

# Agenda

- ▶ More on DNS

- ▶ aka., DNS resource record (RR)
- ▶ A record: address record
- ▶ AAAA record: IPv6 address record
- ▶ CNAME record: alias
- ▶ MX record: Mail exchange record
- ▶ NS record: Name server record

# DNS message format

- ▶ All DNS messages (query and response) have the same format: a header and four sections.
- ▶ Question section: the question for the name server.
- ▶ Answer section: RRs answering the question.
- ▶ Authority section: RRs pointing toward an authoritative name server - a nameserver (DNS Server) that holds the actual DNS records for a particular domain. e.g., ns1.google.com is the authoritative name server for google.com. A domain's authoritative name servers do not necessarily need to be a name inside the domain.
- ▶ Additional section: RRs holding additional information.

- ▶ DNSSEC: Domain Name System Security Extensions
- ▶ Digital signatures are introduced into DNS responses - checks the digital signature to verify if it's a valid or fake response.
- ▶ Deploy DNSSEC takes time due to practical issues.

A large portion of the material is adapted from:

- ▶ Computer Security - A Hands-on Approach by Wenliang Du