



CL-3001

Computer Networks

ASSIGNMENT 01

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UDP FILE TRANSFER

1. Input username

```
Developer PowerShell
+ Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ server_UDP.cpp -o server.exe -lws2_32
>>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
UDP Server listening on port 3801...

Developer PowerShell
+ Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ client_UDP.cpp -o client.exe -lws2_32
>>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./client.exe
Enter your username: seetu05
1. Upload File
2. Download File
3. View List of Files
4. Exit
1
```

2. Upload File

```
116 % No issues found
Developer PowerShell
+ Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ server_UDP.cpp -o server.exe -lws2_32
>>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
UDP Server listening on port 3801...
seetu05|seetu.txt|Data : cnet assignment
User connected: seetu05
File "seetu.txt" received and saved successfully.

Developer PowerShell
+ Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ client_UDP.cpp -o client.exe -lws2_32
>>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./client.exe
Enter your username: seetu05
1. Upload File
2. Download File
3. View List of Files
4. Exit
1
Enter file name to upload: seetu.txt
File uploaded successfully.
1. Upload File
2. Download File
3. View List of Files
4. Exit
1
```

Here, the text file has the following data :

```
seetu.txt  server_TCP.cpp  client_TCP.cpp  server_UDP.cpp  client_UDP.cpp  log.txt  fileList.txt
1 Data : cnet assignment
```

Uploaded File is also added in list of files :

```
fileList.txt  anoosha.txt  seetutxt  server_TCP.cpp  client_TCP.cpp  server_UDP.cpp  client_UDP.cpp  log.txt
1 test.doc
2 hello.cpp
3 no.txt
4 lays.pdf
5 fast.doc
6 civics.pdf
7 cnet.pcap
8 edu.txt
9 file.cpp
10 food.ppt
11 cafe.txt
12 mint.cpp
13 recent.doc
14 seetu.txt
15 anoosha.txt
16
```

3. Download File

```
hello.cpp Developer PowerShell - X
+ Developer PowerShell - X
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ server_UDP.cpp -o server.exe -lws2_32
>>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
UDP Server listening on port 3801...
moosa19[2]hello.cpp
User connected: moosa19
File read successfully, size: 67 bytes
Client has downloaded file successfully.

Developer PowerShell - X
+ Developer PowerShell - X
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./client.exe
Enter your username: moosa19
1. Upload File
2. Download File
3. View List of Files
4. Exit
2
Enter file name to download: hello.cpp
Data : #include <iostream>
using namespace std;
int main()
{
    return 0;
}
```

4. View List of Files (multiple clients can request file action as shown)

```
Developer PowerShell - X
+ Developer PowerShell - X
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
UDP Server listening on port 3801...
moosa19[2]anoosha.txt
moosa19[2]anoosha.txt
User connected: moosa19
Client has downloaded file successfully.
huda[3]

Developer PowerShell - X
+ Developer PowerShell - X
Enter your username: huda
1. Upload File
2. Download File
3. View List of Files
4. Exit
3
Available Files:
test.doc
hello.cpp
no.txt
lays.pdf
fast.doc
civics.pdf
cnet.pcap

Developer PowerShell - X
+ Developer PowerShell - X
Enter file name to download: anoosha.txt
File downloaded successfully: anoosha.txt
1. Upload File
2. Download File
3. View List of Files
4. Exit
```

5. Log.txt logs File Action :

75	User: moosa19	Timestamp: Fri Mar 21 22:11:49 2025	File: anoosha.txt	Protocol: UDP	Action: Downloaded
76	User: moosa19	Timestamp: Fri Mar 21 22:12:38 2025	File: anoosha.txt	Protocol: UDP	Action: Downloaded
77	User: moosa19	Timestamp: Fri Mar 21 22:14:38 2025	File: anoosha.txt	Protocol: UDP	Action: Downloaded
78	User: hunney	Timestamp: Fri Mar 21 22:15:05 2025	File: seetu.txt	Protocol: UDP	Action: Downloaded
79	User: moosa19	Timestamp: Fri Mar 21 22:16:01 2025	File: anoosha.txt	Protocol: UDP	Action: Downloaded
80	User: huda	Timestamp: Fri Mar 21 22:17:43 2025	File: fileList	Protocol: UDP	Action: Viewed
81	User: moosa19	Timestamp: Fri Mar 21 22:20:24 2025	File: hello.cpp	Protocol: UDP	Action: Downloaded
82					

6. Network Traffic Captured on Wireshark on the IP address 127.0.0.1

No.	Time	Source	Destination	Protocol	Length	Info
3803	341.480268	127.0.0.1	127.0.0.1	UDP	52	49904 → 3001 Len=20
3803	341.482418	127.0.0.1	127.0.0.1	UDP	62	3001 → 49904 Len=30
8120	612.492503	127.0.0.1	127.0.0.1	UDP	43	49904 → 3001 Len=11
8121	612.492538	127.0.0.1	127.0.0.1	ICMP	71	Destination unreachable (Port unreachable)
8408	632.499277	127.0.0.1	127.0.0.1	UDP	53	49912 → 3001 Len=21
8409	632.510034	127.0.0.1	127.0.0.1	UDP	62	3001 → 49912 Len=30
8616	666.251548	192.168.100.134	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
8617	666.251697	127.0.0.1	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
8663	669.260969	192.168.100.134	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
8664	669.262056	127.0.0.1	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
8676	672.270173	192.168.100.134	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
8677	672.270641	127.0.0.1	239.255.255.250	SSDP	169	M-SEARCH * HTTP/1.1
9316	708.854417	127.0.0.1	127.0.0.1	UDP	44	49912 → 3001 Len=12
9317	708.855630	127.0.0.1	127.0.0.1	UDP	46	3001 → 49912 Len=14
9780	736.476380	127.0.0.1	127.0.0.1	UDP	52	65286 → 3001 Len=20
9781	736.478932	127.0.0.1	127.0.0.1	UDP	62	3001 → 65286 Len=30
10400	799.309952	127.0.0.1	127.0.0.1	UDP	43	65286 → 3001 Len=11
10401	799.309284	127.0.0.1	127.0.0.1	ICMP	71	Destination unreachable (Port unreachable)
10836	821.339642	127.0.0.1	127.0.0.1	UDP	48	52056 → 3001 Len=16
10837	821.342341	127.0.0.1	127.0.0.1	UDP	62	3001 → 52056 Len=30
11164	853.745970	127.0.0.1	127.0.0.1	UDP	39	52056 → 3001 Len=7
11165	853.746010	127.0.0.1	127.0.0.1	ICMP	67	Destination unreachable (Port unreachable)
12215	926.843717	127.0.0.1	127.0.0.1	UDP	52	64532 → 3001 Len=20
12216	926.856821	127.0.0.1	127.0.0.1	UDP	114	3001 → 64532 Len=82

> Frame 12216: 114 bytes on wire (912 bits), 114 bytes captured (912 bits) on interface \Device\NPF_{...}	0000 02 00 00 00 45 00 00 6e 69 6d 00 00 00 11 00 00E..n im....
> Null/Loopback	0010 7f 00 00 01 7f 00 00 01 0b b5 fc 14 00 5a c9 79Z..y
> Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1	0020 46 49 4c 45 7c 68 65 6c 6c 6f 26 63 70 70 7c 23 FILE hel lo.cpp #
> User Datagram Protocol, Src Port: 3001, Dst Port: 64532	0030 69 6e 63 6c 75 64 65 20 3c 69 6f 73 74 72 65 61 include <iostrea
> Data (82 bytes)	0040 6d 3e 0a 75 73 69 6e 67 20 6e 61 6d 65 73 70 61 ..using namespa
	0050 63 65 20 73 74 64 64 3b 0a 69 6e 70 20 6d 61 6d 6e ce std::int main
	0060 28 29 0a 7b 0a 09 72 65 74 75 72 6e 20 30 3b 0a ();...re turn 0;
	0070 7d 0a ..

TCP FILE TRANSFER

1. Input Username

```

Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./.server.exe
Server listening on port 3001...
Client connected!
User connected : user34546

Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> g++ client_TCP.cpp -o client.exe -lws2_32
>
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./client.exe
Enter your username: user34546
-----Options-----
1. Upload File :
2. Download File :
3. View List of Files :
Type 'exit' to quit

```

2. Upload File

```

Developer PowerShell
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./.server.exe
Server listening on port 3001...
Client connected!
User connected : mish120
Receiving file: seetu.txt
Data : cnet assignment
File "seetu.txt" received and saved successfully.

Developer PowerShell
Enter your username: mish120
-----Options-----
1. Upload File :
2. Download File :
3. View List of Files :
Type 'exit' to quit
1
Enter file name to upload: seetu.txt
File uploaded successfully.
-----Options-----

```

3. Download File

```
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
Server listening on port 3001...
Client connected!
User connected : mint5
Download Successful.

Developer PowerShell
Type 'exit' to quit
2
Enter file name to download: anoosha.txt
Data : testing...<EOF>
File downloaded successfully.
-----Options-----
1. Upload File :
2. Download File :
3. View list of Files :
Type 'exit' to quit
```

Here, the text file has the following data :

```
1 testing...
```

4. View List of Files (multiple clients can request file action as shown)

```
PS C:\Users\sarit\OneDrive\Desktop\CNET_Ass1> ./server.exe
Server listening on port 3001...
Client connected!
User connected : mint5
Download Successful.
Client connected!
User connected : hunney

Developer PowerShell
Type 'exit' to quit
3
Available Files:
test.doc
hello.cpp
no.txt
lays.pdf
fast.doc
civics.pdf
cnet.pcap
edu.txt

Developer PowerShell
Type 'exit' to quit
2
Enter file name to download: anoosha.txt
Data : testing...<EOF>
File downloaded successfully.
-----Options-----
1. Upload File :
2. Download File :
3. View list of Files :
Type 'exit' to quit
```

5. Log.txt logs File Action

```
81 User: moosa19 | Timestamp: Fri Mar 21 22:20:24 2025 | File: hello.cpp | Protocol: UDP | Action: Downloaded
82 User: moosa45 | Timestamp: Sat Mar 22 00:49:44 2025 | File: seetu.txt | Protocol: TCP | Action: Uploaded
83 User: moosa45 | Timestamp: Sat Mar 22 00:50:25 2025 | File: seetu.txt | Protocol: TCP | Action: Uploaded
84 User: mishi20 | Timestamp: Sat Mar 22 00:51:51 2025 | File: seetu.txt | Protocol: TCP | Action: Uploaded
85 User: pepper5 | Timestamp: Sat Mar 22 01:00:23 2025 | File: anoosha.txt | Protocol: TCP | Action: Downloaded
86 User: pepper5 | Timestamp: Sat Mar 22 01:00:56 2025 | File: seetu.txt | Protocol: TCP | Action: Downloaded
87 User: mint5 | Timestamp: Sat Mar 22 01:03:00 2025 | File: anoosha.txt | Protocol: TCP | Action: Downloaded
88 User: mint5 | Timestamp: Sat Mar 22 01:04:08 2025 | File: anoosha.txt | Protocol: TCP | Action: Downloaded
89 User: hunney | Timestamp: Sat Mar 22 01:08:06 2025 | File: fileList | Protocol: TCP | Action: Viewed
90
```

6. Uploaded Files are added in List of Files

```
fileList.txt x anoocha.txt seetu.txt server_TCP.cpp client_TCP.cpp server_UDP.cpp client_UDP.cpp log.txt
1 test.doc
2 hello.cpp
3 no.txt
4 lays.pdf
5 fast.doc
6 civics.pdf
7 cnet.pcap
8 edu.txt
9 file.cpp
10 food.ppt
11 cafe.txt
12 mint.cpp
13 recent.doc
14 seetu.txt
15 anoosha.txt
16
```

7. Network Traffic Captured on Wireshark on the IP address 127.0.0.1

