

iot-Device-Simulation

Project Setup Instructions



Scalable Computing

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Prateek Tuslyan | 19303677

Piyush Saxena | 19300369

Manasi Palakar |

Spandana Banala |

Tools Used:

1. Node-red
2. Aws IOT

A screenshot of a cell phone

Description automatically generatedInstallation:

1. Install NPM locally,

Reference: <https://nodejs.org/en/download/>

Run the following command on the terminal to check if the installation is complete,

* npm -v

A screenshot of a cell phone

Description automatically generated

1. Install Node-red

Reference: <https://nodered.org/docs/getting-started/local>

Run the following command on the terminal,

* sudo npm install -g --unsafe-perm node-red

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Description automatically generated

1. After node-red installation is complete, run the following command on terminal,

* node-red

The node-red would launch, and the URL will be, ‘http://127.0.0.1:1880/’

1. A screenshot of a computer

   Description automatically generatedNow the node-red window will open as shown in the figure.

Click on the top-right icon to open the window as shown in the figure.

A screenshot of a computer

Description automatically generated

1. Click on ‘import’, and upload the file ‘doctors.json’, provided in the codebase.

Similarly upload the ‘patient.json’ file.

1. A screenshot of a computer

   Description automatically generatedThe above step would result in the same.
2. After this step, the server certificates need to be changed for the device with which the sensors would interact. Basically, the MQTT connection certificate which is over TCP. In order to do that, we would first need to setup the device on AWS IOT.

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1. Now Signin into AWS and click on AWS IOT Core.

After the page opens, click on ‘Manage button on the left-hand side and then click on Create on the right-hand side.’

1. After clicking on Create, click on ‘Register a single thing’ and then click on Next. Download all the certificates.

Once, the certificates are downloaded, the screen would look like in Step 8.

The downloaded certificates sample is present under /certs folder in the codebase.

1. A screenshot of a computer screen

   Description automatically generatedNow once the device is created subscribe to the sensor topic to subscribe/publish messages.

A screenshot of a computer

Description automatically generated

1. Now jump back to node-red, and change the certificate path for the MQTT client, the which is downloaded via amazon.
2. Click on Deploy on the top right corner and project is setup and ready to run.

For more references on NODE-RED: <http://www.steves-internet-guide.com/node-red-overview/>

GitHub Link: <https://github.com/tulsyanp/iot-device-simulation>