
Project

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In this project, we construct a tracker, server, and three peers. When doing the downloading part, we use an algorithm which can always find the most precious fragment and download it. The result of each case will be showed in this report

1 Case 1

- (i) Set up the tracker, server, peer_up and peer_down.

```
pizzadaisuki@ubuntu: ~/Su15/ve489/Lab
$ g++ bal.cpp ClientSocket.cpp ServerSocket.cpp File.cpp -std=c++11 -lcrypto -pthread
$ g++ -o ./peer_up_2/peer Peer.cpp client_main.cpp Packet.cpp glo
bal.cpp ClientSocket.cpp ServerSocket.cpp File.cpp -std=c++11 -lcrypto -pthread
pizzadaisuki@ubuntu:~/Su15/ve489/Lab$ |

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/server
$ ./server
Listening on port 8800...
Listening to uploaders and downloaders at Port 8800.

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/tracker
$ ./tracker
Listening on port 8801...
[tracker] Listening to uploaders and downloaders at Port 8801.

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up
$ ./peer
connect() failed: Connection refused.
Connection Failure to server/tracker.
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up$ ls
f.mp3  f.mp3.torrent  peer
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up$ ./peer
Please input command...

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_down
$ ./peer
Connected to Peer 192.168.0.107 at Port 40571.
^C
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up_2$ ./peer
Please input command...
^C
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up_2$ cd ../peer_down
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_down$ ./peer
Please input command...
```

- (ii) Upload the file f.mp3 from peer_up.

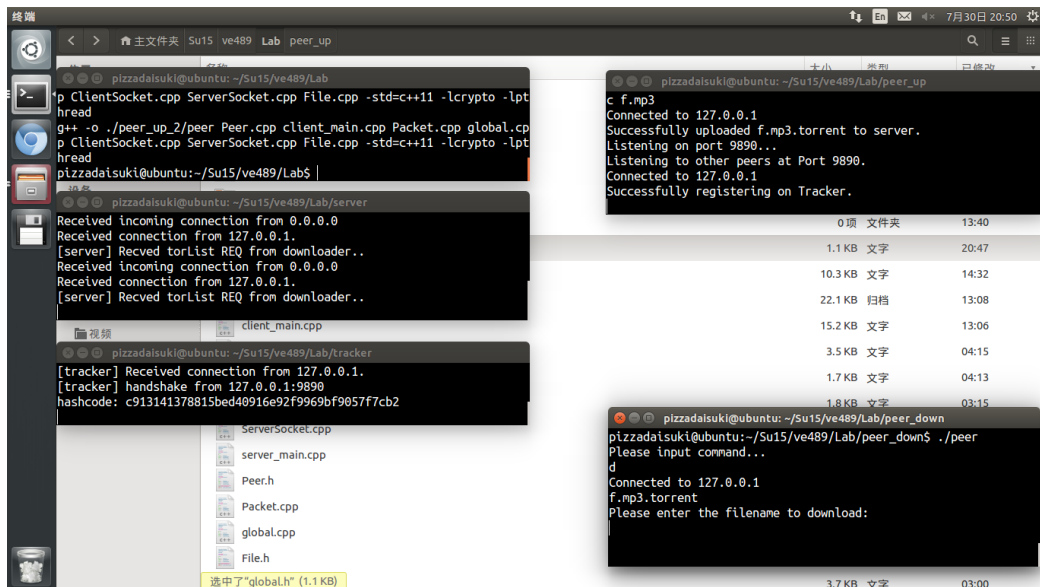
```
pizzadaisuki@ubuntu:~/Su15/ve489/Lab
$ g++ bal.cpp ClientSocket.cpp ServerSocket.cpp File.cpp -std=c++11 -lcrypto -pthread
$ g++ -o ./peer_up_2/peer Peer.cpp client_main.cpp Packet.cpp global.cpp
bal.cpp ClientSocket.cpp ServerSocket.cpp File.cpp -std=c++11 -lcrypto -pthread
pizzadaisuki@ubuntu:~/Su15/ve489/Lab$ |

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/server
$ ./server
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
Received .torrent file REQ.. Sent back 0.
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
[server] Recv'd torList REQ from downloader..

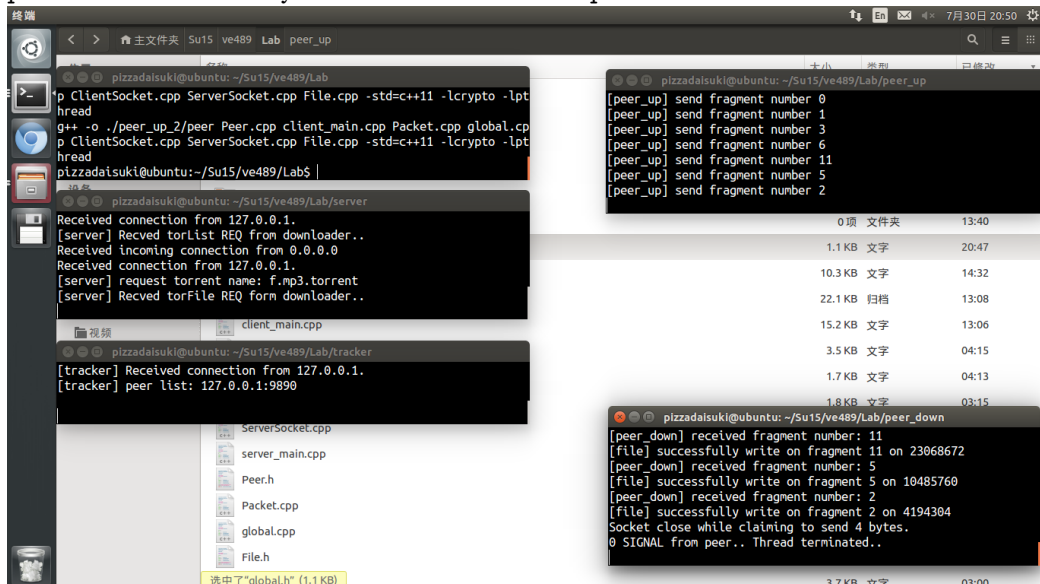
pizzadaisuki@ubuntu:~/Su15/ve489/Lab/tracker
$ ./tracker
[tracker] Received connection from 127.0.0.1.
[tracker] handshake from 127.0.0.1:9890
hashcode: c913141378815bed40916e92f9969bf9857f7cb2

pizzadaisuki@ubuntu:~/Su15/ve489/Lab/peer_up
$ ./peer
Connected to 127.0.0.1
Successfully uploaded f.mp3.torrent to server.
Listening on port 9890...
Listening to other peers at Port 9890.
Connected to 127.0.0.1
Successfully registering on Tracker.
```

- (iii) peer_down prepare to download and get the torrent file.

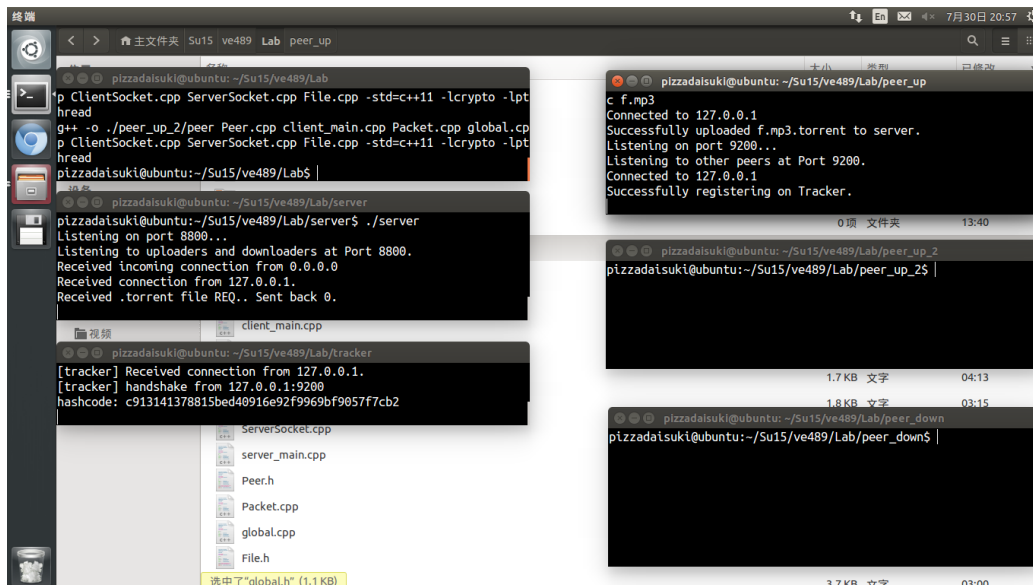


(iv) peer_down successfully downloaded the file f .mp3.

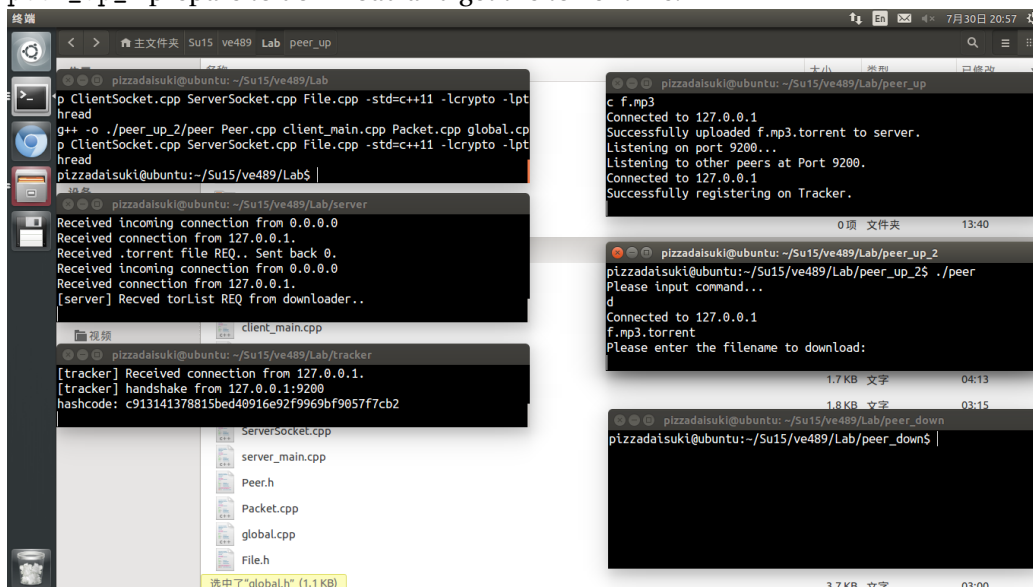


2 Case 2

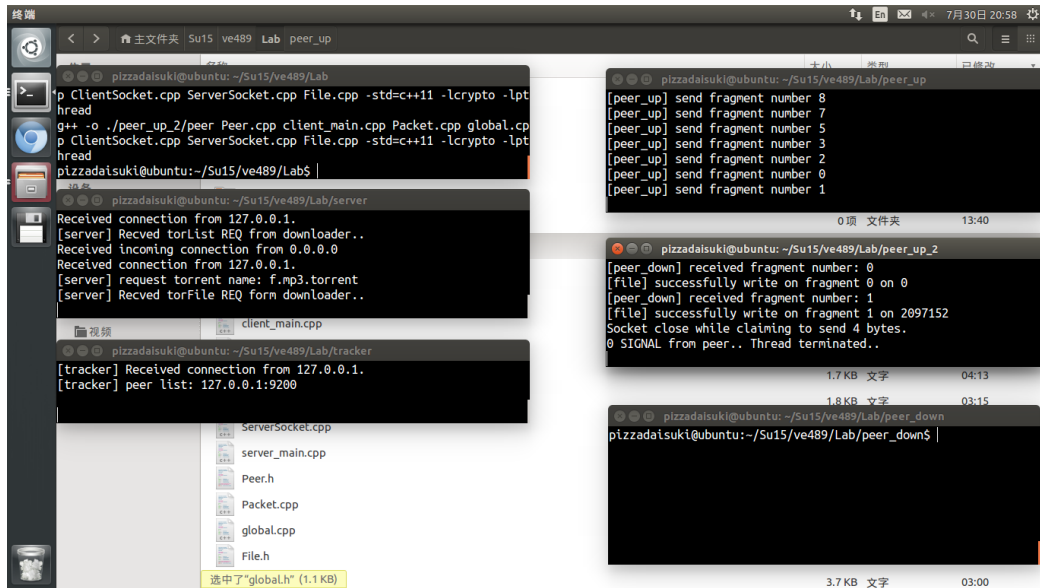
- (i) After setting up the tracker, server, peer_up, peer_up_2 and peer_down, we upload the file f .mp3 from peer_up.



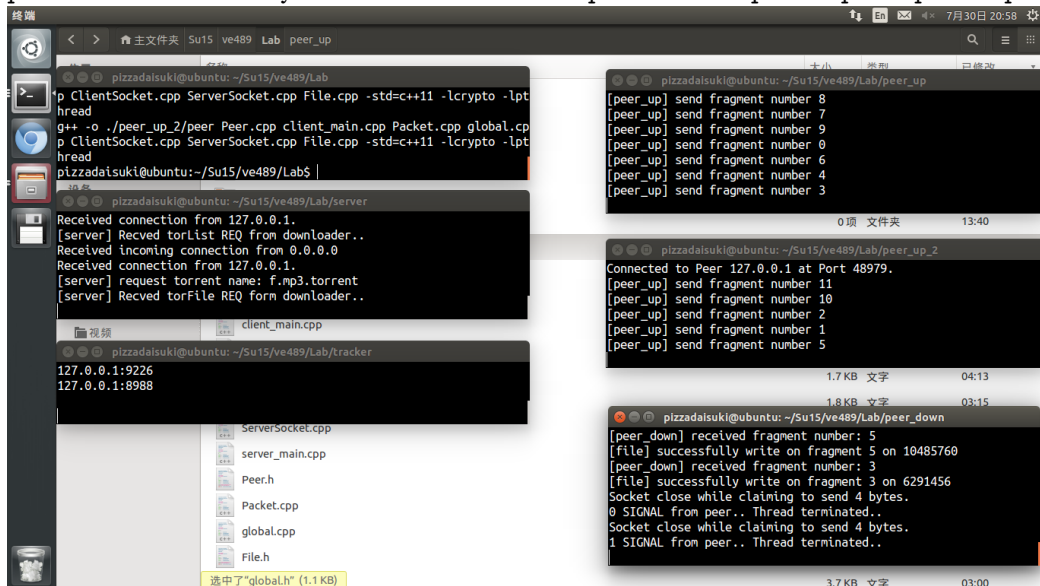
(ii) peer_up_2 prepare to download and get the torrent file.



(iii) peer_up_2 successfully downloaded the file f .mp3.

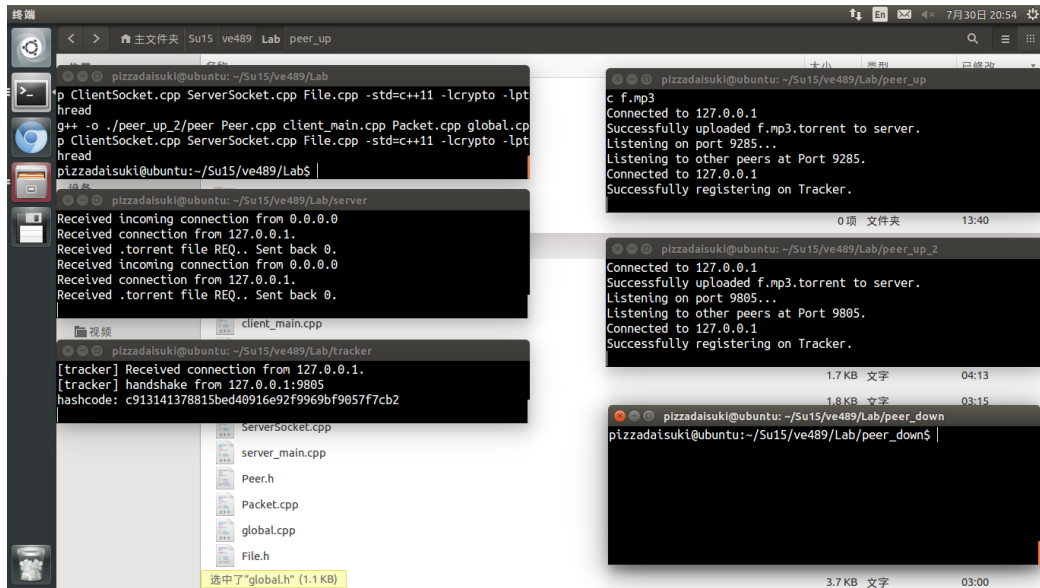


(iv) peer_down successfully downloaded the file f .mp3 from both peer_up and peer_up_2.

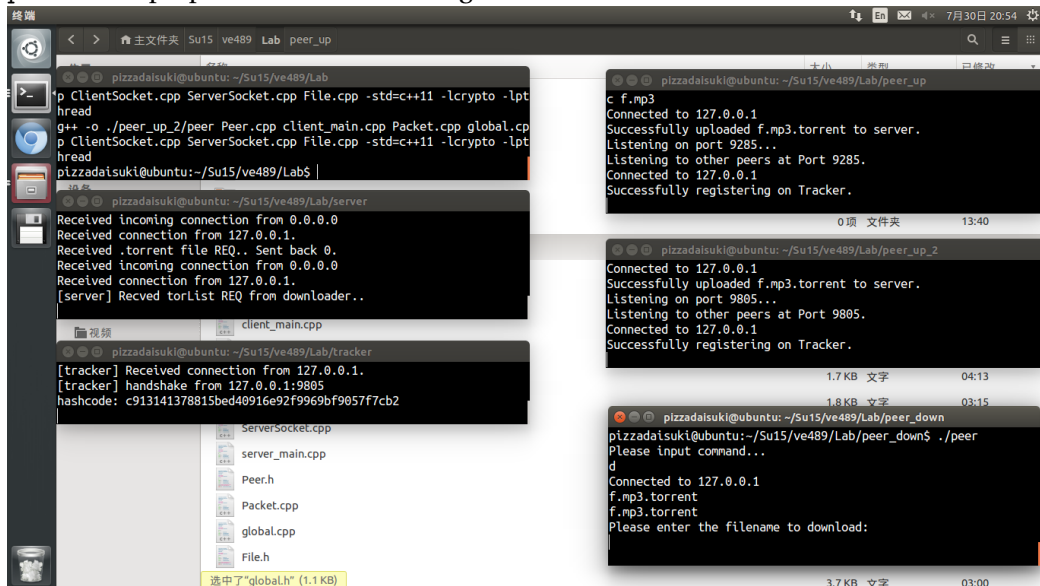


3 Case 3

- (i) After setting up the tracker, server, peer_up, peer_up_2 and peer_down, we upload the file f .mp3 from both peer_up and peer_up_2.



(ii) peer_down prepare to download and get the two torrent file.



(iii) peer_down successfully downloaded the file f .mp3 from both peer_up and peer_up_2.

```

pizzadalsuki@ubuntu: ~/Su15/ve489/Lab
pizzadalsuki@ubuntu:~/Su15/ve489/Lab$ g++ -std=c++11 -lcrypto -lpthread ClientSocket.cpp ServerSocket.cpp File.cpp -o client_main
pizzadalsuki@ubuntu:~/Su15/ve489/Lab$ ./client_main
Received connection from 127.0.0.1.
[server] Recv'd torList REQ from downloader..
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
[server] request torrent name: f.mp3.torrent
[server] Recv'd torFile REQ from downloader..

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/server$ ./server
Listening on port 8800...
Listening to uploaders and downloaders at Port 8800.
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
Received .torrent file REQ.. Sent back 0.

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/tracker$ ./tracker
[tracker] Received connection from 127.0.0.1.
[tracker] handshake from 127.0.0.1:10070
hashcode: c913141378815bed40916e92f9969bf9057f7cb2

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_up$ ./peer_up
Connected to Peer 127.0.0.1 at Port 50141.
[peer_up] send fragment number 12
[peer_up] send fragment number 8
[peer_up] send fragment number 0
[peer_up] send fragment number 3
[peer_up] send fragment number 6
[peer_up] send fragment number 10

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_up_2$ ./peer_up_2
[peer_up] send fragment number 11
[peer_up] send fragment number 5
[peer_up] send fragment number 4
[peer_up] send fragment number 1
[peer_up] send fragment number 2
[peer_up] send fragment number 7

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_down$ ./peer_down
[peer_down] received fragment number: 10
[file] successfully write on fragment 10 on 20971520
[peer_down] received fragment number: 7
[file] successfully write on fragment 7 on 14680064
Socket close while claiming to send 4 bytes.
1 SIGNAL from peer.. Thread terminated..
Socket close while claiming to send 4 bytes.
0 SIGNAL from peer.. Thread terminated..

```

4 Case 4

- (i) After setting up the tracker, server, peer_up, peer_up_2 and peer_down, we upload the file f .mp3 from peer_up.

```

pizzadalsuki@ubuntu: ~/Su15/ve489/Lab
pizzadalsuki@ubuntu:~/Su15/ve489/Lab$ g++ -std=c++11 -lcrypto -lpthread ClientSocket.cpp ServerSocket.cpp File.cpp -o client_main
pizzadalsuki@ubuntu:~/Su15/ve489/Lab$ ./client_main
Received connection from 127.0.0.1.
[server] Recv'd torList REQ from downloader..
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
[server] request torrent name: f.mp3.torrent
[server] Recv'd torFile REQ from downloader..

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/server$ ./server
Listening on port 8800...
Listening to uploaders and downloaders at Port 8800.
Received incoming connection from 0.0.0.0
Received connection from 127.0.0.1.
Received .torrent file REQ.. Sent back 0.

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/tracker$ ./tracker
[tracker] Received connection from 127.0.0.1.
[tracker] handshake from 127.0.0.1:10070
hashcode: c913141378815bed40916e92f9969bf9057f7cb2

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_up$ ./peer_up
Connected to Peer 127.0.0.1 at Port 50141.
[peer_up] send fragment number 12
[peer_up] send fragment number 8
[peer_up] send fragment number 0
[peer_up] send fragment number 3
[peer_up] send fragment number 6
[peer_up] send fragment number 10

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_up_2$ ./peer_up_2
[peer_up] send fragment number 11
[peer_up] send fragment number 5
[peer_up] send fragment number 4
[peer_up] send fragment number 1
[peer_up] send fragment number 2
[peer_up] send fragment number 7

pizzadalsuki@ubuntu:~/Su15/ve489/Lab/peer_down$ ./peer_down
[peer_down] received fragment number: 10
[file] successfully write on fragment 10 on 20971520
[peer_down] received fragment number: 7
[file] successfully write on fragment 7 on 14680064
Socket close while claiming to send 4 bytes.
1 SIGNAL from peer.. Thread terminated..
Socket close while claiming to send 4 bytes.
0 SIGNAL from peer.. Thread terminated..

```

- (ii) peer_up_2 get the torrent file and start to download.

