



CS433/533 Assignment 4

Overview



Fishnet

- Network protocol simulator & emulator
 - Read [fishnet-intro.pdf](#)
- Get started
 - Network topology (.topo) for emulator
 - Simulation script (.fish) for simulator
 - trawler.pl: emulation coordinator
 - fishnet.pl: interactive node emulation



Where to put your code

- Under directory proj/
 - Related files: Node.java, TCPManager.java, TCPSock.java
- Do NOT modify files under lib/
 - E.g., the file ‘Transport.java’ only serves as definition of transport packet format, do not rewrite it



Node.java

- `send(int destAddr, Packet packet)`
 - Call this method to send a packet you have constructed to a node with `destAddr`
- How do I know the destination's address?
 - Fishnet assign the lowest unused address (0-254) to a newly started node
 - If you start two fish nodes, they will have address 0 and 1



Node.java

- `onCommand(String command)`
 - entry point for node commands, process commands here
 - Example: 0 hello
 - Node 0's `onCommand` gets invoked with `command = "hello"`



Node.java

- `onReceive(Integer from, byte[] msg)`
 - Entry point for receiving a packet
 - However, put your support for new protocols in `receivePacket(int from, Packet packet)`
- `receivePacket(int from, Packet packet)`
 - Call your protocol specific packet processing code from this method



Node.java

- addTimer
 - An example of how to use callbacks and timers
 - You may need to implement more sophisticated versions of it, since the current one only adds callbacks with no arguments

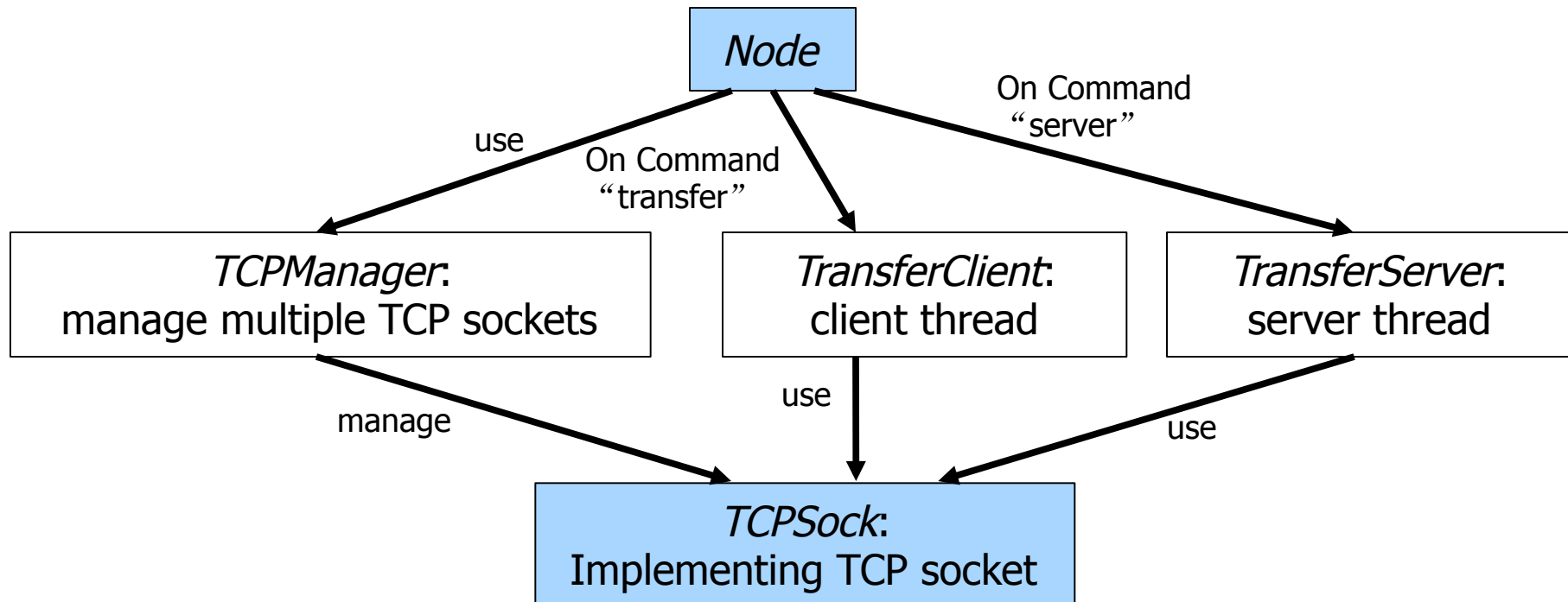


Interoperable Designs

- You should stick to the protocol and API specification on course webpage
 - Connection setup
 - Connection tear-down
- You are free to choose how you implement the specification
- You are free to build your own test case (other than the sample transfer client/server)

Interoperable Designs

- We provide an example design sketch
 - Classes view





How to test your code?

- Use the “two.topo” file on course website to setup two directly connected nodes (with addresses 0 and 1)
 - In your “server” command, specify the port to listen on, and backlog
 - In your “transfer” command, specify the destination node address and port, and the amount to transfer
- Or, use the simulator scripts
“transfertest.fish” under the “scripts” directory