

## Create And Configure IBM Cloud Services

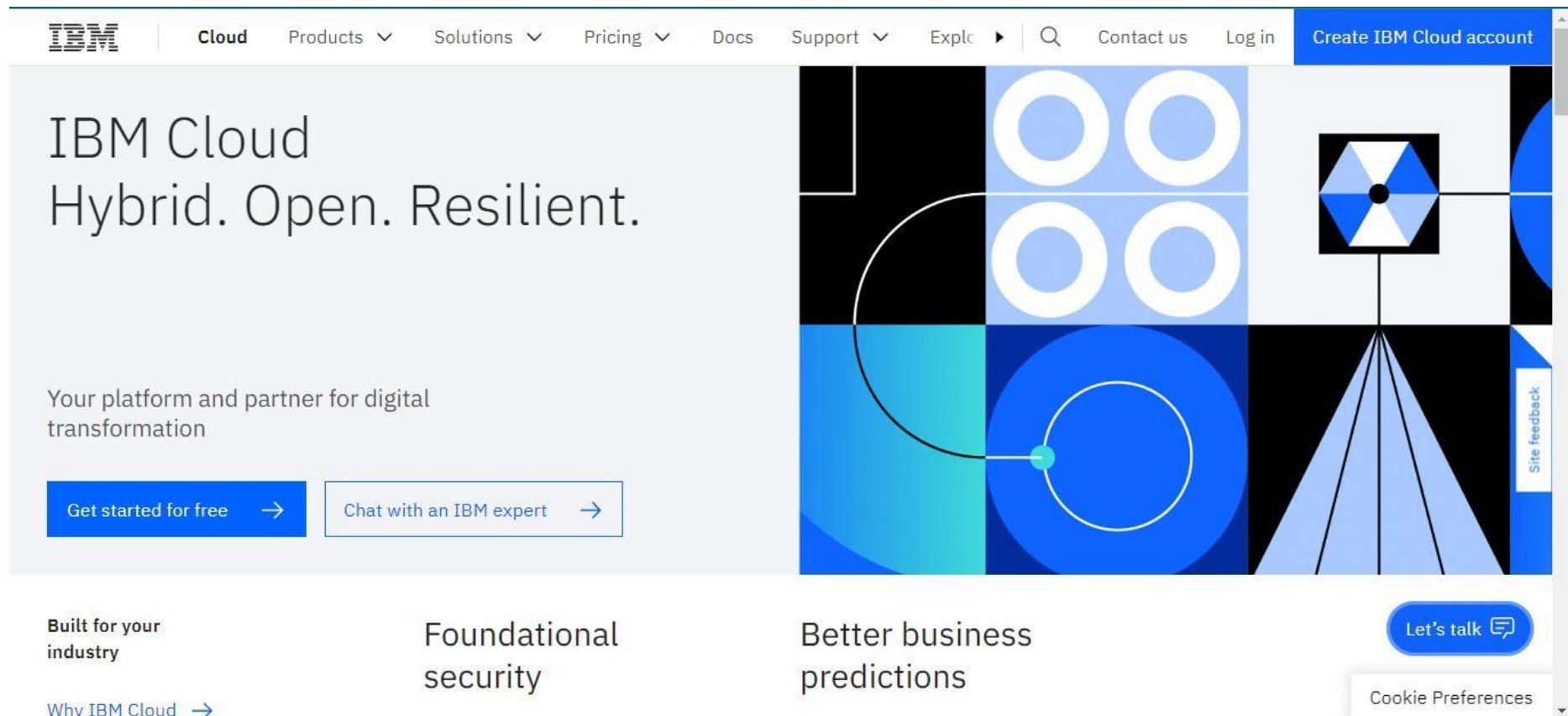
<b>Project Title</b>	SmartFarmer – IoT Enabled Smart Farming Application
<b>Team ID</b>	PNT2022TMID04737
<b>Content</b>	IBM Cloud Service

**STEP 1:**

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

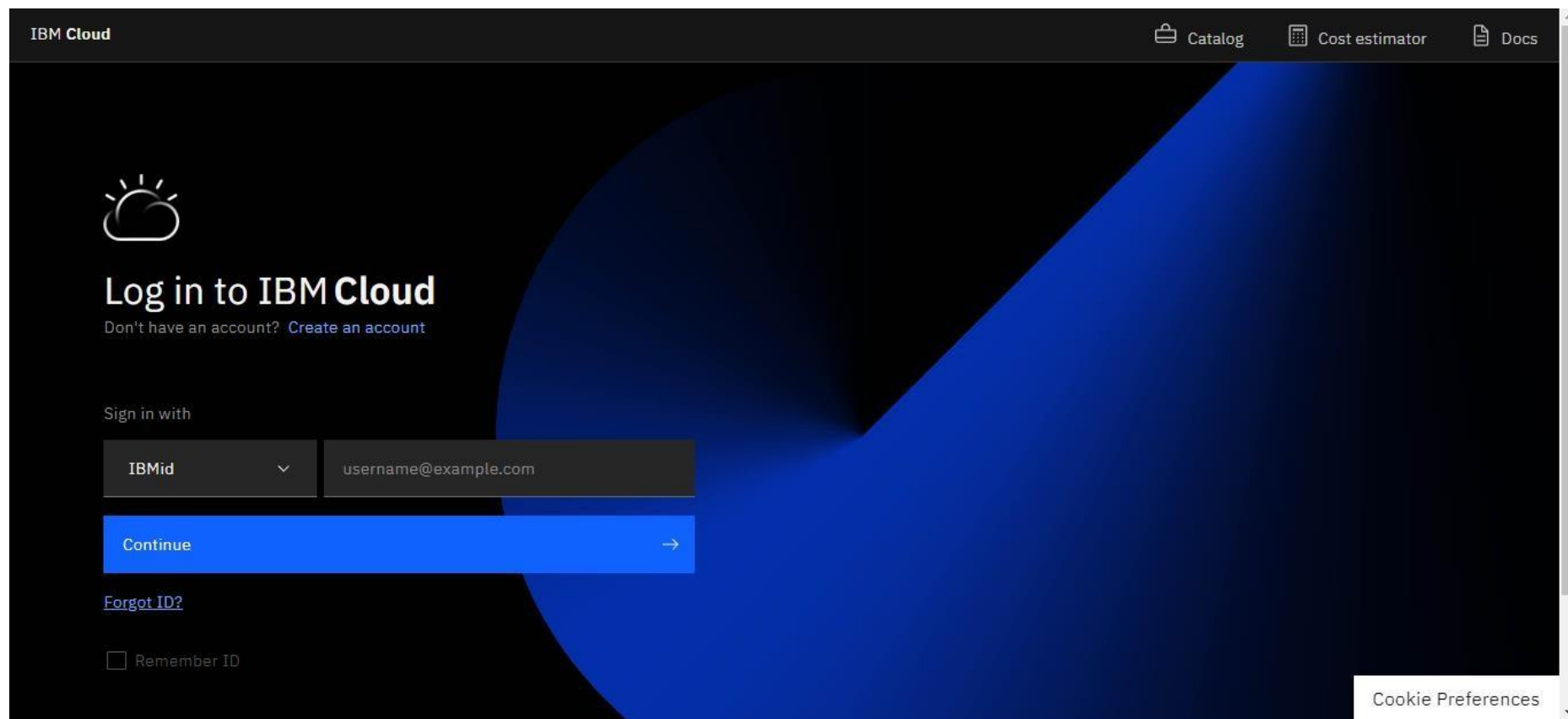
## STEP 2:

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



## 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 navigation bar with the 'IBM Cloud' logo on the left and 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 with sun rays. Below it, the text 'Log in to IBM Cloud' is displayed in white, followed by a link 'Don't have an account? Create an account'. Under the heading 'Sign in with', there is a dropdown menu showing 'IBMid' and a text input field containing 'username@example.com'. Below these is a prominent blue 'Continue' button with a right-pointing arrow. Underneath the button is a link 'Forgot ID?'. At the bottom left, there is a checkbox labeled 'Remember ID'. In the bottom right corner, there is a 'Cookie Preferences' link.

IBM Cloud

Catalog Cost estimator Docs



**Log in to IBM Cloud**

Don't have an account? [Create an account](#)

Sign in with

IBMid

[Continue](#) →

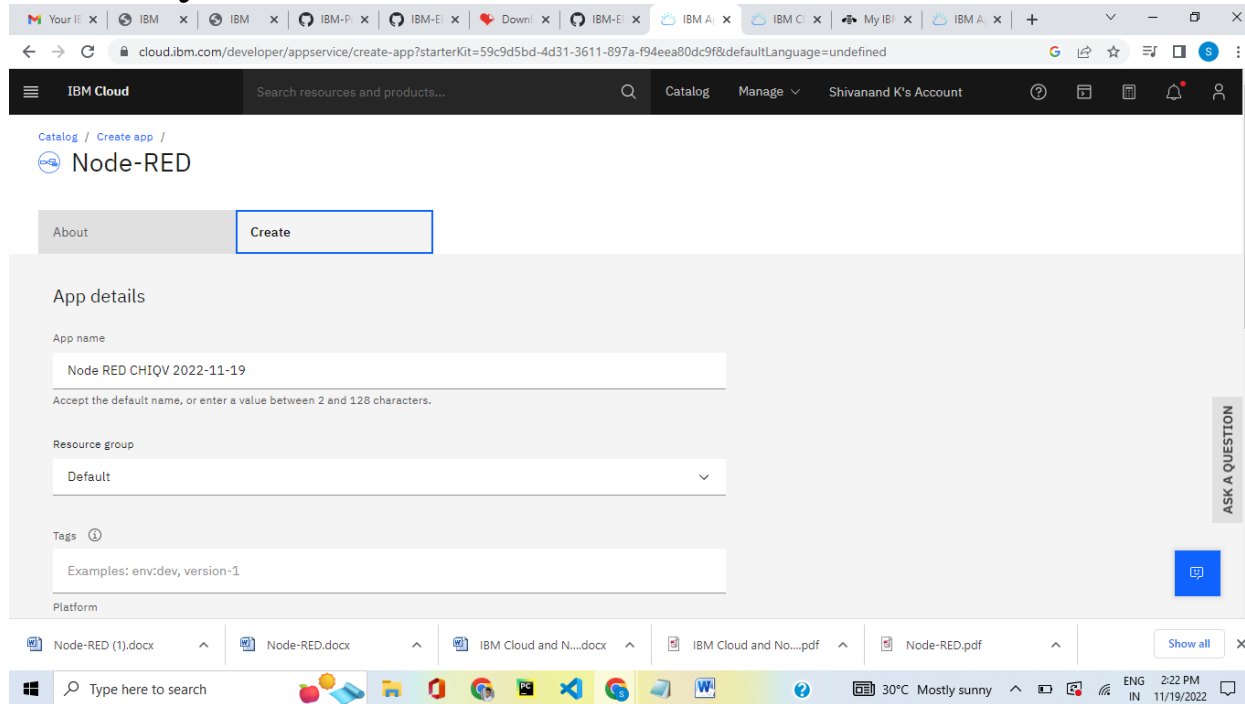
[Forgot ID?](#)

☐ Remember ID

[Cookie Preferences](#)

## STEP 4:

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



## 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.

The screenshot shows the IBM Cloud developer console interface for creating a new application. The browser address bar shows the URL: `cloud.ibm.com/developer/appservice/create-app?starterKit=59c9d5bd-4d31-3611-897a-f94eea80dc9f&defaultLanguage=undefined`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user's account (Shanmugam B's Account). The main content area is titled 'Platform' and shows 'Node.js' as the selected platform. Below this, the 'Service details' section shows 'Cloudant' as the service. A note indicates that existing instances of this service are available for use in this kit. The 'Region' is set to 'Frankfurt' and the 'Resource group' is 'Default'. The 'Pricing plan' dropdown menu is open, showing the selected plan: 'node-red-axqxl-2022--cloudant-1666259245758'. At the bottom, there are 'Cancel' and 'Create' buttons.

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 displays the IBM Cloud Developer console interface. The browser address bar shows the URL: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. The top navigation bar includes the IBM Cloud logo, a search bar, and links for Catalog, Manage, and the user account (Shanmugam B's Account). The main content area is titled "Node RED CBGMG 2022-11-11" with an "Add tags" link and an "Actions..." button. The "Details" section on the left lists the App URL, Source (with a "Download code" button), Resource group (Default), Deployment target, and Created date (11/11/2022). The "Services" section shows the Cloudant service with links to the Open dashboard, Documentation, and API reference, along with a Credentials dropdown. The "Deployment Automation" section on the right features a "Configure Continuous Delivery" button and a message stating that Continuous Delivery is not enabled for this app. A large blue "Deploy your app" button is prominently displayed at the bottom right.

Resource list / App details /

### Node RED CBGMG 2022-11-11

Add tags

Actions...

#### Details

App URL	You must deploy your app first
Source	<a href="#">Download code</a>
Resource group	Default
Deployment target	You must deploy your app first
Created	11/11/2022

#### Services

Cloudant

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

Credentials

#### Deployment Automation

Configure Continuous Delivery

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

[Deploy your app](#)

## STEP 7:

Now click Deploy your app option.

cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4

IBM Cloud Search resources and products... Catalog Manage Shanmugam B's Account

Resource list / App details /

### Node RED CBGMG 2022-11-11

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.

#### Getting started with apps

##### Step 1. Select the deployment target

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

##### IBM Cloud Kubernetes Service

Kubernetes is an open source platform for managing containerized workloads and services across multiple hosts, and offers management tools for deploying, automating, monitoring and scaling containerized apps with minimal manual intervention. [Learn more.](#)

##### Before you begin

- One free Kubernetes cluster is available per account.
- If you don't have an available cluster, you must create one before continuing. Allow 10-20 minutes for the cluster to be ready.



## 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.

cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4

IBM Cloud Search resources and products... Catalog Manage Shanmugam B's Account

IBM Cloud API key

..... New +

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

Container registry region Container registry namespace

Container registry region Container registry namespace

Cluster region Cluster resource group Cluster namespace Cluster name

Dallas Default default No clusters available

Create new +

Deployment type

Helm

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

4. Select the region where your Kuber cluster is located.
5. Select the resource group, cluster namespace, and the cluster name.
6. The deployment type of **Helm** is sel 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.

The screenshot shows the IBM Cloud 'Kubernetes cluster' creation page. The browser address bar displays 'cloud.ibm.com/kubernetes/catalog/create'. The page header includes the IBM Cloud logo, a search bar, and navigation links for 'Catalog', 'Manage', and 'Shanmugam B's Account'. The main content area is titled 'Kubernetes cluster' with links for 'Author: IBM', 'Docs', and 'API docs'. Below the title, there are two tabs: 'Create' (active) and 'About'. A promotional banner for Red Hat OpenShift is visible. The 'Plan details' section includes a link to learn more about plan differences and a 'Pricing plan' dropdown menu currently set to 'Free'. The 'Kubernetes version' section has a link to select the platform version. On the right sidebar, the 'Summary' section shows the 'Kubernetes cluster' configuration: '1 Worker node' with 'Free - 2 vCPUs 4GB RAM', 'Virtual - shared', and 'Ubuntu 18'. Below this, the 'Total estimated cost' section includes a disclaimer about additional charges and a link to the pricing page. At the bottom of the sidebar are 'Create' and 'Add to estimate' buttons.

cloud.ibm.com/kubernetes/catalog/create

IBM Cloud Search resources and products... Catalog Manage Shanmugam B's Account

### 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 shows the IBM Cloud Kubernetes Clusters overview page for a free cluster named 'mycluster-free'. The page includes a navigation bar with 'IBM Cloud', a search bar, and links to 'Catalog', 'Manage', and 'Shanmugam B's Account'. The cluster status is 'Normal' and it 'Expires in 30 days'. A warning banner states: 'Expires in 30 days: Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a standard cluster.' The overview section displays four status cards: Node status (1 of 1, Normal), Add-on status (0 of 0, Normal), Master status (Normal), and Ingress status (Unknown). A 'Details' section at the bottom shows cluster information: Cluster ID (cdmth3gf0uv95es1i540), Version (1.24.7\_1542), Infrastructure (Classic), Zones (Milan 01), Created, Resource group, and Image security enforcement. A right-hand sidebar provides a 'Help' menu with options like 'Log in to your cluster', 'Deploy your app', 'Expose your app', 'Add storage to your app', 'Connect integrations', 'Install add-ons', and 'Troubleshoot'.

cloud.ibm.com/kubernetes/clusters/cdmth3gf0uv95es1i540/overview

IBM Cloud Search resources and products... Catalog Manage Shanmugam B's Account

Clusters / mycluster-free

Normal Expires in 30 days Add tags

Help Kubernetes dashboard Actions...

**Expires in 30 days:**  
Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a [standard cluster](#).

**Node status**  
1 of 1  
Normal  
Details ↓

**Add-on status**  
0 of 0  
Normal  
Details ↓

**Master status**  
Normal  
Docs ↗

**Ingress status**  
Unknown  
Docs ↗

**Details**

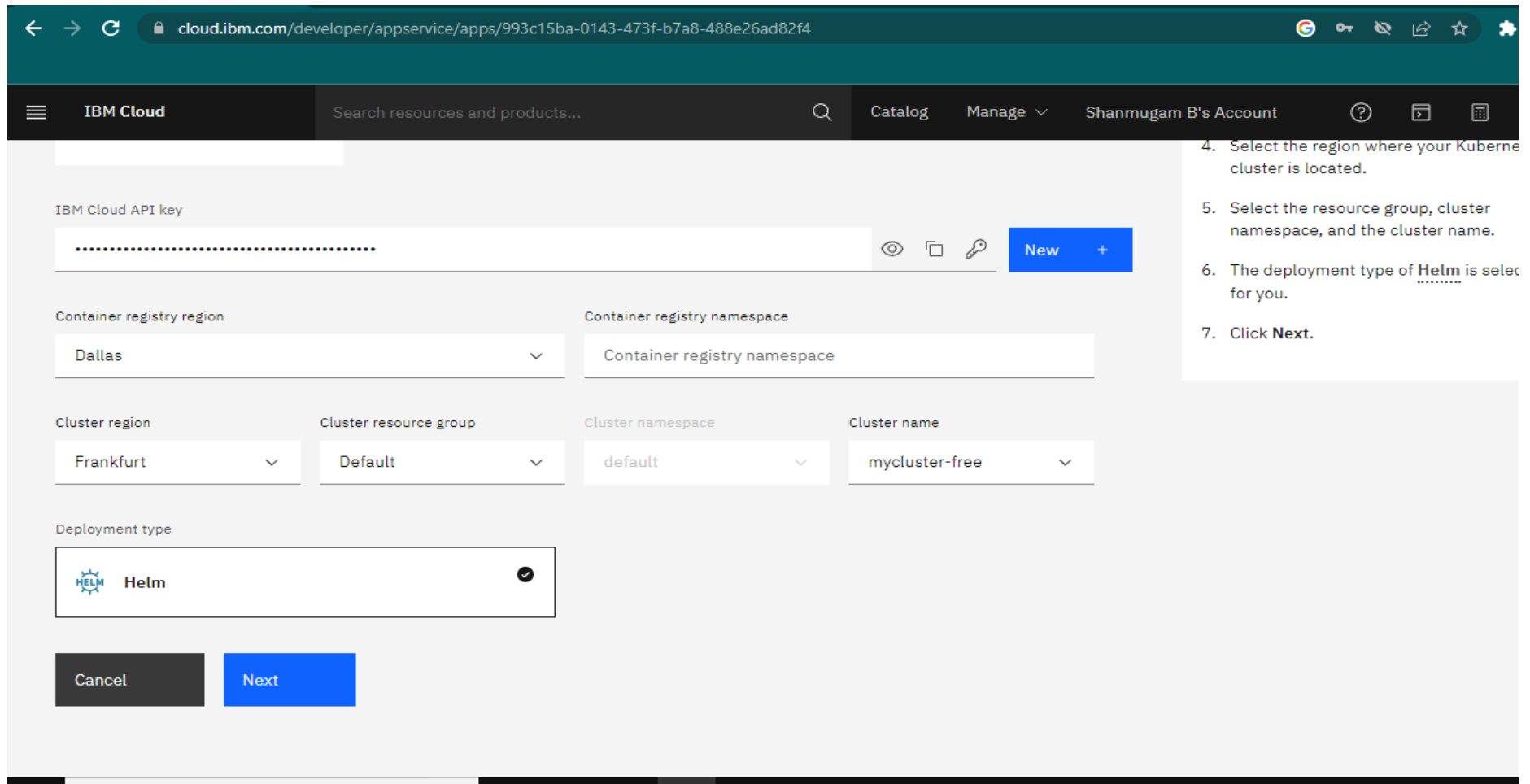
Cluster ID	Version	Infrastructure	Zones
cdmth3gf0uv95es1i540	1.24.7_1542	Classic	Milan 01
Created	Resource group	Image security enforcement	

Help

- Log in to your cluster
- Deploy your app
- Expose your app
- Add storage to your app
- Connect integrations
- Install add-ons
- Troubleshoot

## STEP 11:

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



The screenshot shows the IBM Cloud Developer console interface for creating a new cluster. The URL bar indicates the path: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. The navigation bar includes the IBM Cloud logo, a search bar, and links to Catalog, Manage, and the user's account (Shanmugam B's Account).

The main form contains the following fields and options:

- IBM Cloud API key:** A text field with a masked value (dots) and a "New +" button.
- Container registry region:** A dropdown menu set to "Dallas".
- Container registry namespace:** A text field with the value "Container registry namespace".
- Cluster region:** A dropdown menu set to "Frankfurt".
- Cluster resource group:** A dropdown menu set to "Default".
- Cluster namespace:** A dropdown menu set to "default".
- Cluster name:** A dropdown menu set to "mycluster-free".
- Deployment type:** A selection box with the "Helm" option selected, indicated by a checkmark.

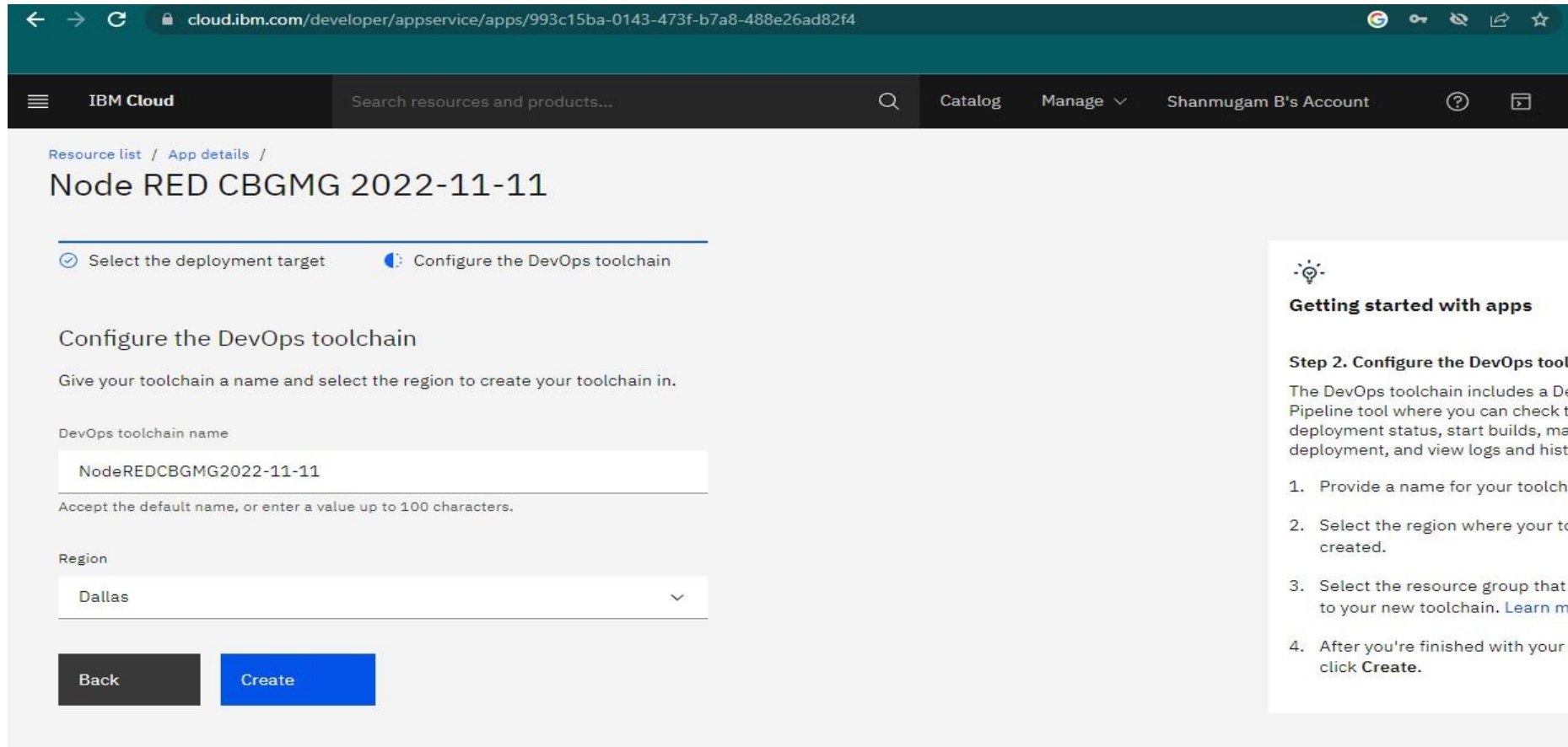
At the bottom of the form are two buttons: "Cancel" and "Next".

Overlaid on the right side of the form is a list of instructions:

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.



cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4

IBM Cloud Search resources and products... Catalog Manage Shanmugam B's Account

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 Dev 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 create your new toolchain in. [Learn more](#)
4. After you're finished with your configuration, click **Create**.

## STEP 13:

You need to wait until ci-pipeline status success.

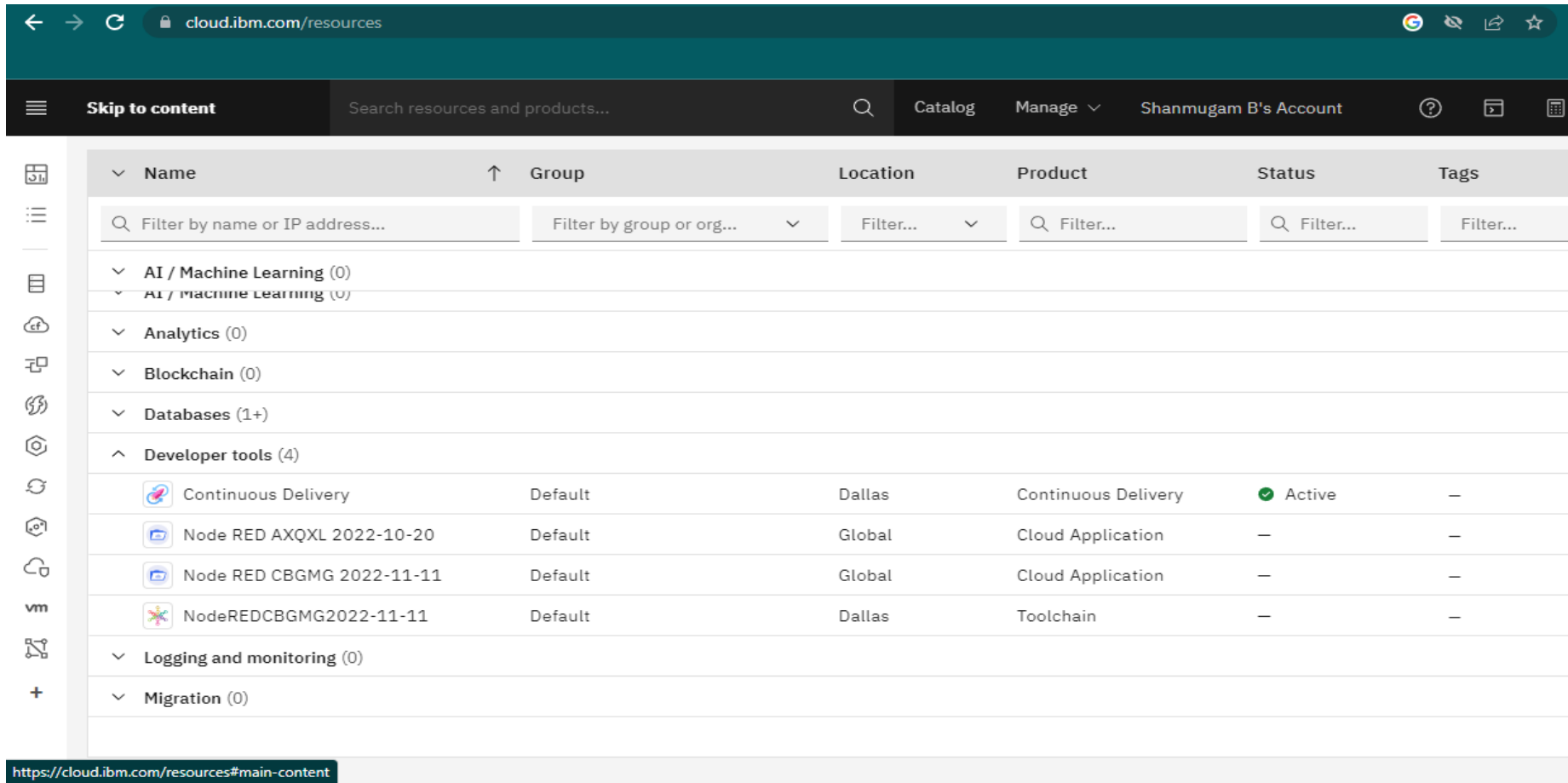
The screenshot shows the IBM Cloud Developer console interface. The browser address bar displays the URL: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. The navigation bar includes the IBM Cloud logo, a search bar, and links for Catalog, Manage, and the user account (Shanmugam B's Account).

The main content area is divided into two columns. The left column contains the 'Details' section for the application, showing fields like App URL, Source (with a 'Download code' button), Resource group (Default), Deployment target, and Created date (11/11/2022). Below this is the 'Services' section, featuring a 'Cloudant' service with links to 'Open dashboard', 'Documentation', and 'API reference', and buttons to 'Connect existing services' and 'Create service'.

The right column contains the 'Deployment Automation' section, which lists the deployment pipeline. The pipeline is named 'pr-pipeline' and is located in 'Dallas'. It shows two stages: 'pr-pipeline' (status: No stages detected) and 'ci-pipeline' (status: Success, indicated by a green checkmark).

## 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 Resources page. The browser address bar displays [cloud.ibm.com/resources](https://cloud.ibm.com/resources). The page header includes a "Skip to content" link, a search bar, and navigation links for "Catalog", "Manage", and the user account "Shanmugam B's Account".

The main content area displays a table of resources, categorized by a sidebar menu. The "Developer tools (4)" category is expanded, showing the following resources:

Name	Group	Location	Product	Status	Tags
Continuous Delivery	Default	Dallas	Continuous Delivery	Active	—
Node RED AXQXL 2022-10-20	Default	Global	Cloud Application	—	—
Node RED CBGMG 2022-11-11	Default	Global	Cloud Application	—	—
NodeREDCBGMG2022-11-11	Default	Dallas	Toolchain	—	—

The URL bar at the bottom shows <https://cloud.ibm.com/resources#main-content>.

## 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 Developer console interface. The browser address bar shows the URL: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. The page title is "Node RED CBGMG 2022-11-11".

**Details**

App URL	<a href="http://169. [REDACTED]">http://169. [REDACTED]</a>
Source	<a href="https://us-south.git.cloud.ibm.com/312819106035/NodeREDCBGM...">https://us-south.git.cloud.ibm.com/312819106035/NodeREDCBGM...</a>
Resource group	Default
Deployment target	mycluster-free
Created	11/11/2022

**Services**

Cloudant

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

**Deployment Automation**

Name	NodeREDCBGMG2022-11-11
Location	Dallas
Tool integrations	

**Delivery Pipelines**

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

At the bottom, there are two buttons: "Connect existing services" and "Create service".



## 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.

