

Recitation 13: ProxyLab Part 1

Instructor: TA(s)

Outline

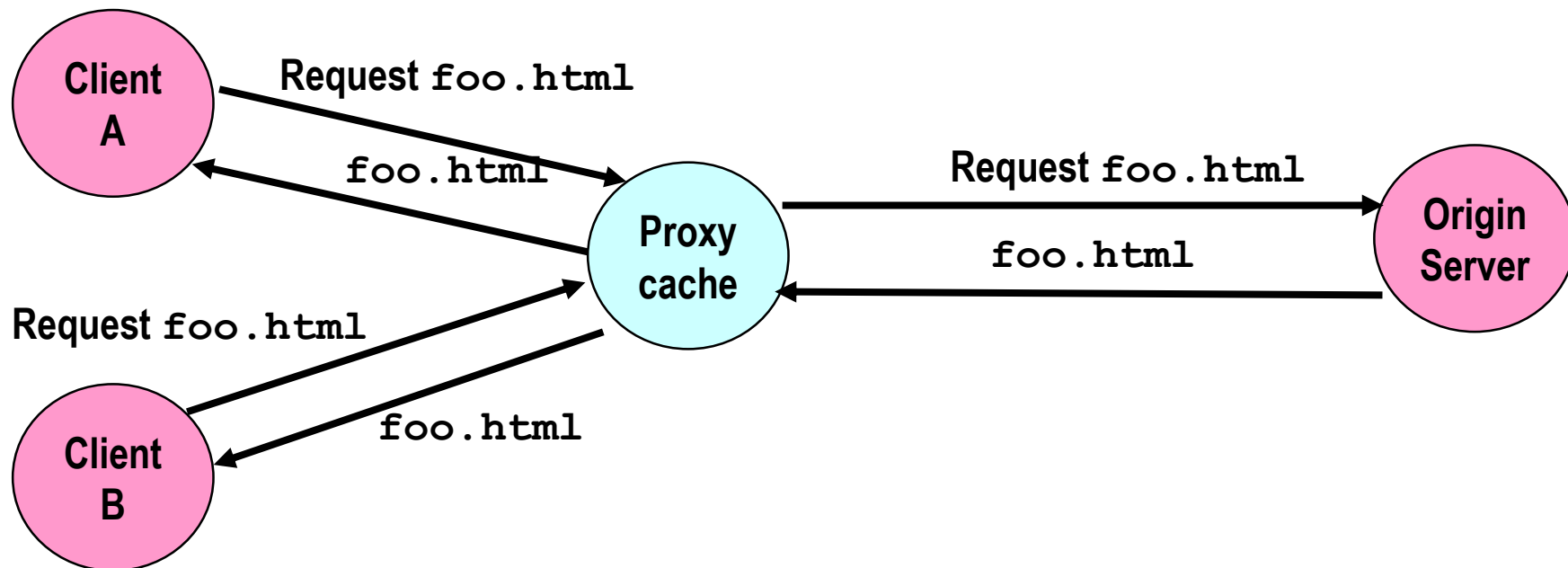
- **Proxies**
- **Networking**
- **Networking Demos**

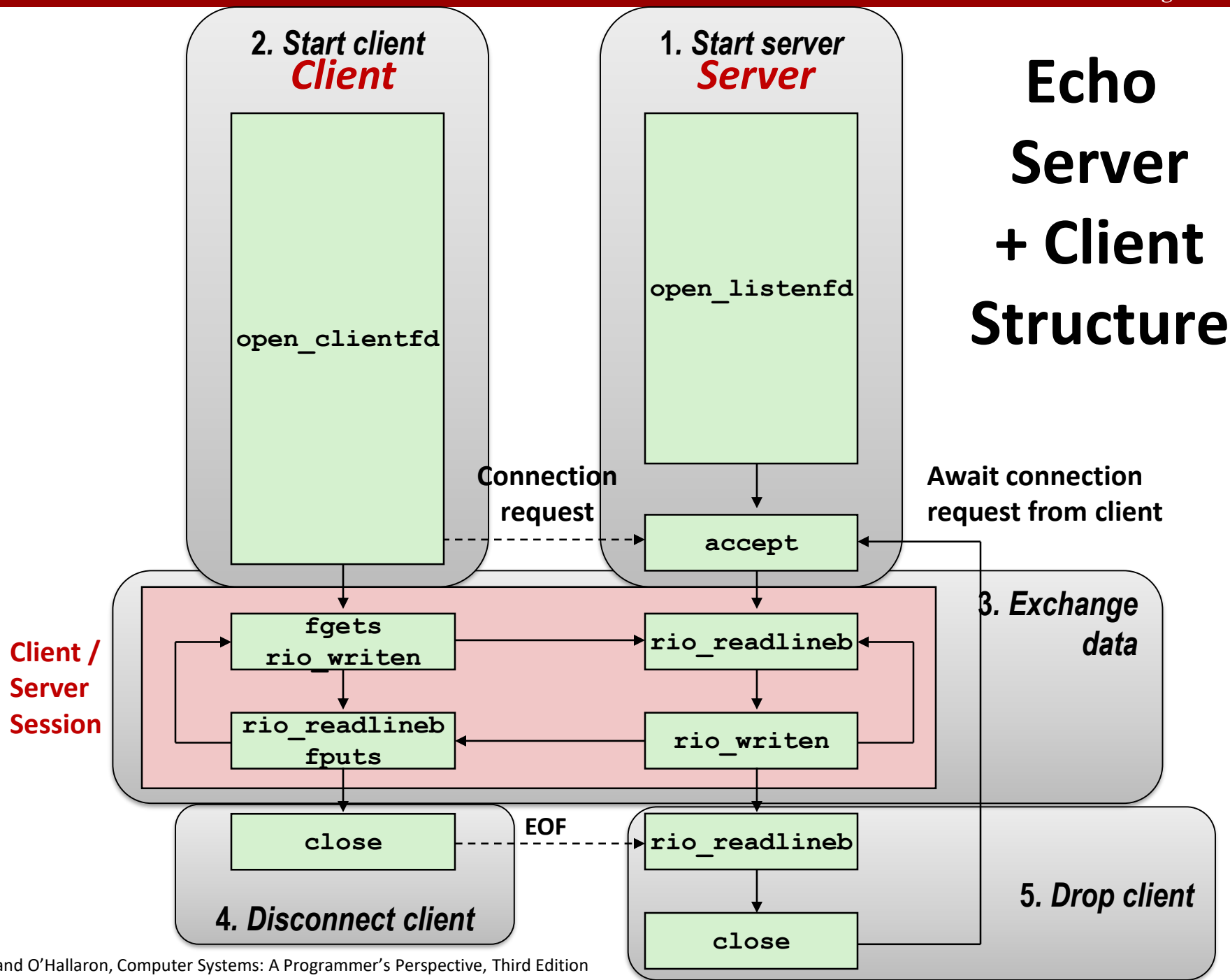
Proxy Lab

- **There are no grace days / late submissions**
 - 8% of final grade
- **You are submitting an entire project**
 - Modify the makefile
 - Split source file into separate pieces
- **Submit regularly to verify proxy builds on Autolab**
- **Your proxy is a server, it should not crash!**

Why Proxies?

- Proxies are both clients and servers
- Can perform useful functions as requests and responses pass by
 - Examples: Caching, logging, anonymization, filtering, transcoding





Transferring HTTP Data

- **If something requests a file from a web server, how does it know that the transfer is complete?**

A) It reads a NULL byte.

B) The connection closes.

C) It reads a blank line.

D) The HTTP header specifies the number of bytes to receive.

E) The reading function receives EOF.

Telnet Demo

- **Telnet is valuable for manually testing your proxy**

- What are valid requests to web servers?
- What do valid replies look like?

- **Connect to a shark machine**

- `$ telnet www.cs.cmu.edu 80`

`GET /~213/activities/rec13.html HTTP/1.0 <press enter>`

`<press enter>`

Echo Demo

- See telnet results

Echo Server Multi-Threaded

- How might we make this server multithreaded?
(Don't look at echoserver_t.c)

```
listenfd = Open_listenfd(port); /* Server listens on a specific port
number */
while (1) {
    clientlen = sizeof(clientaddr);
    /* Accept call will block until a client connects to the port */
    connfd = Accept(listenfd, (SA *)&clientaddr, &clientlen);
    /* Connection is established, echo to client */
    echo(connfd);
    Close(connfd); /* Close the socket connection */
}
```

Echo Server Multithreaded

- **View the code in echoserver_t.c**
- **Nominate one student in class to run server**
 - Have other groups connect to it

Reminders

- **Read the writeup**
- **Start early**
 - Remember, no late submissions
- **Work incrementally and take breaks**

Echo Demo

- **> wget <http://www.cs.cmu.edu/~213/activities/rec13.tar>**
- **> tar xf rec13**
- **> cd rec13**
- **> make**
- **(Have a fellow student launch the client / server,
figure out how to get them to communicate)**