

Mugla Sıtkı Kocman University
Department of Computer Engineering

CENG 4508 Multimedia Networking
VoIP Application

Faruk Bayram - 140709023
Uğur Ulaş Göktaş - 140709030

Mentor
Cihat Çetinkaya

Overview

Our project is a Terminal VoIP that allows people to talk to each other from computers connected across a network.

Abstraction

In this project, We wrote a basic two-person Terminal VoIP application. Our application can explore how some basic system parameters effect the quality of the audio stream.

Background

We used JavaScript for our server and client and it works on Ubuntu Linux machine. We used ALSA for the sound operations. We used Node.js for the execute JavaScript. We used Node-gyp for the compiles Node.js Addons. We used npm for the manage node packages.

Challenges we faced

- throw er Unhandled error event

We solved this problem with changing port number to 8080

- cannot find module 'socket.io'

We solved this problem with installing socket.io with npm.

- nodejs connect cannot find static

We solved this problem with installing connect@2.X.X and serve-static with npm.

- cannot find module 'connect'

We solved this problem with adding connect to our package.json file and running npm update

- socket.io - ReferenceError: io is not defined

We solved this problem with installing io with npm.

```
[MacBook-Pro:VoipApp overwatch$ node index.js --listen 8080 --input hw:0,0 --output hw:1,1  
Mode: listen
```

```
Speaker config  
{ channels: 2, bitDepth: 16, sampleRate: 44100 }
```

```
Mic config  
{ encoding: 'signed-integer',  
  channels: 2,  
  bitwidth: 16,  
  rate: 44100 }
```

```
--listen: 8080
```

```
Server is listening
```

```
A client has connected.
```

```
Speaker event: open
```

```
█
```

```
[MacBook-Pro:VoipApp overwatch$ node index.js --connect 192.168.1.101:8080 --input hw:0,0 --output hw:1,1  
Mode: connect
```

```
Speaker config  
{ channels: 2, bitDepth: 16, sampleRate: 44100 }
```

```
Mic config  
{ encoding: 'signed-integer',  
  channels: 2,  
  bitwidth: 16,  
  rate: 44100 }
```

```
Host: 192.168.1.101
```

```
Port: 8080
```

```
Connected to server.
```

```
Speaker event: open
```

```
█
```

References

<https://www.npmjs.com/package/speaker>

<https://github.com/jesusprubio/bluebox-ng>

<https://stackoverflow.com/questions/16827987/expressjs-throw-er-unhandled-error-event>

<https://stackoverflow.com/questions/17058298/error-cannot-find-module-socket-io>

<https://stackoverflow.com/questions/24346161/nodejs-connect-cannot-find-static>

<https://stackoverflow.com/questions/15351995/error-cannot-find-module-connect>

<https://stackoverflow.com/questions/11995406/socket-io-referenceerror-i-o-is-not-defined>

<https://stackoverflow.com/questions/6563885/socket-io-how-do-i-get-a-list-of-connected-sockets-clients>

<https://superuser.com/questions/53957/what-do-alsa-devices-like-hw0-0-mean-how-do-i-figure-out-which-to-use>