

# Introduction to Computer Networks

## HTTP Caching and Proxies (§7.3.4, §7.5.2)



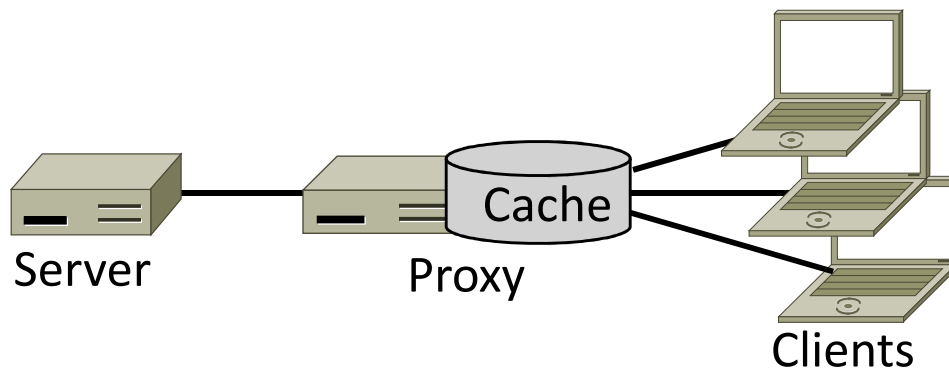
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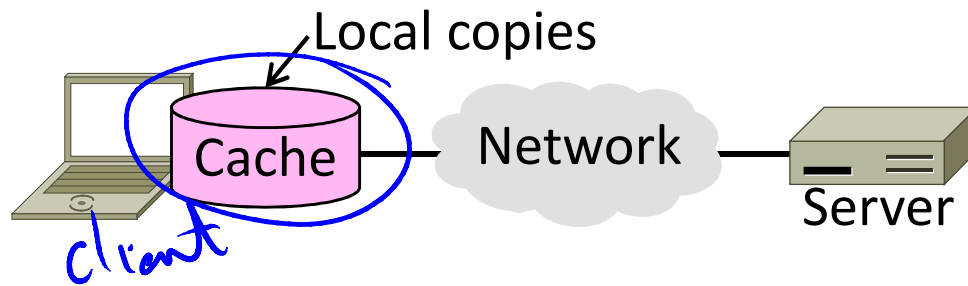
# Topic

- HTTP caching and proxies
  - Enabling content reuse



# Web Caching

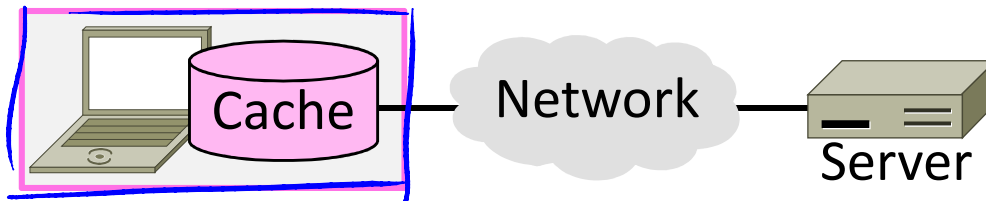
- Users often revisit web pages
  - Big win from reusing local copy!
  - This is caching



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

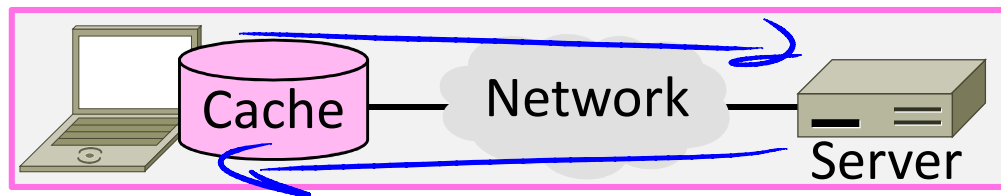
## Web Caching (2)

- 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



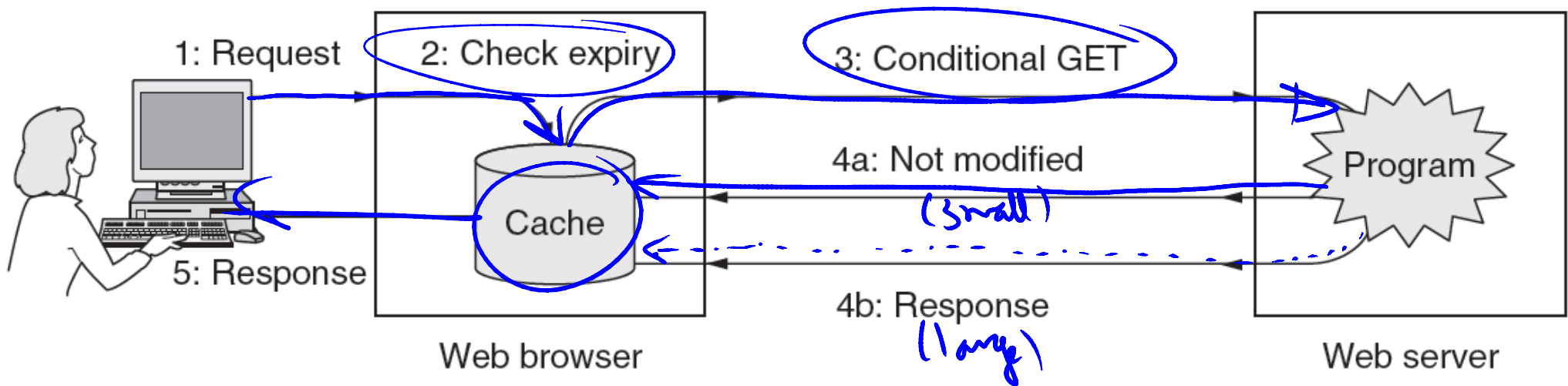
# Web Caching (3)

- 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:

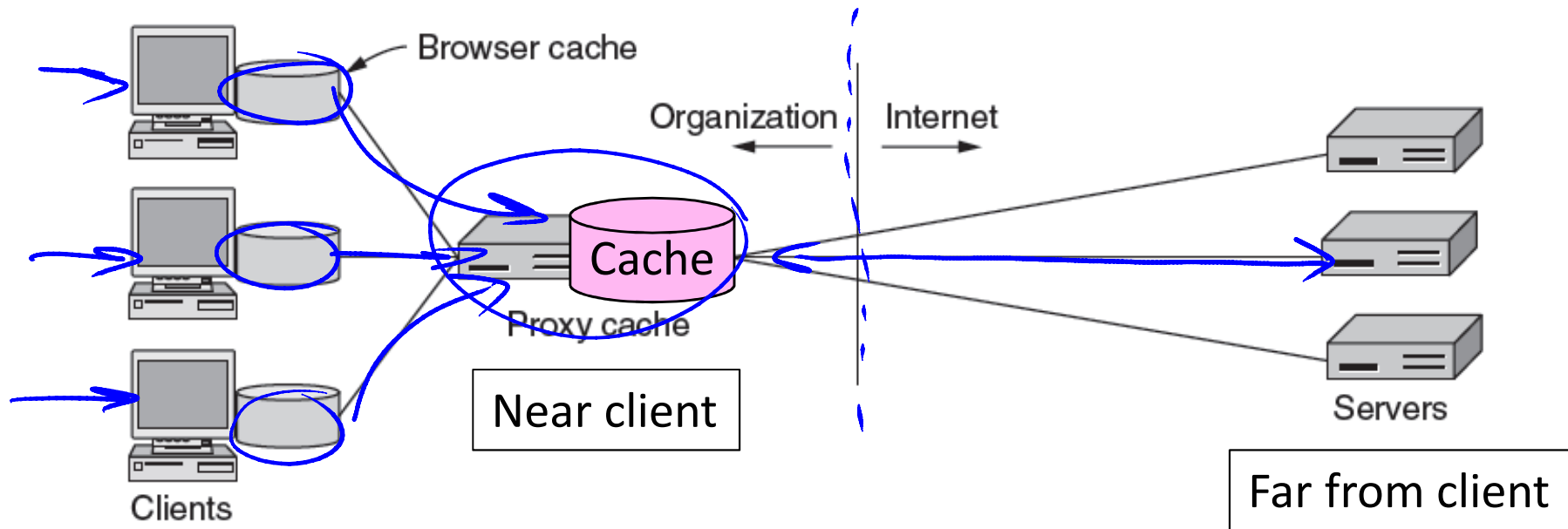


# Web Proxies

- 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”

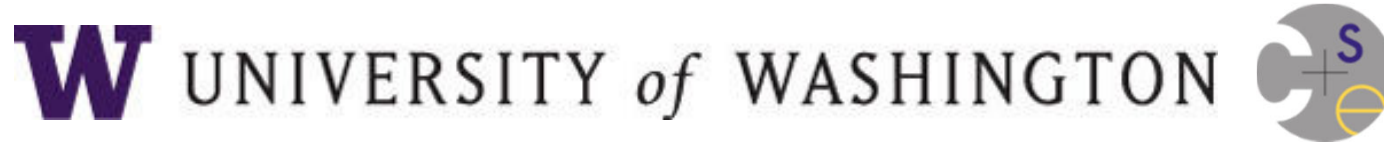
# Web Proxies (2)

- Clients contact proxy; proxy contacts server





# END



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