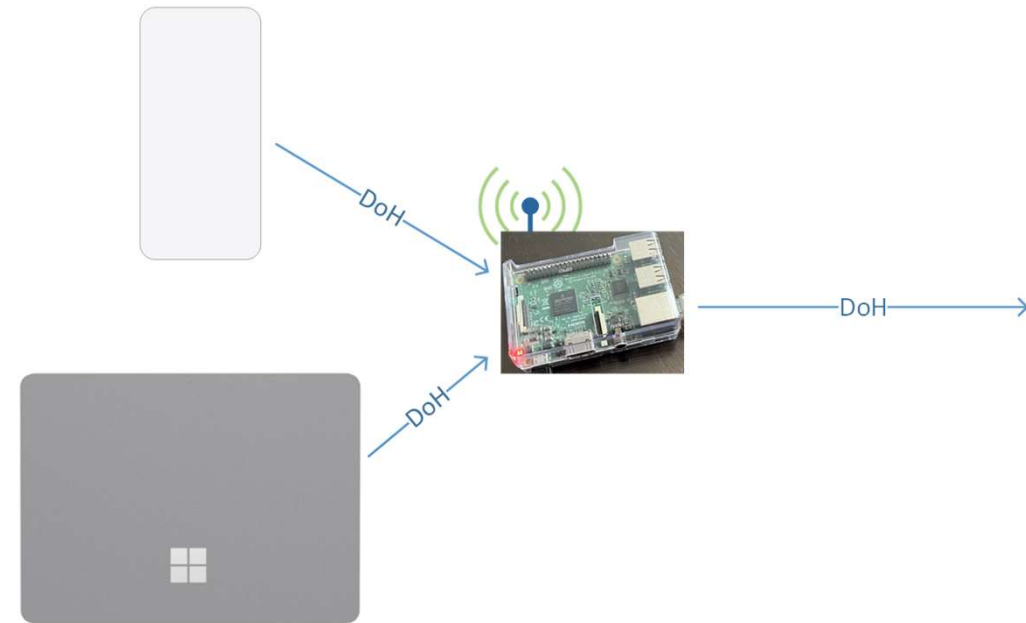
- Provide a DoH listener on `https://192.168.1.254/dns-query`
- Set up connections to two backend DoH resolvers, in this case two IP addresses of `doh.bt.com`
- Healthcheck the success of those connections in “lazy” mode appropriate to a CPE deployment. Suitable sample size, threshold, failed interval set.
- Implement a packet cache, with defined size and TTL limits.

Deployment 2: DoH via the Pi

Both clients used DHCPv4, requesting option 162.

Dnsmasq responded with:

Name	Value (in wire encoding)
Service Priority	1
ADN	dnrpoc.<personal domain>
IP Address	192.168.1.254
SvcParams	alpn=h2 dohpath=/dns-query{?dns}



Summary of results

Name	Cloud	Pi
iOS	✓	✓
Windows 11	✓	✓

✓ means encryption was used for the network segments between the user device and the recursive resolver.