

Computer Network Chapter 2 Quiz 99/12/15

1. What are the major differences between SMTP and POP3? (10% each, 20% total)
2. Describe FTP operations (20%)
3.
 - (a) cookie: (10%)
 - (b) Conditional GET: (10%)
 - (c) web caching: (10%)
4.
 - (a) DNS services (5%)
 - (b) Authoritative DNS servers: (5%)
 - (c) iterated query: (10%)
 - (d) recursive query: (10%)

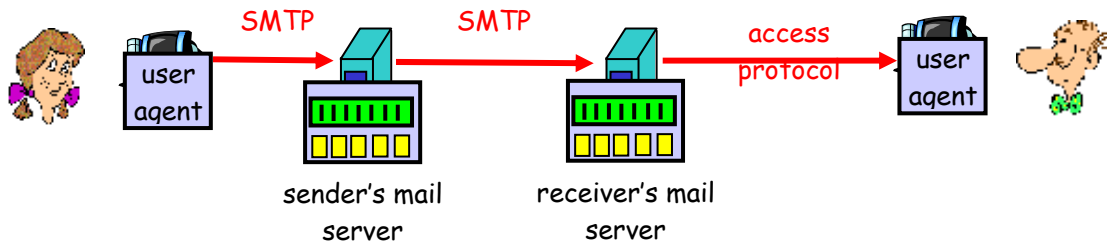
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1. What are the major differences between SMTP and POP3? (3% each, 6% total)
(10% each, 20% total)

POP: Mail access protocol: retrieval from server

SMTP:

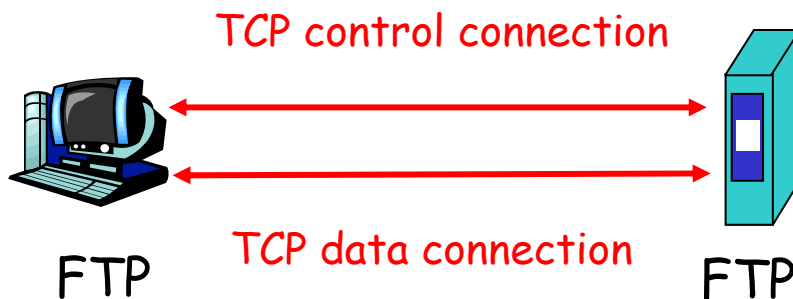
- direct transfer between mail servers to send email messages



2. (20%)

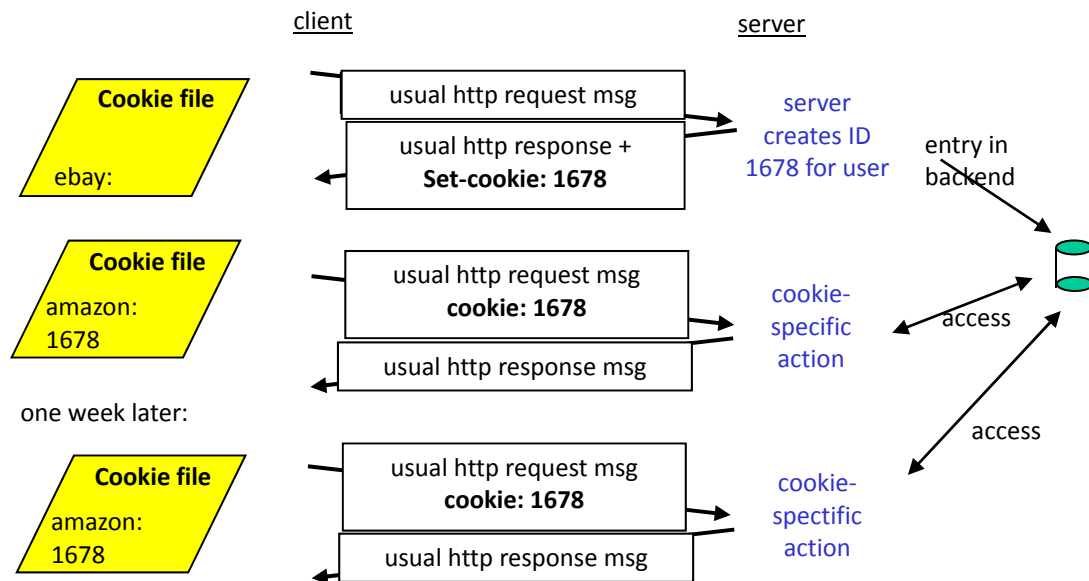
FTP operations:

- FTP client contacts FTP server at port 21, specifying TCP as transport protocol
- Client obtains authorization and sends commands over control connection
- When server receives a command for a file transfer, the server opens a TCP data connection to client. After transferring one file, server closes connection. => out-of-band control!



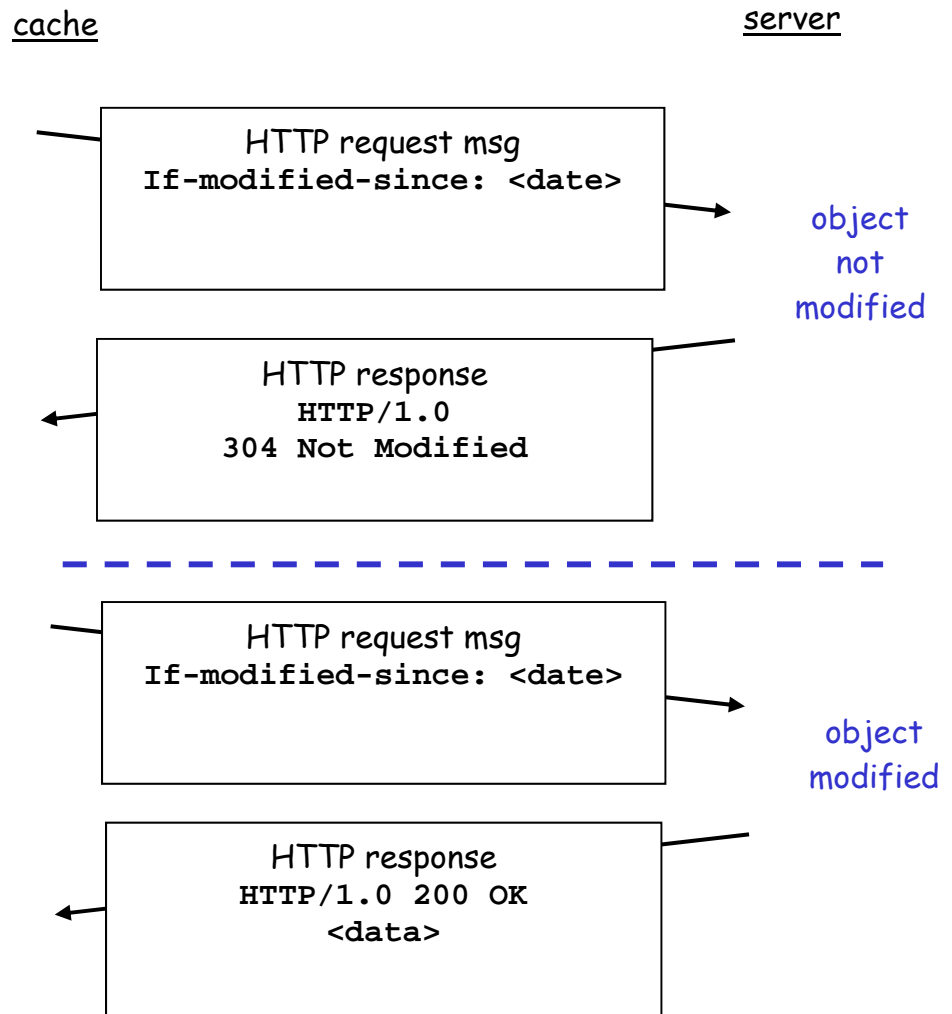
3. cookie: when a user visits a specific web site for first time and initial HTTP requests arrives at site, site creates a unique ID and creates an entry in backend database for recording user states of this ID. => keep client's states! (10%)

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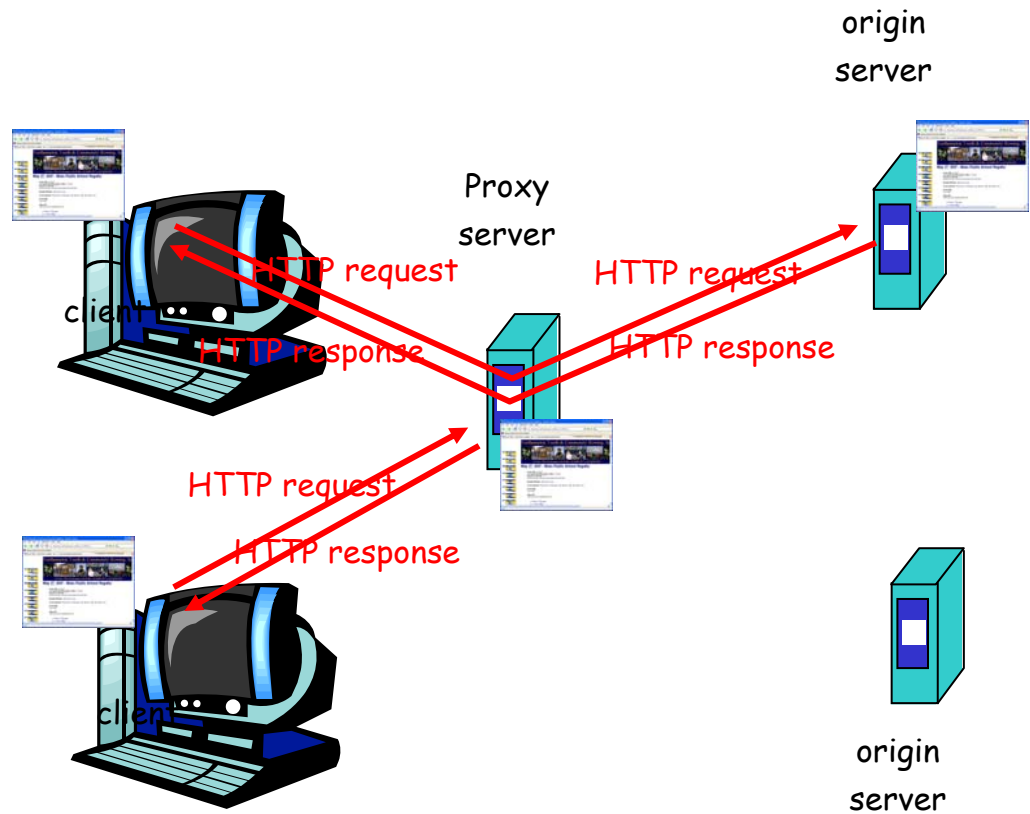
- Conditional GET: don't send object if cache has up-to-date cached version
 => reduce traffic loads (delays) on network links!
 cache: specify date of cached copy in HTTP request
If-modified-since: <date>
 server: response contains no object if cached copy is up-to-date:
HTTP/1.0 304 Not Modified
 (10%)

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- web caching: (10%)
 - user sets browser: Web accesses via cache
 - browser sends all HTTP requests to cache
 - i. object in cache: cache returns object
 - ii. else cache requests object from origin server, then returns object to client
- => reduce response time for client request and traffic on an institution's access link.

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4. (a) DNS services (5%)

- hostname to IP address translation
- host aliasing (Canonical, alias names)
- mail server aliasing

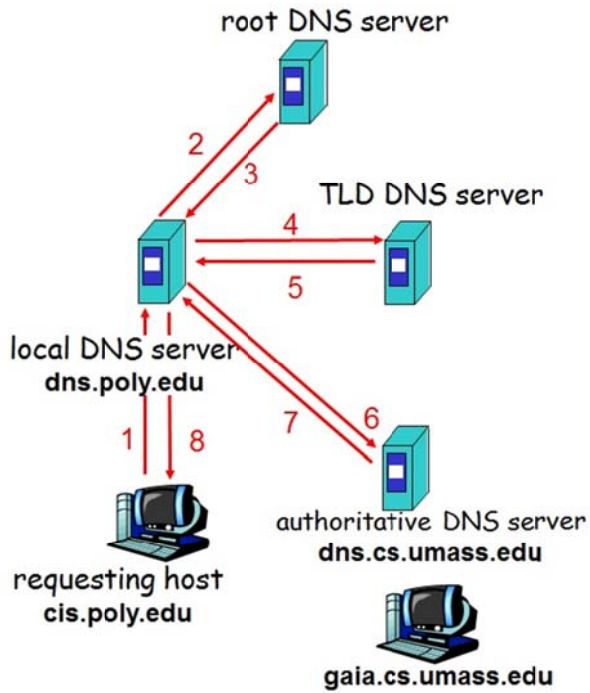
(b) Authoritative DNS servers: (5%)

- organization's DNS servers, providing authoritative hostname to IP mappings for organization's servers

(c) iterated query: (10%)

- contacted server replies with name of server to contact

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(d) recursive query: (10%)

- contacted server forwards the DNS query to next server and waits for the reply

