

Darren Yu

## Lab 4

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## Lab 4 Documentation

### Directory Structure:

- **src:** contains the source code used to generate the executable
- **bin:** holds the executable program generated from my source code
- **doc:** contains resources used and tests

## Makefile:

- Standard “make” to execute everything
- Standard “make clean” to remove executable files

### Usage:

All requests should follow the format of

### For the server

```
./myclient <servn> <servaddr.conf> <mtu> <winsz> <in filepath> <out filepath>
```

## For the client

```
./myserver <port number> <droppc> <root folder path>\n
```

## Functionality

## Multiple Thread Support

[illegible]

## Time-out and Re-send Detection

```
Timeout occurred. Retry #1
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 1
Timeout occurred. Retry #2
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 2
Timeout occurred. Retry #3
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 3
Timeout occurred. Retry #4
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 4
Timeout occurred. Retry #5
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 5
Timeout occurred. Retry #6
Retransmitting window starting from sequence number: 0
Sending packet with sequence number: 6
^C
-bash-4.2$
```

## Detects Valid Window Size

```
-bash-4.2$ ./myclient 1 ../server.conf 512 -10 /afs/cats.ucsc.edu/users/c/dyu40/infile/text.tx /joe/mama/epic.txt
Client_Error: Invalid window size value
```

## Detects Valid MTU

```
-bash-4.2$ ./myclient 1 ../server.conf 0 10 /afs/cats.ucsc.edu/users/c/dyu40/infile/text.txt /joe/mama/epic.txt
Client_Error: Invalid MTU value
```

## Detects if infile does not exist

```
-bash-4.2$ ./myclient 1 ../server.conf 512 10 /afs/cats.ucsc.edu/users/c/dyu40/infile/text.tx /joe/mama/epic.txt
Client_Error opening input file
-bash-4.2$
```

```
./myclient 1 ../server.conf 2 5 /afs/cats.ucsc.edu/users/c/dyu40/infile/cat.txt /green/egg/ham.txt
```

```
./myclient 3 serv.conf 512 10 dir/testfile outfile
```

## Resources Used

## Sources

<https://www.rfc-editor.org/rfc/rfc3339>

<https://www.baeldung.com/cs/networking-go-back-n-protocol>

<https://jamboard.google.com/d/14Ppwl41SwMoU78i4by7-R2bM3jPh2oUD9nAdkSXr7wY/edit?usp=sharing>

<https://chat.openai.com/share/fd0936f7-b81f-4970-90d7-fc998aa96146>

<https://chat.openai.com/share/252605b4-98c9-45a0-97d8-52759aa8b938>

<https://chat.openai.com/share/8fd14ca6-47f9-4558-a909-9bcd0f7b69>

<https://man7.org/linux/man-pages/man7/pthreads.7.html>

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