

## **Create And Configure IBM Cloud Services**

<b>Project Title</b>	SmartFarmer – IoT Enabled Smart Farming Application
<b>Team ID</b>	PNT2022TMID26132
<b>Content</b>	IBM Cloud Service

## STEP 1:

Type IBM Cloud in Google and click on the first link.

The screenshot shows a Google search for "ibm cloud". The search bar at the top contains "ibm cloud" with a clear button (X), a voice search button (microphone), an image search button (camera), and a search button (magnifying glass). To the right of the search bar are icons for settings, a grid of apps, and a user profile (B).

Below the search bar, there are tabs for "All", "News", "Images", "Videos", "Books", and "More". The "All" tab is selected. Below the tabs, it says "About 18,90,00,000 results (0.43 seconds)".

The first search result is for "IBM Cloud - India" with the URL "https://www.ibm.com › in-en › cloud". The description says: "A full stack cloud platform with over 170 products and services covering. You've visited this page 3 times. Last visit: 18/11/22".

The second search result is for "IBM Cloud" with the URL "https://cloud.ibm.com". The description says: "Start building immediately using 190+ unique services. Cloud Computing · Account registration · Catalog · IBM Watson. You've visited this page 2 times. Last visit: 15/11/22".

Below the search results, there is a "People also ask" section with four questions, each with a dropdown arrow:

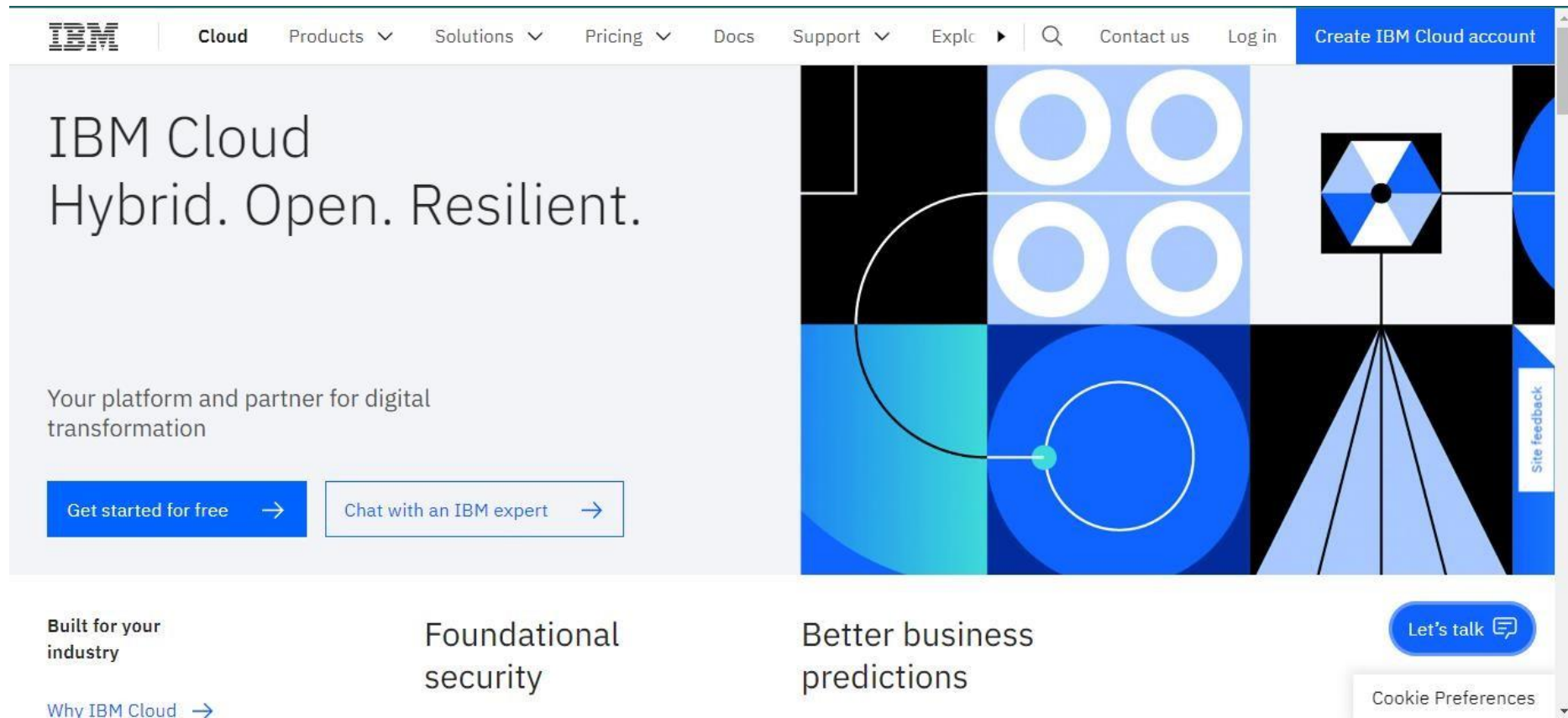
- What is IBM Cloud?
- Is IBM Cloud free?
- Does IBM Cloud use AWS?
- What are the IBM Cloud types?

At the bottom right of the "People also ask" section is a "Feedback" link.

On the right side of the search results, there is a knowledge panel for "IBM cloud computing". It features the IBM Cloud logo and a diagram of cloud services. The text in the panel says: "IBM cloud computing is a set of cloud computing services for business offered by the information technology company IBM. Wikipedia". Below this, it says "Platform: Cross-platform software" and "Initial release date: 7 April 2011". There is also a "More images" link.

## STEP 2:

Click on create IBM Cloud Account Now and enter the details.



The screenshot shows the IBM Cloud website homepage. The navigation bar at the top includes the IBM logo, links for Cloud, Products, Solutions, Pricing, Docs, Support, Explore, a search icon, Contact us, Log in, and a prominent blue button labeled "Create IBM Cloud account". The main hero section features the text "IBM Cloud Hybrid. Open. Resilient." and "Your platform and partner for digital transformation". Below this text are two buttons: "Get started for free" and "Chat with an IBM expert". To the right of the text is a large, abstract graphic composed of various geometric shapes in blue, black, and white, including circles, squares, and a hexagon. At the bottom of the page, there are three columns of text: "Built for your industry" with a link "Why IBM Cloud", "Foundational security", and "Better business predictions". On the far right, there is a "Let's talk" button and a "Cookie Preferences" link. A vertical "Site feedback" button is also visible on the right side of the main content area.

IBM Cloud  
Hybrid. Open. Resilient.

Your platform and partner for digital transformation

Get started for free → Chat with an IBM expert →

Built for your industry  
Why IBM Cloud →

Foundational security

Better business predictions

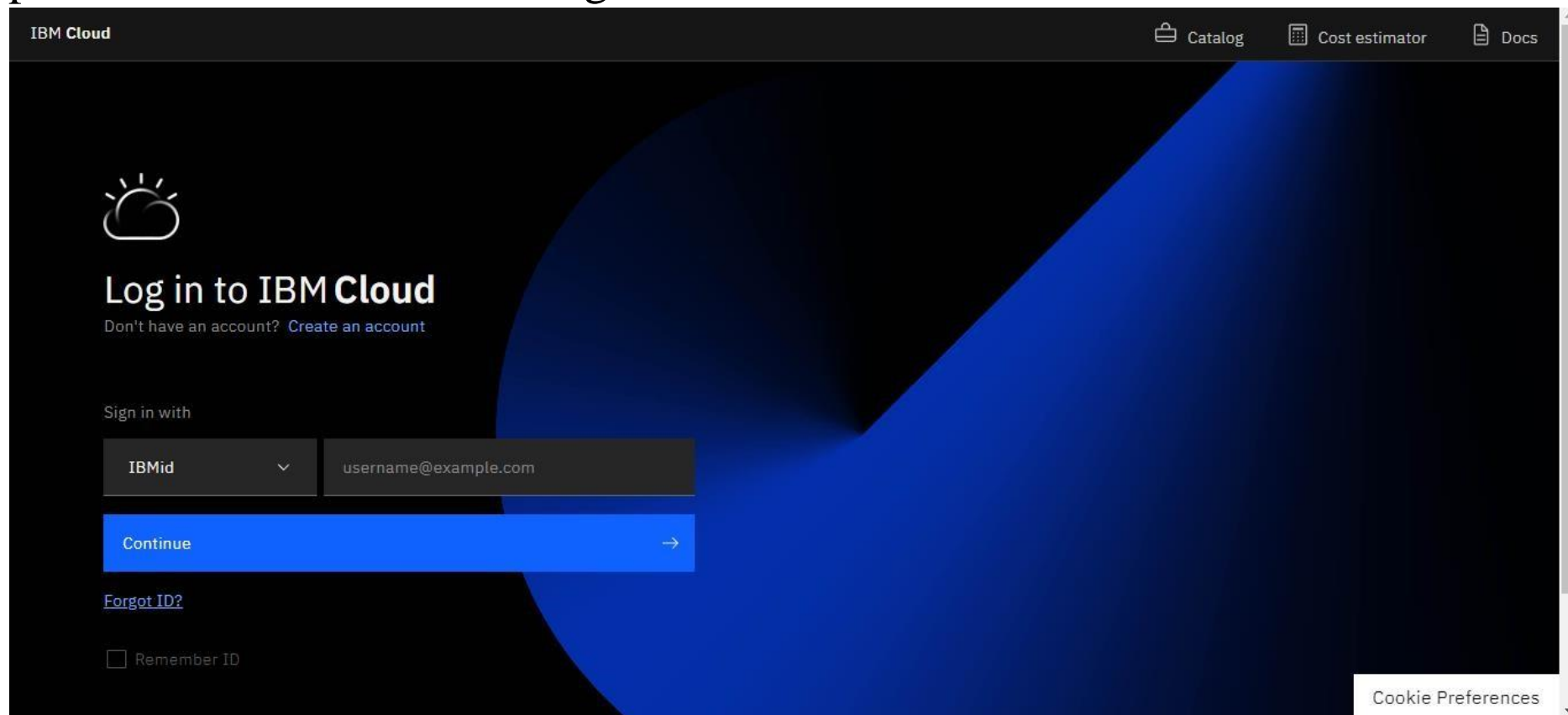
Let's talk

Cookie Preferences

Site feedback

### STEP 3:

You will get the email with your password. Type your mail Id and the password then click on the login button.



The screenshot shows the IBM Cloud login interface. At the top, there is a dark header with the 'IBM Cloud' logo on the left and navigation links for 'Catalog', 'Cost estimator', and 'Docs' on the right. The main content area has a dark background with a large blue abstract shape. On the left, there is a cloud icon, the text 'Log in to IBM Cloud', and a link 'Don't have an account? Create an account'. Below this, a 'Sign in with' section features a dropdown menu set to 'IBMid' and a text input field containing 'username@example.com'. A prominent blue 'Continue' button with a right-pointing arrow is positioned below the input field. At the bottom left, there is a link 'Forgot ID?' and a checkbox labeled 'Remember ID'. In the bottom right corner, a 'Cookie Preferences' link is visible.



## STEP 4:

Now you are in Dashboard. Now search Node-Red and click on it.

The screenshot displays the IBM Cloud dashboard interface. On the left, a sidebar contains the 'Manage' tab, which is active. The main content area shows search results for 'node red'. The results are divided into two sections: 'Resource Results' and 'Catalog Results'. The 'Resource Results' section lists two items: 'Node RED OBLWK 2022-11-06' (Cloud Foundry App) and 'Node RED OBLWK 2022-11-06' (Apps). The 'Catalog Results' section lists five items: 'Node-RED App' (Service), 'HDM VMware Workload Migrator' (Service), 'Virtual Server for VPC' (Service), 'TrilioVault for Kubernetes' (Software), and 'Custom Migrations as a Service' (Service). Below the search results, there are three service plans: 'Lite', 'Non-Production', and 'Production'. The 'Lite' plan is described as a lightweight development environment. The 'Non-Production' plan is a full-featured, fully-integrated offering. The 'Production' plan is a fully managed SaaS offering. The interface also includes a top navigation bar with 'Catalog', 'Manage', and 'Bhuvanesh G's Account' options, and a bottom right corner with a chat icon.

IBM Cloud

node red

Resource Results

Node RED OBLWK 2022-11-06  
Cloud Foundry App

Node RED OBLWK 2022-11-06  
Apps

Catalog Results

Node-RED App  
Service

HDM VMware Workload Migrator  
Service

Virtual Server for VPC  
Service

TrilioVault for Kubernetes  
Software

Custom Migrations as a Service  
Service

Search "node red" in Support Cases

Search "node red" in Docs

Lite

The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.

Free

Non-Production

The Non-Production service plan is a full-featured, fully-integrated offering that enables you to explore Watson IoT Platform to see how the service can fit into your IoT environment.

Starts at \$500 per month

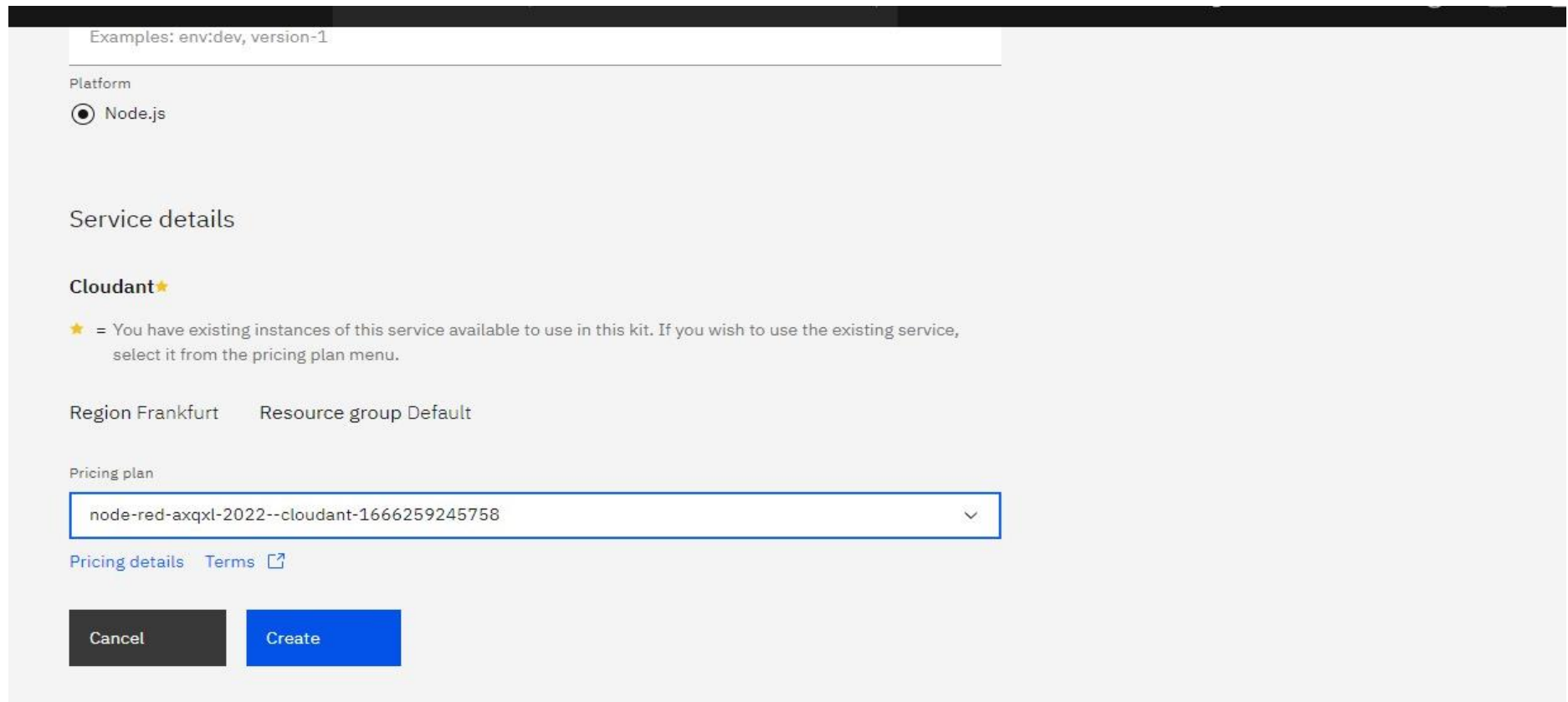
Production

The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.

Includes IBM Service & Support

## STEP 5:

Now click on Get Started. After choose node-red-xxxxxxx in pricing plan or you can choose Lite. Then click on create option.



Examples: env:dev, version=1

Platform

☒ Node.js

Service details


**Cloudant**★

★ = You have existing instances of this service available to use in this kit. If you wish to use the existing service, select it from the pricing plan menu.

Region Frankfurt    Resource group Default

Pricing plan

node-red-axqxl-2022--cloudant-1666259245758

[Pricing details](#)   [Terms](#) 

[Cancel](#)   [Create](#)

## STEP 6:

Now you will be redirected to your node-red app page.

The screenshot shows a web interface for managing a Node RED application. At the top, there's a breadcrumb trail: "Resource list / App details /". Below this, the app name "Node RED CBGMG 2022-11-11" is displayed, followed by a link to "Add tags" and an "Actions..." button. The main content area is divided into two columns. The left column, titled "Details", contains a table with the following information: App URL (You must deploy your app first), Source (with a "Download code" button), Resource group (Default), Deployment target (You must deploy your app first), and Created (11/11/2022). The right column, titled "Deployment Automation", features a "Configure Continuous Delivery" section. It states that Continuous Delivery is not enabled and provides instructions on how to enable it. A prominent blue button labeled "Deploy your app" is located at the bottom of this section. Below the "Details" table, there is a "Services" section showing the "Cloudant" service with links to its dashboard, documentation, and API reference, along with a "Credentials" dropdown menu.

Resource list / App details /

### Node RED CBGMG 2022-11-11

[Add tags](#)[Actions...](#)



# STEP 7:

Now click Deploy your app option.

IBM Cloud

Search resources and products...

Q

Catalog

Manage

Bhuvanesh G's Account

?

Resource list / App details /

Node RED OBLWK 2022-11-06


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**  
IDM

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




**Red Hat OpenShift**  
IDM

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



**Cloud Foundry**  
IDM

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




**Code Engine**  
IDM

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 Foundry Public is deprecated. [Learn more](#)

X



**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**

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

ASK A QUESTION



## STEP 8:

Now choose Kubernetes Service and below you will see IBM Cloud API Key there click on New and then click OK. Your API Key will be generated.

IBM Cloud API key

.....

**New** +

**Note:** Your cluster status must be available before you can select it.

Container registry region

Container registry namespace

Cluster region

Cluster resource group

Cluster namespace

Cluster name

Deployment type

**Helm**

<https://cloud.ibm.com/containers-kubernetes/launch>

4. Select the region where your Kubernetes cluster is located.

5. Select the resource group, cluster namespace, and the cluster name.


6. The deployment type of **Helm** is selected for you.

7. Click **Next**.


## STEP 9:

Now click on Create New below the cluster name. You will be redirected to new page. In new page, choose pricing plan as Free and then click on Create.

[Catalog](#) /

 **Kubernetes cluster**  
Author: IBM • [Docs](#) • [API docs](#)

[Create](#) [About](#)

Deliver your apps quicker  
across clouds with  
**Red Hat OpenShift** 

### Plan details

Learn more about the differences between plans in our [docs](#).

Pricing plan

Free

Kubernetes version

Select the Kubernetes platform version for your cluster. For more information

Summary

United States

**Kubernetes cluster**  
**1 Worker node**  
Free - 2 vCPUs 4GB RAM  
Virtual - shared  
Ubuntu 18

**Total estimated cost**  
*Additional charges for networking and might apply.  
Actual monthly total will vary with tier  
Estimate does not include costs for int*

Create

Add to estimate

## STEP 10:

For cluster creation you need to wait for 20 minutes. After creation come back to node red app tab.

The screenshot displays the 'mycluster-free' dashboard. At the top, it shows the cluster name 'mycluster-free' with a status of 'Normal' and a warning 'Expires in 30 days'. A sidebar on the left lists navigation options: Overview, Worker nodes, Worker pools, DevOps, and a 'New' button. The main content area features a warning banner about the 30-day expiration. Below this, four status cards are shown: Node status (1 of 1, Normal), Add-on status (0 of 0, Normal), Master status (Normal), and Ingress status (Unknown). Each card has a 'Details' link. At the bottom, a 'Details' section provides specific cluster information in a table format.

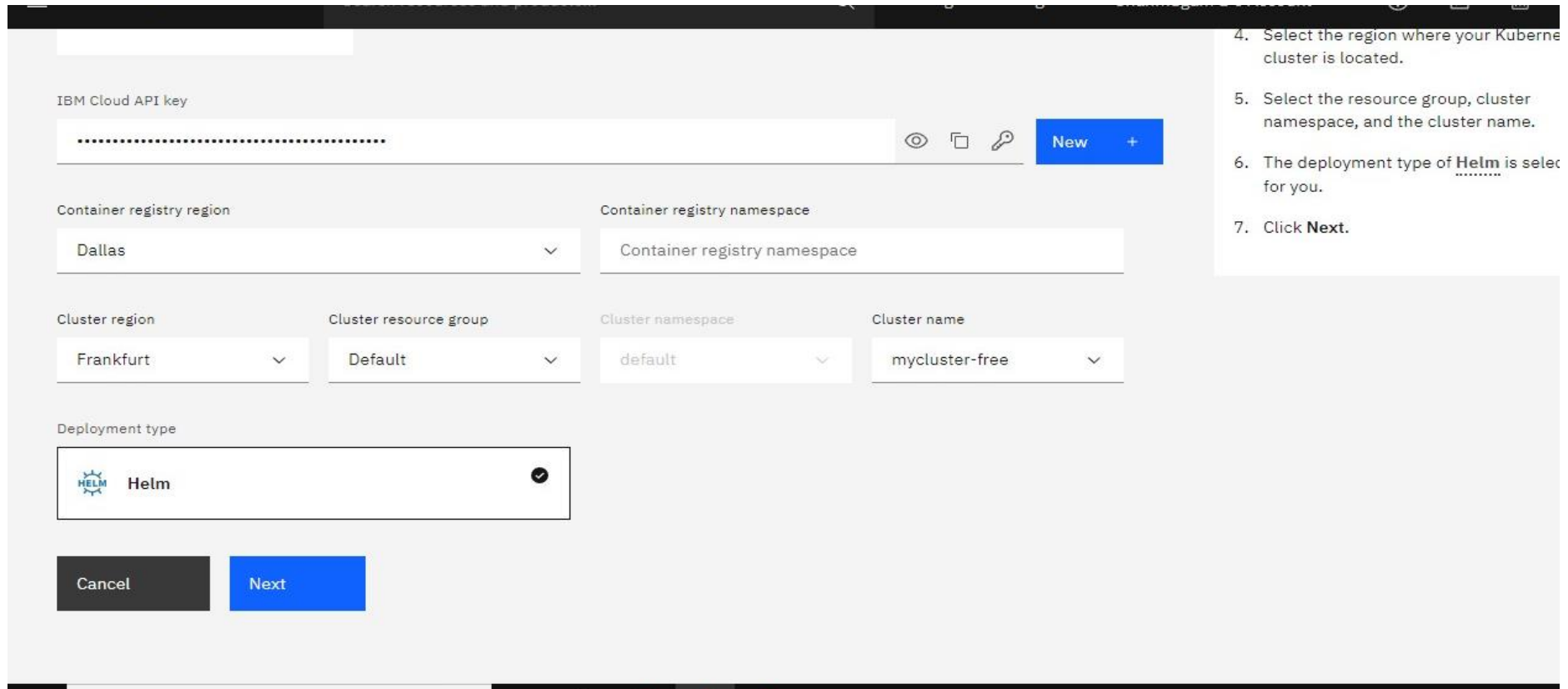
Cluster ID	Version	Infrastructure	Zones
cdmth3gfv95e...	1.24.7_1542	Classic	Milan 01

Created	Resource group	Image security enforcement

## STEP 11:

In cluster name, choose mycluster-free and click on Next.



IBM Cloud API key

.....

Container registry region

Dallas

Container registry namespace

Container registry namespace

Cluster region

Frankfurt

Cluster resource group

Default


Cluster namespace

default

Cluster name

mycluster-free

Deployment type

 Helm

Cancel Next

4. Select the region where your Kubernetes cluster is located.
5. Select the resource group, cluster namespace, and the cluster name.
6. The deployment type of **Helm** is selected for you.
7. Click **Next**.

## STEP 12:

Then click on Create.

[Resource list](#) / [App details](#) /

# Node RED CBGMG 2022-11-11

✔ 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

NodeREDCBGMG2022-11-11


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

Region

Dallas

Back

Create



### Getting started with apps

#### Step 2. Configure the DevOps tool

The DevOps toolchain includes a DevOps Pipeline tool where you can check the deployment status, start builds, manage deployment, and view logs and history.

1. Provide a name for your toolchain.
2. Select the region where your toolchain is created.
3. Select the resource group that you want to associate with your new toolchain. [Learn more](#)
4. After you're finished with your configuration, click **Create**.

## STEP 13:

You need to wait until ci-pipeline status success.

The screenshot displays the IBM Cloud console interface. At the top, there is a dark navigation bar with the IBM Cloud logo, a search bar, and user account information. Below this, the breadcrumb trail shows 'Resource list / App details /'. The main heading is 'Node RED OBLWK 2022-11-06' with an 'Add tags' link and an 'Actions...' dropdown menu.

The 'Details' section on the left contains the following information:

Details	
App URL	You must deploy your app first
Source	<a href="https://au-syd.git.cloud.ibm.com/211519205023/NodeREDOBLWK2022-11-06">https://au-syd.git.cloud.ibm.com/211519205023/NodeREDOBLWK2022-11-06</a>
Resource group	Default
Deployment target	You must deploy your app first
Created	11/6/2022

The 'Services' section on the left shows the 'Cloudant' service with links to 'Open dashboard', 'Documentation', and 'API reference', and a 'Credentials' dropdown. At the bottom of this section are buttons for 'Connect existing services' and 'Create service'.

The 'Deployment Automation' section on the right contains the following information:

Deployment Automation	
Name	NodeREDOBLWK2022-11-06
Location	Sydney
Tool integrations	

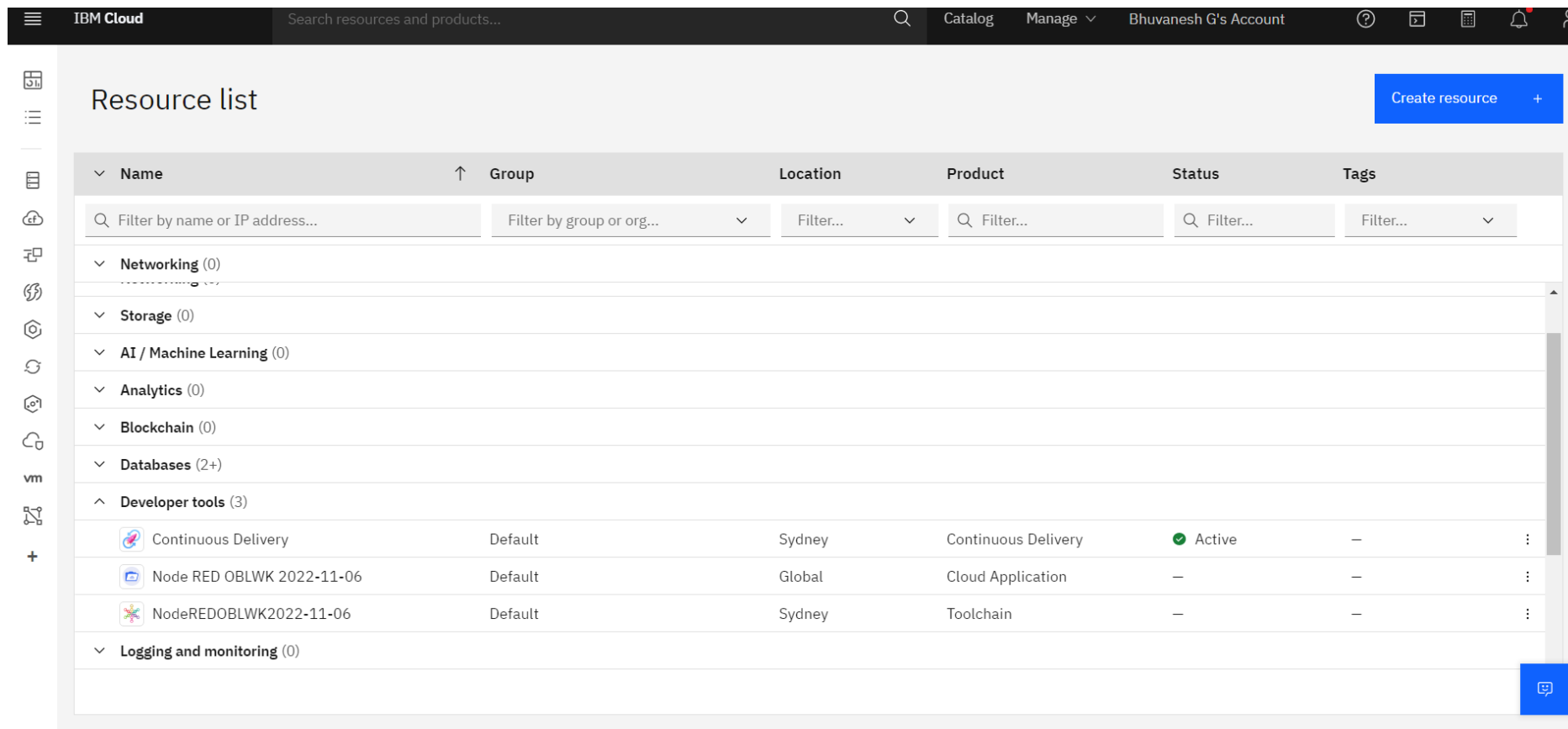
The 'Delivery Pipelines' section on the right contains the following information:

Delivery Pipelines	
Name	<a href="#">pr-pipeline</a>
Status	No stages detected
Name	<a href="#">ci-pipeline</a>
Status	In progress

On the far right, there is a vertical 'ASK A QUESTION' button. At the bottom right of the console, there is a blue chat icon.

## STEP 14:

Now go to Dashboard, in sidebar menu choose Resource list > Developer Tools. Click on your Node-red (Cloud Application)



The screenshot shows the IBM Cloud dashboard with the 'Resource list' page. The sidebar on the left contains various icons for navigation. The main content area has a header 'Resource list' and a 'Create resource' button. Below this is a table with columns: Name, Group, Location, Product, Status, and Tags. The table is filtered by 'Developer tools (3)'. The resources listed are:

Name	Group	Location	Product	Status	Tags
Continuous Delivery	Default	Sydney	Continuous Delivery	Active	—
Node RED OBLWK 2022-11-06	Default	Global	Cloud Application	—	—
NodeREDOBLWK2022-11-06	Default	Sydney	Toolchain	—	—



## STEP 15:

Now you will be redirected your Node-red app there you can see your App url and Source. To open Node-red editor copy the app url and paste in new tab.

The screenshot displays the IBM Cloud console interface. At the top, there's a navigation bar with the IBM Cloud logo, a search bar, and user account information. Below this, the breadcrumb trail shows 'Resource list / App details /'. The main heading is 'Node RED OBLWK 2022-11-06' with an 'Add tags' link. An 'Actions...' dropdown menu is visible in the top right corner of the resource details area.

The 'Details' section on the left contains the following information:

Details	
App URL	<a href="https://node-red-oblwk-2022-11-06.au-syd.mybluemix.net">https://node-red-oblwk-2022-11-06.au-syd.mybluemix.net</a>
Source	<a href="https://au-syd.git.cloud.ibm.com/211519205023/NodeREDOBLWK2022-11-06">https://au-syd.git.cloud.ibm.com/211519205023/NodeREDOBLWK2022-11-06</a>
Resource group	Default
Deployment target	Node RED OBLWK 2022-11-06
Created	11/6/2022

The 'Services' section on the left shows the 'Cloudant' service with links to 'Open dashboard', 'Documentation', and 'API reference'. There are also buttons for 'Connect existing services' and 'Create service'.

The 'Deployment Automation' section on the right shows the 'NodeREDOBLWK2022-11-06' deployment with the following details:

Deployment Automation	
Name	NodeREDOBLWK2022-11-06
Location	Sydney
Tool integrations	

The 'Delivery Pipelines' section on the right shows two pipelines:

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

An 'ASK A QUESTION' button is located on the right side of the console.

## STEP 16:

Click on Next and then choose Not Recommended and click on next and then click finish. Then click on go to Node-RED flow editor. Now start work on your flows.

