

Clark Schwarz      [cas5560@g.rit.edu](mailto:cas5560@g.rit.edu)  
 Kyle Kaczorowski      [kmk4427@rit.edu](mailto:kmk4427@rit.edu)  
 Dylan Spence      [drs7727@g.rit.edu](mailto:drs7727@g.rit.edu)

To start the Voice chat application, start the server on a machine. This screenshot shows the server successfully starting up and displays the ports that the udp and tcp servers are listening on.

```
C:\Users\clark\OneDrive\Documents\Backup\Documents\Networks\project\commsProject>python server.py
UDP server listening on 0.0.0.0:9999...
Started receiving UDP audio packets.
TCP server listening on 0.0.0.0:8888...
```

Once a client starts up and connects to the server, the server will display when it forwards a packet along with the information about where the packet was received from and who it is being sent to.

[illegible]

On the client side, once a client begins, it will print its current status about the audio it is receiving. In this case, it is silent because it is not receiving anything.

[illegible]

In the below example, the client is picking up on audio from the server so it is printing data about the packet it received and playing audio.

```
Playing packet seq_num: 3873
Playing packet seq_num: 3874
Playing packet seq_num: 3875
Playing packet seq_num: 3876
Playing packet seq_num: 3877
Playing packet seq_num: 3878
Playing packet seq_num: 3879
Playing packet seq_num: 3880
Playing packet seq_num: 3881
Playing packet seq_num: 3882
Playing packet seq_num: 3883
Playing packet seq_num: 3884
Playing packet seq_num: 3885
Playing packet seq_num: 3886
Playing packet seq_num: 3887
Playing packet seq_num: 3888
Playing packet seq_num: 3889
Playing packet seq_num: 3890
Playing packet seq_num: 3891
Playing packet seq_num: 3892
Playing packet seq_num: 3893
Playing packet seq_num: 3894
Playing packet seq_num: 3895
Playing packet seq_num: 3896
Playing packet seq_num: 3897
```

The client will use a tcp handshake to establish a connection with the server. It will try to do so 3 times and if it does not succeed it will give up. This example below shows when a client is trying to connect to the server but the server.py application is not running.

```
.1
Attempting TCP handshake with 127.0.0.1:8888 (Attempt 1)...
Handshake failed: timed out
Attempting TCP handshake with 127.0.0.1:8888 (Attempt 2)...
Handshake failed: timed out
Attempting TCP handshake with 127.0.0.1:8888 (Attempt 3)...
Handshake failed: timed out
Handshake failed after maximum retries.
```