

# Intel Edison

Use an Intel® Edison to connect to the IBM Internet of Things Foundation. Then you can visualize the data generated by the on-board sensors.

This recipe and its supporting code are a work-in-progress.

## Ingredients

### Hardware Requirements

- Intel Edison with Arduino Expansion Board
- [Intel Edison Getting Started Guide](#)

## Prepare

Get your device ready

Complete steps 1 – 4 in the [Intel Edison Getting Started Guide](#). Choose the Intel® XDK IoT Edition in Step 5.

Connect a sensor to A0 on the Arduino shield. Any sensor will work as we are only displaying volts. If you don't have a sensor the voltage on the analog pin drifts. You can still connect and visualize changes in your "data".

## Connect (Quickstart)

IoT Foundation Quickstart connection

After the above steps you should have your Edison set up and connected to wifi.

a) Browse to <https://github.com/chipgarner/EdisonBluemixNode/tree/quickstart> and click on Download Zip on the right hand side. Unzip to a folder you would like to keep your project in.

b) Open Intel XDK IoT Edition.

c) Select PROJECTS and OPEN AN INTEL XDK PROJECT. Navigate to the folder you unzipped the project in select the .xdk file. Click on DEVELOP.

d) Select your Edison under IoT Device: Your Edison needs to be connected to wifi using a password for the SSH connection to work. (See <https://software.intel.com/en-us/connecting-your-intel-edison-board-using-wifi> ) Note that you can open a Serial Terminal in the XDK and connect the Edison to wifi if needed.

e) Skip this step if you know your Edison's MAC address. Select the Serial Terminal tab and log in to your Edison. Enter `wpa_cli status` and note the MAC address at "address=...". (This assumes you are connected to wifi.)

f) Open main.js and enter your Edison's MAC address by editing the line:

```
var MAC = '784b87a801ee';
```

Leave out the semicolons as in the above example.

g) Click on the hammer icon in the lower menu to build and install the program. Click the green "Run" icon to run it.

## Visualize

Real-time visualization of device data

Enter your MAC address here <https://quickstart.internetofthings.ibmcloud.com/#/> and click "Go". You should see your data displayed.

# Sign Up Options

You can sign up and register devices to an Internet of Things Foundation (IoT Foundation) organization by using IBM Bluemix or the IBM Cloud Marketplace. [Click here for more information on which option is right for you.](#) Note: To register your devices using IBM Bluemix, you must first create a Bluemix account.

## Signing up with IBM Bluemix

- Go to [Bluemix](#). If you are an existing Bluemix user log in as usual. If you are new to Bluemix you can sign up for their free 30 day trial.
- Use the [Internet of Things Foundation Starter boilerplate](#) from the Catalog to try out a sample Node-RED flow with your Quickstart connected device, or with a simulated device.
- To register devices, you must first create an IoT Foundation organization. To do this, create an instance of the [Internet of Things Foundation Service](#), which is found by scrolling to the 'Internet of Things' section of the Catalog in Bluemix. When you have added the service, select it in your dashboard to open the service page. Launch the IoT Foundation portal, where you can add your devices and obtain the security credentials for your IoT Foundation organization. Be sure and copy the credentials e.g.

org=xrxila

type=edison-air

id=784b87a801ee

auth-token=\*QwMxi!O8DLITFOv(Y

## Signing up with IBM Cloud Marketplace

- Go to [Marketplace \(Internet of Things Foundation\)](#) and sign up for the 30 day free trial or select a price plan.
- When you are logged in to the Internet of Things Foundation you can register your device from the Quickstart visualization page. Alternatively, you can click on

'Dashboard' and select the option to 'Add a new device'. Be sure and copy the credentials e.g.

```
org=xrxila
```

```
type=edison-air
```

```
id=784b87a801ee
```

```
auth-token=*QwMxi!O8DLITFOv(Y
```

## Connect (Registered)

Internet of Things Foundation Registered connection

Once you have access to an [Internet of Things Foundation](#) organization through Bluemix or the Marketplace, you can click to 'Add a new device' on the IoT organization dashboard.

During the device registration process above you received credentials containing the following details, copy these when you get them. (Example data.)

```
org=xrxila
```

```
type=edison-air
```

```
id=784b87a801ee
```

```
auth-token=*QwMxi!O8DLITFOv(Y
```

These instructions are the same as for the Quickstart example above except that you are downloading and running a different program and adding more credentials.

a) Browse to <https://github.com/chipgarner/EdisonBluemixNode/tree/registered> and click on Download Zip on the right hand side. Unzip to a folder you would like to keep your project in.

b) Open Intel XDK IoT Edition.

c) Select PROJECTS and OPEN AN INTEL XDK PROJECT. Navigate to the folder you unzipped the project in select the .xdk file. Click on DEVELOP.

d) Select your Edison under IoT Device: Your Edison needs to be connected to wifi using a password for the SSH connection to work. (See....) Note that you can open a Serial Terminal in the XDK and connect the Edison to wifi if needed.

e) Open main.js and enter your Edison's credentials by editing the lines:

```
var ORG = 'xrxila';  
var TYPE = 'edison-air';  
var ID = '784b87a801ee';//MAC address  
var AUTHTOKEN = '*QwMxi!O8DLITFOv(Y';
```

f) Click on the red "Stop" icon in the lower menu if a program is still running on your Edison. Click on the hammer icon to build and install the program. Click the green "Run" icon to run it. You should see your data on the IoT Devices page.