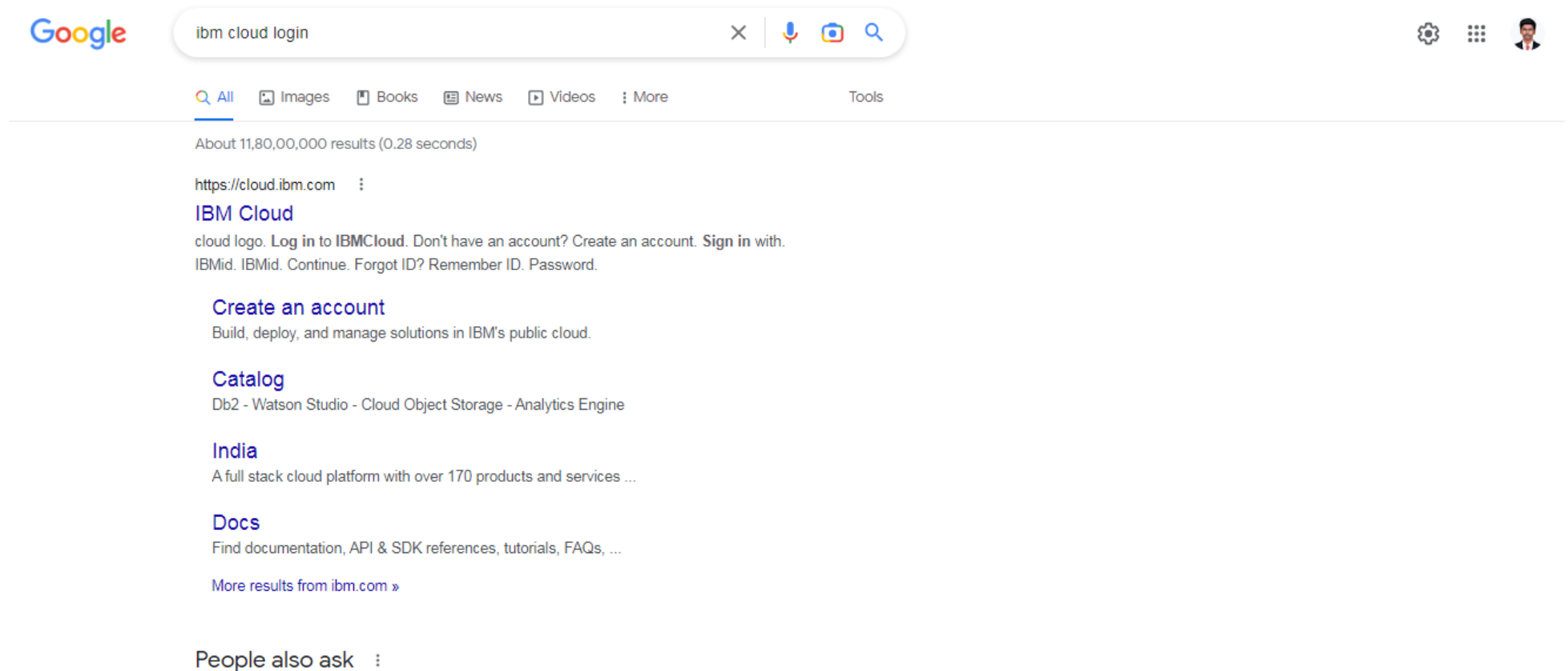


## **Create And Configure IBM Cloud Services**

<b>Project Title</b>	SmartFarmer – IoT Enabled Smart Farming Application
<b>Team ID</b>	PNT2022TMID42723
<b>Content</b>	IBM Cloud Service

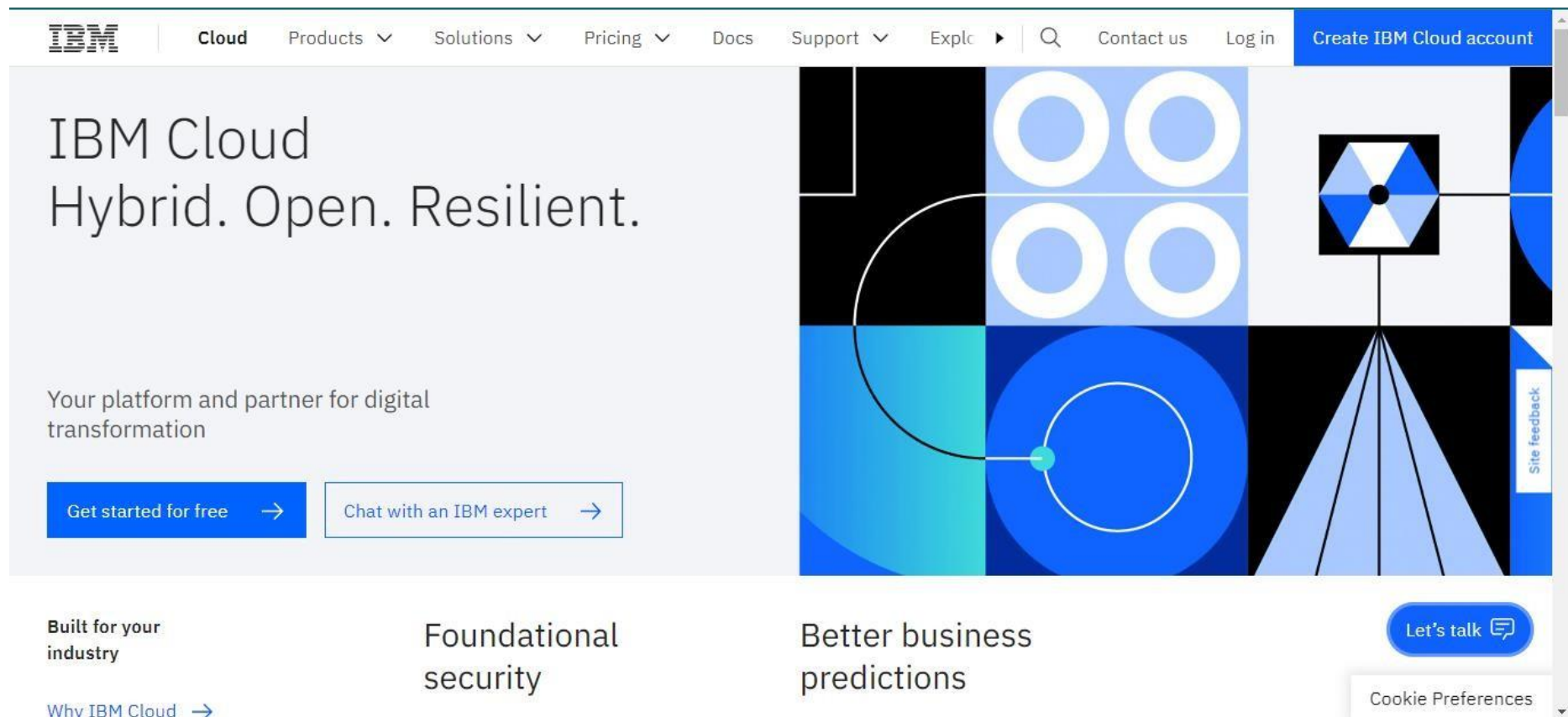
## STEP 1:

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



## STEP 2:

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



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". The right side of the hero section is a large abstract graphic with blue, black, and white geometric shapes. Below the hero section, there are three columns of content: "Built for your industry" with a link "Why IBM Cloud", "Foundational security", and "Better business predictions". A "Let's talk" button is located at the bottom right, and a "Cookie Preferences" link is at the very bottom right. A "Site feedback" link is visible on the right edge of the hero section.

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

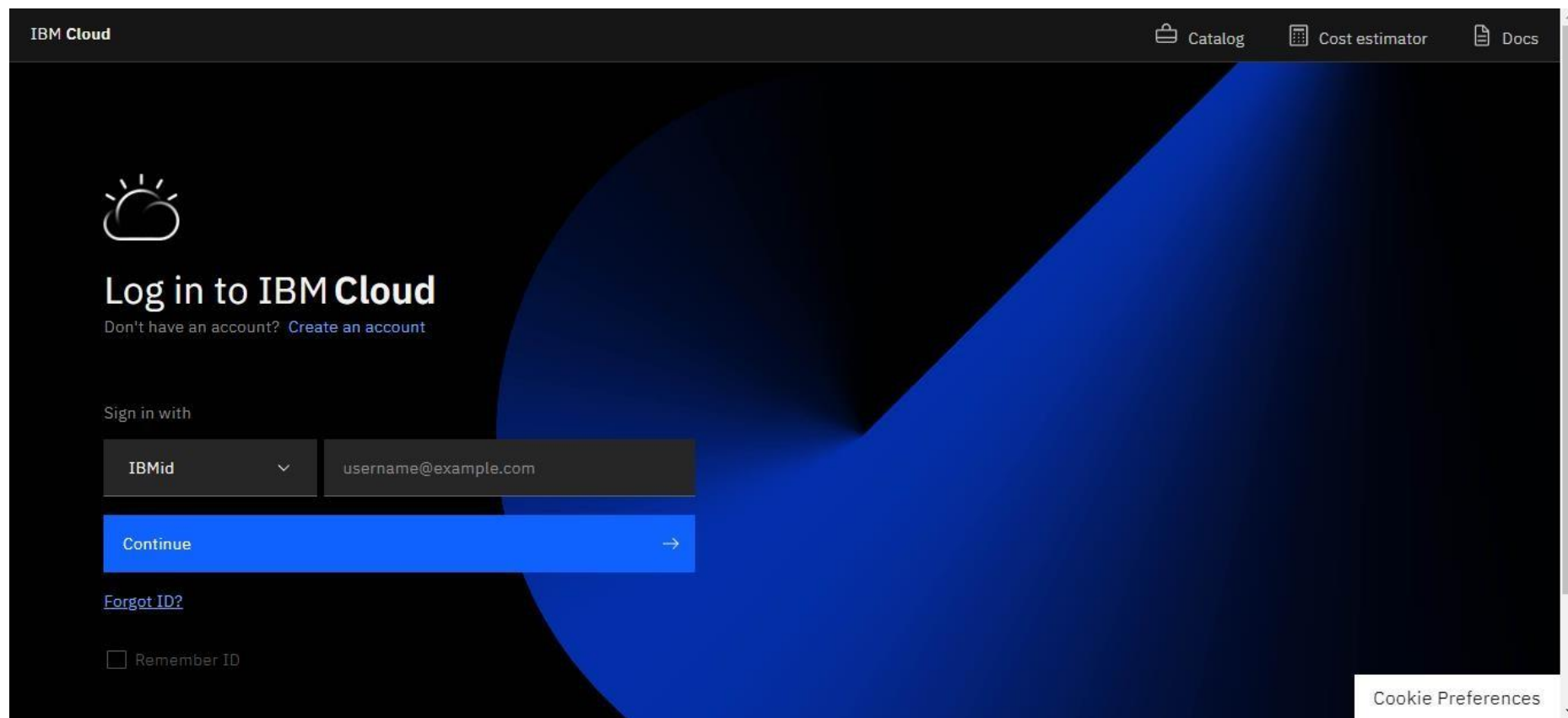
Let's talk

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 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 sun icon and 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. At the bottom left, there is a link for '[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 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 'Create resource' button is visible in the top right.

The main content area is titled 'Dashboard' and features a 'For you' section with a 'Build' card. A search overlay is active, displaying 'Resource Results' and 'Catalog Results' for 'node-red'. The 'Resource Results' section shows a service named 'node-red-axqxl-2022--cloudant-1666259245758'. The 'Catalog Results' section shows the 'Node-RED App' service. Below the search results, there are links to 'Search "node-red" in Support Cases' and 'Search "node-red" in Docs'.

The dashboard also includes several featured cards: 'Build a web app with Watson Speech to Text' (15 min), 'Build a Virtual Private Cloud (VPC)' (7 min), and 'IBM Cloud account, manage your account settings, organize resources, and control access to those resources.' (10 min). The bottom section contains 'User access', 'News' (with a link to 'All About IBM Storage's Price and Supply Guarantee'), and '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.

cloud.ibm.com/developer/appservice/create-app?starterKit=59c9d5bd-4d31-3611-897a-f94eea80dc9f&defaultLanguage=undefined

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

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 app information: App URL (with a message "You must deploy your app first"), Source (with a "Download code" button), Resource group (Default), Deployment target (with a message "You must deploy your app first"), and Created (11/11/2022). The "Services" section shows the Cloudant service with links to "Open dashboard", "Documentation", and "API reference", along with a "Credentials" dropdown. On the right, the "Deployment Automation" section features a "Configure Continuous Delivery" button and a message stating that Continuous Delivery is not enabled for this app. A prominent blue "Deploy your app" button is located at the bottom right of the main content area.

Resource list / App details /

### Node RED CBGMG 2022-11-11

Add tags

Actions...

#### 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

#### 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.

The screenshot shows the IBM Cloud Developer App Service console. The browser address bar displays `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 features a progress bar with two steps: "Select the deployment target" (active) and "Configure the DevOps toolchain". Below the progress bar, the "Deployment Automation" section explains the process: "Select your deployment target and configure your DevOps toolchain. After you click **Create**, the toolchain is created, and the deployment process is started automatically." The "Deployment target" section displays three options: "Kubernetes Service" (selected with a checkmark), "Red Hat OpenShift", and "Cloud Foundry". Each option includes a description of its capabilities. On the right side, a sidebar titled "Getting started with apps" provides a "Step 1. Select the deployment target" guide, explaining that users should select a target and provide configuration information. It also mentions the "IBM Cloud Kubernetes Service" and provides a brief overview of Kubernetes, along with a "Before you begin" section listing prerequisites like having a free Kubernetes cluster or creating one.

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 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 placeholder text: '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' (blue) and 'Add to estimate' (white with a black border).

## 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 browser address bar shows the URL: `cloud.ibm.com/kubernetes/clusters/cdmth3gf0uv95es1i540/overview`. The IBM Cloud navigation bar is at the top, with a search bar and links to 'Catalog', 'Manage', and 'Shanmugam B's Account'. The cluster status is 'Normal' with a warning that it 'Expires in 30 days'. A sidebar on the left lists navigation options: 'Overview' (selected), 'Worker nodes', 'Worker pools', and 'DevOps' (with a 'New' button). The main content area features a warning banner about the 30-day expiration and four status cards: 'Node status' (1 of 1, Normal), 'Add-on status' (0 of 0, Normal), 'Master status' (Normal), and 'Ingress status' (Unknown). Below these is a 'Details' section with a table of cluster information.

Cluster ID	Version	Infrastructure	Zones
cdmth3gf0uv95es1i540	1.24.7_1542	Classic	Milan 01

Created	Resource group	Image security enforcement

On the right side, a 'Help' sidebar lists actions: 'Log in to your cluster', 'Deploy your app', 'Expose your app', 'Add storage to your app', 'Connect integrations', 'Install add-ons', and '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 Kubernetes 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 with the 'Helm' option selected, indicated by a checkmark.

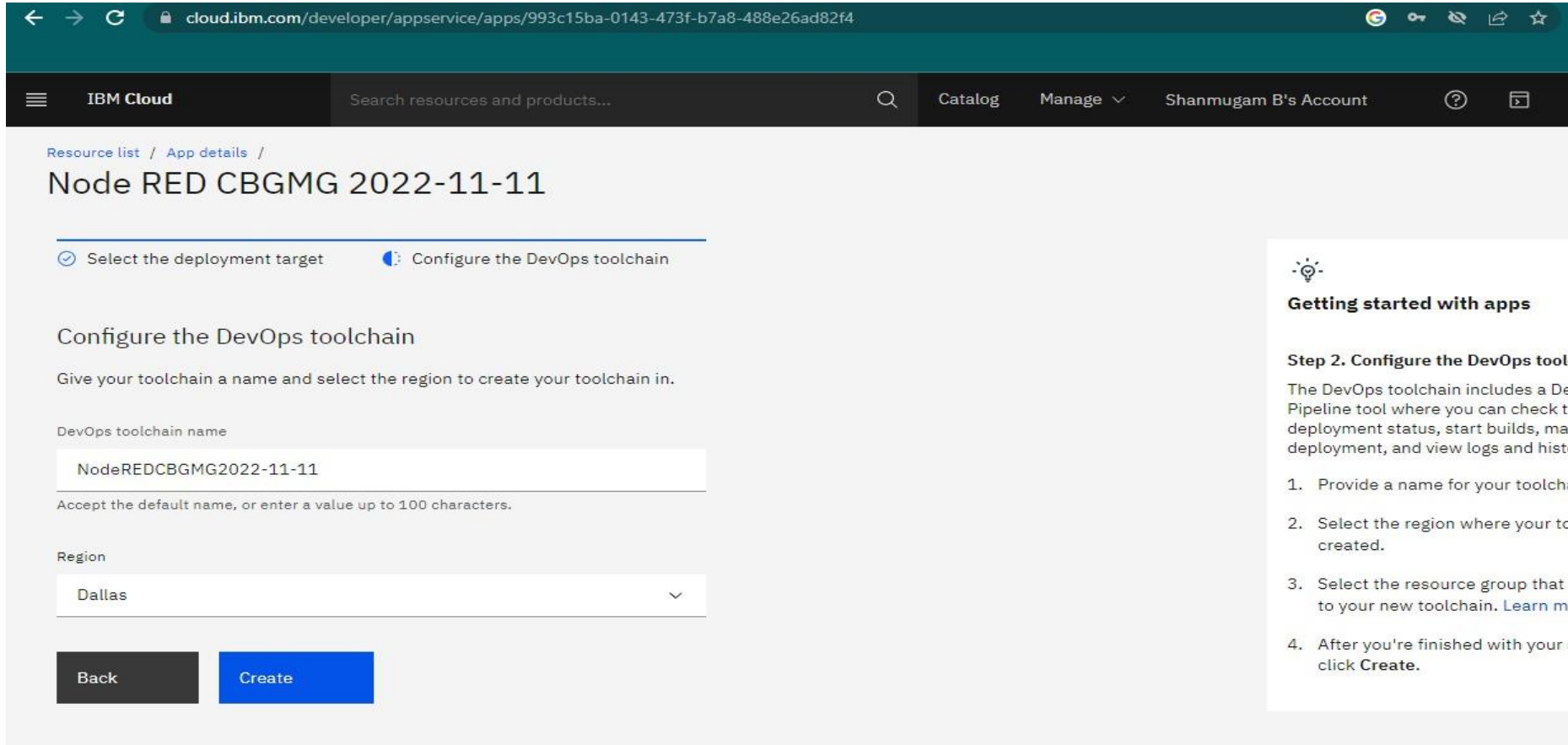
At the bottom of the form are two buttons: 'Cancel' and 'Next'.

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.



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 current location: 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" with the value "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"); 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 a 'Details' section with fields for App URL, Source (with a 'Download code' button), Resource group (Default), Deployment target, and Created date (11/11/2022). Below this is a 'Services' section featuring a 'Cloudant' service with links to its dashboard, documentation, and API reference, along with a 'Credentials' dropdown and buttons to 'Connect existing services' or 'Create service'. The right column shows 'Deployment Automation' details, including the Name 'NodeREDCBGMG2022-11-11', Location 'Dallas', and Tool integrations. Below this, the 'Delivery Pipelines' section lists two pipelines: 'pr-pipeline' with a status of 'No stages detected' and 'ci-pipeline' with a status of 'Success'.

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](#)

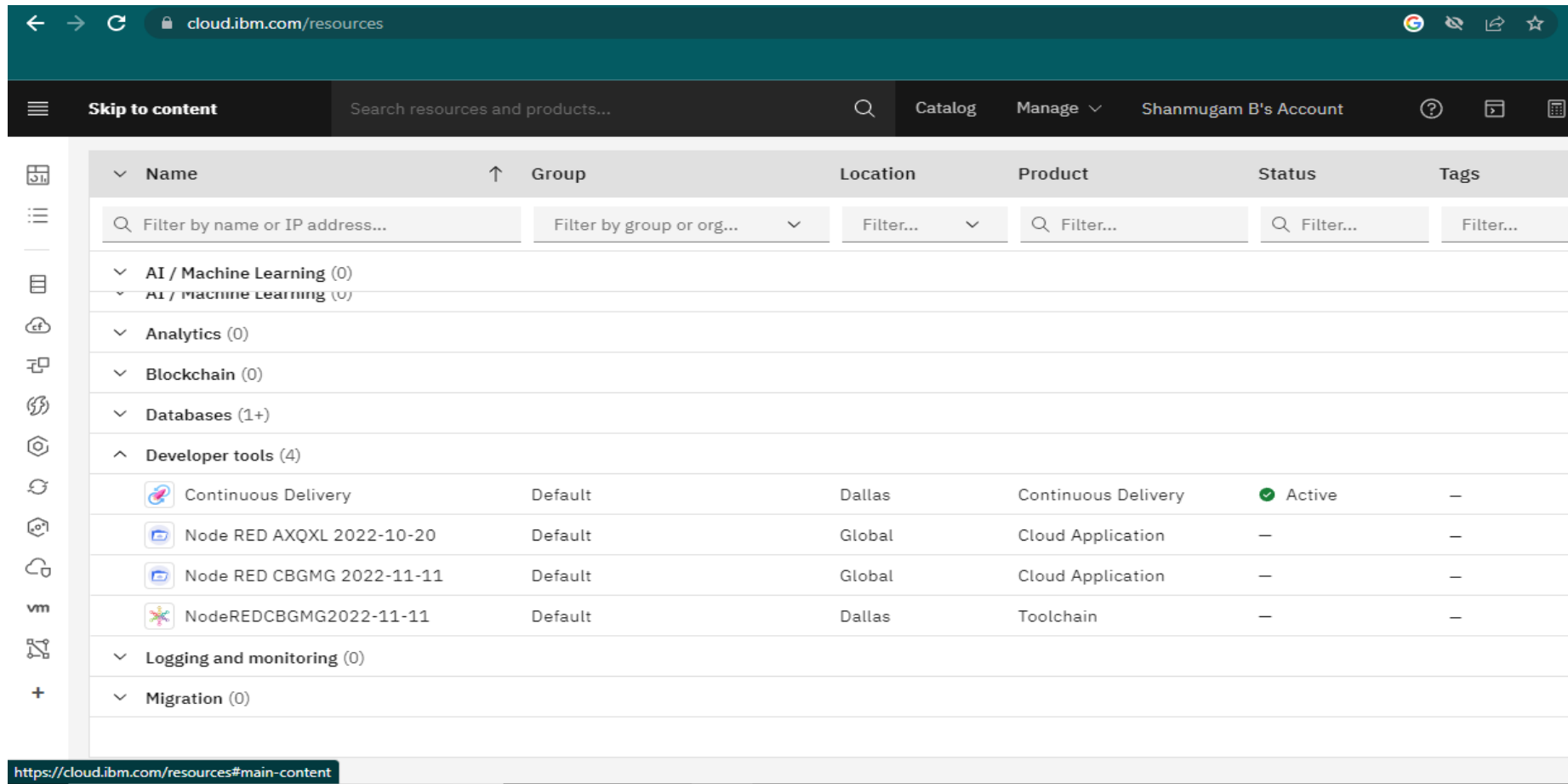
Status [No stages detected](#)

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, navigation links (Catalog, Manage), and the user's account (Shanmugam B's Account). The left sidebar contains various resource categories. The main content area displays a table of resources, with the 'Developer tools' category expanded to show four items: Continuous Delivery, Node RED AXQXL 2022-10-20, Node RED CBGMG 2022-11-11, and NodeREDCBGMG2022-11-11. The table columns are Name, Group, Location, Product, Status, and Tags.

Name	Group	Location	Product	Status	Tags
Filter by name or IP address...	Filter by group or org...	Filter...	Filter...	Filter...	Filter...
AI / Machine Learning (0)					
Analytics (0)					
Blockchain (0)					
Databases (1+)					
Developer tools (4)					
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	—	—
Logging and monitoring (0)					
Migration (0)					

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. At the top, the browser address bar shows 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's 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 page is divided into two main sections: "Details" and "Deployment Automation".

**Details Section:**

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 Section:**

Cloudant

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

**Deployment Automation Section:**

Deployment Automation	
Name	NodeREDCBGMG2022-11-11
Location	Dallas
Tool integrations	

**Delivery Pipelines Section:**

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

At the bottom of the console, 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.

