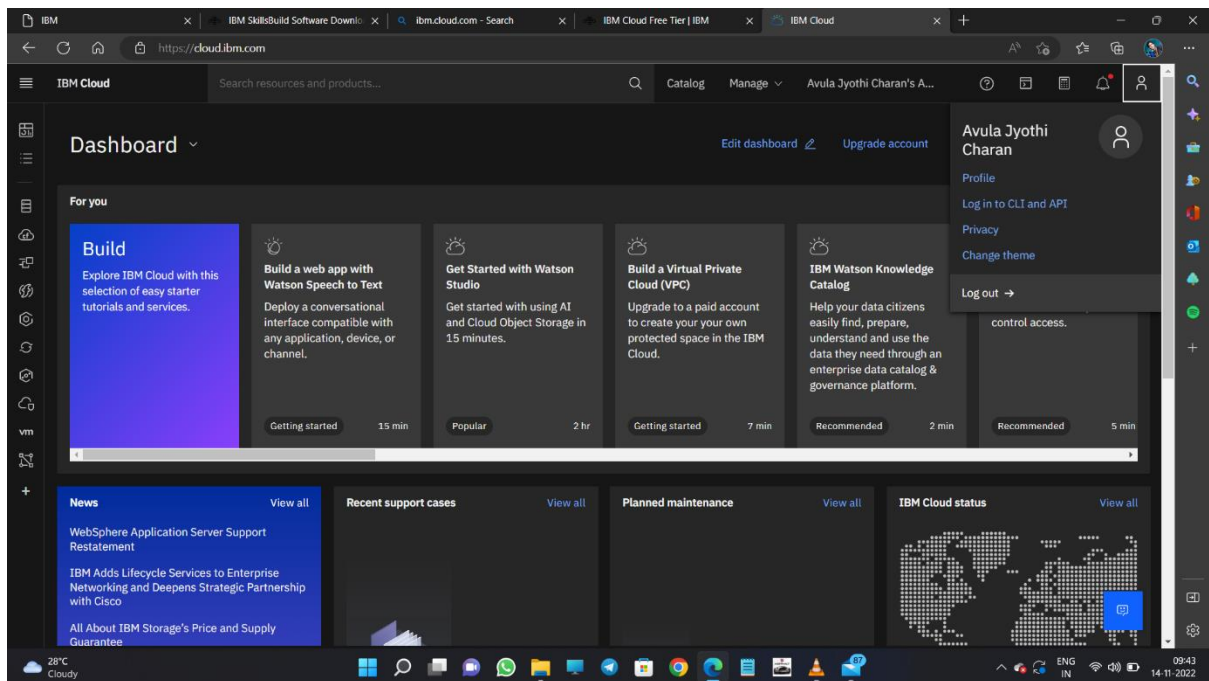


Create Node-RED Service

Date	15 November 2022
Team ID	PNT2022TMID28791
Project Name	SMART SOLUTIONS FOR RAILWAYS

CREATING NODE-RED IN IBM CLOUD

STEP 1: Open ibm cloud:



STEP 2: Go to catalog and search for node red app and open it:

The screenshot shows the IBM Cloud Catalog page for the Node-RED application. The breadcrumb navigation at the top reads "Catalog / Create app /". The main heading is "Node-RED" with a circular icon. Below this, there are two tabs: "About" (selected) and "Create". The "About" tab contains a sidebar with links for "Details", "Source code" (GitHub), "Helpful links" (Terms, Tutorial), and "Create". The main content area is titled "Overview" and describes the starter kit, which includes a pre-configured Node-RED application, a Cloudant service for storing configuration, and instructions for using the IBM Cloud Developer Tools CLI. It lists three key features: generating an application with Node-RED, generating files for deployment to Cloud Foundry or DevOps Pipeline, and connecting to provisioned services. A section titled "What's included?" features a Cloudant service card with links for "View docs", "View API reference", and "View pricing". A "Get started" button is located at the bottom left of the main content area. On the right side, there is a vertical "ASK A QUESTION" button.

STEP 3: Enter the app name, location and select the plan and click on create.:

The screenshot shows the IBM Cloud "Create app" page for Node-RED. The "Resource group" is set to "Default". The "Tags" field is empty, with examples "env:dev, version=1" provided. The "Platform" is set to "Node.js". The "Service details" section shows "Cloudant" as the selected service, with a note indicating that existing instances can be selected from the pricing plan menu. The "Region" is set to "London" and the "Resource group" is "Default". The "Pricing plan" is set to "node---red-mksj-deve-cloudant-1667465881112". At the bottom, there are "Cancel" and "Create" buttons. On the right side, there is a vertical "ASK A QUESTION" button.

STEP 4: click on deploy your app button:

Resource list / App details / Node RED NGHKJ 2022-11-04 Add tags

Details

App URL: You must deploy your app first

Source: [Download code](#)

Resource group: Default

Deployment target: You must deploy your app first

Created: 11/4/2022

Services

Cloudant

[Open dashboard](#) [Documentation](#) [API reference](#)

Credentials

[Connect existing services](#) [Create service](#)

Deployment Automation

Configure Continuous Delivery

Continuous Delivery is not enabled for this app. Enable Continuous Delivery to automate builds, tests, and deployments through Delivery Pipeline, GitLab, and more.

[Deploy your app](#)

Getting started quickly

Configuring your app

To connect services and DevOps toolchains to your app:

1. Use the **Services** card to connect a service to your app. Select an existing service instance, or create a new one. [Learn more](#)
2. If you want to view the code before your app is deployed, click **Download code** to obtain the .zip file.
3. Click **Deploy your app** in the **Deployment Automation** card to select the deployment target and configure the Continuous Delivery service. The deployment begins automatically.
4. After the deployment begins, you can view the status of the deployment, modify your app, view your repo, or view the app's URL.
5. If you make any changes to your app, be

STEP 5: In deployment automation select cloud foundry and click on create.org:

Resource list / App details / Node RED NGHKJ 2022-11-04

Select the deployment target Configure the DevOps toolchain

Deployment Automation

Select your deployment target and configure your DevOps toolchain. After you click **Create**, the toolchain is created, and the deployment process is started automatically.

Deployment target

Kubernetes Service
IBM
Deploy, scale, and manage your containerized application workloads to highly available clusters.

Red Hat OpenShift
IBM
Deploy your apps on highly available clusters that come installed with Red Hat OpenShift on IBM Cloud.

Cloud Foundry
IBM
Deploy and run your applications without managing servers or clusters. A Lite plan is available for quick and easy deployment.

Code Engine
IBM
Run your app, job, or container on a managed serverless platform. Auto-scale workloads, and pay only for the resources that you consume.

IBM Cloud API key

IBM Cloud API key

[New](#)

The value is required.

<https://cloud.ibm.com>

Getting started with apps

Step 1. Select the deployment target

Select your deployment target, and then provide the configuration information.

IBM Cloud Foundry

Cloud Foundry is the premier industry standard Platform-as-a-Service (PaaS) that ensures fast, easy, and reliable deployment of cloud-native apps. Cloud Foundry ensures that the build and deploy aspects of coding remain carefully coordinated with any attached services — resulting in quick, consistent and reliable iterating of applications. Cloud Foundry has a Lite plan that allows quick deployments for testing purposes.

Before you begin

- If your account doesn't have a Cloud Foundry org, you must create one. [Create org](#)

Steps

1. Select the number of instances, memory allocation, **region, org**, and **space**.

STEP 6: In app development click new on api key and select region and click next:

The screenshot shows the IBM Cloud API key creation interface. At the top, there are four informational boxes: 'workloads to highly available clusters.', 'installed with Red Hat OpenShift on IBM Cloud.', 'servers or clusters. A Lite plan is available for quick and easy deployment.', and 'platform. Auto-scale workloads, and pay only for the resources that you consume.' Below these is the 'IBM Cloud API key' section, which includes a text input field with a masked key, a 'New' button, and icons for eye, copy, and link. The 'Number of instances' is set to 1. The 'Memory allocation per instance' is shown as a slider from 64 MB to 2000 MB, with a value of 256 selected. Below this are three dropdown menus: 'Region' (London), 'Organization' (monish16), and 'Space' (smart solutions for railways). At the bottom, there are two input fields: 'Host' (node-red-ngkhj-2022-11-04) and 'Domain' (eu-gb.mybluemix.net). At the bottom left are 'Cancel' and 'Next' buttons. At the bottom right is a blue button with a circular arrow icon. On the far right edge, there is a vertical 'ASK A QUESTION' button.

STEP 7: select the region and click create:

Resource list / App details /

Node RED NGHJKJ 2022-11-04

Select the deployment target **Configure the DevOps toolchain**

Configure the DevOps toolchain

Give your toolchain a name and select the region to create your toolchain in.

DevOps toolchain name

NodeREDNGHJKJ2022-11-04

Accept the default name, or enter a value up to 100 characters.

Region

London

Back Create

Getting started with apps

ASK A QUESTION

STEP 8: Wait till you get the success in ci-pipeline and app URL is generated:

Resource list / App details /

Node RED NGHJKJ 2022-11-04 [Add tags](#)

Actions...

Details

App URL	You must deploy your app first
Source	https://eu-gb.git.cloud.ibm.com/monishkumarts/NodeREDNGH...
Resource group	Default
Deployment target	You must deploy your app first
Created	11/4/2022

Services

Cloudant

[Open dashboard](#) [Documentation](#) [API reference](#)

Credentials

Connect existing services + Create service +

Deployment Automation

Name	NodeREDNGHJKJ2022-11-04
Location	London
Tool integrations	

Delivery Pipelines

Name	ci-pipeline
Status	No stages detected
Name	pr-pipeline
Status	No stages detected

Getting started quickly

Configuring your app

To connect services and DevOps toolchains to your app:

1. Use the **Services** card to connect a service to your app. Select an existing service instance, or create a new one. [Learn more](#)
2. If you want to view the code before your app is deployed, click **Download code** to obtain the .zip file.
3. Click **Deploy your app** in the **Deployment Automation** card to select the deployment target and configure the Continuous Delivery service. The deployment begins automatically.
4. After the deployment begins, you can view the status of the deployment, modify your app, view your repo, or view the app's URL.
5. If you make any changes to your app, be

ASK A QUESTION

STEP 9: Now click on the generated APP URL:

Resource list / App details /

Node RED NGHKJ 2022-11-04 [Add tags](#)

Actions...

Details

App URL	https://node-red-nghkj-2022-11-04.eu-gb.mybluemix.net
Source	https://eu-gb.git.cloud.ibm.com/monishkumarts/NodeREDNGH...
Resource group	Default
Deployment target	Node RED NGHKJ 2022-11-04
Created	11/4/2022

Services

Cloudant

[Open dashboard](#) [Documentation](#) [API reference](#)

Credentials ▾

[Connect existing services](#) [Create service](#)

Deployment Automation

Name	NodeREDNGHKJ2022-11-04
Location	London
Tool integrations	

Delivery Pipelines

Name	ci-pipeline
Status	Success
Name	pr-pipeline
Status	No stages detected

Getting started quickly

Configuring your app

To connect services and DevOps toolchains to your app:

1. Use the **Services** card to connect a service to your app. Select an existing service instance, or create a new one. [Learn more.](#)
2. If you want to view the code before your app is deployed, click **Download code** to obtain the .zip file.
3. Click **Deploy your app** in the **Deployment Automation** card to select the deployment target and configure the Continuous Delivery service. The deployment begins automatically.
4. After the deployment begins, you can view the status of the deployment, modify your app, view your repo, or view the app's URL.
5. If you make any changes to your app, be

ASK A QUESTION

STEP 10 : You will redirected to your node-red on ibm cloud page:

Node-RED on IBM Cloud

Node-RED

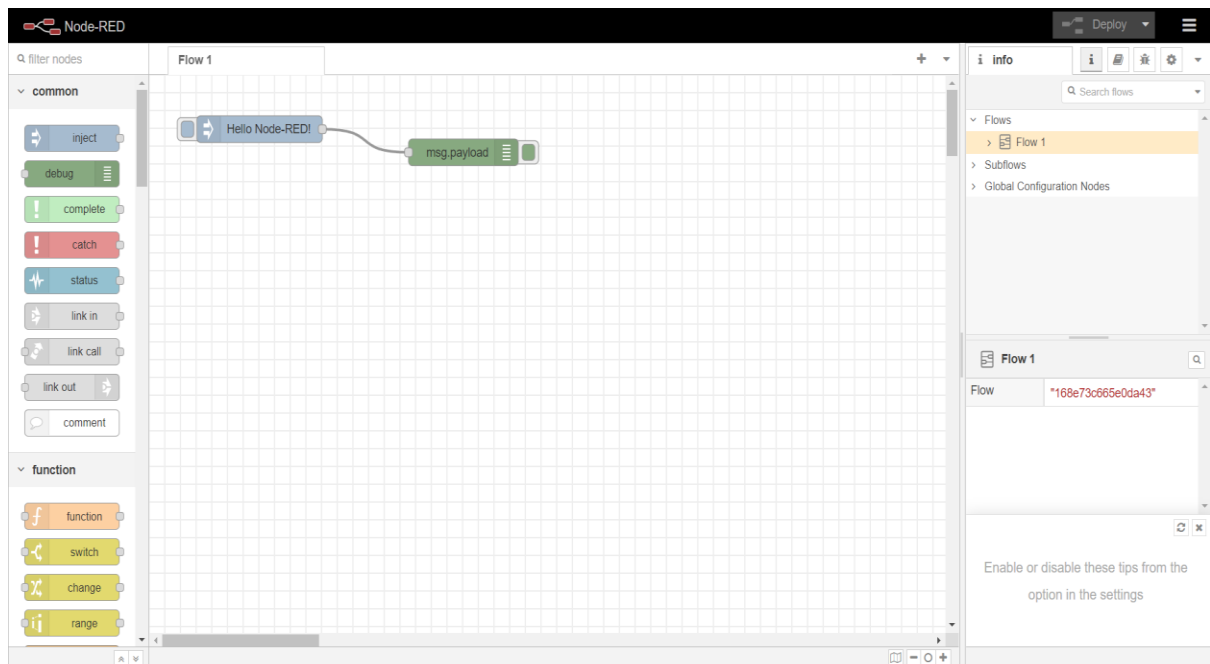
Flow-based programming for the Internet of Things

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

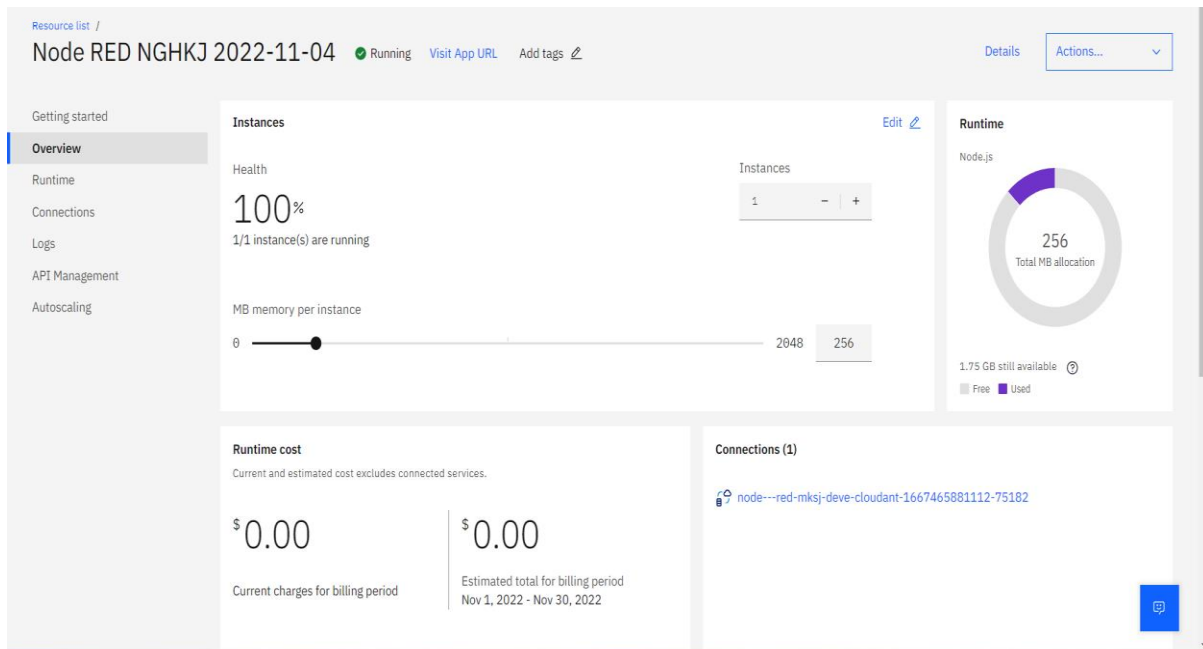
This instance is running as an IBM Cloud application, giving it access to the wide range of services available on the platform.

More information about Node-RED, including documentation, can be found at nodered.org.

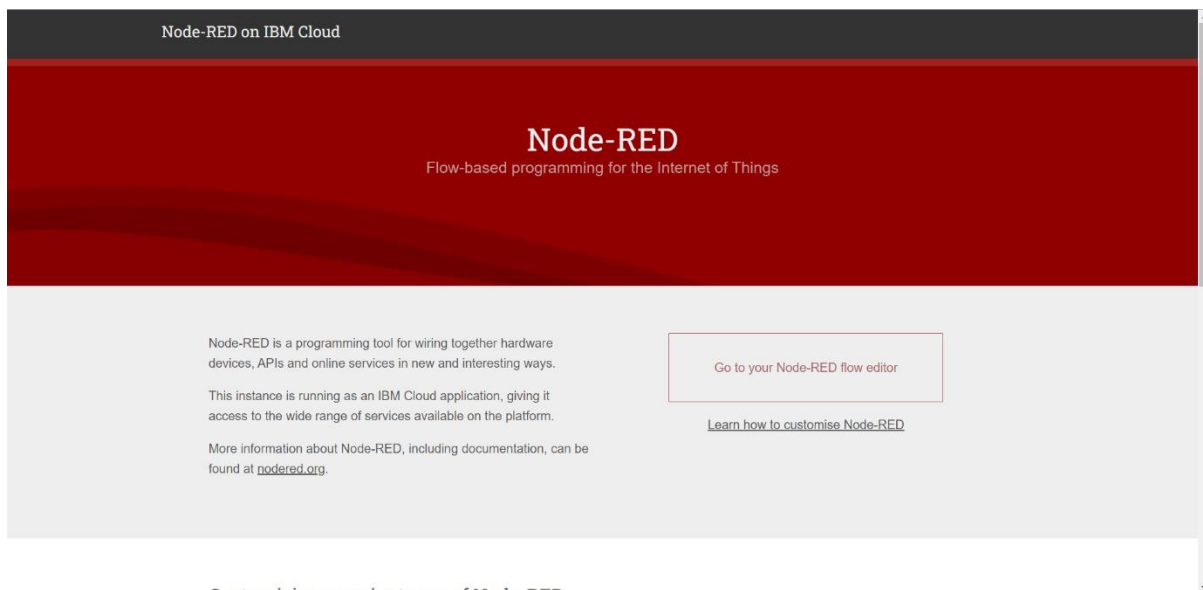
STEP 11: Click on node-red flow editor and you will be redirected to your node-red workspace:



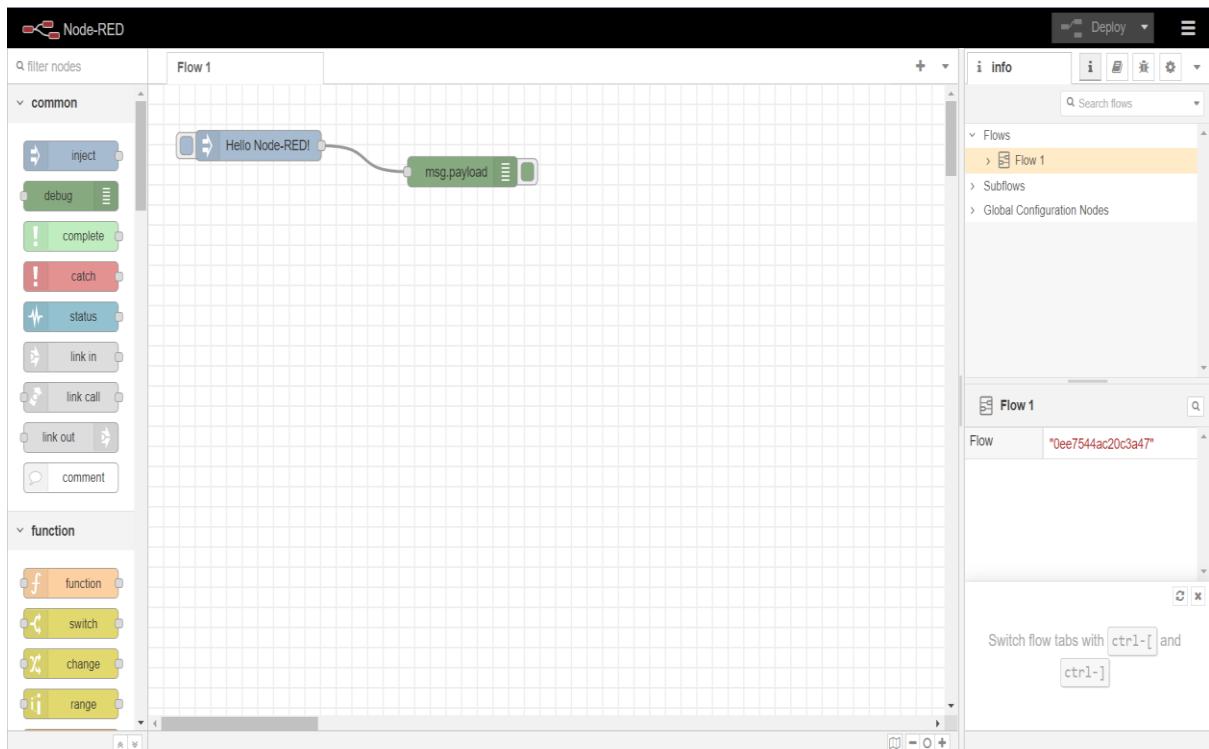
STEP 12: click on visit app url to be redirected to node red:



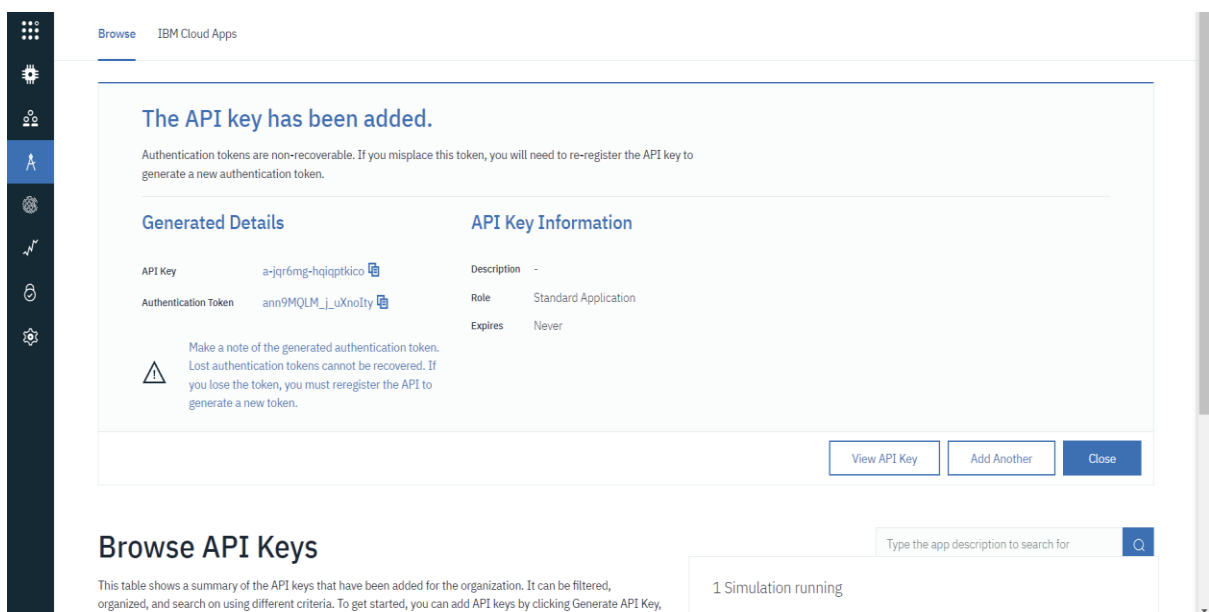
STEP 13: Click on go to your NODE-RED flow editor button:



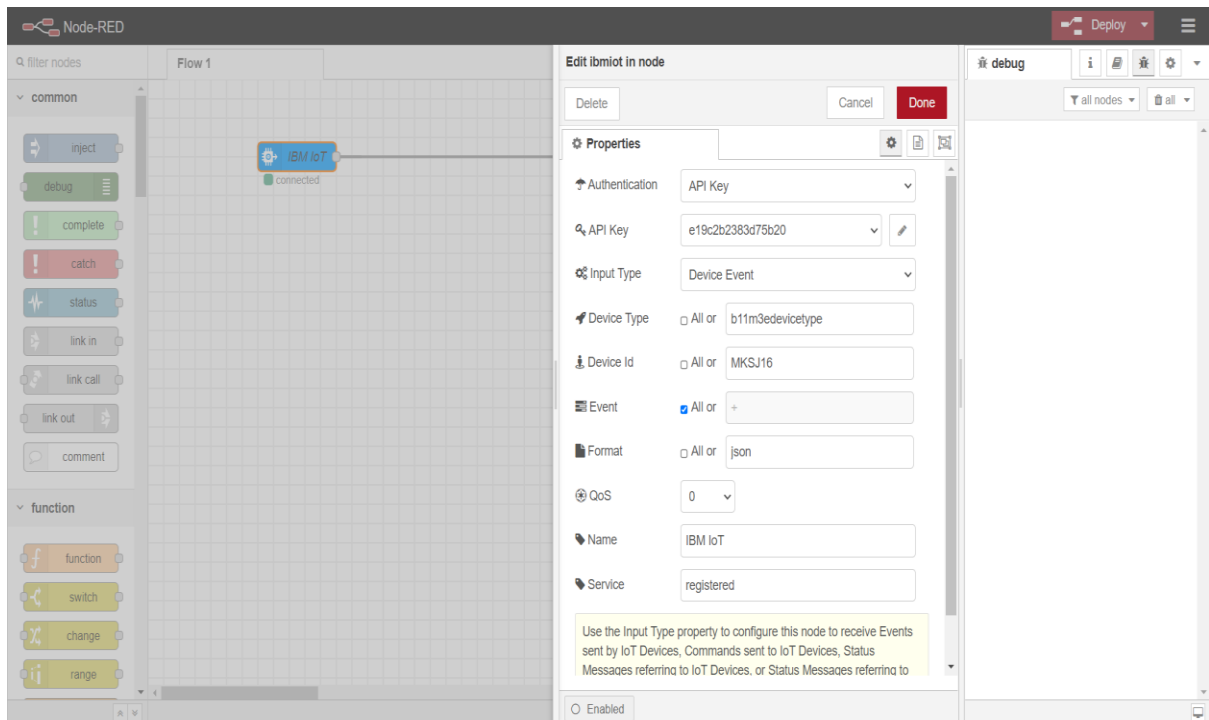
STEP 14: You will be redirected to the node red flow editor:



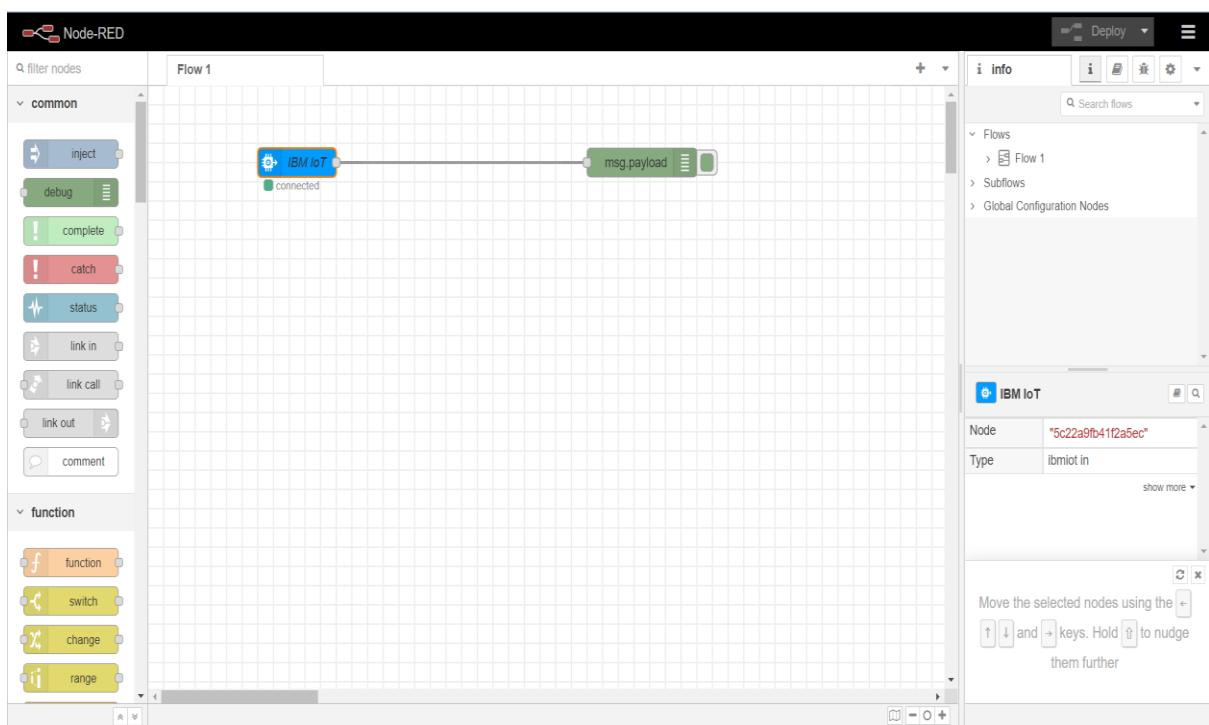
STEP 15: Generating API key and Authentication token:



STEP 16: Edit IbmIoT in node:



STEP 17: Connect Ibmiot in and debug 1 and deploy:



STEP 18: Edit gauge node (the gauge nodes named latitude,longitude and available_seats as fig1,fig2,fig3):

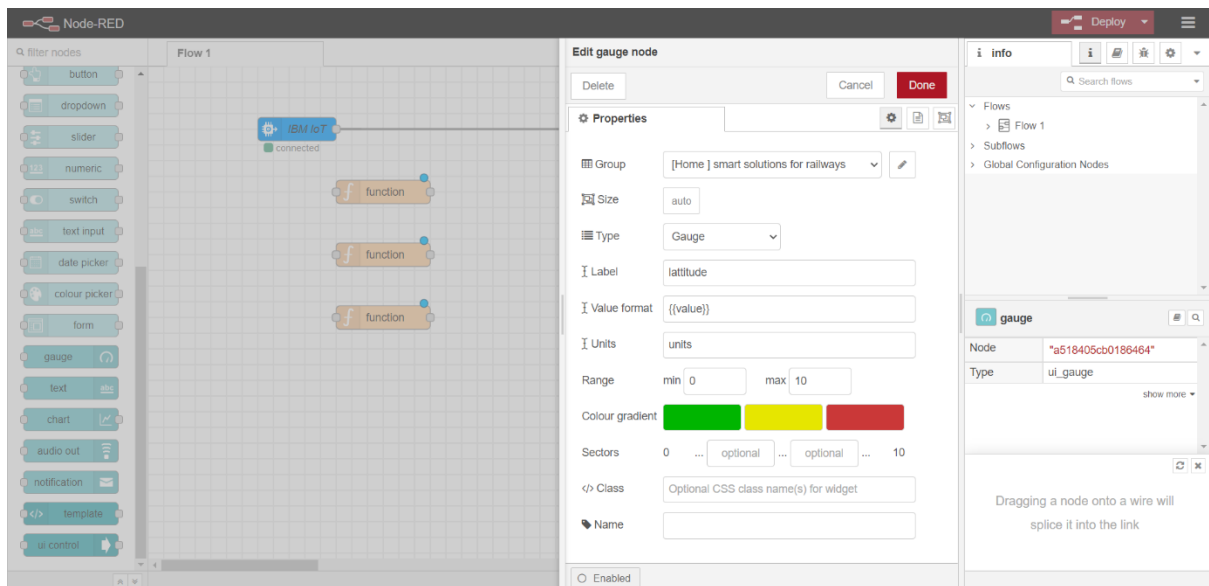


FIG 1

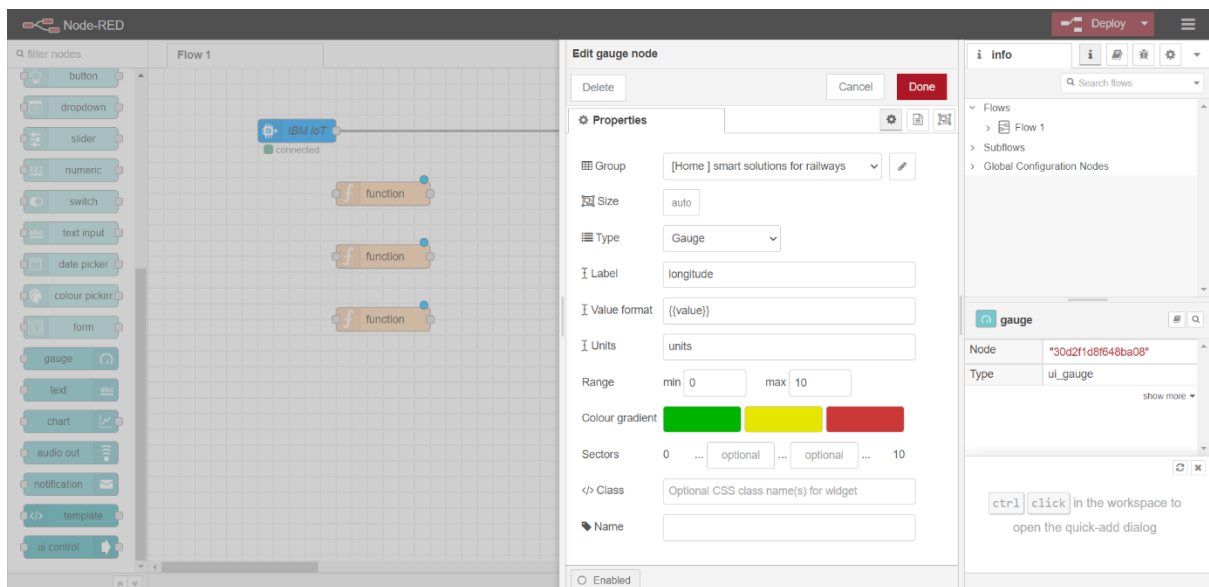


FIG 2

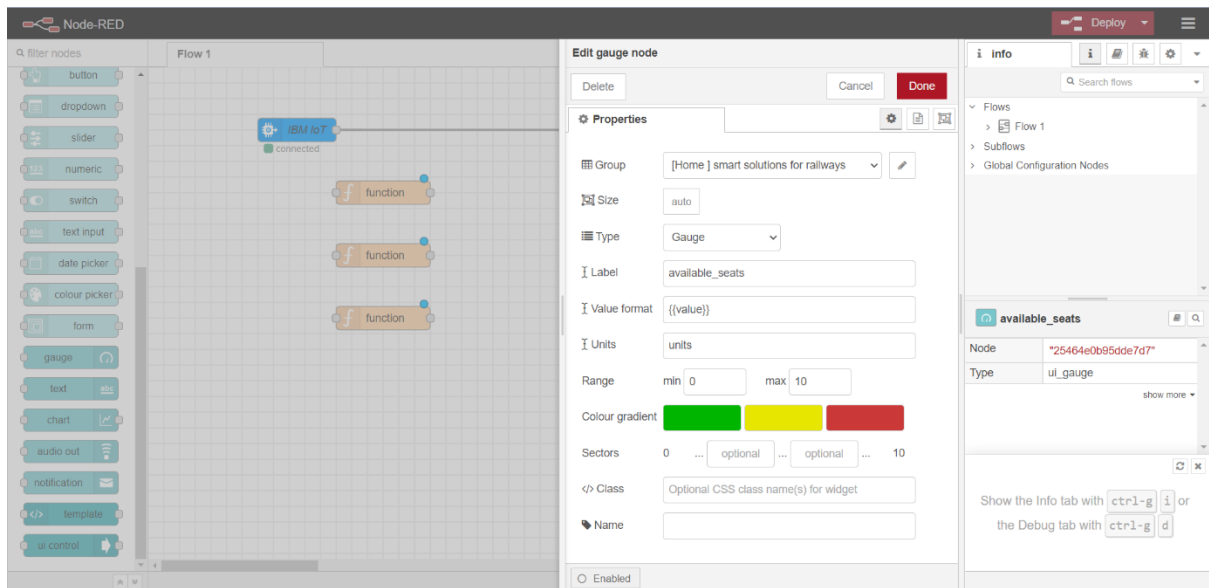
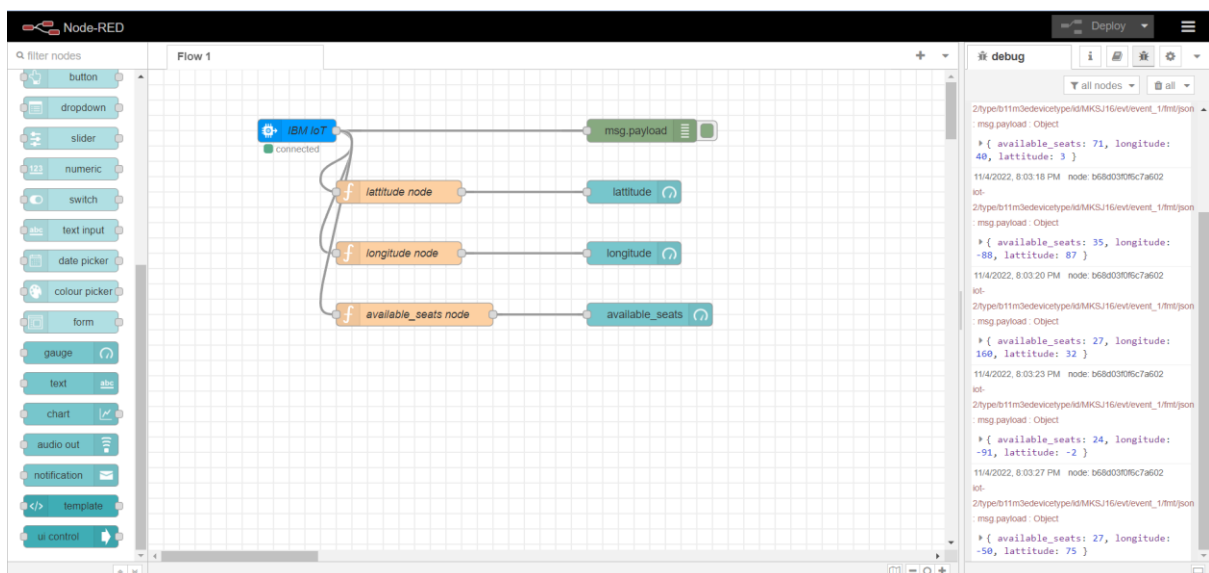


FIG 3

STEP 19: Generate debug message from IBM Watson IoT Platform and connect the nodes:



⚙️

👤

📊

📈

🔍

⚙️

Browser

Action

Device Types

Interfaces

Identity

Device Information

Recent Events

State

Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"available_seats":61,"longitude":-10,"latitude":...	json	a few seconds ago
event_1	{"available_seats":57,"longitude":108,"latitude":...	json	a few seconds ago
event_1	{"available_seats":81,"longitude":117,"latitude":...	json	a few seconds ago
event_1	{"available_seats":39,"longitude":81,"latitude":...	json	a few seconds ago
event_1	{"available_seats":10,"longitude":-30,"latitude":...	json	a few seconds ago

Items per page 50 | 1-1 of 1 item

Device Type: b11m3edevicetype

Events 1

New event type

Event type name event_1 Send

Schedule20 Every Minute

PayloadSpecify the event payload in the editor window or by uploading a CSV file.

```
0 {
1   "available_seats": random(0, 100)
2   "longitude": random(-100, 100)
3   "latitude": random(-90, 90)
4 }
5
```

Upload a CSV file

Cancel Save