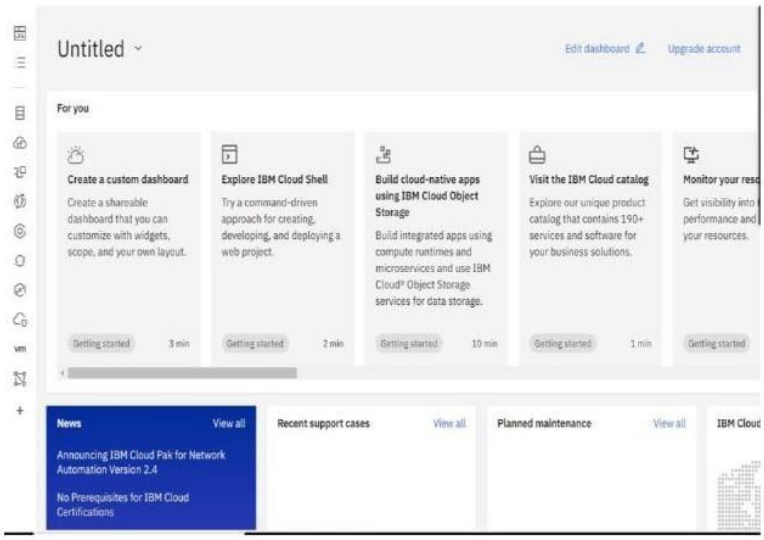
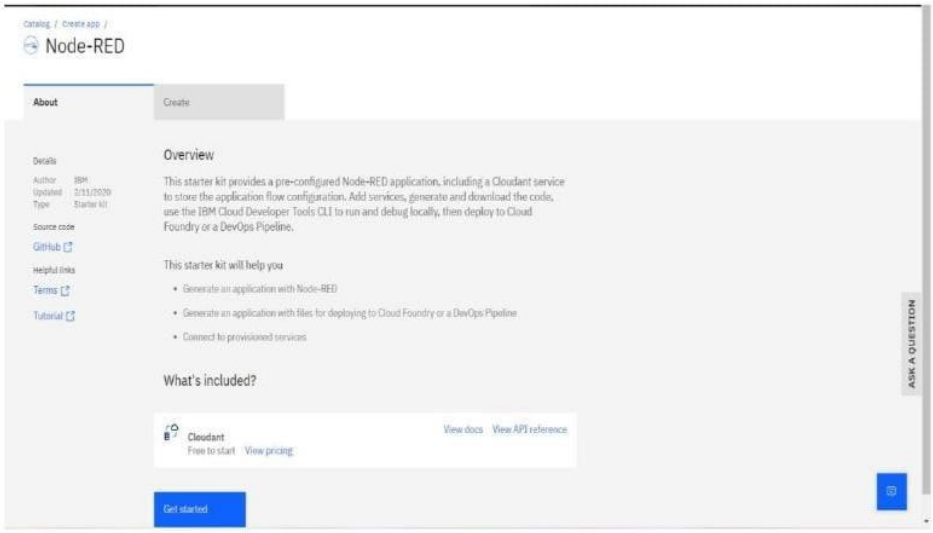
TEAM ID	PNT2022TMID32983
PROJECT	SMART SOLUTION FOR RAILWAYS

Creating node-red in IBM cloud

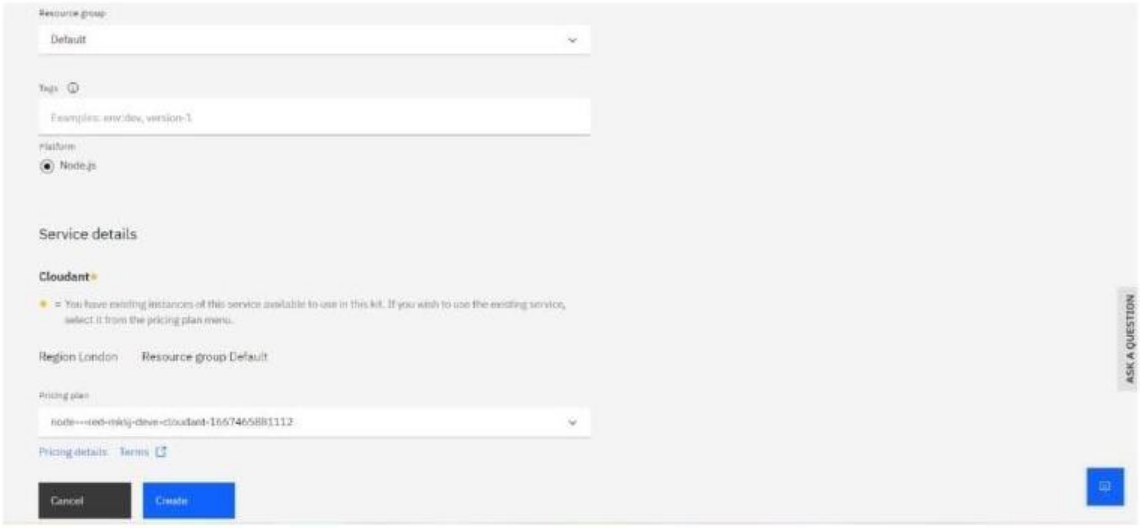
STEP-1: Open IBM cloud



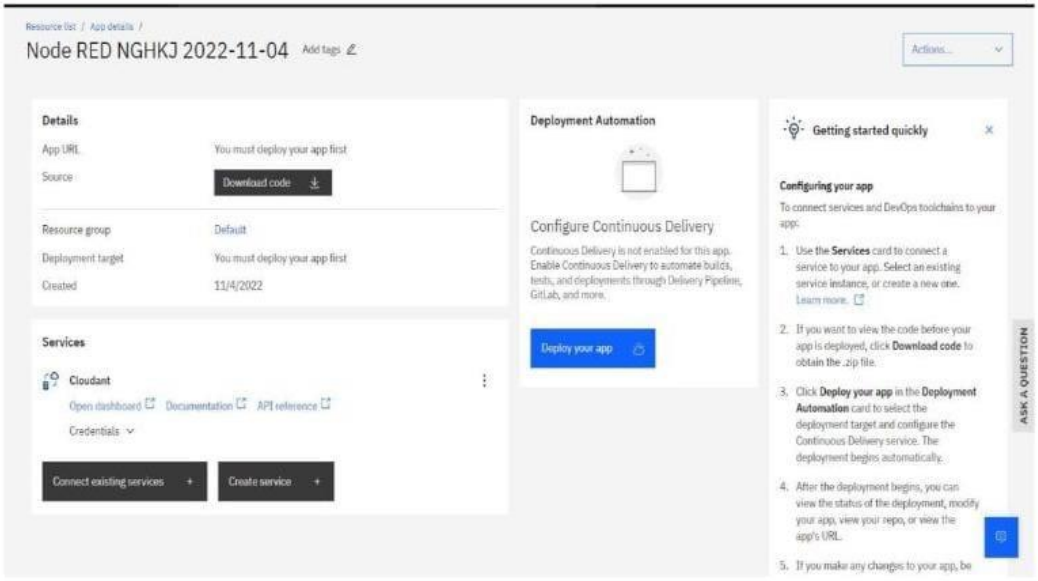
Step-2: Go to catalog and search for node-red app and open it



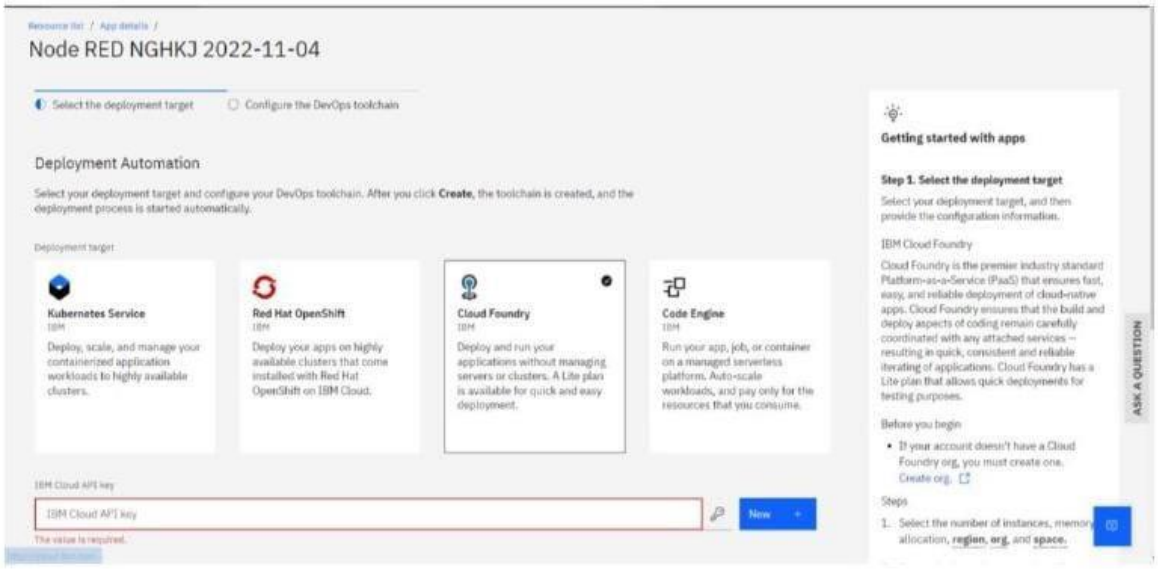
Step-3: Enter the app name, location and select the plan and click on create:



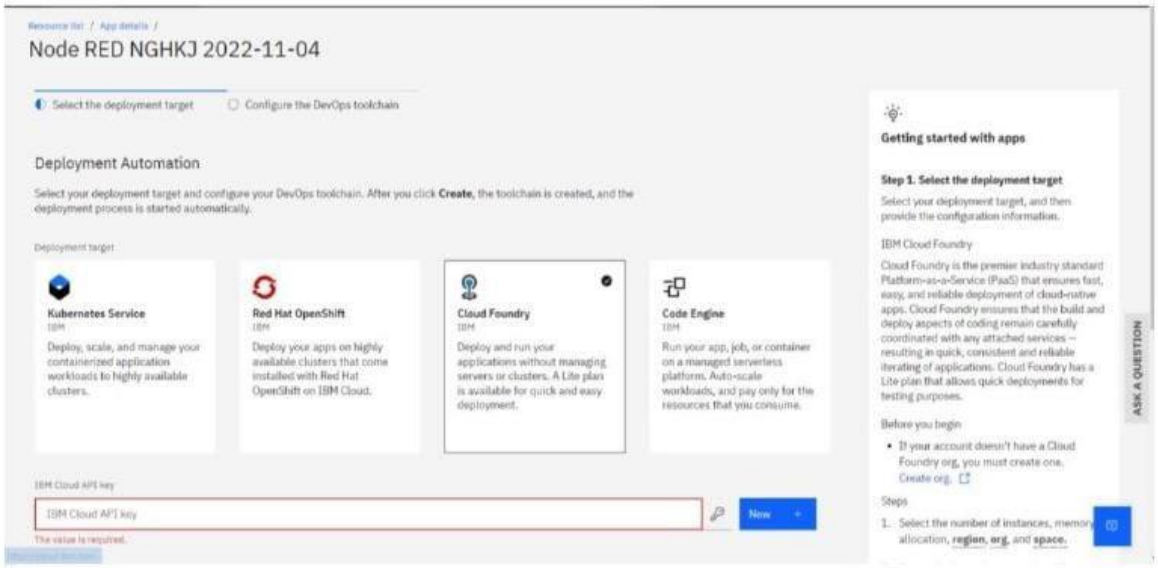
Step 4: Click on deploy your app button:



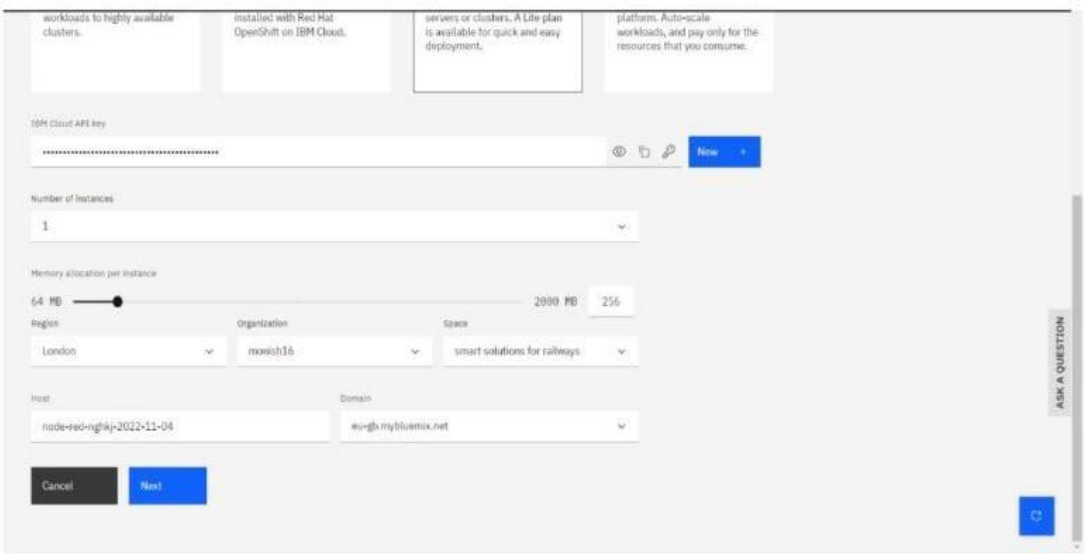
Step 5: Indeployment automation select cloud foundery and click on create.org:



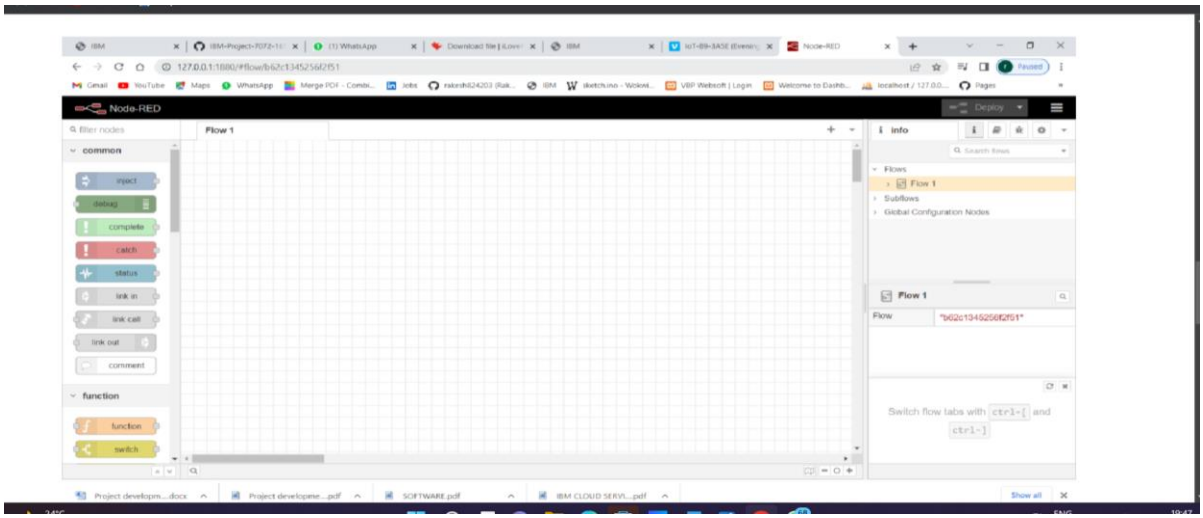
Step 6: Click on create button and enter the name and create a space:



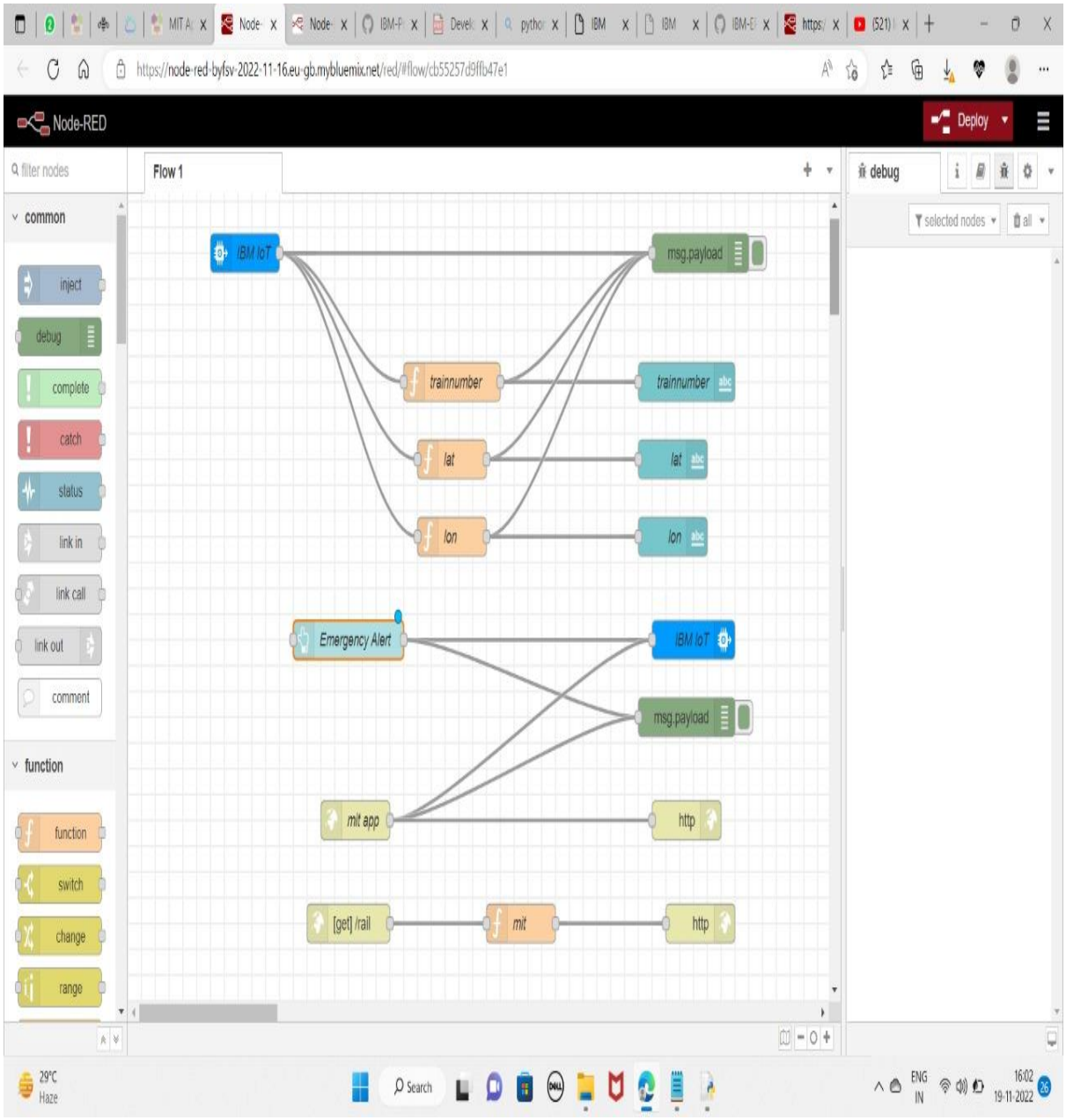
Step 7: In app development click new on api key and select region and click next:



Step 8:



LAST STEP:



LEARING OBJECTIVES:

In this tutorial, you will learn how to:

• Create a Node-RED starter application running in the IBM Cloud

• Secure the application

• Customize the Node-RED Starter Kit by adding additional nodes PREREQUISITES:

To complete this tutorial, you need an IBM Cloud account. This tutorial requires an IBM Cloud Pay-As-You-Go account.

To upgrade your Lite account, go to your account settings. In the Account Upgrade section, click Add credit card to upgrade to a Pay-As-You-Go account, or click Upgrade for a Subscription account. See Upgrading your account for more information.

This Node-RED starter tutorial provides instructions on deploying the app to IBM Cloud Code Engine, which is a fully managed, serverless platform that runs your containerized workloads and manages the underlying infrastructure for you. IBM Cloud Code Engine provides 100000 vCPU seconds per month at no charge.

Your Node-RED flow will often scale to 0, which means that you won't incur any charges for light to moderate usage. Review your consumption and confirm your billing on a regular basis.

TIME STEP:

• Find the Node-RED Starter Kit in the IBM Cloud catalog

• Create your application • Enable the Continuous Delivery feature

• Open the Node-RED application

• Configure your Node-RED application

• Add extra nodes to your Node-RED palette

Step1.

Find the Node-RED Starter Kit in the IBM Cloud catalog:

• Log in to IBM Cloud.

• Open the catalog and search for node-red.

• Click on the Node-RED App tile. This will show you an overview of the Starter Kit and what it provides.

Step2.

Create your application: Now you need to create the Node-RED starter application. o On the Create tab, a randomly generated App name will be suggested.

Either accept that default name or provide a unique name for your application. This will become part of the application URL.

o The Node-RED starter application requires an instance of the Cloudant database service with IBM Cloud IAM and Cloudant credentials to store your application flow configuration. Select the region the service should be created in and what pricing plan it should use.

o Click the Create button to continue. This will create your application and, if necessary a Cloudant database service instance, but it is not yet deployed to IBM Cloud.

Step3.

Enable the Continuous Delivery feature:

o On the next screen, click the Deploy your app button to enable the Continuous Delivery feature for your application.

o On the next screen, click the Code Engine tile. o Scroll down after selecting the Code Engine tile. You will need to create an IBM Cloud API key to allow the deployment process to access your resources. Click the New button to create the key. A message dialog will appear. You can accept the default values and confirm to close the dialog.

o Select the Region and Container registry region, to deploy your application to. This should match the region you created your Cloudant instance in.

o Provide a unique Project name or accept the default 'project-name' Click Next to continue.

o Configure the DevOps toolchain by selecting the region it should be created in. Again, try to match the region you selected previously.

o After a few moments, the Deployment Automation section will refresh with the details of your newly created Delivery Pipeline. The Status field of the pipeline will eventually show In progress. That means your application is being built and deployed.

o The Deploy stage will take a few minutes to complete. You can click on the cipipeline Status link to check the progress of the Delivery Pipeline. Eventually the Deploy stage will display a green checkmark and a Success message to show it has passed. This means your Node-RED starter application is now running.

Step 4.

Open the Node-RED application: Now deployed your Node-RED application, let's open it up! May have to refresh your page.On the application details page, you should now see the App URL, Source and Deployment target fields filled in.Click on the App URL to open up your Node-RED application in a new browser tab.

Step 5.

Configure your Node-RED application: The first time you open your Node-RED app, you'll need to configure it and set up security.

o A new browser tab will open with the Node-RED start page.

o On the initial screen, click Next to continue.

o Secure your Node-RED editor by providing a username and password. If youdatabase, or override them using environment variables. The documentation on nodered.org describes how to do this. Click Next to continue.

o The final screen summarizes the options you've made and highlights the environment variables you can use to change the options in the future. Click Finish to proceed.

o Node-RED will save your changes and then load the main application. From here you can click the Go to your Node-RED flow editor button to open the editor.

o The Node-RED editor opens showing the default flow.

Step 6.

Add extra nodes to your Node-RED palette:

The recommended approach is to edit your application's package.json file to include the additional node modules and then redeploy the application. This step shows how to do that in order to add the node-red-dashboard module.

o On your application's details page, click Source url. This will take you to a git repository where you can edit the application source code from your browser.

o Scroll down the list of files and click on package.json. This file lists the module dependencies of your application.

o Click the Edit button

o Add the following entry to the top of the dependencies section (1): "node-red-dashboard": "2.x",
o Add a Commit message (2) and click Commit changes (3)

o At this point, the Continuous Delivery pipeline will automatically run to build and deploy that change into your application. If you view the Delivery Pipeline you can watch its progress. The Build section shows you the last commit made and the Deploy section shows the progress of redeploying the application.

o Once the Deploy stage completes, your application will have restarted and now have the node-red-dashboard nodes preinstalled.

Summary:

Now created a Node-RED application that is hosted in the IBM Cloud. You have also learned how to edit the application source code and automatically deploy changes.