Computer Networks

HTTP Caching and Proxies (§7.3.4, §7.5.2)
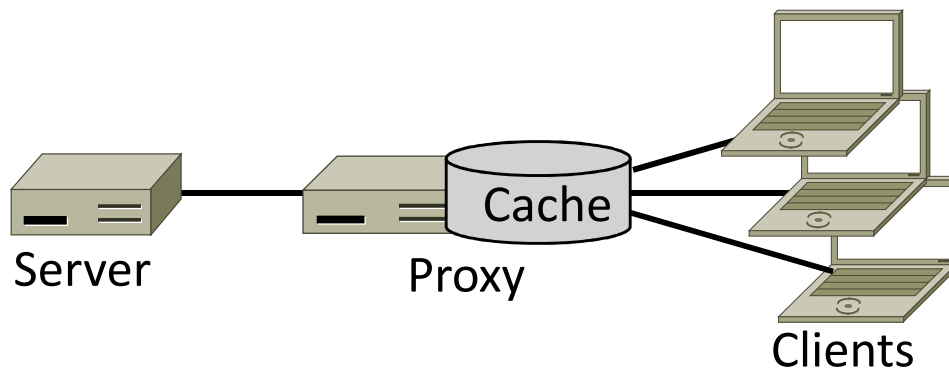
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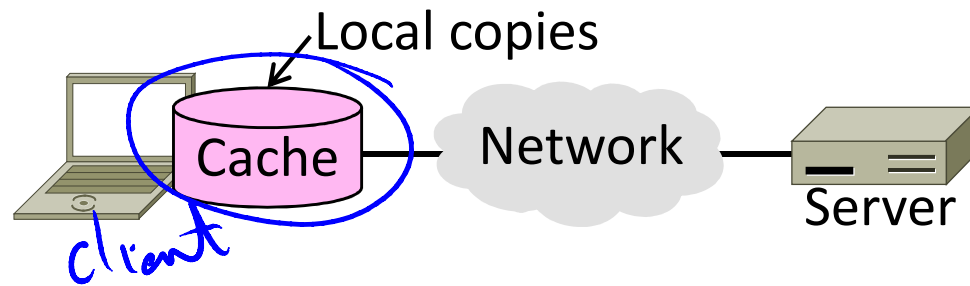UNIVERSITY *of* WASHINGTON

Topic

- ## HTTP caching and proxies
 - ### Enabling content reuse

Server   Proxy   Cache   Clients

Web Caching

- Users often revisit web pages
  - Big win from reusing local copy!
  - This is caching

Local copies

Cache — Network — Server

client

- Key question:
  - When is it OK to reuse local copy?

Web Caching (2)

- Locally determine copy is still valid
  - Based on expiry information such as "Expires" header from server
  - Or use a heuristic to guess (cacheable, freshly valid, not modified recently)
  - Content is then available right away
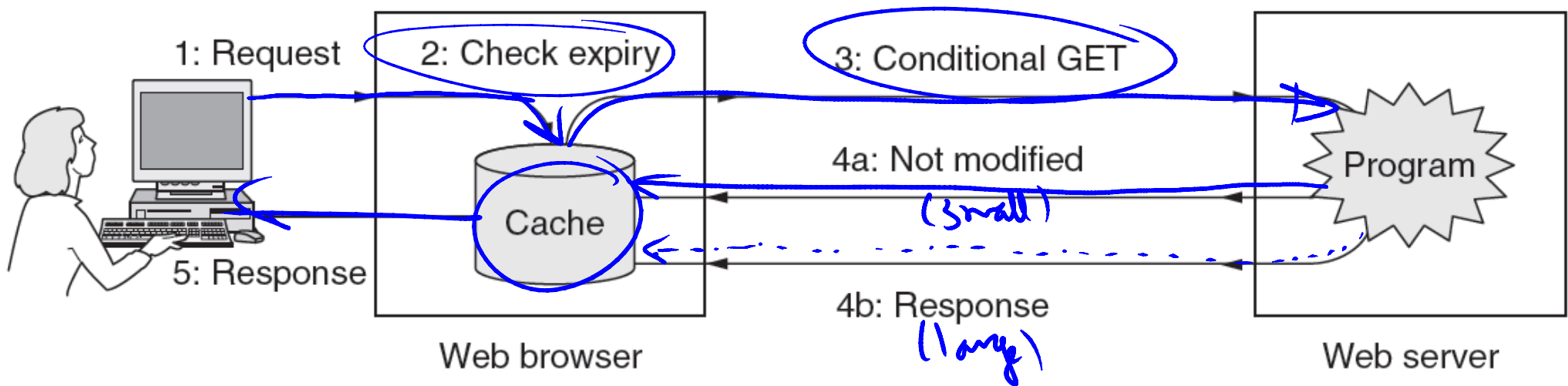
Cache — Network — Server
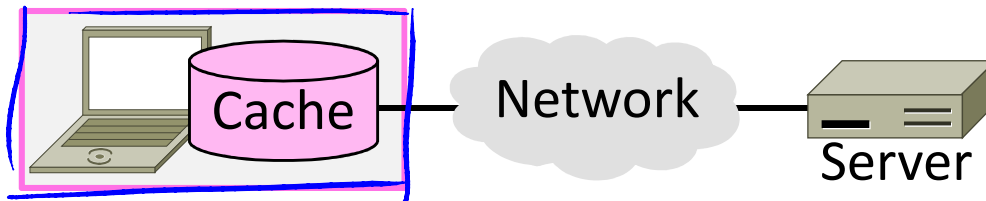
Web Caching (3)

- Revalidate copy with remote server
  - Based on timestamp of copy such as "Last-Modified" header from server
  - Or based on content of copy such as "Etag" header from server
  - Content is available after 1 RTT
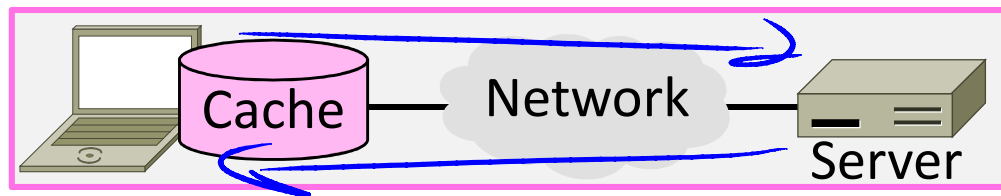
Web Caching (4)

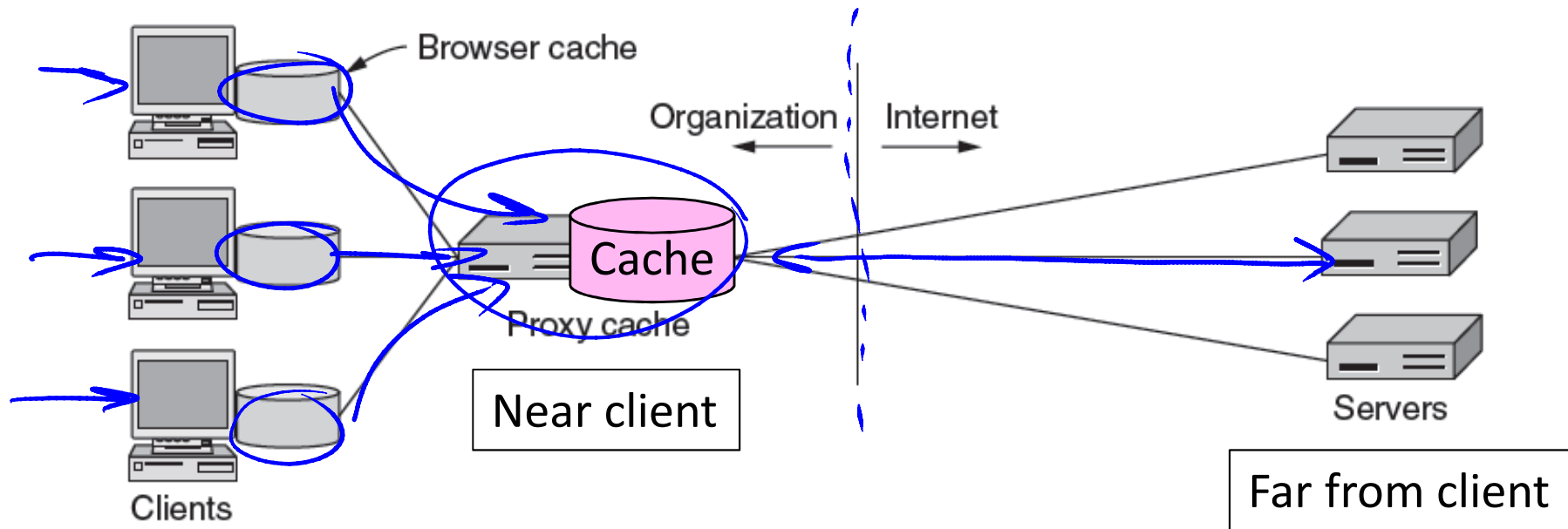- Putting the pieces together:

Web Proxies

- Place intermediary between pool of clients and external web servers
  - Benefits for clients include greater caching and security checking
  - Organizational access policies too!

- Proxy caching
  - Clients benefit from larger, shared cache
  - Benefits limited by secure / dynamic content, as well as "long tail"

Web Proxies (2)

- Clients contact proxy; proxy contacts server

END

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