Setting Up NodeJS

If you haven't connected to your VM using SSH, go back and read those notes.

Installing NodeJS on Ubuntu Linux

Connect to your VM via SSH. You the following 2 lines to install NodeJS 12.x on Ubuntu:

```
# Using Ubuntu
curl -sL https://deb.nodesource.com/setup_12.x | sudo -E bash -
sudo apt-get install -y nodejs
```

Installing nodemon

NodeJS is a javascript framework that allows us to run JavaScript code on the server. Although it works fine on its own, we can install some tools to help make things easier. First we will install `nodemon` : the program will watch the project for any file changes. Whenever it sees any, it will automatically restart the node server. To install it use:

```
sudo npm install -g nodemon
```

Lets breakdown this command
`sudo` this lets us install nodemon as a superuser
`npm` this is **n**ode **p**ackage **m**anager. It's how we install packages for node.
`install` installs the package (same using `npm i`)
`-g` this to install the package **globally** this lets us access `nodemon` anywhere
`nodemon` This is the package we want to install

Creating a Node project

Once that's done create a directory called `example-server` . Use the command

```
mkdir example-server
```

Then:

```
cd example_server
```

Now that you're inside example-server you should initialize your node project. Type the command:

```
npm init
```

This will prompt you for some info to create a `package.json` (you shouldn't have much trouble with this). This is just all the info relevant to your application.

Then you need to install express. NodeJS is perfectly capable for handling HTTP; however, we need to write a lot of frequent boilerplate. Express handles it for us. Us this command:

```
npm install --save express
```

This will install express and save it as a project dependency to your package.json.

Now you can write some code; create a file `index.js` and write the contents of program below into index.js.

```javascript
const express = require('express'); // essentially JS #include
const app = express();              // Create express object
const PORT = 80;                    // Default port for HTTP is 80

// We set up a function that will execute on the defualt route when a user attempt to GET
// this resource  which immediatly sends back "Hello, World!"
app.get('/', (request, response) => {
 response.send('Hello, World!');
});

// Listen to our PORT and execute the function when the PORT is set up
app.listen(PORT,
           () = > console.log(`App is listenting on PORT: ${PORT}`)
);
```

Once that's done move it to your server and execute the following command.

```
sudo nodemon index.js
```

You should see that the app is listening on PORT 80. Then you should paste your VM's public IP into your browser's URL tab and you'll see the **"Hello, World!"** message.