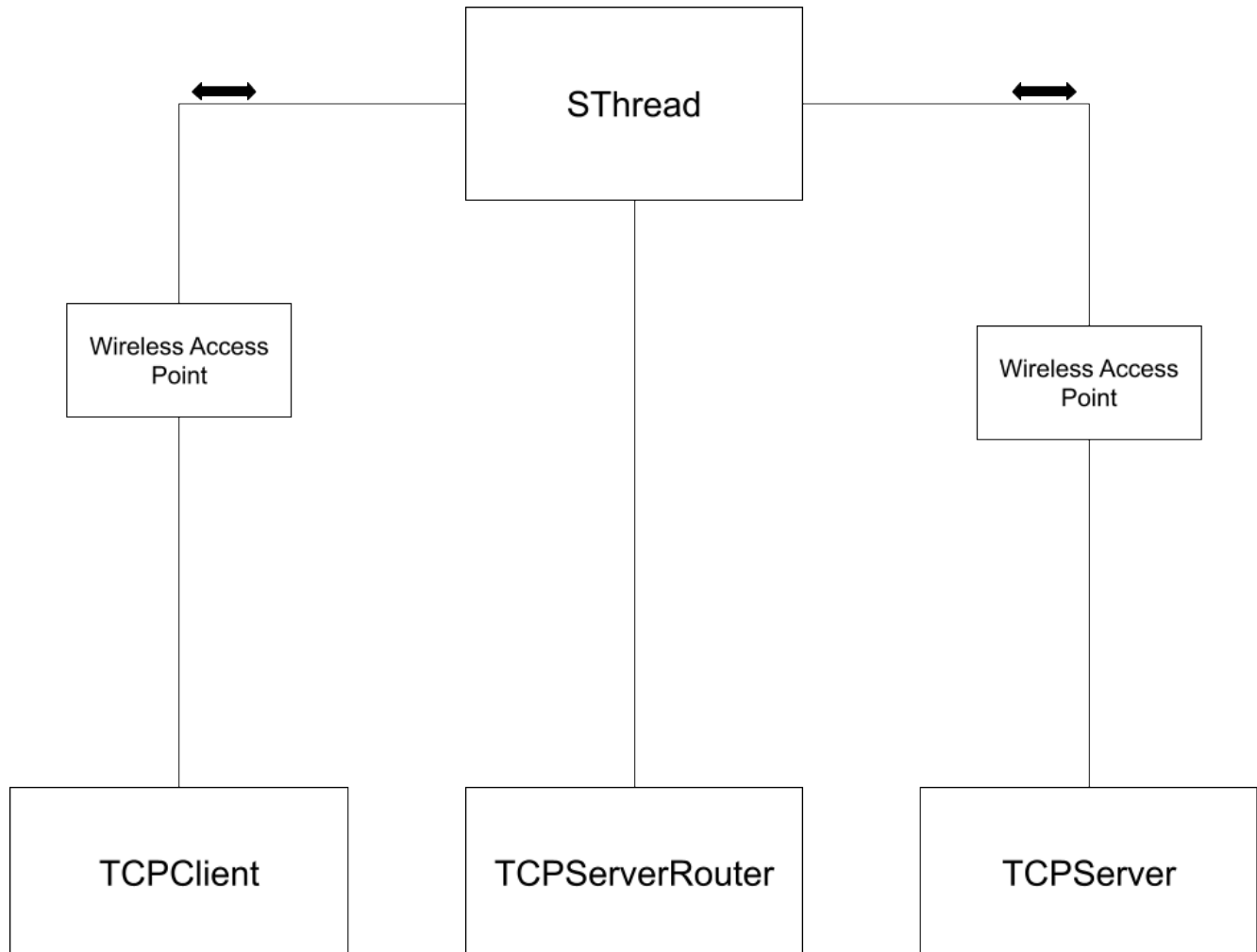


User Guide for CS 4504 Project Part 1

Created by Mae B. Morella, Mionne Gooch, William McNab, Louis Todd, Ethan Blaizis, and Stephen Flenniken

Functionality



This repository hosts three programs:

1. TCPServer
 - Receives messages from the client, and echoes them back in uppercase.
2. TCPClient
 - Reads a text file and transmits it to a socket.

3. TCPServerRouter

- Establishes socketed connections between Server and Client instances.
- Socket is closed when `"Bye.\n"` is received.

Configuration

The client and server programs load configuration data from environmental variables:

- `ROUTER_HOSTNAME` – The hostname of the device running the ServerRouter instance.
- `DESTINATION_IP` – The IP address of the server/client instance for the program to connect to.

To make these values persistent, set them as system-wide variables (platform-dependent), or define them in a file named `.env`, as explained below.

To deploy

1. Clone the project repository:

```
git clone https://github.com/Mgooch2/ParallelDistrib_Project.git
cd ParallelDistrib_Project
```

2. Compile the Java classes

```
javac @classes
```

3. Create a file called `.env` containing the following definitions:

```
# The hostname of the TCPServerRouter instance
ROUTER_HOSTNAME=localhost
# The IP address of the server/client to connect to
DESTINATION_IP=127.0.0.1
```

- For a connection between multiple machines, these should be changed to the desired values.
- On Windows and POSIX systems, the `hostname` command will print the system's hostname.

- On Windows, the `ipconfig` command will print this. On most Linux systems, `ip addr`, `hostname -I`, or `ifconfig` will print the system's IP address.
4. On one system, launch the `TCPServerRouter` program.

```
java -cp src/ TCPServerRouter
```

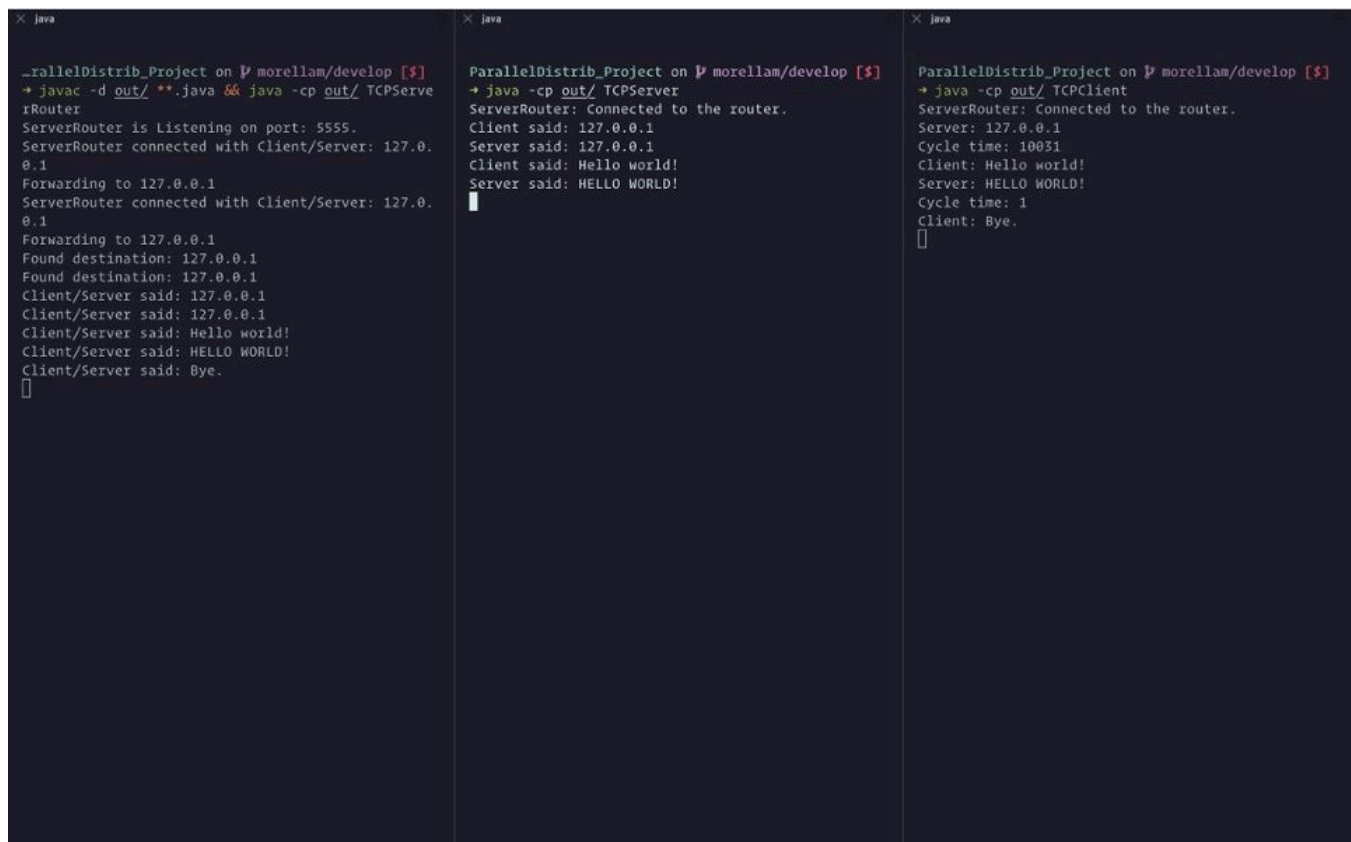
5. On another system, launch the `TCPServer`

```
java -cp src/ TCPServer
```

6. Finally, invoke the client process with the name of a text file

```
java -cp src/ TCPClient txt/file.txt
```

Output



```
ParallelDistrib_Project on P morellam/develop [$]
+ javac -d out/ **.java && java -cp out/ TCPServerRouter
ServerRouter is Listening on port: 5555.
ServerRouter connected with Client/Server: 127.0.0.1
Forwarding to 127.0.0.1
ServerRouter connected with Client/Server: 127.0.0.1
Forwarding to 127.0.0.1
Found destination: 127.0.0.1
Found destination: 127.0.0.1
Client/Server said: 127.0.0.1
Client/Server said: 127.0.0.1
Client/Server said: Hello world!
Client/Server said: HELLO WORLD!
Client/Server said: Bye.
█

ParallelDistrib_Project on P morellam/develop [$]
+ java -cp out/ TCPServer
ServerRouter: Connected to the router.
Client said: 127.0.0.1
Server said: 127.0.0.1
Client said: Hello world!
Server said: HELLO WORLD!
█

ParallelDistrib_Project on P morellam/develop [$]
+ java -cp out/ TCPClient
ServerRouter: Connected to the router.
Server: 127.0.0.1
Cycle time: 10031
Client: Hello world!
Server: HELLO WORLD!
Cycle time: 1
Client: Bye.
█
```

Copyright notice

The source code in this project is derived from files provided for the assignment by the Kennesaw State University College of Computing and Software Engineering.

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