

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

<b>Project Title</b>	SmartFarmer – IoT Enabled Smart Farming Application
<b>Team ID</b>	PNT2022TMID11788
<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 interface with the query "ibm cloud" entered in the search bar. The search results page displays "About 20,70,00,000 results (0.48 seconds)". The first result is an advertisement for IBM Cloud, with the URL "https://www.ibm.com/cloud/computing". The ad text describes IBM Cloud as a robust suite of advanced data and AI tools, trusted by thousands of enterprises, and lists types: Full Stack Cloud Platform, Hybrid Cloud, and Developer Tools. Below the ad are four links: "Watson AI" (Bring AI Tools and Apps to Your Data Wherever It Resides), "IBM Let's Create" (Bringing Together the Technology & Expertise for a New Way to Create), "Chat with IBM Sales" (Chat, Call, or Email IBM To Discuss Your Business Needs Today), and "Modernise Hybrid Cloud" (Let's Create Cloud Management That Requires Less Management).

On the right side of the search results, there is a knowledge panel for "IBM cloud computing". The panel features the IBM Cloud logo and a diagram illustrating cloud services and management. Below the diagram, it states "IBM cloud computing" and "Computer software". At the bottom of the panel, it begins with "IBM cloud computing is a set of cloud computing services for business offered by the information".

## STEP 2:

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

The screenshot shows the IBM Cloud website homepage. The top navigation bar includes the IBM logo, links for Cloud, Products, Solutions, Pricing, Docs, Support, and Explore, a search icon, and links for 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 are two buttons: 'Get started for free' and 'Chat with an IBM expert'. To the right is a large abstract graphic with blue, black, and white geometric shapes. At the bottom, there are three columns: 'Built for your industry' with a 'Why IBM Cloud' link, 'Foundational security', and 'Better business predictions'. A 'Let's talk' button is in the bottom right, and a 'Cookie Preferences' link is at the very bottom right.

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

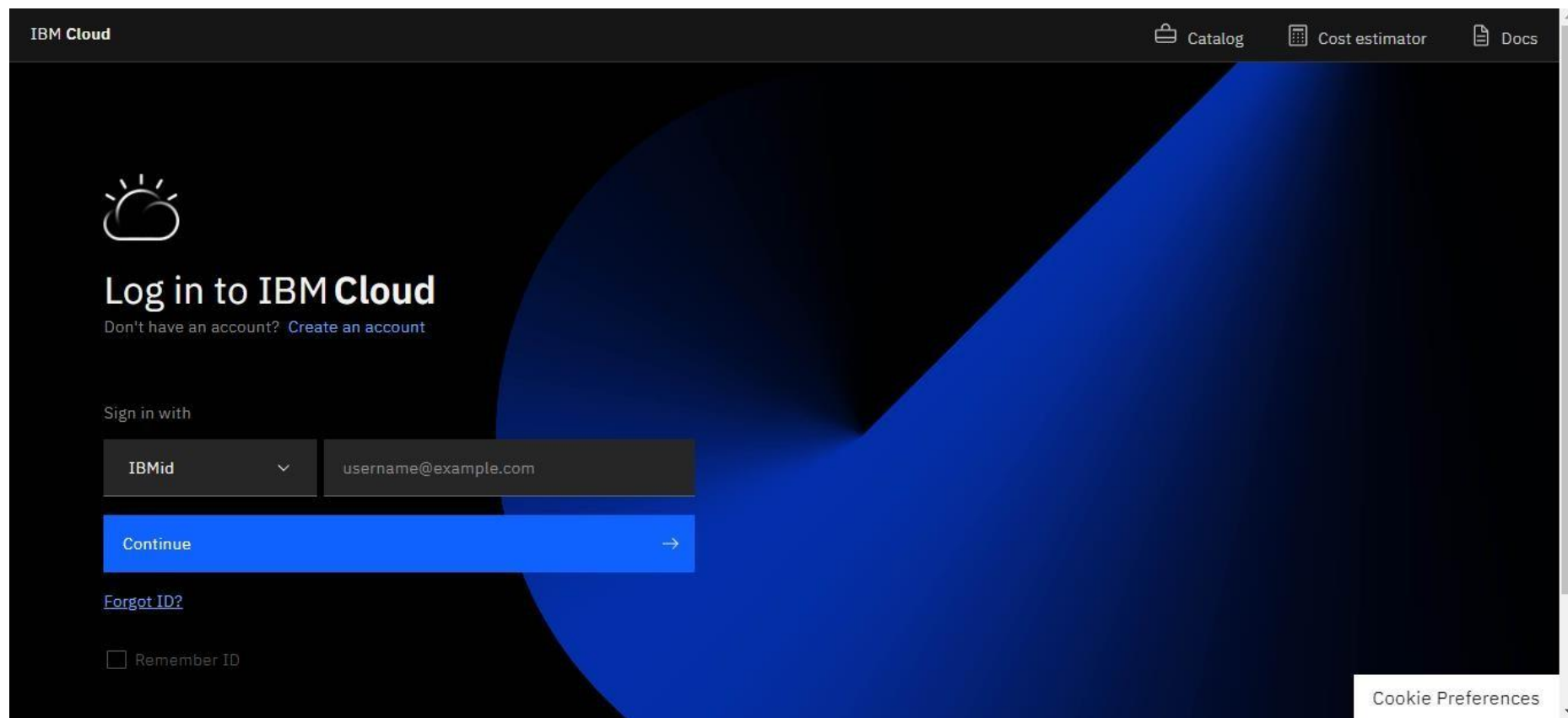
Better business predictions

Let's talk

Cookie Preferences

## 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, followed by the text 'Log in to IBM Cloud'. Below this, a link says 'Don't have an account? [Create an account](#)'. The '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. Underneath the button is a link for '[Forgot ID?](#)'. At the bottom left, there is a checkbox labeled 'Remember ID'. In the bottom right corner, a 'Cookie Preferences' link is visible.

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.

The screenshot shows the IBM Cloud Dashboard interface. At the top, the browser address bar displays 'cloud.ibm.com'. The dashboard header includes the 'IBM Cloud' logo, a search bar containing 'node-red', and navigation links for 'Catalog', 'Manage', and 'Shanmugam B's Account'. A dropdown menu is open under the search bar, showing 'Resource Results' and 'Catalog Results'. The 'Resource Results' section lists a service 'node-red-axqxl-2022--cloudant-1666259245758'. The 'Catalog Results' section lists the 'Node-RED App' service. Below the search results, there are several tiles for building applications, including 'Build a web app with Watson Speech to Text' and 'Build a Virtual Private Cloud (VPC)'. The bottom of the dashboard features a 'User access' section with a 'Manage users' link, a 'News' section with a 'View all' link, and a 'Planned maintenance' section.

Dashboard

For you

Build

Explore IBM Cloud with the selection of easy starter tutorials and services.

Resource Results

View all resource results

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

Service

Catalog Results

View all catalog results

Node-RED App

Service

Search "node-red" in Support Cases

Search "node-red" in Docs

Build a web app with Watson Speech to Text

Deploy a conversational interface compatible with any application, device, or channel.

Build a Virtual Private Cloud (VPC)

Upgrade to a paid account to create your own protected space in the IBM Cloud.

User access

Manage users

News

View all

Planned maintenance

## 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 displays 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 "Examples: env:dev, version-1" and features a "Platform" section with "Node.js" selected. Below this, the "Service details" section shows "Cloudant" as the selected service, with a note indicating that existing instances can be used. The "Region" is set to "Frankfurt" and the "Resource group" is "Default". The "Pricing plan" section has a dropdown menu showing "node-red-axqxl-2022--cloudant-1666259245758". At the bottom, there are links for "Pricing details" and "Terms", and two buttons: "Cancel" and "Create".

## STEP 6:

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

The screenshot shows the IBM Cloud Developer App Service interface. The browser address bar displays the URL: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. The page header includes the IBM Cloud logo, a search bar, and navigation 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 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 Open dashboard, Documentation, and API reference, and a Credentials dropdown. The "Deployment Automation" section includes a "Configure Continuous Delivery" button and a "Deploy your app" button.

Resource list / App details /

### Node RED CBGMG 2022-11-11

Add tags [Add tags](#)

Actions...

#### Details

App URL	You must deploy your app first
Source	<a href="#">Download code</a>
Resource group	<a href="#">Default</a>
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.](#)

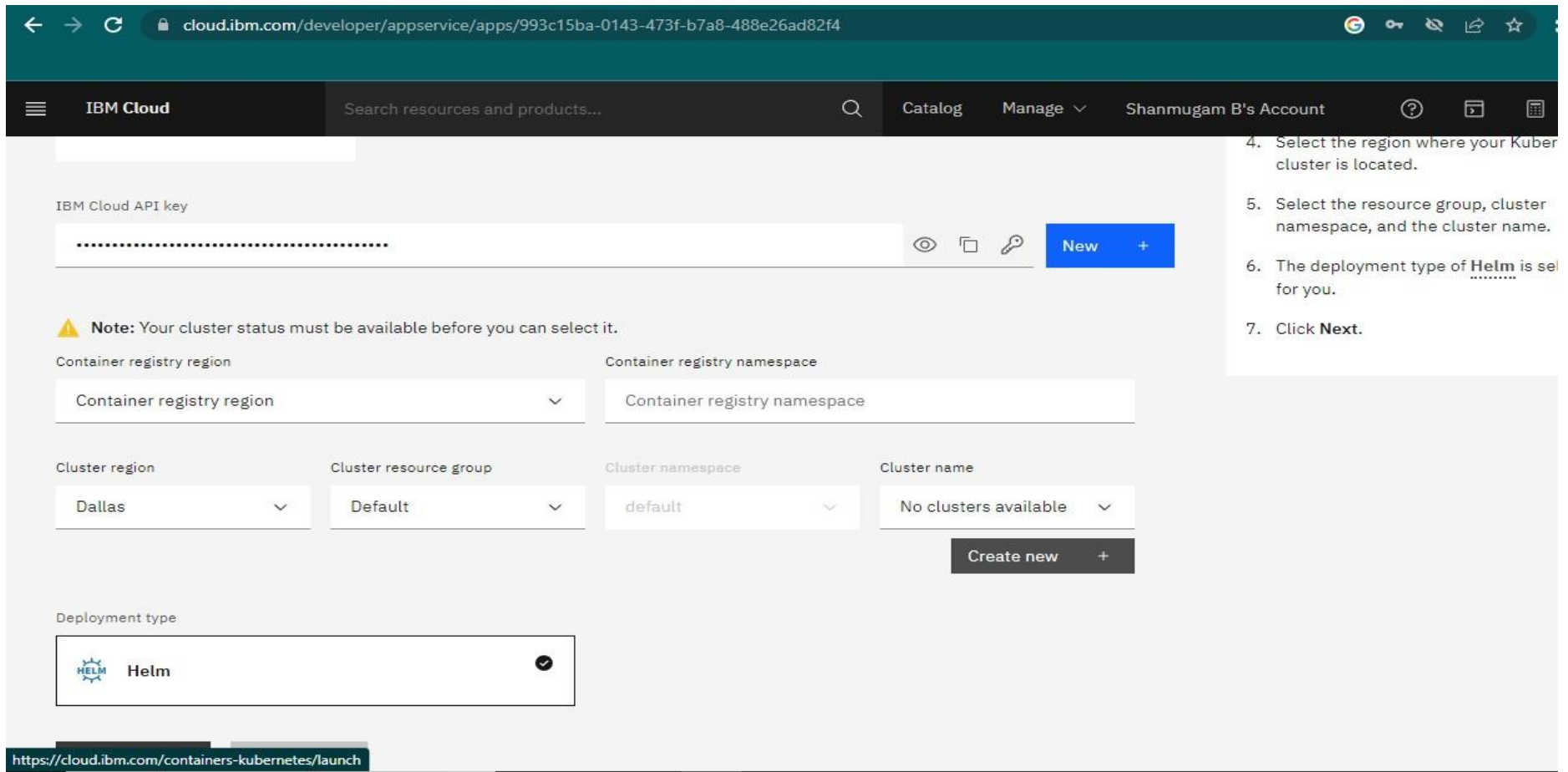
##### Before you begin

- 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.



The screenshot shows the IBM Cloud developer console interface for configuring a Kubernetes service. The URL in the browser is `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. 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 displays the "IBM Cloud API key" section. It features a text input field containing a masked API key, an "eye" icon to toggle visibility, a "New" button, and a "+" icon. Below this is a note: "Note: Your cluster status must be available before you can select it."

The configuration section includes several dropdown menus for selecting resources:

- Container registry region:** A dropdown menu with the text "Container registry region".
- Container registry namespace:** A dropdown menu with the text "Container registry namespace".
- Cluster region:** A dropdown menu with "Dallas" selected.
- Cluster resource group:** A dropdown menu with "Default" selected.
- Cluster namespace:** A dropdown menu with "default" selected.
- Cluster name:** A dropdown menu with "No clusters available" selected.

A "Create new" button with a "+" icon is located below the cluster name dropdown.

The **Deployment type** section shows "Helm" as the selected option, indicated by a checkmark.

On the right side of the screenshot, a list of instructions is visible:

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**.

The browser's address bar at the bottom shows the URL `https://cloud.ibm.com/containers-kubernetes/launch`.

## 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 the user account 'Shanmugam B's Account'. The main content area is titled 'Kubernetes cluster' with links to 'Author: IBM', 'Docs', and 'API docs'. Below this, there are two tabs: 'Create' (active) and 'About'. A banner for 'Red Hat OpenShift' is visible. The 'Plan details' section includes a link to 'docs' and a 'Pricing plan' dropdown menu currently set to 'Free'. The 'Kubernetes version' section has a link to 'Select the Kubernetes platform version for your cluster. For more information'. On the right sidebar, the 'Summary' section shows 'Kubernetes cluster' with a 'Worker node' configuration: 'Free - 2 vCPUs 4GB RAM', 'Virtual - shared', and 'Ubuntu 18'. Below this, the 'Total estimated cost' section includes a disclaimer: 'Additional charges for networking and might apply. Actual monthly total will vary with tier. Estimate does not include costs for int'. At the bottom of the sidebar are two buttons: 'Create' and 'Add to estimate'.

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

##### 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 cluster named 'mycluster-free'. The URL in the browser is `cloud.ibm.com/kubernetes/clusters/cdmth3gf0uv95es1i540/overview`. The page features a dark teal header with the IBM Cloud logo, a search bar, and navigation links for 'Catalog', 'Manage', and 'Shanmugam B's Account'. A left sidebar contains navigation options: 'Overview' (selected), 'Worker nodes', 'Worker pools', and 'DevOps' (with a 'New' button). The main content area displays the cluster status as 'Normal' with a warning that it 'Expires in 30 days'. 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). A 'Details' section at the bottom provides metadata for the cluster, including its ID, version, infrastructure type, zones, and creation date.

Node status	Add-on status	Master status	Ingress status
1 of 1 ✓ Normal	0 of 0 ✓ Normal	Normal ✓	Unknown —

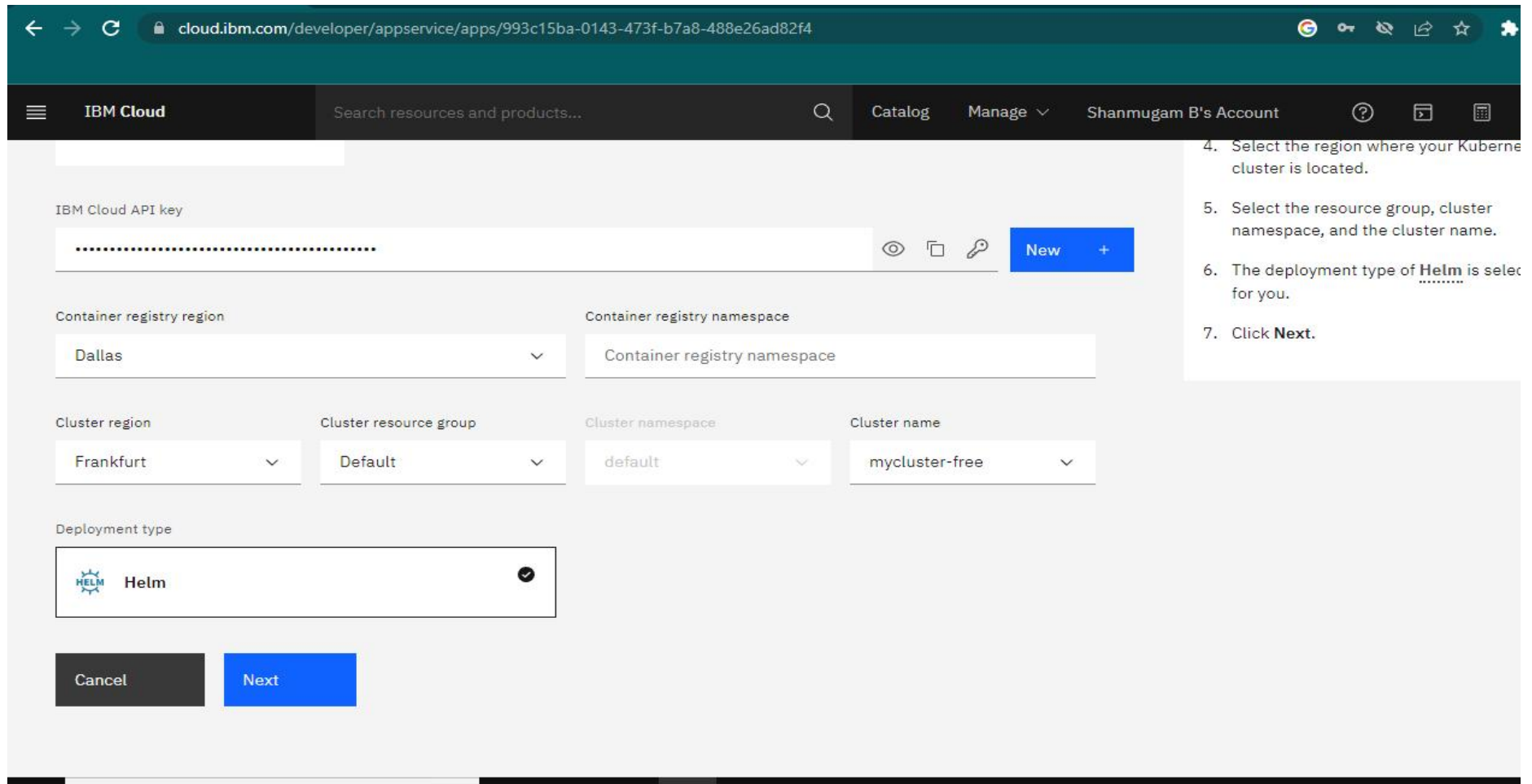
Cluster ID	Version	Infrastructure	Zones
cdmth3gf0uv95es1i540	1.24.7_1542	Classic	Milan 01

Created	Resource group	Image security enforcement
2023-10-27 10:10:10	default	Enforced

## STEP 11:

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



The screenshot shows the IBM Cloud console interface for creating a new cluster. The URL in the browser is `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 input field with a masked value (dots) and a "New +" button.
- Container registry region:** A dropdown menu set to "Dallas".
- Container registry namespace:** A text input field with the placeholder "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 showing "Helm" with a checkmark.

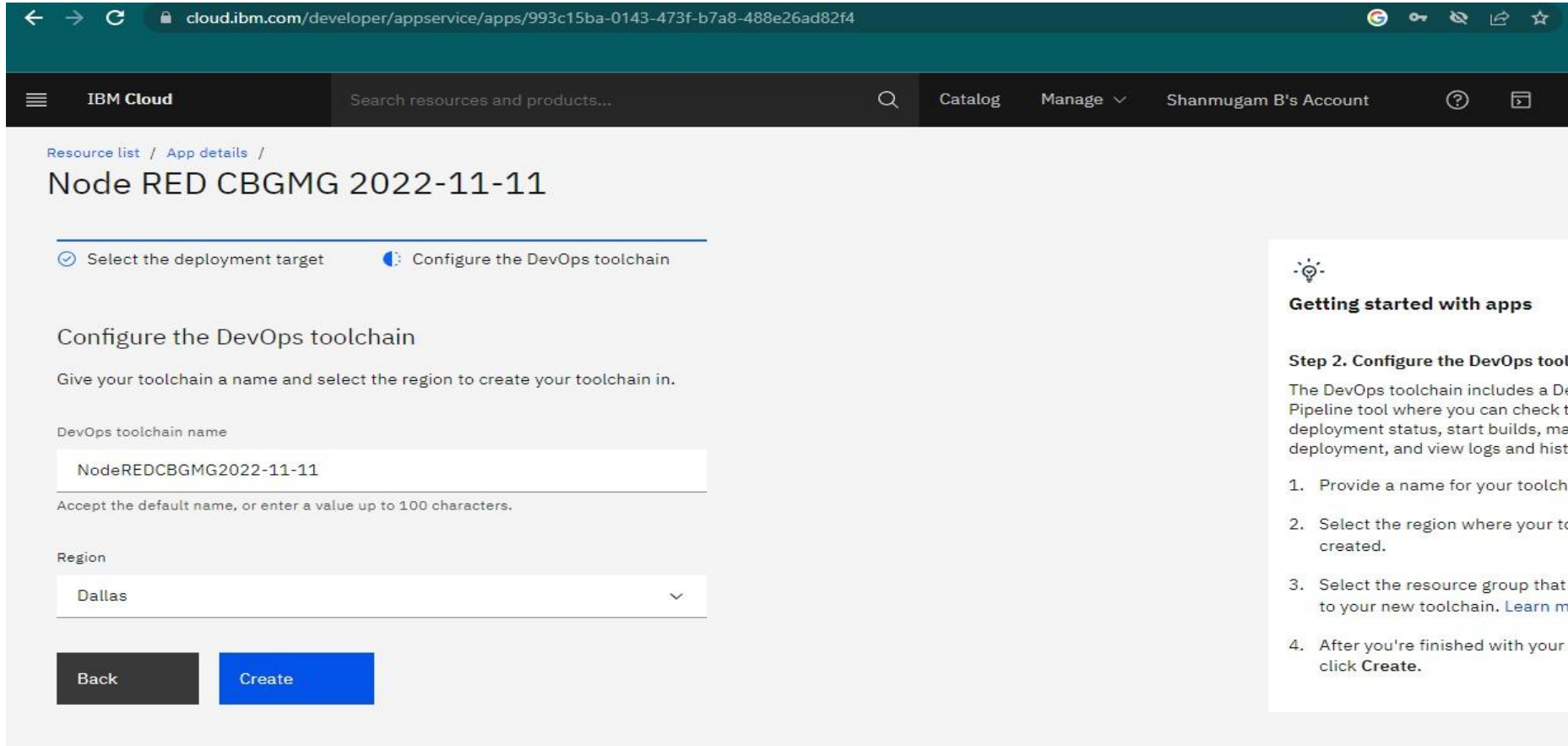
At the bottom of the form are two buttons: "Cancel" and "Next".

Overlaid on the right side of the screen 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.



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 breadcrumb trail indicates the path: Resource list / App details / Node RED CBGMG 2022-11-11.

The main content area is titled "Node RED CBGMG 2022-11-11" and features two progress steps: "Select the deployment target" (completed) and "Configure the DevOps toolchain" (active). The "Configure the DevOps toolchain" section instructs the user to "Give your toolchain a name and select the region to create your toolchain in." It includes a text input field for the "DevOps toolchain name" containing "NodeREDCBGMG2022-11-11" and a dropdown menu for the "Region" set to "Dallas". Below these fields are "Back" and "Create" buttons.

A sidebar on the right, titled "Getting started with apps", provides guidance for "Step 2. Configure the DevOps tool". It explains that the DevOps toolchain includes a Dev Pipeline tool for checking deployment status, starting builds, managing deployment, and viewing logs and history. It lists four steps: 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 use for your new toolchain (with a link to "Learn more"), and 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 Developer console interface. The top 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 content area is divided into two columns. The left column contains the 'Details' section for an 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 shows the 'Deployment Automation' section, listing two delivery pipelines: 'pr-pipeline' (status: No stages detected) and 'ci-pipeline' (status: Success, indicated by a green checkmark).

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

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

### Details

App URL You must deploy your app first

Source [Download code](#)

Resource group [Default](#)

Deployment target You must deploy your app first

Created 11/11/2022

### Services

Cloudant

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

Credentials

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

### Deployment Automation

Name [NodeREDCBGMG2022-11-11](#)

Location Dallas

Tool integrations

### Delivery Pipelines

Name [pr-pipeline](#)

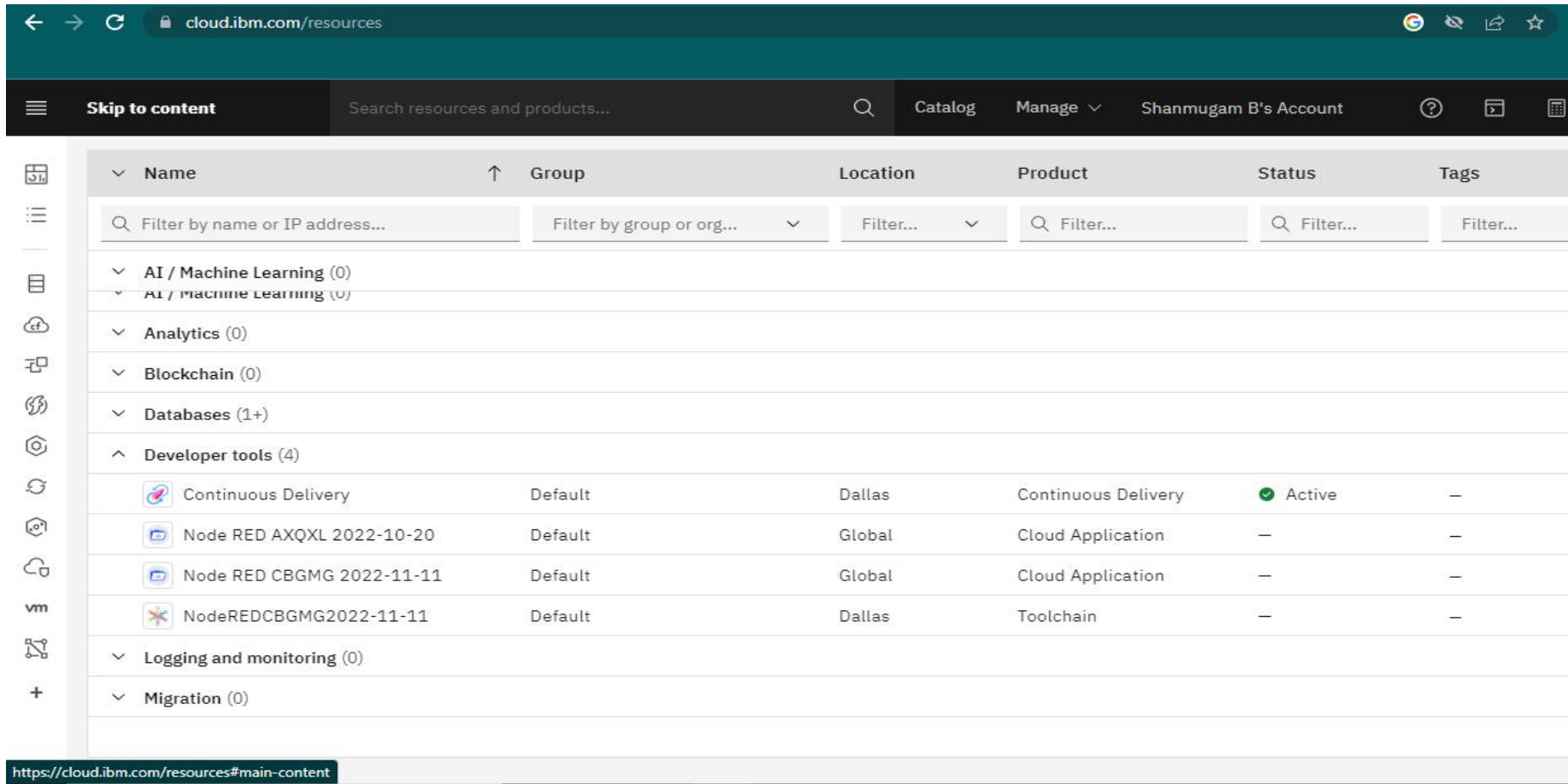
Status [No stages detected](#)

Name [ci-pipeline](#)

Status [Success](#)

## 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 search bar, a "Skip to content" link, and navigation links for "Catalog", "Manage", and the user account "Shanmugam B's Account".

The main content area is a table with the following columns: Name, Group, Location, Product, Status, and Tags. The table is filtered to show resources under the "Developer tools" category. The resources listed are:

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 at the bottom of the page is <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 shows the IBM Cloud Developer App Service interface. The browser address bar displays the URL: `cloud.ibm.com/developer/appservice/apps/993c15ba-0143-473f-b7a8-488e26ad82f4`. 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 "Node RED CBGMG 2022-11-11" and includes an "Add tags" link and an "Actions..." button. The "Details" section on the left lists the App URL, Source, Resource group, Deployment target, and Created date. The "Services" section on the left shows the Cloudant service with links to the dashboard, documentation, and API reference. The "Deployment Automation" section on the right lists the Name, Location, and Tool integrations. The "Delivery Pipelines" section on the right lists the Name and Status for two pipelines: "pr-pipeline" and "ci-pipeline".

Resource list / App details /

### Node RED CBGMG 2022-11-11

Add tags

Actions...

#### 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	<a href="#">NodeREDCBGMG2022-11-11</a>
Location	Dallas
Tool integrations	

#### Delivery Pipelines

Name	<a href="#">pr-pipeline</a>
Status	No stages detected
Name	<a href="#">ci-pipeline</a>
Status	Success

[Connect existing services](#) [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.

