



Government Engineering College Thrissur

Network Programming Lab

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S6, CSE

Experiment 6

File Server - TCP

AIM

Develop a concurrent file server which will provide the file requested by the client if it exists. If not, the server sends an appropriate message to the client. Server should also send its process ID (PID) to clients for display along with a file or the message.*

THEORY

A file server is a central server in a computer network that provides file systems or at least parts of a file system to connected clients. File servers therefore offer users a central storage place for files on internal data media, which is accessible to all authorized clients. Here, the server administrator defines strict rules regarding which users have which access rights: For instance, the configuration or file authorizations of the respective file system enable the admin to set which files can be seen and opened by a certain user or user group, and whether data can only be viewed or also added, edited, or deleted.

With file servers connected to the internet and configured accordingly, users cannot only access the files via the local network but also benefit from remote access. This enables files to be accessed and saved on the file server even when users are on the go. All modern operating systems such as Windows, Linux, or macOS can be used on a file server, although the devices available in the network need to be compatible with the operating system. But file servers are not only used for file storage and management. They are also often used as a repository for programs that have to be accessible to multiple network participants, and as a backup server.

HOW TO USE?

1. Navigate to the main directory containing the program.
2. Open terminal 1
3. Type `$ javac Server.java`
4. Enter `$ java Server`
5. Open a new terminal
6. Type `$ javac Client.java`
7. Enter `$ java Client`
8. Open more terminals and repeat the same for client
9. Type the input and test the output.

RESULT

Implemented a concurrent file server which will provide the file requested by client if it exists.. If not, the server sends an appropriate message to the client. Server should also send its process ID (PID) to clients for display along with file or the message.*

P.T.O

Output Screenshots

TERMINAL 1
(Server)

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer$ java Server
```

```
A new client is connected : Socket[addr=/127.0.0.1,port=45604,localport=5056]  
Assigning new thread for this client
```

```
From Client: log me in
```

```
From Client: GET file1.txt
```

```
From Client: auth#client_1
```

```
From Client: GET file1.txt
```

```
A new client is connected : Socket[addr=/127.0.0.1,port=45606,localport=5056]  
Assigning new thread for this client
```

```
From Client: log me in
```

```
From Client: auth#client_2
```

```
From Client: GET testImg.png
```

```
From Client: exit
```

```
Client Socket[addr=/127.0.0.1,port=45606,localport=5056] sends exit...  
Closing this connection.  
Connection closed
```

```
From Client: exit
```

```
Client Socket[addr=/127.0.0.1,port=45604,localport=5056] sends exit...  
Closing this connection.  
Connection closed
```

```
□
```

TERMINAL 2
(Client 1)

```
(base) navaneeth@navaneeth-lap:~/Documents/
2021/Network Lab/FileServer$ java Client
Type 'log me in' to get more details on aut
horization process.

To server: log me in
From Server: Your Auth id is client_1. Plea
se log in by sending auth#<id> to server

To server: GET file1.txt
Invalid input or please login and try again
.

To server: auth#client_1
From Server: You have been successfully log
ged in as client_1. Feel free to fetch file
s

To server: GET file1.txt
From server: file1.txt File found

File transfered
META INFO:
The process was handled by thread with PID1
on the server side
File extension: txt
MIME type: text
-----Transfer complete-----

To server: exit
Closing this connection : Socket[addr=local
host/127.0.0.1,port=5056,localport=45604]
Connection closed
(base) navaneeth@navaneeth-lap:~/Documents/
2021/Network Lab/FileServer$
```

TERMINAL 3
(Client 2)

```
1: java, bash, bash  +  -  [ ]  [ ]  -  x

(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer$ java Client
Type 'log me in' to get more details on authorization process.

To server: log me in
From Server: Your Auth id is client_2. Please log in by sending auth#<id> to server

To server: auth#client_2
From Server: You have been successfully logged in as client_2. Feel free to fetch files

To server: GET testImg.png
From server: testImg.png File found

File transfered
META INFO:
The process was handled by thread with PID2 on the server side
File extension: png
MIME type: image
-----Transfer complete-----

To server: exit
Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=45606]
Connection closed
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer$
```

TERMINAL SNAPSHOT (Whole)

PROBLEMS	OUTPUT	TERMINAL	DEBUG CONSOLE	
		<pre>(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer\$ java Server A new client is connected : Socket[addr=/127.0.0.1,port=45604,localport=5056] Assigning new thread for this client From Client: log me in From Client: GET file1.txt From Client: auth#client_1 From Client: GET file1.txt A new client is connected : Socket[addr=/127.0.0.1,port=45606,localport=5056] Assigning new thread for this client From Client: log me in From Client: auth#client_2 From Client: GET testImg.png From Client: exit Client Socket[addr=/127.0.0.1,port=45606,localport=5056] sends exit... Closing this connection. Connection closed From Client: exit Client Socket[addr=/127.0.0.1,port=45604,localport=5056] sends exit... Closing this connection. Connection closed</pre>	<pre>(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer\$ java Client Type 'log me in' to get more details on authorization process. To server: log me in From Server: Your Auth id is client_1. Please log in by sending auth#<id> to server To server: GET file1.txt Invalid input or please login and try again . To server: auth#client_1 From Server: You have been successfully logged in as client_1. Feel free to fetch files To server: GET file1.txt From server: file1.txt File found File transfered META INFO: The process was handled by thread with PID1 on the server side File extension: txt MIME type: text -----Transfer complete----- To server: exit Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=45604] Connection closed (base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer\$</pre>	<pre>1:java, bash, bash (base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer\$ java Client Type 'log me in' to get more details on authorization process. To server: log me in From Server: Your Auth id is client_2. Please log in by sending auth#<id> to server To server: auth#client_2 From Server: You have been successfully logged in as client_2. Feel free to fetch files To server: GET testImg.png From server: testImg.png File found File transfered META INFO: The process was handled by thread with PID2 on the server side File extension: png MIME type: image -----Transfer complete----- To server: exit Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=45606] Connection closed (base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/FileServer\$</pre>