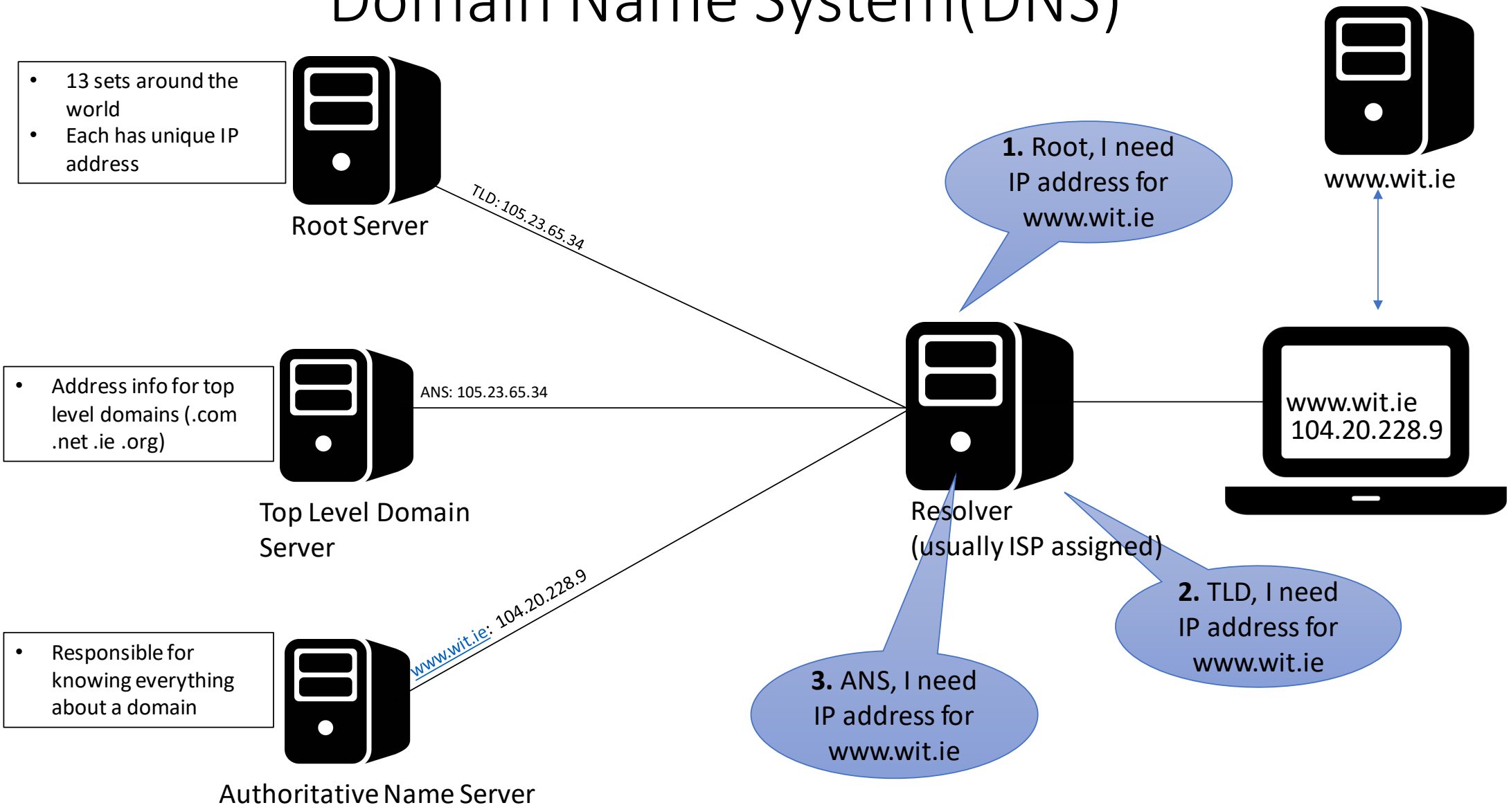
Domain Name System(DNS)

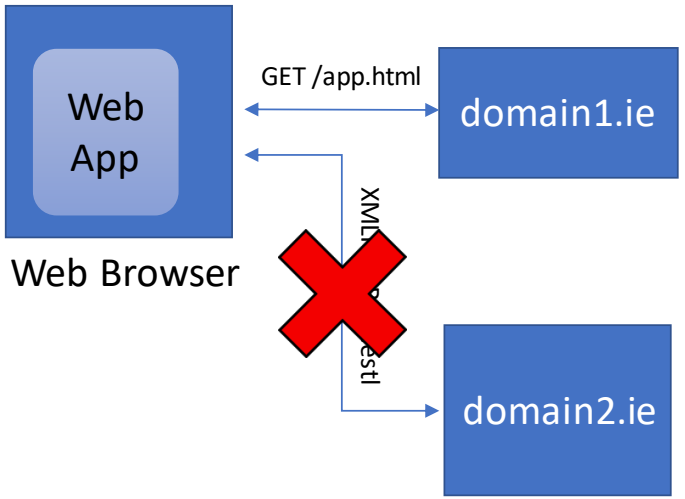


DNS Rebinding Attack

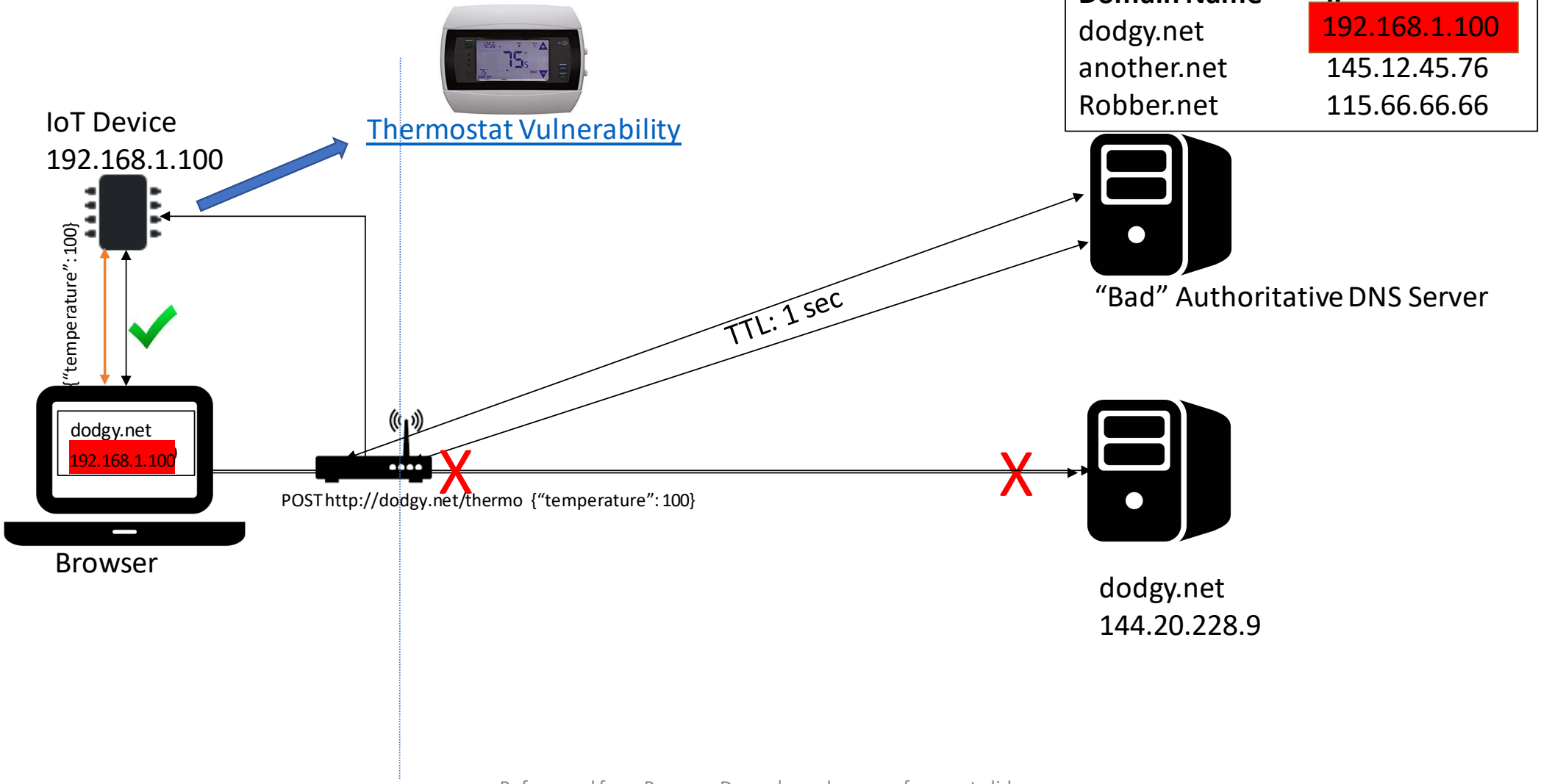
- Allows remote attack on private network through a victims web browser
- Victims typically initiate attack by clicking on a link or dodgy advert.
- Results in malicious Javascript being downloaded/run in browser
- Browser acts as a “proxy” for attacker to get at victims devices

Same-Origin policy

- Web browsers have built in mechanism called “same-origin policy” that stops web pages making HTTP requests to any domain other that it’s own.
  - So a page served from one domain (**dodgy.ie)** should not be allowed to contain Javascript that makes requests to other domains (**http://192.168.1.100/set-temperature)**!
- Browsers do this by making sure the protocol, domain, and port of a **URL** is identical to the page requesting it.
  - But do not take into account the IP address.
- **Attackers can get around Same-Origin policy by changing the IP address of http://dodgy.ie in DNS to match http://mybank.ie**
  - **Browser would think everything is fine!**



DNS Rebinding – how it works



Referenced from Brannon Dorsey's work - see ref on next slide

Recent publicity Re: DNS Rebinding

- https://www.wired.com/story/chromecast-roku-sonos-dns-rebinding-vulnerability/
- https://www.theregister.co.uk/2018/06/21/dns_rebind_attacks_google_roku/
- https://medium.com/@brannondorsey/attacking-private-networks-from-the-internet-with-dns-rebinding-ea7098a2d325