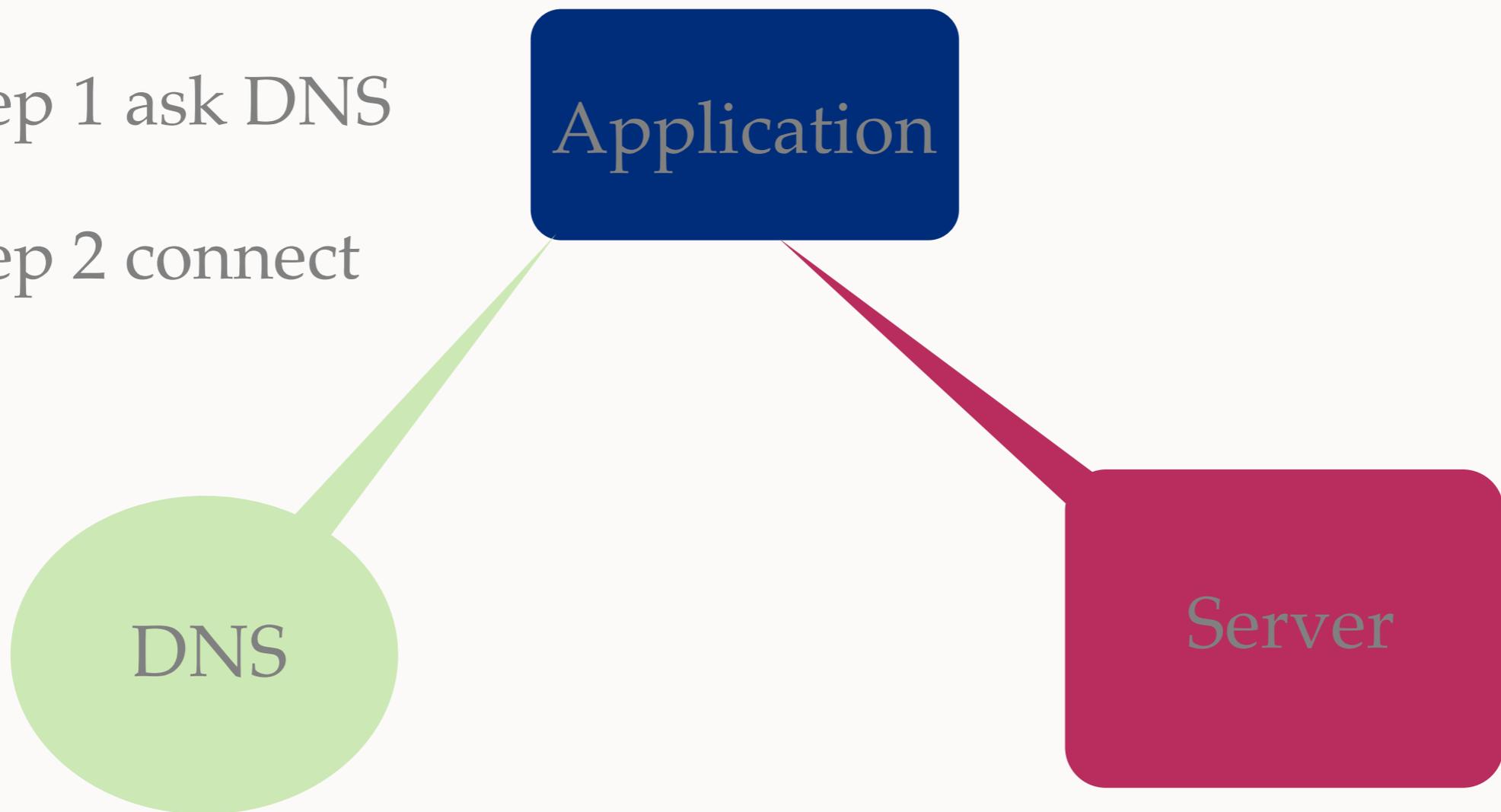# DNS VOCABULARY

OLAFUR GUDMUNDSSON
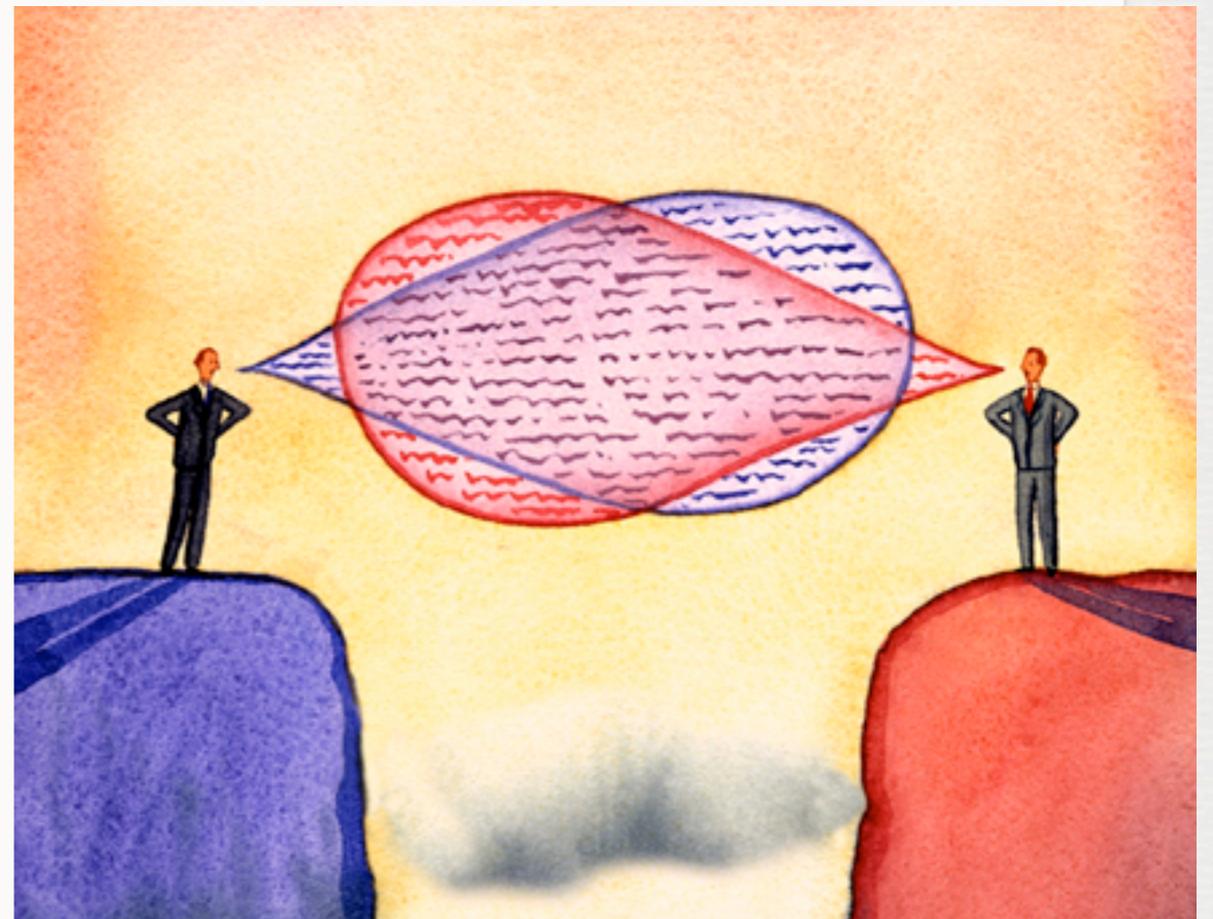
HOW THE INTERNET WORKS: APP VIEW

- Step 1 ask DNS

- Step 2 connect

-

Application

DNS

Server

BUT

- Different applications fetch different stuff from DNS

- No unified terminology (or good API)

- draft-ogud-dane-vocabulary attempts to address terminology

TERMS

- DNS Navigation: How you get to the answers

    - NS, CNAME, DNAME

- **DNS Integrity: Is this DNSSEC validated? (green requires)**

- **Service Specification Records:**

    - MX, SRV, NAPTR, or even A and AAAA

- Service Address Records

- **Application Authentication Records:**

    - TLSA, IPSECKEY

DOMAIN NAME == DNS ?

- For many foo.bar.example is a name in DNS class IN

- There are domain names that are not in DNS:

  - 1234.555.202.1.GPRS. is a private space for mobile operators not available on the general internet.

WHERE WE ARE

- State of the art in naming NEW/DIFFERENT lookup mechanism ==> posfix on the domain name

- RFC6761 specifies a IANA registry to put these in

- TLD domain names live on the boundary of ICANN and IETF

- draft-iesg-special-use-p2p-names asks for 7 "meta-TLD's" for distributed hash table lookups

- draft-chapin-additional-reserved-tlds-00 adds 8 TLD's to RFC6761 registry

IMPLICATIONS

- Any application that does not know that link to "eff.gnu" is not DNS name will leak that to DNS

  - Unless the underlying resolution library or local resolver has been patched

- Problem #1: list of non DNS postfixes gets longer each year new ones will leak

- Problem #2: patching resolution libraries increases risks

- Problem #3: granting TLD via IETF bypasses ICANN

PROPOSALS

- Restrict RFC6761 registrations to .arpa (solves ICANN issue)

- Create a new tld ".alt" where all of these go and sinkhole all DNS traffic to unknown ".alt" postfixes

  - http://tools.ietf.org/html/draft-wkumari-dnsop-alt-tld-00

- Express new name spaces via URI (i.e. http: and foo-https:)

- Create new set of tags to identify namespace

  - http://MARGIR##foo.bar.my-alt-root

    - http://tools.ietf.org/html/draft-ogud-appsawg-multiple-namespaces-00

THANK YOU

- Please read and comment, we need your help as DNS only sees part of the picture and these issues are more of application issues