

Same machine:-

Proof that it allows at max only 5 clients at a time

```
server — script client • server — 96x24
ka 'struct _opaque_pthread_t *') [-Wformat]
printf("(+)Thread at tid = %d received the filename as %s from Client with ip:port as %s\n",tid[index],globbuff,ip,port);

./server.c:61:58: warning: format specifies type 'int' but the argument has type 'pthread_t _Non
null' (aka 'struct _opaque_pthread_t *') [-Wformat]
printf("(+)Thread at id %d read: %d bytes\n", pthread_self(), bytes_read);
./server.c:71:57: warning: data argument not used by format string [-Wformat-extra-args]
printf("(+) %s named File sent.\n", globbuff, pthread_self());
./server.c:77:1: warning: non-void function does not return a value [-Wreturn-type]
}
4 warnings generated.
(base) Kunalkariwala@lmaoo-1 server % ./server 4444
[+]Server is active on [0.0.0.0 : 4444]
[+]Connection accepted from 127.0.0.1:62718
[+]Connection accepted from 127.0.0.1:62711
[+]Connection accepted from 127.0.0.1:62712
[+]Connection accepted from 127.0.0.1:62713
[+]Connection accepted from 127.0.0.1:62714

client — script client • client — 107x9
(base) Kunalkariwala@lmaoo-1 client % gcc -o client ./client.c -lpthread
./client.c:30:10: warning: initializing 'char **' with an expression of type 'const char *' discards quali
fiers [-Wincompatible-pointer-types-discards-qualifiers]
char * servAdd = argv[1];
1 warning generated.
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit:

client — script client • client — 107x12
(base) Kunalkariwala@lmaoo-1 client % script client
Script started, output file is client
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit:

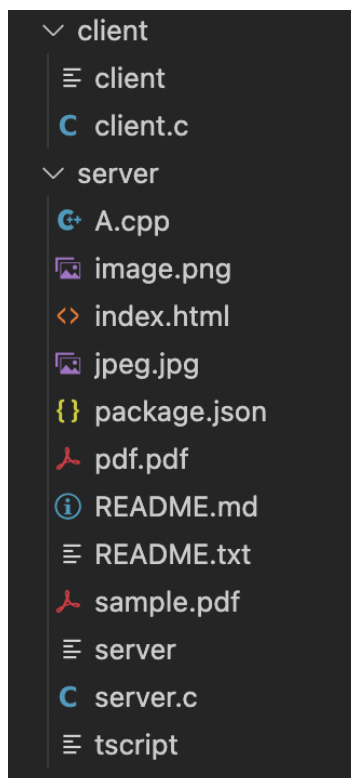
client — script client • client — 107x11
(base) Kunalkariwala@lmaoo-1 client % script client
Script started, output file is client
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit:

client — script client • client — 96x12
(base) Kunalkariwala@lmaoo-1 client % script client
Script started, output file is client
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit:

client — script client • client — 96x14
(base) Kunalkariwala@lmaoo-1 client % script client
Script started, output file is client
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit:

client — script client • zsh — 106x14
(base) Kunalkariwala@lmaoo-1 client % script client
Script started, output file is client
(base) Kunalkariwala@lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection refused: Server is full
(base) Kunalkariwala@lmaoo-1 client %
```

File structure before executing the commands



Commands executed:-

```
server -- script tscript - server -- 96x24
[+]Connection accepted from 127.0.0.1:62712
[+]Connection accepted from 127.0.0.1:62713
[+]Connection accepted from 127.0.0.1:62724
[+]Thread at tid = 1848967680 recieved the filename as sample.pdf from Client with ip:port as 127.0.0.1:62710
[+]Thread at id 1848967680 read: 3828 bytes
[+] sample.pdf named File sent.
[+]Thread at tid = 1848967680 recieved the filename as index.html from Client with ip:port as 127.0.0.1:62710
[+]Thread at id 1848967680 read: 1148 bytes
[+] index.html named File sent.
[+]Thread at tid = 1848967680 recieved the filename as A.cpp from Client with ip:port as 127.0.0.1:62710
[+]Thread at id 1848967680 read: 560 bytes
[+] A.cpp named File sent.
[+]Thread at tid = 1848967680 recieved the filename as image.png from Client with ip:port as 127.0.0.1:62710
[+]Thread at id 1848967680 read: 172426 bytes
[+] image.png named File sent.
[+]Thread at tid = 1848967680 recieved the filename as package.json from Client with ip:port as 127.0.0.1:62710
[+]Thread at id 1848967680 read: 811 bytes
[+] package.json named File sent.

client -- script client - client -- 107x24
(base) kunalkariwala@Lmaoo-1 client % script client
Script started, output file is client
(base) kunalkariwala@Lmaoo-1 client % gcc -o client ./client.c -lpthread
./client.c:30:10: warning: initializing 'char **' with an expression of type 'const char **' discards qualifiers [-Wincompatible-pointer-types-discards-qualifiers]
  char * servAdd = argv[1];
          ^
1 warning generated.
(base) kunalkariwala@Lmaoo-1 client % ./client 127.0.0.1 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit: sample.pdf
[+] sample.pdf named file received!
[+] Enter file name or type quit to quit: index.html
[+] index.html named file received!
[+] Enter file name or type quit to quit: A.cpp
[+] A.cpp named file received!
[+] Enter file name or type quit to quit: image.png
[+] image.png named file received!
[+] Enter file name or type quit to quit: package.json
[+] package.json named file received!
[+] Enter file name or type quit to quit:
```

File structure after executing the commands.

```

└─ client
  └─ A.cpp
  └─ client
  └─ client.c
  └─ image.png
  └─ index.html
  └─ package.json
  └─ sample.pdf
└─ server
  └─ A.cpp
  └─ image.png
  └─ index.html
  └─ jpeg.jpg
  └─ package.json
  └─ pdf.pdf
  └─ README.md
  └─ README.txt
  └─ sample.pdf
  └─ server
  └─ server.c
  └─ tscript
```

The script file until now is available in [serverscript1](#).

Different machines:

Screenshot of the server:

```
server — script tscript - zsh — 204x34
(base) kunalkariwala@Lmaoo-1 server % script serverscript2
Script started, output file is serverscript2
(base) kunalkariwala@Lmaoo-1 server % ./server 4444
[+]Server is active on [0.0.0.0 : 4444]
[+]Connection accepted from 192.168.29.199:60016
[+]Thread at tid = 1830760448 recieved the filename as sample.pdf from Client with ip:port as 192.168.29.199:60016
[+]thread at id 1830760448 read: 3028 bytes
[+] sample.pdf named File sent.
[+]Thread at tid = 1830760448 recieved the filename as text.txt from Client with ip:port as 192.168.29.199:60016
[+]Thread at tid = 1830760448 recieved the filename as image.png from Client with ip:port as 192.168.29.199:60016
[+]thread at id 1830760448 read: 172426 bytes
[+] image.png named File sent.
[+]Thread at tid = 1830760448 recieved the filename as package.json from Client with ip:port as 192.168.29.199:60016
[+]thread at id 1830760448 read: 811 bytes
[+] package.json named File sent.
[+]Thread at tid = 1830760448 recieved the filename as index.html from Client with ip:port as 192.168.29.199:60016
[+]thread at id 1830760448 read: 1148 bytes
[+] index.html named File sent.
[+]Thread at tid = 1830760448 recieved the filename as pdf.pdf from Client with ip:port as 192.168.29.199:60016
[+]thread at id 1830760448 read: 22521 bytes
[+] pdf.pdf named File sent.
[+]Client with ip:port as 192.168.29.199:60016 has safely exited
^C
(base) kunalkariwala@Lmaoo-1 server %
```

Screenshot of the client on the different machine.

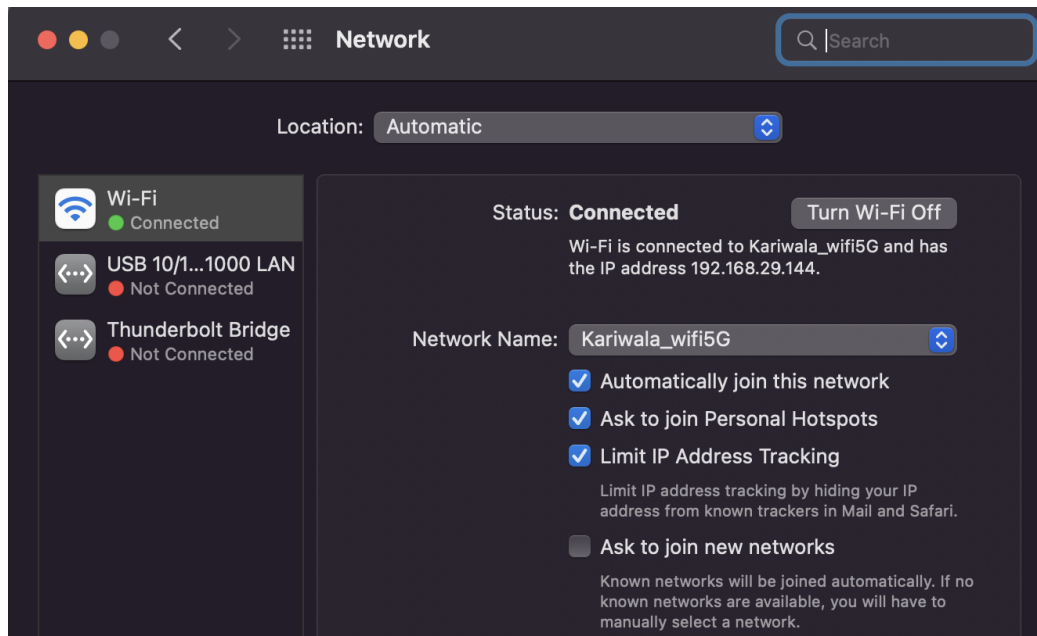
```
client.c - kunal [WSL: Ubuntu] - Visual Studio Code
EXPLORER
KUNAL [WSL: UBUNTU]
> .cache
> landscape
> vscode-server
$ .bash_history
$ .bash_logout
$ .bashrc
$ .motd_shown
$ .profile
$ sudo_as_admin_succ...
$ wget-hsts
client
client.c
clientdiffmachine

TERMINAL
kunal@DESKTOP-H196PA1:~$ script clientdiffmachine
Script started, file is clientdiffmachine
kunal@DESKTOP-H196PA1:~$ gcc -o client ./client.c -lpthread
./client.c: In function 'main':
./client.c:29:20: warning: initialization discards 'const' qualifier from pointer target type [-Wdiscarded-qualifiers]
29 |     char * servAdd = argv[1];
    |                   ^
kunal@DESKTOP-H196PA1:~$ ./client 192.168.29.144 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit: 
```

```
client.c - kunal [WSL: Ubuntu] - Visual Studio Code
EXPLORER
KUNAL [WSL: UBUNTU]
> .cache
> landscape
> vscode-server
$ .bash_history
$ .bash_logout
$ .bashrc
$ .motd_shown
$ .profile
$ sudo_as_admin_succ...
$ wget-hsts
client
client.c
clientdiffmachine
image.png
index.html
package.json
pdf.pdf
sample.pdf

TERMINAL
kunal@DESKTOP-H196PA1:~$ script clientdiffmachine
Script started, file is clientdiffmachine
kunal@DESKTOP-H196PA1:~$ gcc -o client ./client.c -lpthread
./client.c: In function 'main':
./client.c:29:20: warning: initialization discards 'const' qualifier from pointer target type [-Wdiscarded-qualifiers]
29 |     char * servAdd = argv[1];
    |                   ^
kunal@DESKTOP-H196PA1:~$ ./client 192.168.29.144 4444
[+]Connection Accepted!
[+] Enter file name or type quit to quit: sample.pdf
[+] sample.pdf named file received!
[+] Enter file name or type quit to quit: text.txt
[-] File not found!
[+] Enter file name or type quit to quit: image.png
[+] image.png named file received!
[+] Enter file name or type quit to quit: package.json
[+] package.json named file received!
[+] Enter file name or type quit to quit: index.html
[+] index.html named file received!
[+] Enter file name or type quit to quit: pdf.pdf
[+] pdf.pdf named file received!
[+] Enter file name or type quit to quit: quit
[-] connection closed!
kunal@DESKTOP-H196PA1:~$
```

Here the client and server were connected to the same wifi, proof of IP address:-



Script file is available in serverscript2.