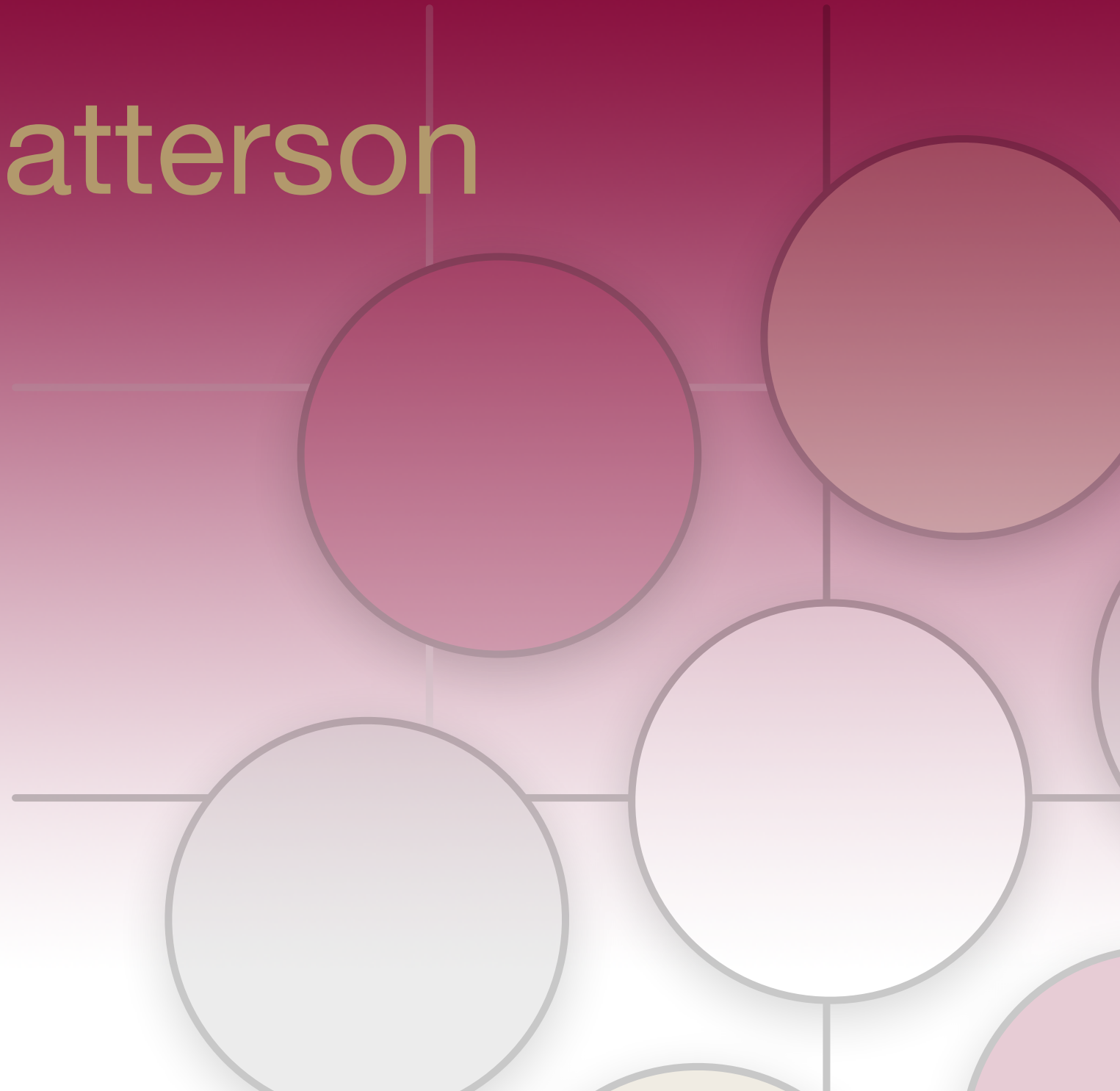


# DNS

Donald J. Patterson





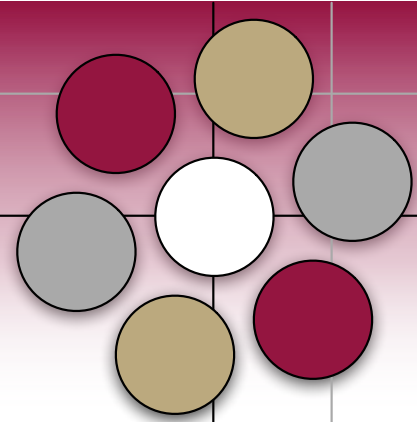
## Domain Name Server

- A lookup service on the internet
  - Given a URL, retrieve its IP address
    - www.djp3.net -> 45.79.205.40
- This service is provided by a distributed set of servers
  - Latency can be high
    - Even seconds

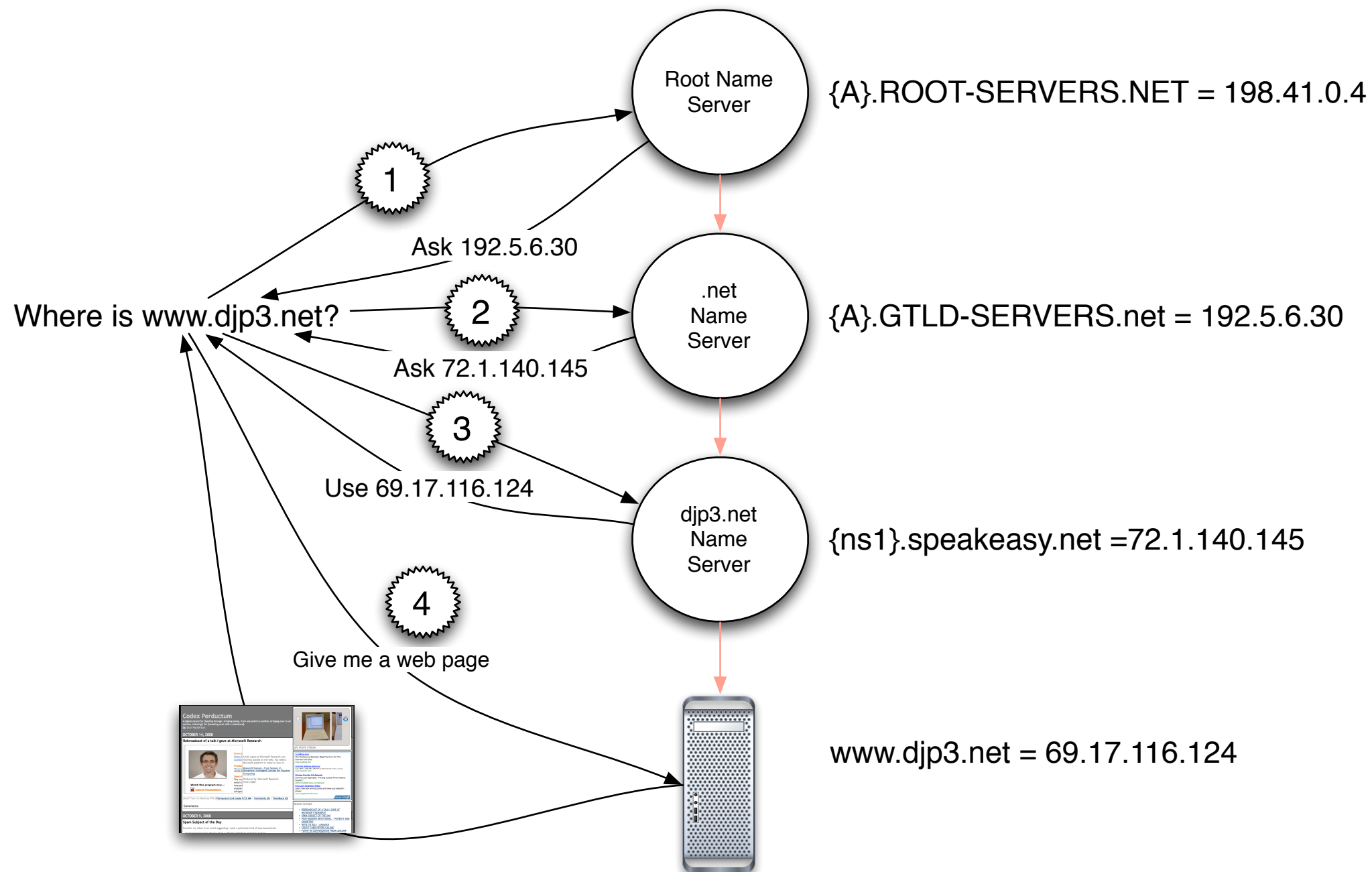


## Domain Name Server

- Common OS implementations of DNS lookup are blocking
  - One request at a time
- Solution:
  - Caching
  - Batch requests
  - Custom resolvers

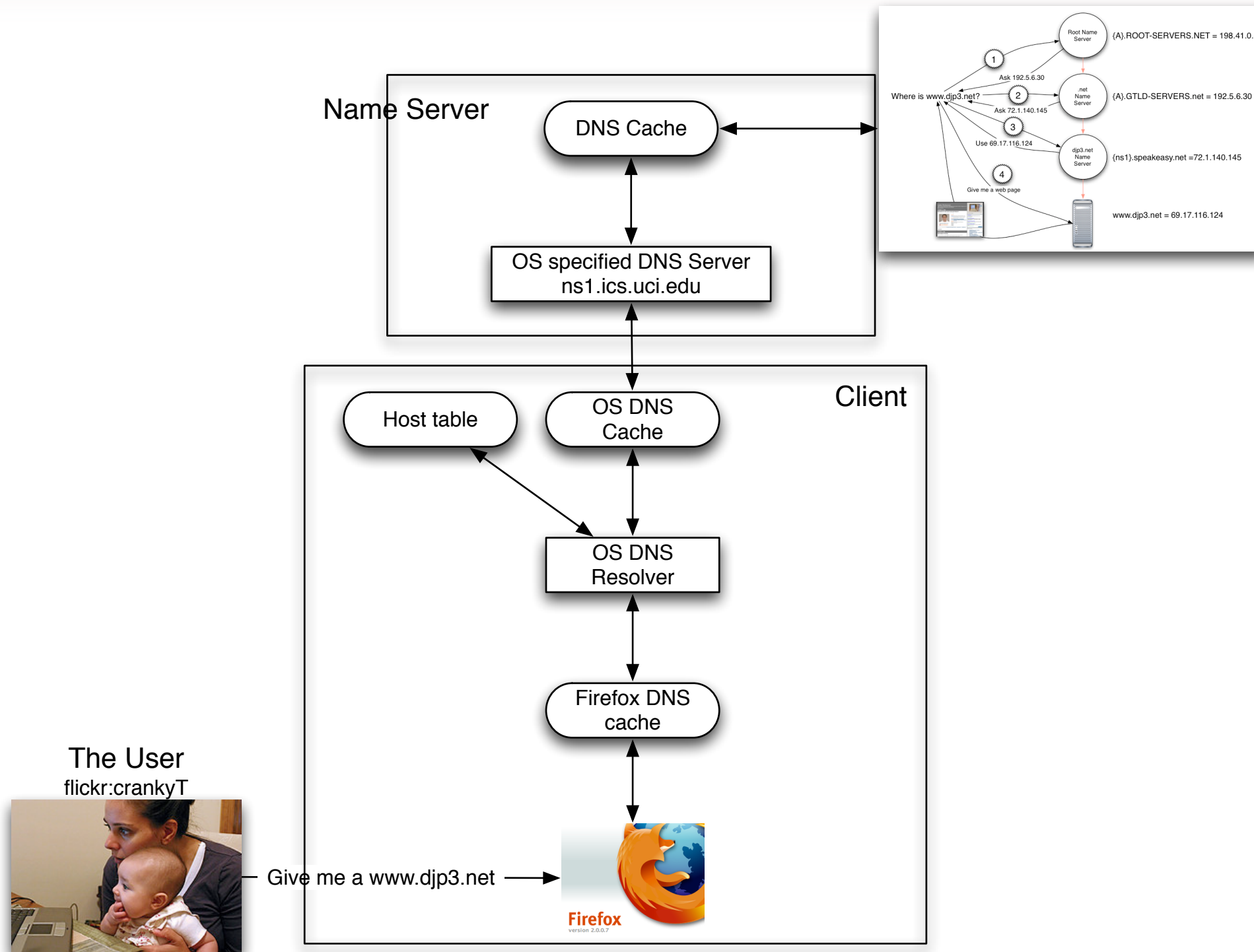
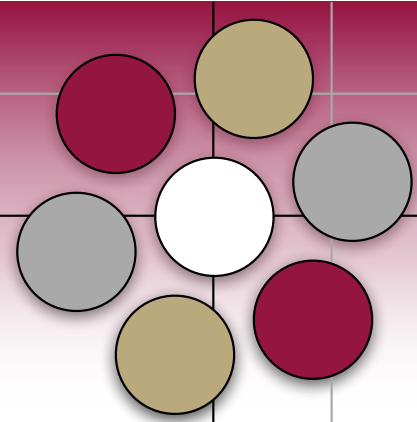


# Domain Name Server



# DNS

# What really happens





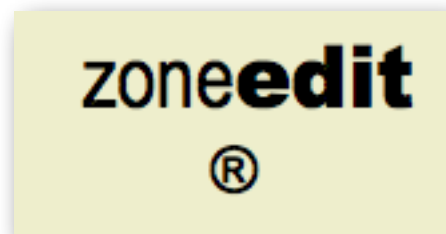
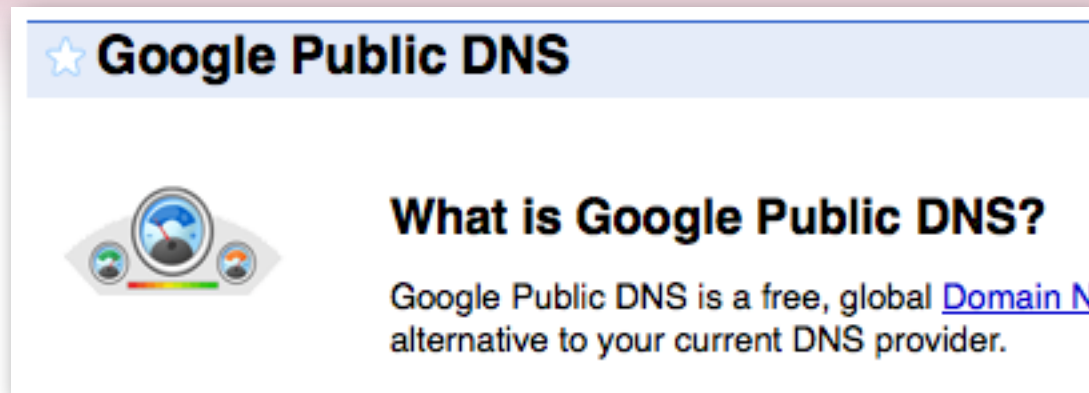
## Class Exercise

- Calculate how long it would take to completely fill a DNS cache.
- How many active hosts are there?
- What is an average lookup time?
- Do the math.





# Public DNS Servers



- Why run a DNS lookup service?
- It's your administrative domain
- A public good
- It helps your other business
- You can make money on bad queries
- Mobile servers need special attention

<http://www.flickr.com/photos/lurie/298967218/>