

## C++ L4 Loadbalancer 실행가이드

Server -> loadbalancer -> client 실행순서를 따라주세요

server

```
kjs@kjs:~/iot/f
kjs@kjs:~/iot/final$ ./chat_serv 10010
kjs@kjs:~/iot/f
kjs@kjs:~/iot/final$ ./chat_serv 10011
kjs@kjs:~/iot/final$ ./chat_serv 10012
```

loadbalancer

```
kjs@kjs:~/iot/final$ g++ loadbalancerLobin.cpp -o loadbalancerLobin
kjs@kjs:~/iot/final$ sudo ./loadbalancerLobin 172.18.136.132 172.18.158.107 10010 172.18.158.107 10011 172.18.158.107 10012
[sudo] password for kjs:
server ip :172.18.158.107 port : 10010 operating
server ip :172.18.158.107 port : 10011 operating
server ip :172.18.158.107 port : 10012 operating
```

Client(왼쪽에서 오른쪽 방향으로 순서대로 접속하고 대화를 입력) -> 사진처럼 나오려면 각 client 연결 순서를 지켜야 하지만 client들 끼리는 연결 순서 상관 없이 모두 정상 작동함

```
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 20
000 jin
hello
[jin] hello
[sujungwef] hi jins
hi sujungwef
[jin] hi sujungwef
[susu] asfas
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 susu
hello
[susu] hello
[jang] sdfsd
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 jang
hello
[jang] hello
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 $
/chat_clnt 172.18.136.132 2000
00 sujungwef
hi jins
[sujungwef] hi jins
[jin] hi sujungwef
```

Server(위의 순서대로 접속됨을 보여줌 client 서버에 할당 방식은 라운드 로빈 방식)

```
kjs@kjs:~/iot/final$ ./chat_serv 10010
Connected client IP: 172.18.136.132
Connected client IP: 172.18.136.132
kjs@kjs:~/iot/f
kjs@kjs:~/iot/final$ ./chat_serv 10011
Connected client IP: 172.18.136.132
kjs@kjs:~/iot
kjs@kjs:~/iot/final$ ./chat_serv 10012
Connected client IP: 172.18.136.132
```

Client(왼쪽에서 오른쪽 방향으로 q를 누르고 순서대로 client 종료)

```
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 20
000 jin
hello
[jin] hello
[sujungwef] hi jins
hi sujungwef
[jin] hi sujungwef
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 susu
hello
[susu] hello
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 jang
hello
[jang] hello
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 $
/chat_clnt 172.18.136.132 2000
00 sujungwef
hi jins
[sujungwef] hi jins
[jin] hi sujungwef
q
jinsu@LAPTOP-UQUT2CSB:~/final$ ./chat_clnt 172.18.136.132 2000
0 $
```

서버에서 각 연결된 client들이 정상 종료됨을 보여줌 -> server는 loadbalancer의 주소를 client로 인식

```

kjs@kjs:~/iot/final$ ./chat_serv 10010
Connected client IP: 172.18.136.132
Connected client IP: 172.18.136.132
client 4 terminated
client 5 terminated
[]

kjs@kjs:~/iot/f
kjs@kjs:~/iot/final$ ./chat_serv 10011
Connected client IP: 172.18.136.132
client 4 terminated
[]

kjs@kjs:~/iot
kjs@kjs:~/iot/final$ ./chat_serv 10012
Connected client IP: 172.18.136.132
client 4 terminated
[]

```

위의 순서대로 종료 할 때 마다 loadbalancer는 client가 종료됨을 인식하고 종료된 client에게 할 당 됐던 NAT(Network address tranlation) table의 row를 삭제함  
row ex: (client ip port : client와 연결된 server ip port)

```
Successfully sent 52 bytes to server!
```

```
client <172.17.204.253,3932> terminated
Current NAT table length : 3
[]
```

```
client <172.17.204.253,3934> terminated
Current NAT table length : 2
[]
```

```
client <172.17.204.253,3936> terminated
Current NAT table length : 1
[]
```

```
client <172.17.204.253,3938> terminated
Current NAT table length : 0
[]
```