Project Instructions

The server IP that you will have to communicate with is: **10.64.45.4**

You will need a VPN connection to the UTH network to reach the server.

You can find in the following link the .proto file for the definition of the messages that the server is set to communicate with:
https://repo.nitlab.uth.gr/ece441/ece-441-labs/-/tree/main/Project?ref_type=heads

A complete list of the messages are given below:

- HELLO messages -> exchanged periodically over SCTP, based on a random interval that the server is setting during the connection request
- CONN_REQ messages -> messages to initiate the connection (TCP)
- CONN_RESP messages -> messages that set parameters of the connection (TCP) -> messages contain the interval of the hello messages
- NETSTAT_REQ messages -> send a message to indicate that you will send some parameters (TCP)
- NETSTAT_RESP messages -> Server responds to the NETSTAT_REQ (TCP)
- NETSTAT_DATA messages -> Connection data transmitted to the server (TCP)
- NETMEAS_REQ messages -> Send message to indicate that you will start a network measurement (TCP)
- NETMEAS_RESP messages -> Reply by the server that specifies the connection properties (TCP). The message contains port, and the interval for which an iperf3 server will be open on the server to receive your client connections
- NETMEAS_REPORT messages -> Measurement data transmitted to the server (TCP)

In order to send/receive packets from the server, you should use two writes/reads from the socket as follows:

To write packets (send):

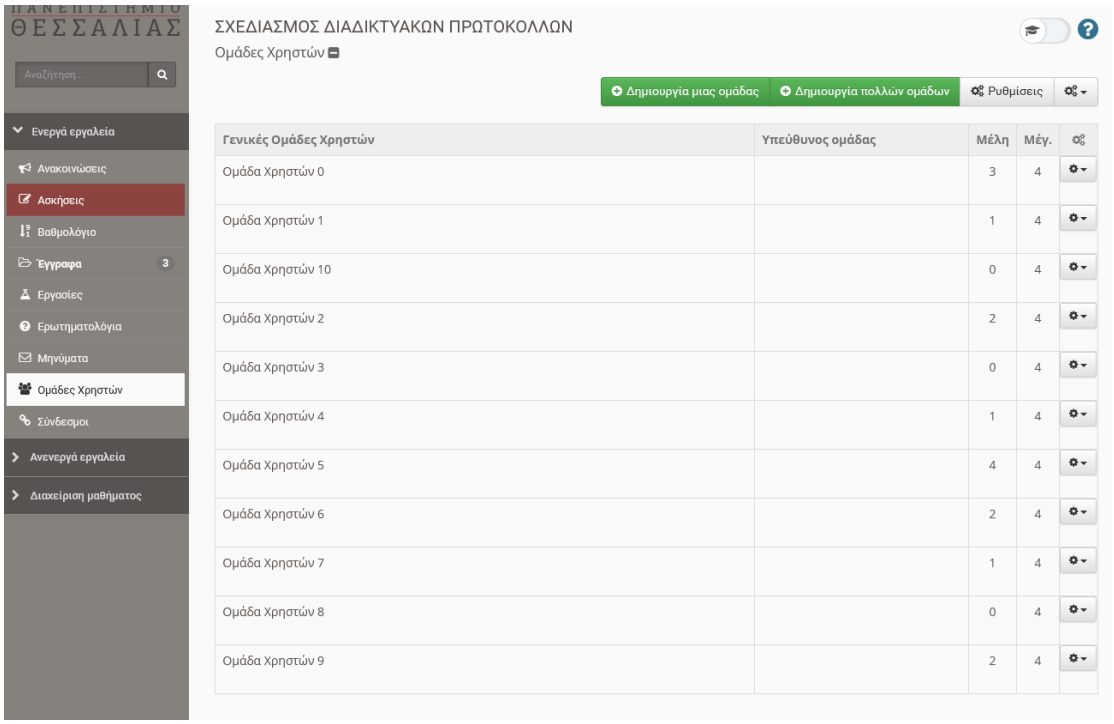
```
client_socket.send(len(serialized_data).to_bytes(4, 'big'))
client_socket.sendall(serialized_data)
```

To read packets (receive):

```
data_length = int.from_bytes(client_socket.recv(4), 'big')
while data_length < 1:
    data_length = int.from_bytes(client_socket.recv(4), 'big')
data = client_socket.recv(data_length)
```

What we are basically doing is sending in a 4 byte message how long the actual packet is that we are about to send over the network.

Register in a team in the eClass website:



The ID parameter that needs to go on your packets, is your team ID.

Up to 4 students/team, if more teams are needed please send an email to nimakris@uth.gr

Project accounts for 25% of the final grade.

Submission: By 8/1/2025, 18:00