

CS118 Computer Network Fundamentals

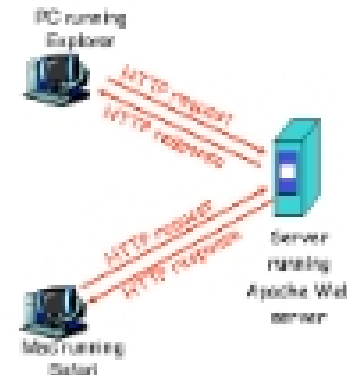
Section 2

TA: Pei-chun Cheng
Friday 4-3:30PM BH2444

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This Week

- HTTP
 - HTTP message format
 - Cookie
 - Caching



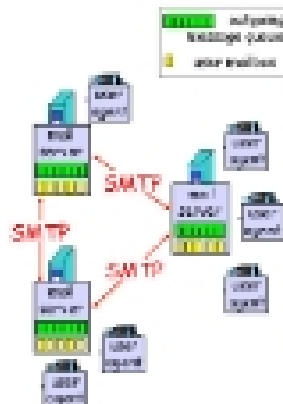
- FTP
 - FTP commands
 - USER / PASS
 - RETR / STOR
 - Control / data separation



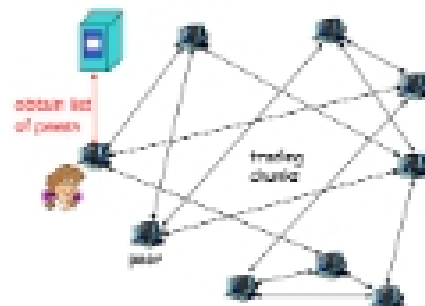
2

This Week

- E-MAIL
 - SMTP
 - POP/IMAP



- P2P
 - File distribution speed
 - Cases
 - BitTorrent
 - Skype



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Discussions

- [Slide 13 \(HTTP Message\)](#)
 - Plain text
 - Cookie
 - Cache (Proxy)
- [Slide 30 \(FTP\)](#)
 - Control port: 21
 - Data port: 20
 - [PORT command](#)

- [Slide 53~55 \(P2P\)](#)
 - File exchange
 - Join / Leave
 - How to search?
 - Centralized index
 - Flat query flooding
 - Hierarchical overlay

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Discussion Problems

- FTP (Active vs Passive connection)
 - An FTP client C, an FTP server S, and a file F
 - Describe the sequence of connections, commands, and port numbers involved in the following scenarios

Question

1. Active connection?
2. Passive connection?
3. Discuss the relative advantages and disadvantages

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Discussion Problems

- Ch2.P20 (P2P Join/Leave)
 - Consider a overlay network that uses query flooding.
 - Each participant maintains TCP connections to at least 4 distinct peers at all times
 - Peer X is connected to Y which has exact 4 connections.

Question

1. What happens if peer X decides to leave, and notifying Y . What would Y do?
2. Now suppose X abruptly disconnects from the Internet w/o notifying Y .

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Discussion Problems

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 - Consider a overlay network that uses query flooding.
 - Each participant maintains TCP connections to at least 4 distinct peers at all times
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Homeworks

- Homework #1
 - Review
- Homework #2
 - Points
 - SMTP / POP3
 - P2P query and dissemination
 - Questions?

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About project groups

- Group up to 3 people
- Due with the Project 1
 - Each group submits one report for the project 1
 - List your group members
- Project 2 would follow the project 1 groups
 - No change allowed
 - Coordinate with members

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Any questions?

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HTTP Message

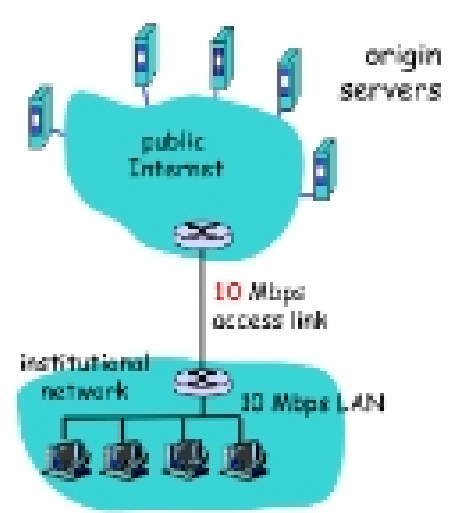
- HTTP Request / Response

```
GET /~ross/ HTTP/1.1!  
Host: cis.poly.edu!  
  
HTTP/1.1 200 OK!  
Date: Sun, 03 Apr 2011 19:48:33 GMT!  
Server: Apache/1.2.5!  
Last-Modified: Tue, 22 Jun 2010 19:20:37 GMT!  
Content-Length: 9615!  
Accept-Ranges: bytes!  
Set-Cookie: var=value; Domain=.poly.edu; Path=/  
Expires=...  
Content-Type: text/html!
```

Plain text

Cookie

Web Cache / Proxy



- Proxy
 - Client side
 - proxy.ucla.edu
 - Cache
 - Access control
 - Library resources
- Reverse Proxy
 - Server side
 - Reduce server load

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