



University of Dhaka

Department of Computer Science and Engineering

CSE-3111 : Computer Networking Lab

Mid Lab Viva: Emulation Results of Lab 3 and Lab 4

Submitted By:

Name: Meherun Farzana

Roll No : 05

Name: Mohd. Jamal Uddin Mallick

Roll No : 07

Submitted On :

February 25, 2024

Submitted To :

Dr. Md. Abdur Razzaque

Dr. Md. Mamun Or Rashid

Dr. Muhammad Ibrahim

Redwan Ahmed Rizvee

Fig: A large pdf of 60.5 Mb is being downloaded

Showing Progress Bar and Total Time Transferring Larger Files with Huge Number of Communications

```
reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 se
rver.py
Server active on 127.0.1.1:9
090
Listening
New connection from ('127.0.
0.1', 33626)
New connection from ('127.0.
0.1', 33636)
New connection from ('127.0.
0.1', 33646)
New connection from ('127.0.
0.1', 33152)
2
Upload
New connection from ('127.0.
0.1', 40066)
2
Upload
New connection from ('127.0.
0.1', 38250)
3
Download
3
Download
3
Download
2
Upload
[]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: James F. Kur
ose, Keith Ross - Computer N
etworking- A Top Down Approa
ch-Pearson (2020).pdf
35%|| 21.2M/60.5M [02:49<]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 client.
py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: 2024-02-21 1
7-57-05.mkv
43%|| 19.1M/44.4M [02:36<]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff/3-
1/Networking/Lab/CSE-3111-Netwo
rk1
ng-Lab/Lab 3 - File Transfer
with TCP and pTTP/Task $ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: image.jpeg
100%|| 7.71k/7.71k [00:00<0
Downloaded ./client_files/im
age.jpeg
Select one:
1. List
2. Upload
3. Download
-> []

reckless_meherun@LAPTOP-QQEV
V4AP4:/mnt/c/Univ
ersity Stuff/3-1/Networking
/Lab/CSE-3111-Net
working-Lab/Lab 3 - File Tr
ansfer with TCP a
nd HTTP/Task $ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 2
upload
Enter filename: cortexn3_m4
_book.pdf
16%|| 10.2M/65.0M [00:54<]
```

Fig: At the beginning of uploading and downloading larger files from 4 multiple clients

```
reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 se
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0.1', 33646)
New connection from ('127.0.
0.1', 33152)
2
Upload
New connection from ('127.0.
0.1', 40066)
2
Upload
New connection from ('127.0.
0.1', 38250)
3
Download
3
Download
3
Download
2
Upload
[]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: James F. Kur
ose, Keith Ross - Computer N
etworking- A Top Down Approa
ch-Pearson (2020).pdf
72%|| 43.8M/60.5M [16:22<]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task $ python3 client.
py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: 2024-02-21 1
7-57-05.mkv
97%|| 43.0M/44.4M [16:09<]

reckless_meherun@LAPTOP-QQEV
4AP4:/mnt/c/University Stuff/3-
1/Networking/Lab/CSE-3111-Netwo
rk1
ng-Lab/Lab 3 - File Transfer
with TCP and pTTP/Task $ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: image.jpeg
100%|| 7.71k/7.71k [00:00<0
Downloaded ./client_files/im
age.jpeg
Select one:
1. List
2. Upload
3. Download
-> []

reckless_meherun@LAPTOP-QQEV
V4AP4:/mnt/c/Univ
ersity Stuff/3-1/Networking
/Lab/CSE-3111-Net
working-Lab/Lab 3 - File Tr
ansfer with TCP a
nd HTTP/Task $ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 2
upload
Enter filename: cortexn3_m4
_book.pdf
54%|| 35.3M/65.0M [14:30<]
```

Fig: Mid-way to transferring large files from multiple clients

```

reckless_meherun@LAPTOP-QQEV 4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task 1$ python3 se
rver.py
Server active on 127.0.1.1:9
090
Listening
New connection from ('127.0.
0.1', 33626)
New connection from ('127.0.
0.1', 33636)
New connection from ('127.0.
0.1', 33646)
New connection from ('127.0.
0.1', 33152)
2
Upload
New connection from ('127.0.
0.1', 40066)
2
Upload
New connection from ('127.0.
0.1', 38250)
3
Download
3
Download
3
Download
2
Upload
Received

```

```

reckless_meherun@LAPTOP-QQEV 4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task 1$ thon3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: James F. Kur
ose, Keith Ross - Computer N
etworking- A Top Down Approa
ch-Pearson (2020).pdf
100%|█| 60.5M/60.5M [29:33<
Downloaded ./client_files/Ja
mes F. Kurose, Keith Ross -
Computer Networking- A Top D
own Approach-Pearson (2020).
pdf
Select one:
1. List
2. Upload
3. Download
-> []

```

```

reckless_meherun@LAPTOP-QQEV 4AP4:/mnt/c/University Stuff
/3-1/Networking/Lab/CSE-3111
-Networking-Lab/Lab 3 - File
Transfer with TCP and HTTP/
Task 1$ ear
python3 client.
py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: 2024-02-21 1
7-57-05.mkv
100%|█| 44.0M/44.0M [17:34<
Downloaded ./client_files/20
24-02-21 17-57-05.mkv
Select one:
1. List
2. Upload
3. Download
-> []

```

```

reckless_meherun@LAPTOP-QQEV 4AP4:/mnt/c/University Stuff/3-
1/Networking/Lab/CSE-3111-Netwo
rking-Lab/Lab 3 - File Transfer
with TCP and pTTP/Task 1$ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 3
download
Enter filename: image.jpeg
100%|█| 7.71k/7.71k [00:00<
Downloaded ./client_files/in
age.jpeg
Select one:
1. List
2. Upload
3. Download
-> []

```

```

reckless_meherun@LAPTOP-QQEV 4AP4:/mnt/c/University Stuff/3-1/Networking
/Lab/CSE-3111-Netwo
rking-Lab/Lab 3 - File Tr
ansfer with TCP a
nd HTTP/Task 1$ p
ython3 client.py
Select one:
1. List
2. Upload
3. Download
-> 2
upload
Enter filename: cortexn3_m4
_book.pdf
100%|█| 65.0M/65.0M [32:04<
Downloaded ./client_files/cor
texn3_m4_book.pdf
Select one:
1. List
2. Upload
3. Download
-> []

```

Fig: At the end when all the files are fully transferred

Comparison:

We can see that the same video file took only **5 mins 18 secs** when one client was uploading it. However, with 3 other simultaneous client uploading and downloading other large files, the video took **17 mins 34 secs** to be downloaded.

Task 2

Showing the Total Time for Transferring Files of Large Size

```
reckless_meherun@LAPTOP-QQEV4AP4:/mnt/c/University Stuff/3-1/Networking/Lab/CSE-3111-Networking-Lab/Lab 3 - File Transfer with TCP and HTTP/Task 2$ python3 server.py
Hello client!
172.29.96.128 - - [25/Feb/2024 01:51:27] "GET /list HTTP/1.1" 200 -
['2024-02-21 17-57-05.mkv', 'client_post.py', 'Curzon Hall.png', 'Curzon%20Hall.png', 'James F. Kurose, Keith Ross - Computer Networking- A Top Down Approach-Pearson (2020).pdf', 'nani.txt', 'output.in', 'Sarah Resort Detail.pdf', 'T2_Get.png', 'TaylorSwift%20GRAMMYYYY.png', 'text.txt']
172.29.96.128 - - [25/Feb/2024 01:52:10] "GET /download/James%20Kurose,%20Keith%20Ross%20-%20Computer%20Networking-%20A%20Top%20Down%20Approach-Pearson%20(2020).pdf HTTP/1.1" 200 -
172.29.96.128 - - [25/Feb/2024 01:52:10] code 404, message Sorry! Did not find the file!
172.29.96.128 - - [25/Feb/2024 01:52:10] "GET /download/James%20Kurose,%20Keith%20Ross%20-%20Computer%20Networking-%20A%20Top%20Down%20Approach-Pearson%20(2020).pdf HTTP/1.1" 404 -
[]

with TCP and HTTP/Task 2$ python3 client.py
Select one :
1. list
2. upload
3. download
3
Enter the filename: James F. Kurose, Keith Ross - Computer Networking- A Top Down Approach-Pearson (2020).pdf
Successfully downloaded the file!
Total time : 15252.368450164795
Select one :
1. list
2. upload
3. download
```

Fig: Downloading Large PDF via HTTP

Showing the Total Time Transferring Larger Files with Huge Number of Communications

```
Approach-Pearson%20(2020).pdf HTTP/1.1" 200 -
172.29.96.128 - - [25/Feb/2024 01:55:43] code 404, message Sorry! Did not find the file!
172.29.96.128 - - [25/Feb/2024 01:55:43] "GET /download/James%20Kurose,%20Keith%20Ross%20-%20Computer%20Networking-%20A%20Top%20Down%20Approach-Pearson%20(2020).pdf HTTP/1.1" 404 -
172.29.96.128 - - [25/Feb/2024 01:56:15] "POST /upload/TaylorSwift%20GRAMMYYYY.png HTTP/1.1" 201 -
172.29.96.128 - - [25/Feb/2024 01:56:39] "POST /upload/Sarah%20Resort%20Detail.pdf HTTP/1.1" 201 -

TCP-QQEV4AP4:/mnt/c/University Stuff/3-1/Networking/Lab/CSE-3111-Networking-Lab/Lab 3 - File Transfer with TCP and HTTP/Task 2$ python3 client.py
Select one :
1. list
2. upload
3. download
3
Enter the filename: 2024-02-21 17-57-05.mkv
Successfully downloaded the file!
Total time : 14.810686588287354
Select one :
1. list
2. upload
3. download

University Stuff/3-1/Networking/Lab/CSE-3111-Networking-Lab/Lab 3 - File Transfer with TCP and HTTP/Task 2$ python3 client.py
Select one :
1. list
2. upload
3. download
3
Enter the filename: James F. Kurose, Keith Ross - Computer Networking- A Top Down Approach-Pearson (2020).pdf
Successfully downloaded the file!
Total time : 29.005483570008877
Select one :
1. list
2. upload
3. download

rsity Stuff/3-1/Networking/Lab/CSE-3111-Networking-Lab/Lab 3 - File Transfer with TCP and HTTP/Task 2$ python3 client.py
Select one :
1. list
2. upload
3. download
2
Enter the filename: TaylorSwift%20GRAMMYYYY.png
Successfully uploaded the file!
Total time : 27.197538375854492
Select one :
1. list
2. upload
3. download

reckless_meherun@LAPTOP-QQEV4AP4:/mnt/c/University Stuff/3-1/Networking/Lab/CSE-3111-Networking-Lab/Lab 3 - File Transfer with TCP and HTTP/Task 2$ python3 client.py
Select one :
1. list
2. upload
3. download
2
Enter the filename: Sarah Resort Detail.pdf
Successfully uploaded the file!
Total time : 2.7167418803082275
Select one :
1. list
2. upload
3. download
```

Fig: Downloading and uploading multiple large files from multiple clients via HTTP

Showing the Total Time with Huge Number of Clients demanding IP addresses from the same servers

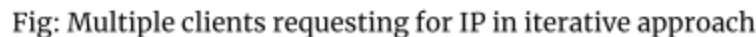


Fig: Multiple clients requesting for the same IP address and the time is gradually decreasing due to DNS cache