

To Build and run :

- .Attached are the screenshots on how to build sphere ,proxy and clients on different terminals .
- Sphere server is listening on port 7777 and spawns a process to handle clients .Its a simple echo server which just relays the data back to client for used for demonstration.
- Proxy server listens on three ports 8888,8889,8890 one assigned to each client (box1,box1,box2) and forwards the data to upstream sphere server and sends it back to clients .
- Clients connect to proxy server on their assigned ports .

Sphere :

```
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ vi sphere.c  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ gcc sphere.c -o sphere  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ ./sphere  
Listening on port 7777...  
Accepted connection from client 0.0.0.0:0  
Accepted connection from client 127.0.0.1:59004  
Received 4 bytes from client: 123  
  
Sent 4 bytes to client: 123  
  
Accepted connection from client 127.0.0.1:59008  
Received 4 bytes from client: abc  
  
Sent 4 bytes to client: abc  
  
Accepted connection from client 127.0.0.1:59018  
Received 4 bytes from client: xyz  
  
Sent 4 bytes to client: xyz
```

Proxy:

```
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ gcc proxy.c -o proxy -lpthread  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ ./proxy  
connection accepted from client 1  
read 4 bytes from client  
read 4 bytes from server  
sent data back to client 123  
connection accepted from client 3  
read 4 bytes from client  
read 4 bytes from server  
sent data back to client abc  
connection accepted from client 2  
read 4 bytes from client  
read 4 bytes from server  
sent data back to client xyz  
^C
```

Box1:

```
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ gcc client_box1.c -o box1  
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ ./box1  
Connected to proxy server  
Enter message to send: 123  
Received 4 bytes from server: 123  
  
Enter message to send: ^C
```

BOX2:

```
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ gcc client_box2.c -o box2
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ ./box2
Connected to proxy server
Enter message to send: abc
Received 4 bytes from server: abc

Enter message to send: █
```

Box3:

```
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ gcc client_box3.c -o box3
salluvad@ott-ads-400:/nobackup/salluvad/SUBMI/GOOD_FILES$ ./box3
Connected to proxy server
Enter message to send: xyz
Received 4 bytes from server: xyz

Enter message to send: █
```