Internet of Things (IoT)

Connecting Raspberry Pi as a Device to W using Node-RED

This recipe will help you to connect your Raspberry Pi to the Watson IoT Platform approach of Node-RED.

Recipes@WatsonIoT

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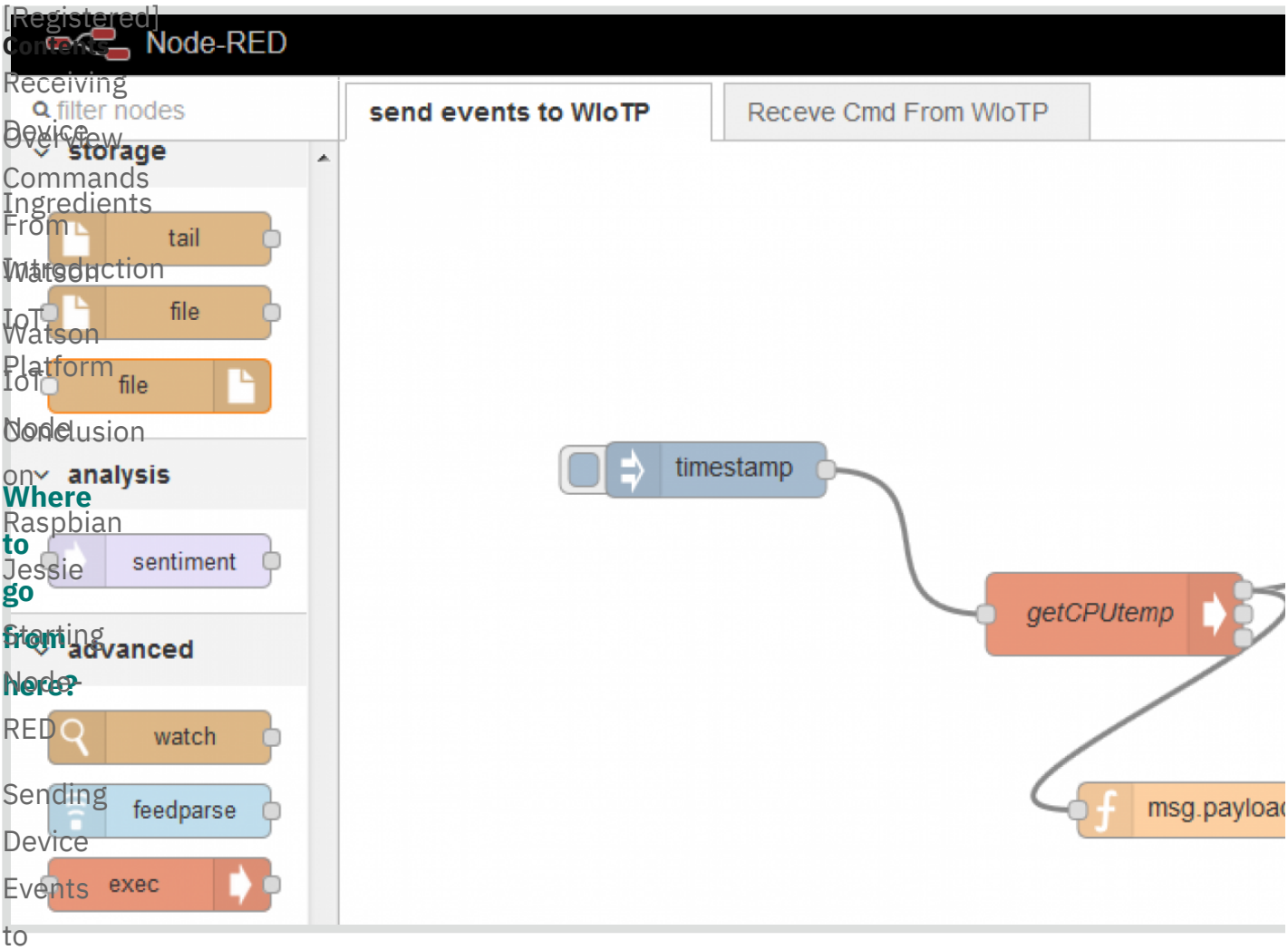


Overview

Skill Level: Beginner

Beginner

Introduction The Watson IoT Node is a pair of Node-RED nodes for connecting your device to the of Things Platform as a Device or as a Gateway. In this recipe, you will learnHow to install Watso Pi,Connect the Raspberry Pi, as a device to the IBM Watson IoT […]

Ingredients

Hardware

1. Raspberry Pi Model B/ Model B+/ 2
2. Minimim 8GB SD card with latest Rasbian operating system(**Raspberry Jessie** or higher)

Step-by-step

1 Introduction

The Watson IoT Node is a pair of Node-RED nodes for connecting your device to the IBM W Platform as a Device or as a Gateway.

In this recipe, you will learn

1. How to install Watson IoT Node in Raspberry Pi,
2. Connect the Raspberry Pi, as a device to the IBM Watson IoT Platform, and
3. Learn how to send events to the platform and receive commands from it.

For more information about the Watson IoT Node please **click here**.

2 Watson IoT Node on Raspbian Jessie

The latest version of **Raspbian Jessie** has both Node-RED and Watson IoT node pre-install step.

If you already have an older version of Jessie, you can install or upgrade Node-RED using tl manager:

```
sudo apt-get update
sudo apt-get install nodered
```

At this stage we have installed Watson IoT Node in Raspberry Pi.

3 Starting Node-RED

To **start Node-RED**, there are two ways:

1. on the Desktop, select ***Menu -> Programming -> Node-RED.***
2. run the following command in a new terminal window.
   `node-red-start`

To **stop Node-RED**, run the following command in a new terminal window:

```
node-red-stop
```

You can then access the Node-RED editor by entering http://localhost:1880 in the browser

To connect to the Node-RED editor via network:

Once Node-RED is running – open the browser program in the host machine and then brow
ip-address-returned}:1880/. One way to find the IP address of the Pi is to use the comman

```
hostname -I
```

Autostart on boot:

To have the Node-RED application started, when the Pi system boots, please refer to the st
page ***Running*** the Node-RED, on the ***nodered.org*** site.

***After this step you will be able to access Node-RED editor, with the Watson IoT Nodes, in it
events to the IBM Watson IoT Platform and receive commands from the same.***

4 Sending Device Events to Watson IoT Platform [Quick Star

- In the Node-RED editor, which you have opened in the browser (either on Raspberry Pi
  click on **Menu – > Import -> Clipboard**
- Copy the json from this **link** and paste it in the clip board
- Click on ***Ok*** button then place the flow in the work place
- Click on deploy button to start

Now the CPU temperature from your Raspberry Pi is sent to the Watson IoT Platform once
also verify that in the debug tab.

Click here to open the QuickStart Dashboard

5 Registering your Device In Watson IoT Platform

To explore and make use of the full capabilities of Watson IoT Platform (including bidirectio
and register your device(s) in the platform. This section shows how you can setup the same

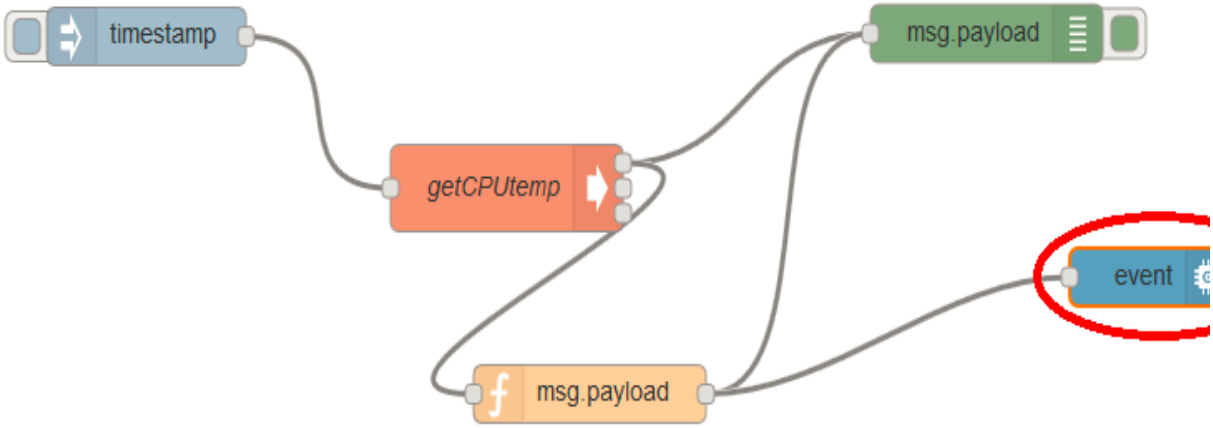
Carry out the **steps present in this recipe** to register your device(s) in IBM Watson Internet

At this step, we have successfully created the Watson IoT service and registered your devic

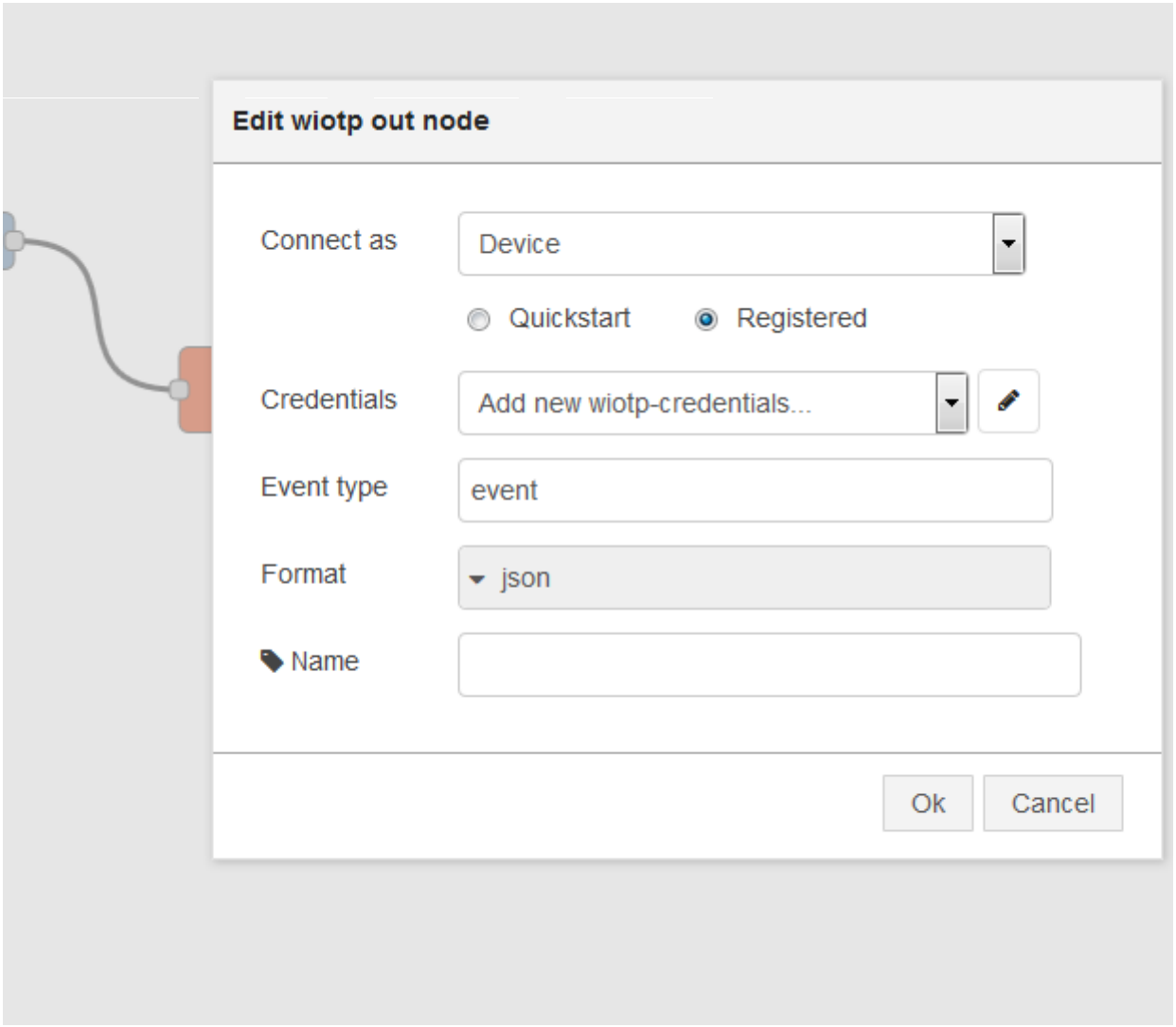
6 Sending Device Events to Watson IoT Platform [Registered

Once you have registered your device in the Watson IoT organization make the following m
flow.

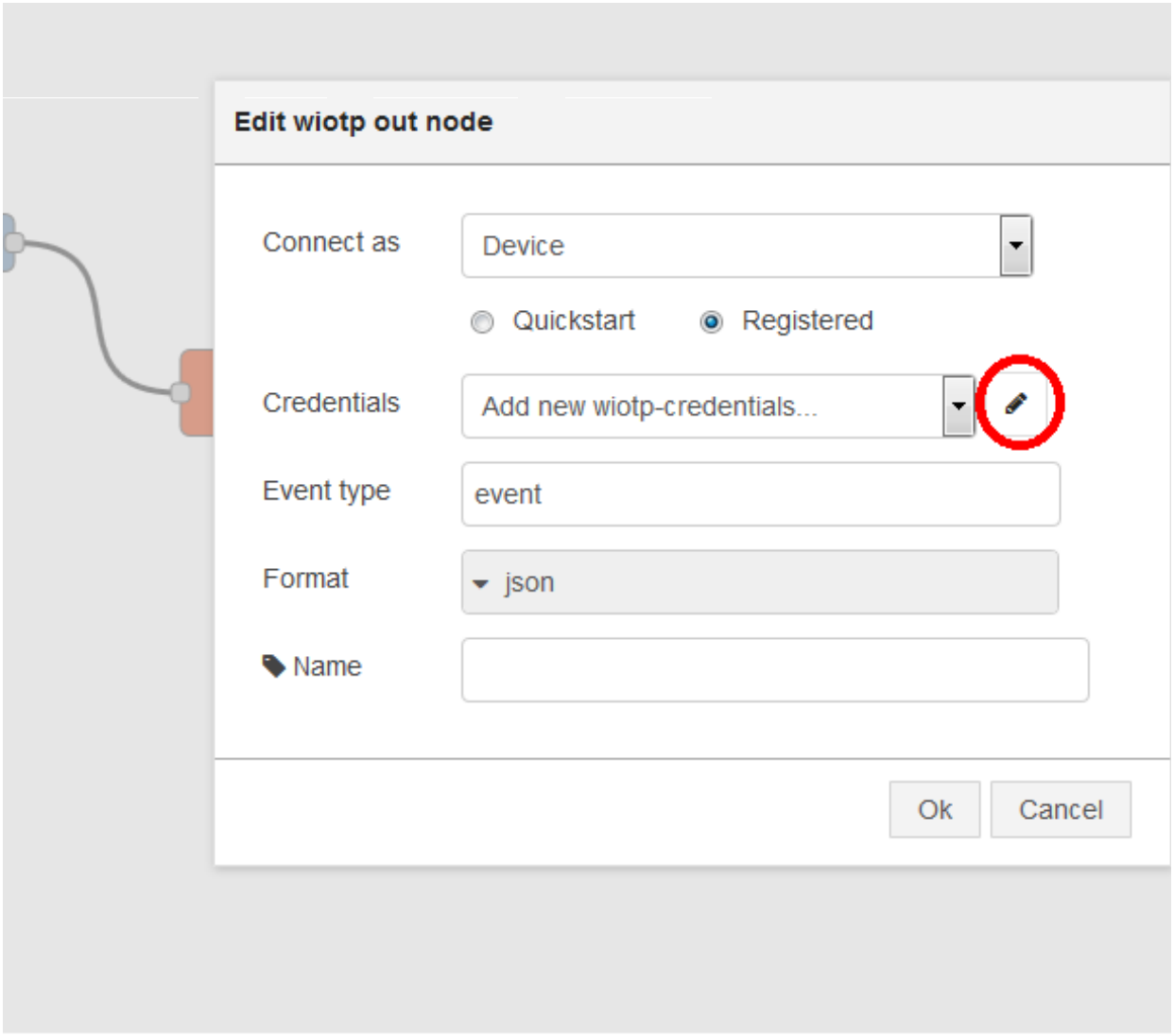
- Double click on the event node.



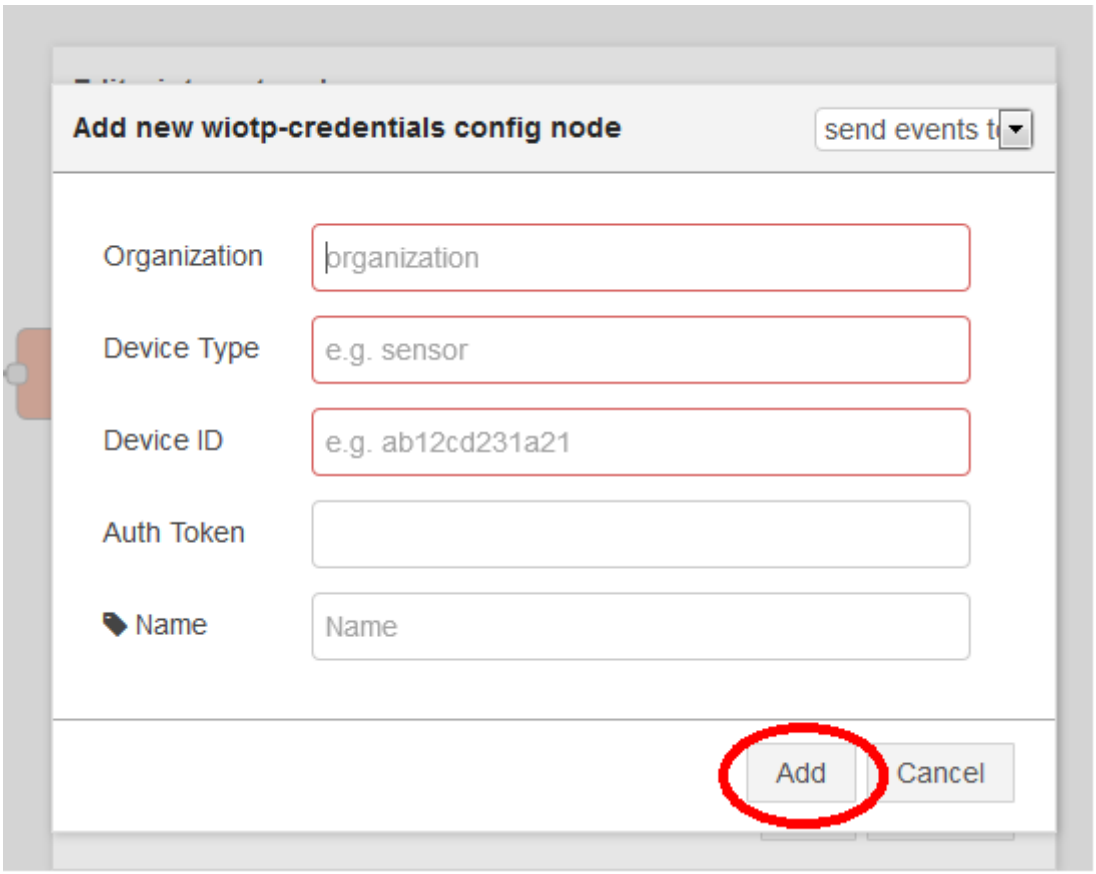
- Select connection as Registered .



- Select edit button in Credentials.



- Fill the Organization,Device Type, Device ID, Auth Token and then click on the ***Add*** butt



- Click on the ***Ok*** Button.
- Click on deploy button to start.

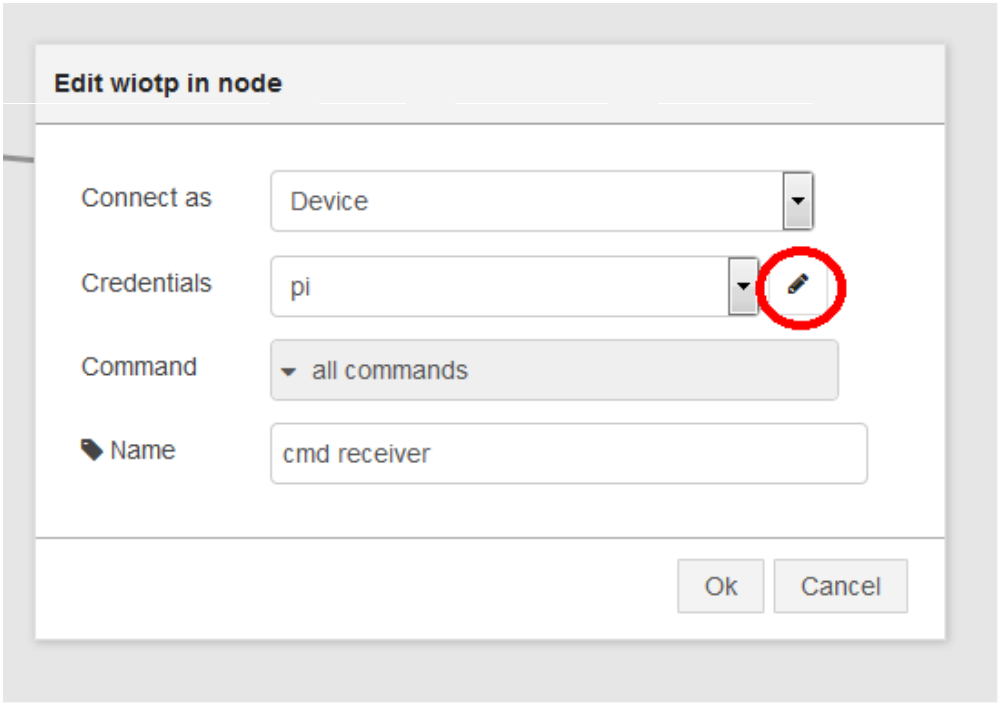
Now Node-RED flow will start sending events to your organization.

7 Receiving Device Commands From Watson IoT Platform

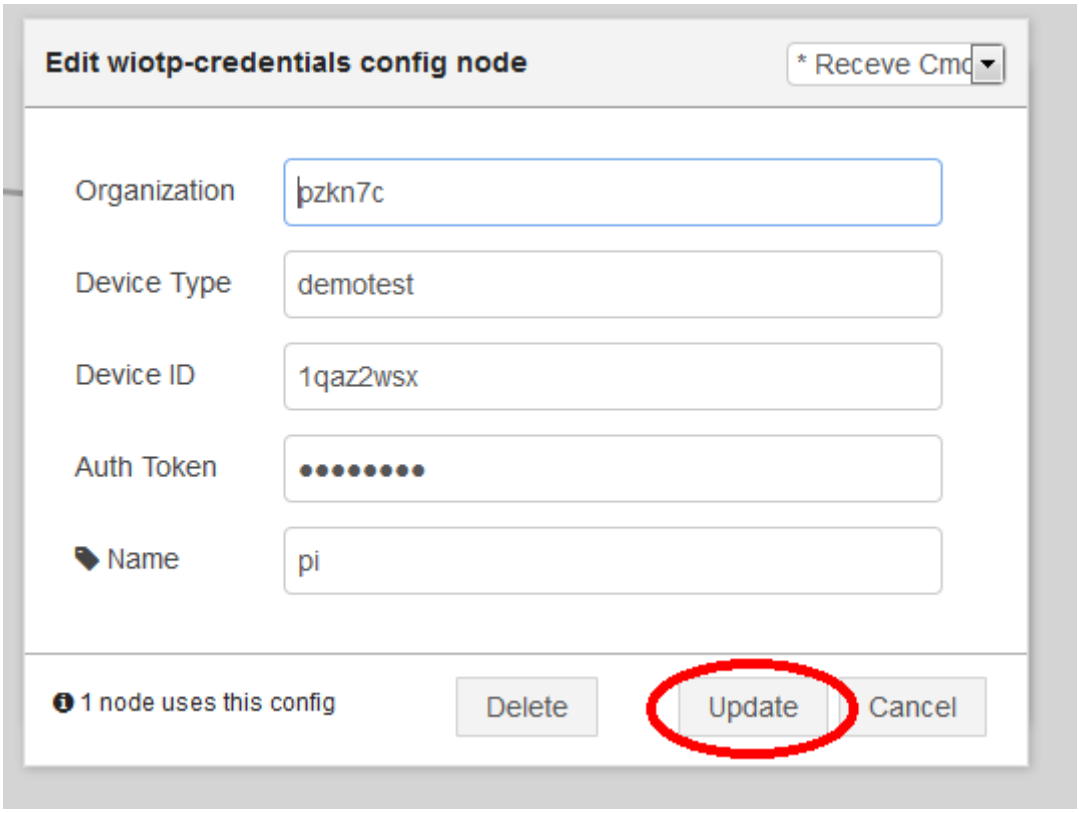
In order to receive commands from the IBM Watson IoT Platform we need to register our d follow the step Register Your Device in Watson IoT Platform given above.

- In the Node-RED editor, which you have opened in the browser (either on Raspberry Pi click on **Menu-> Import – >Clipboard**.
- Copy the json from this **link** and paste it in that clip board.
- Click on ***Ok*** button then place the flow in the work place.
- Double click on cmd receiver.

- Select edit button in Credentials.



- Fill the Organization, Device Type, Device ID, Auth Token and then click on update butt



- Click on the ***Ok*** Button.
- Click on the deploy button to start the flow.

Note : You will need an external application that is sending commands to this Raspberry Pi

Now you can receive the commands from Watson IoT Platform which will be displayed in t

8 Conclusion

Now we have seen how to deploy Watson IoT Node in the Raspberry Pi as a device and sen
Watson IoT Platform and receive commands from the Platform using Node-RED without an

9 Where to go from here?

The next part of the recipe shows how to use the Raspberry Pi work as a gateway.

TAGS APPLICATION, DEVICE, IBM WATSON IOT PLATFORM, IOT, NODE-RED, NODE.JS, NODEJS, RASPBERRY, RASPBERRYPI, S

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3 comments on"Connecting Raspberry Pi as a Device to Watson

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I would like to transfer one file from raspberry pi environment in to one generator, which has usb port onl
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