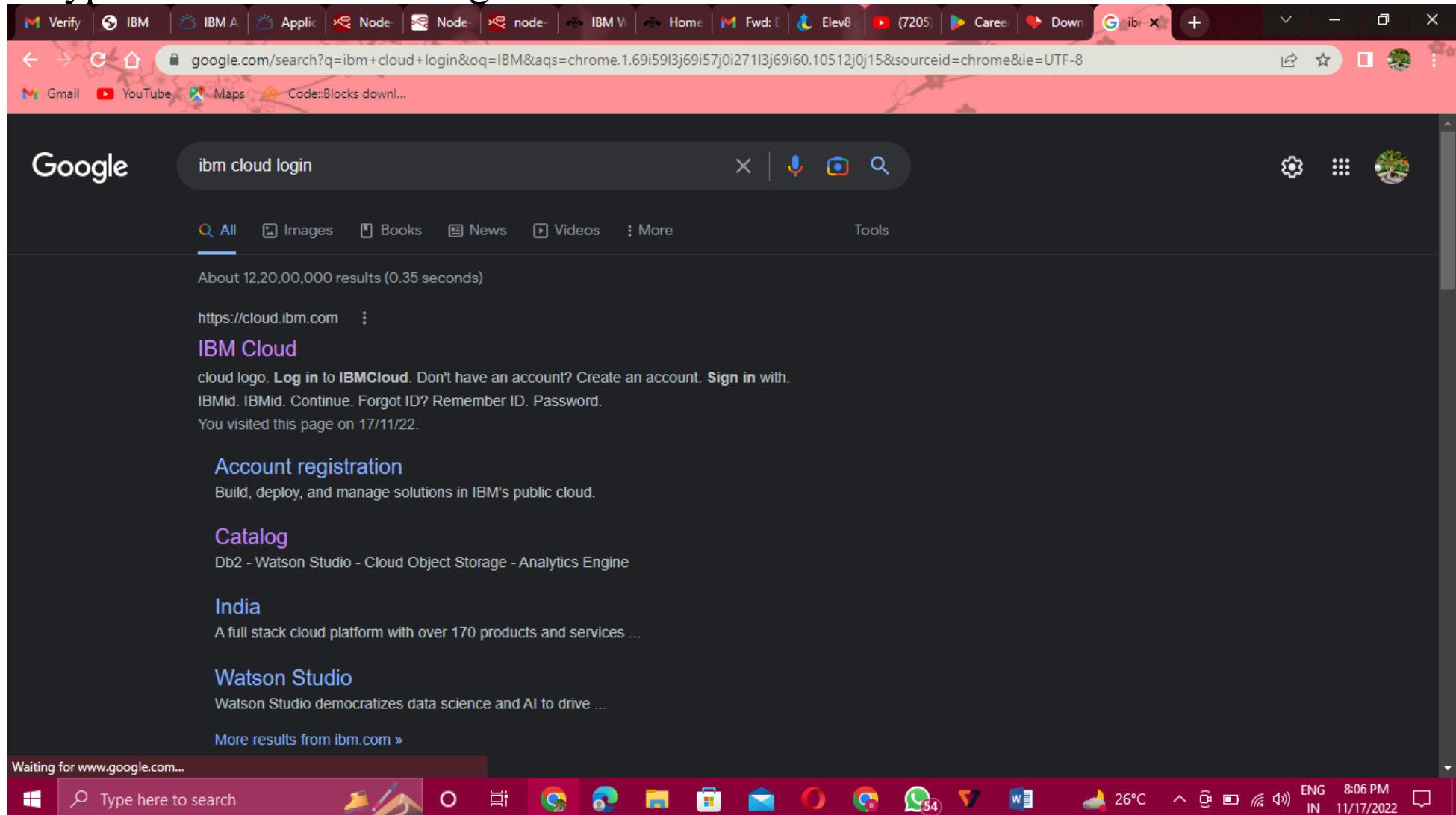


## **Create And Configure IBM Cloud Services**

<b>Project Title</b>	SmartFarmer – IoT Enabled Smart Farming Application
<b>Team ID</b>	PNT2022TMID25425
<b>Content</b>	IBM Cloud Service

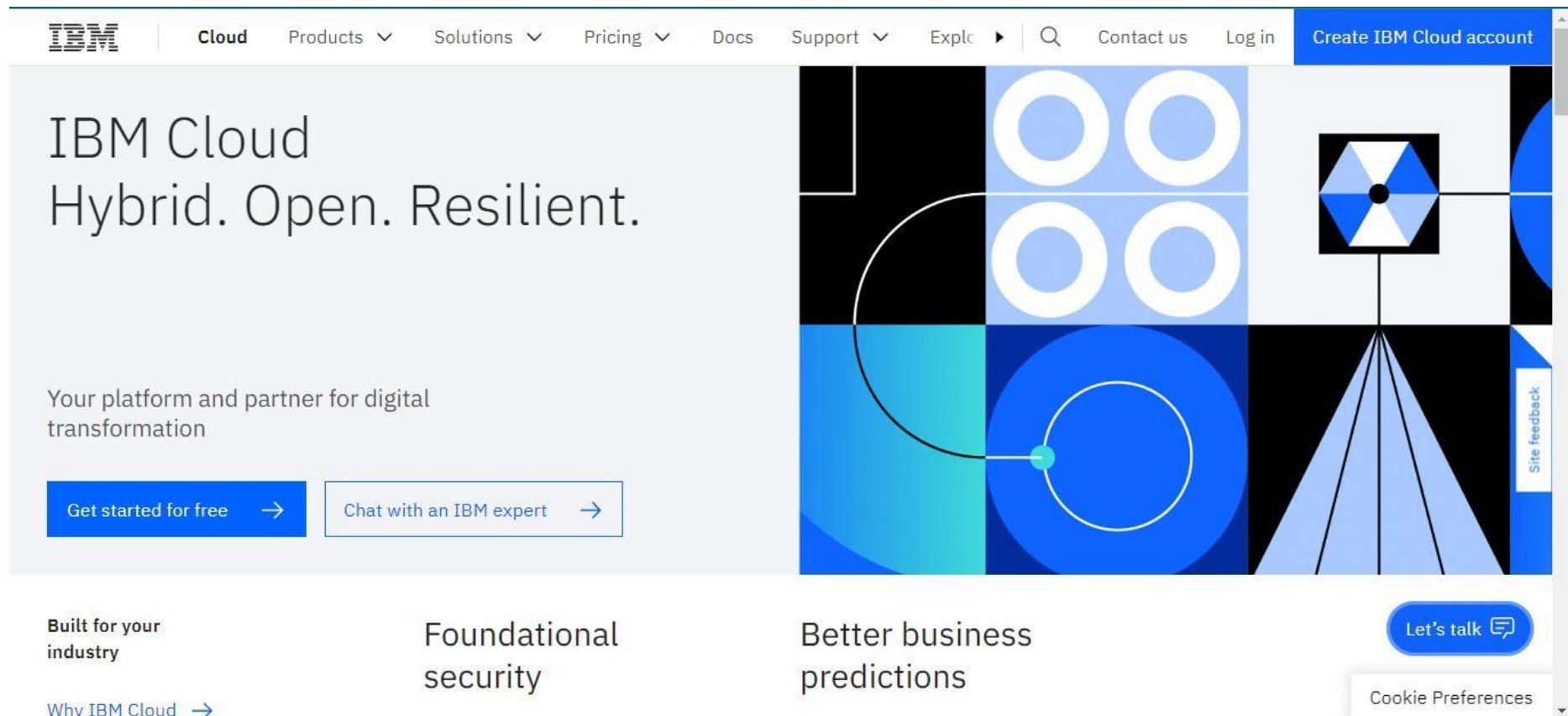
## STEP 1:

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



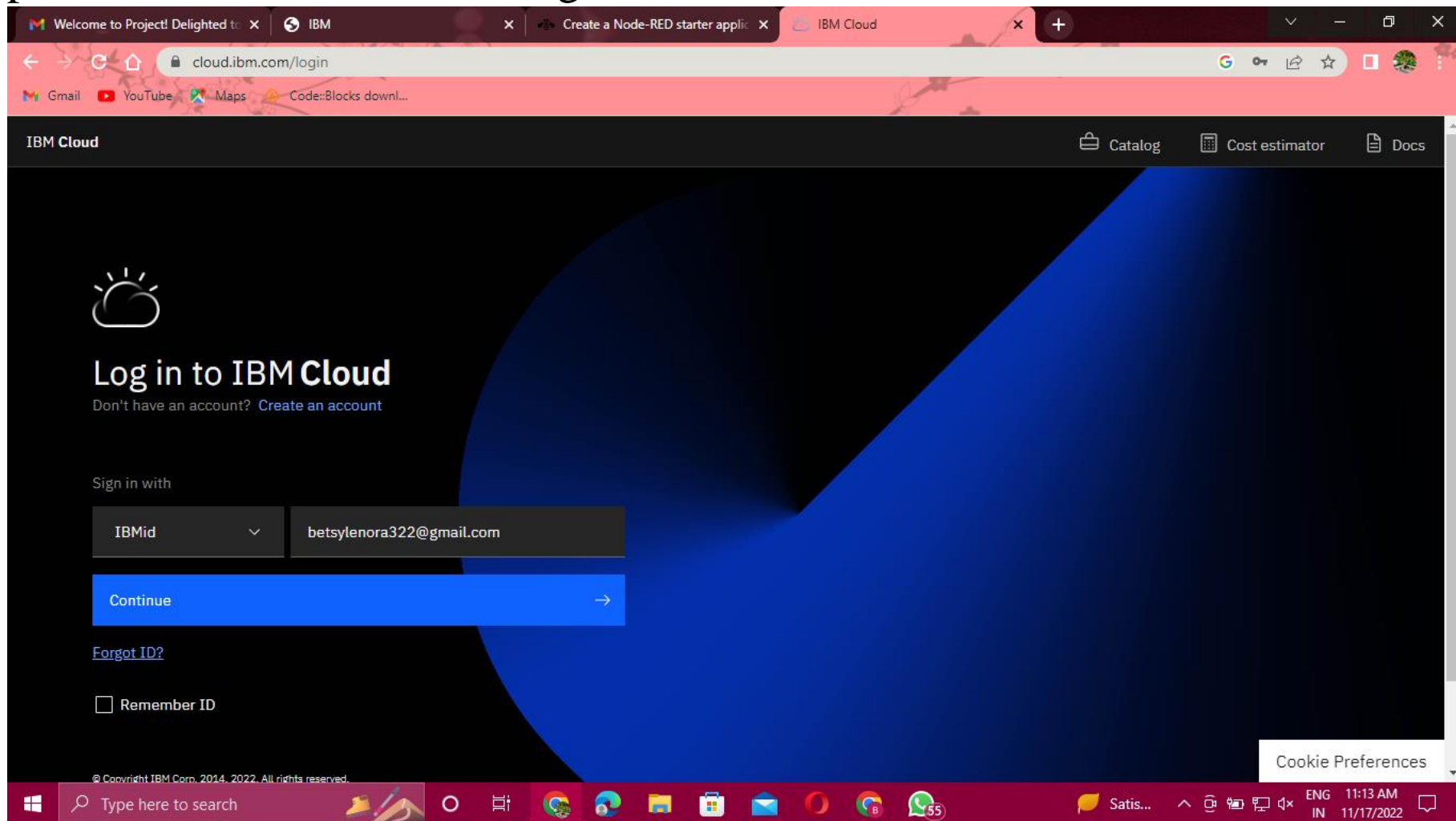
## STEP 2:

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.



## STEP 4:

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

The screenshot displays the IBM Cloud Dashboard interface. At the top, the browser address bar shows 'cloud.ibm.com'. The dashboard header includes the 'IBM Cloud' logo, a search bar, and navigation links for 'Catalog', 'Manage', and the user account 'BETSY LENORA A's Acc...'. A 'Create resource' button is prominently displayed in blue. The main content area is titled 'Dashboard' and features a 'For you' section with several service tiles. The first tile is 'Build', which is highlighted in blue and contains the text 'Explore IBM Cloud with this selection of easy starter tutorials and services.' Other tiles include 'Build a web app with Watson Speech to Text', 'Get Started with Watson Studio', 'Build a Virtual Private Cloud (VPC)', 'Learn about IAM Roles', and 'Build a Lift and Shift workload'. Each tile provides a brief description and a 'Getting started' button. The bottom of the dashboard shows sections for 'User access', 'News' (with a 'View all' link), and 'Planned maintenance'. The Windows taskbar at the bottom indicates the system time as 11:16 AM on 11/17/2022.

Welcome to Project! Delighted to... x IBM x Create a Node-RED starter applic x IBM Cloud x +

cloud.ibm.com

Gmail YouTube Maps Code::Blocks downl...

IBM Cloud Search resources and products... Catalog Manage BETSY LENORA A's Acc... ? ? ? ? ? ? ? ? ? ?

Dashboard Edit dashboard Upgrade account Create resource

For you Select an option

**Build**  
Explore IBM Cloud with this selection of easy starter tutorials and services.

**Build a web app with Watson Speech to Text**  
Deploy a conversational interface compatible with any application, device, or channel.  
Getting started 15 min

**Get Started with Watson Studio**  
Get started with using AI and Cloud Object Storage in 15 minutes.  
Popular 2 hr

**Build a Virtual Private Cloud (VPC)**  
Upgrade to a paid account to create your own protected space in the IBM Cloud.  
Getting started 7 min

**Learn about IAM Roles**  
Learn about roles in IBM Cloud and how they work to control access.  
Recommended 5 min

**Build a Lift and Shift workload**  
Getting started

User access Manage users News View all Planned maintenance View

Enter email addresses below to jump directly into the invite user setup.

IBM Cloud Satellite New Pricing

Type here to search 29°C ENG 11:16 AM 11/17/2022

## 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 (You must deploy your app first), Source (Download code button), Resource group (Default), Deployment target (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 "Deploy your app" button.

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**.

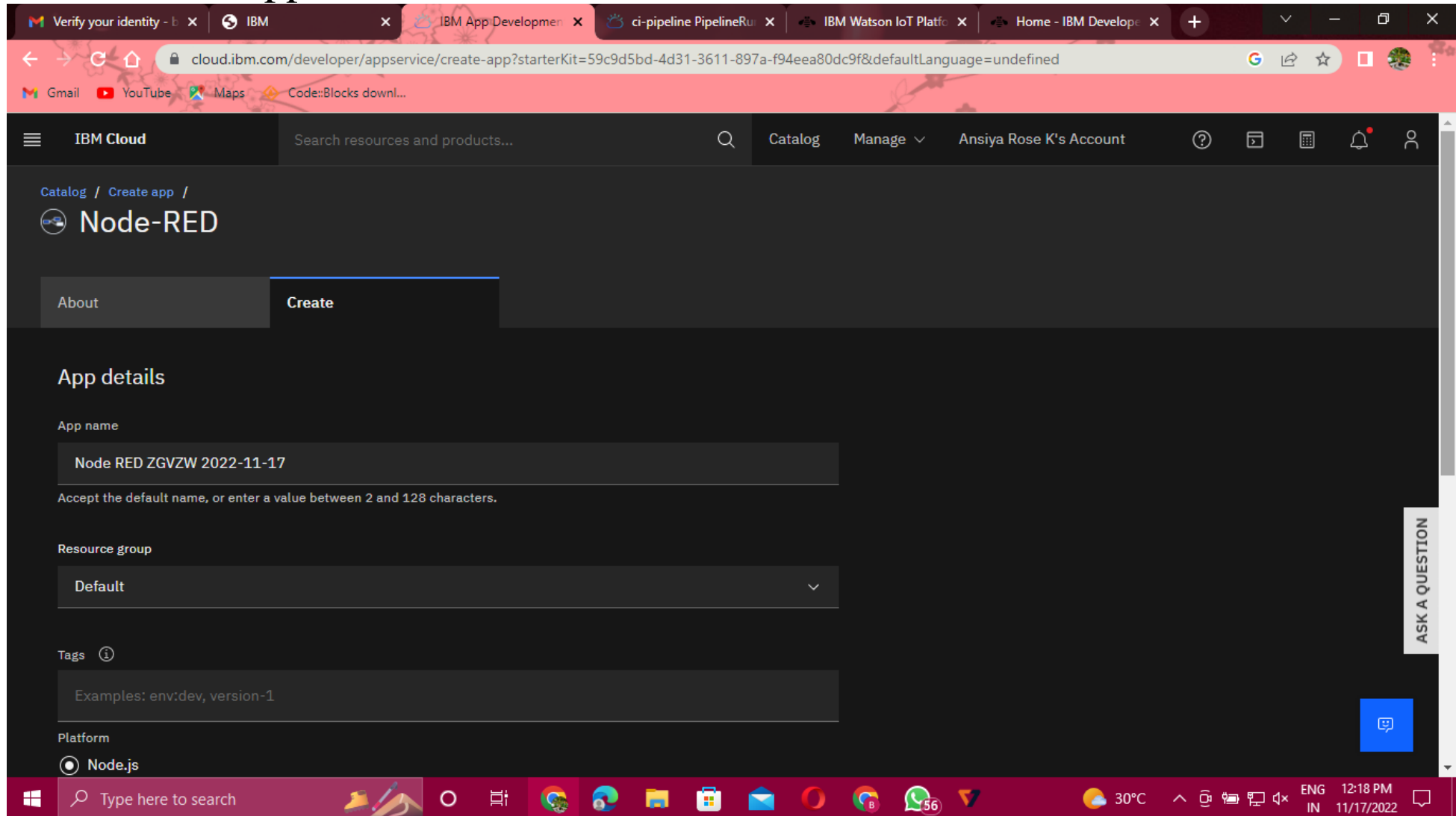
## STEP 9:

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 to 'Author: IBM', 'Docs', and 'API docs'. Below this, 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 '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).

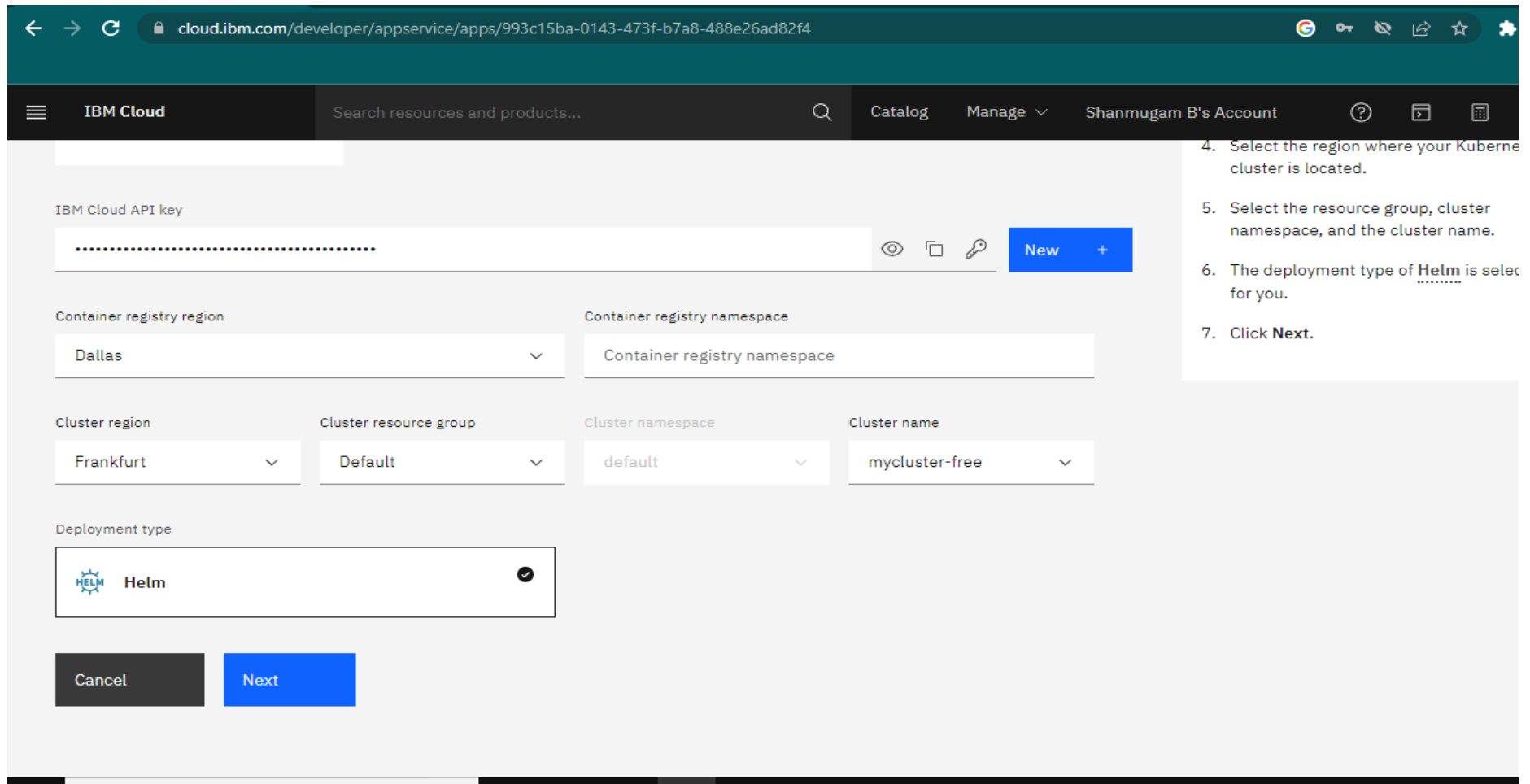
## STEP 10:

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



## 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 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.

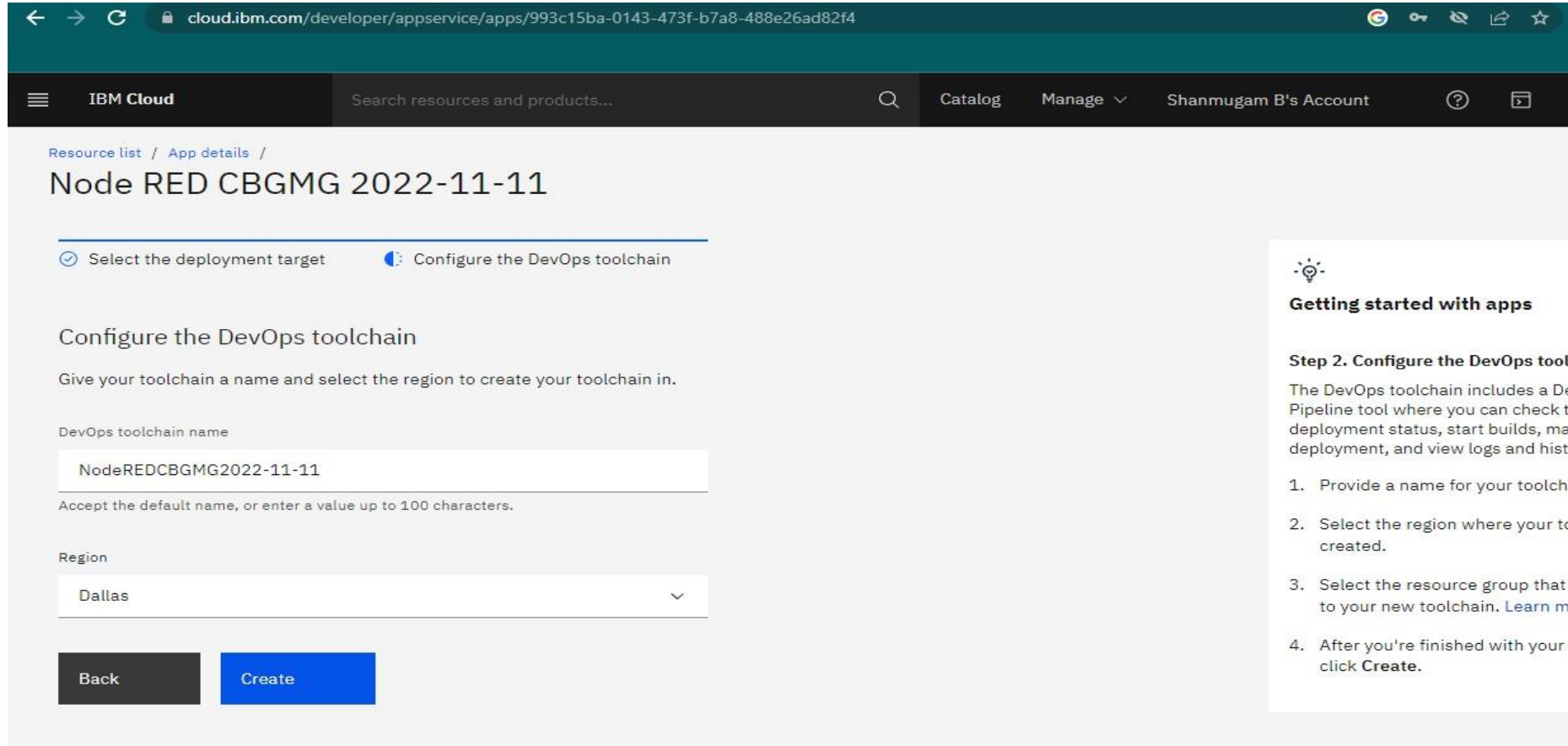
At the bottom of the form are two buttons: "Cancel" and "Next".

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.



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.

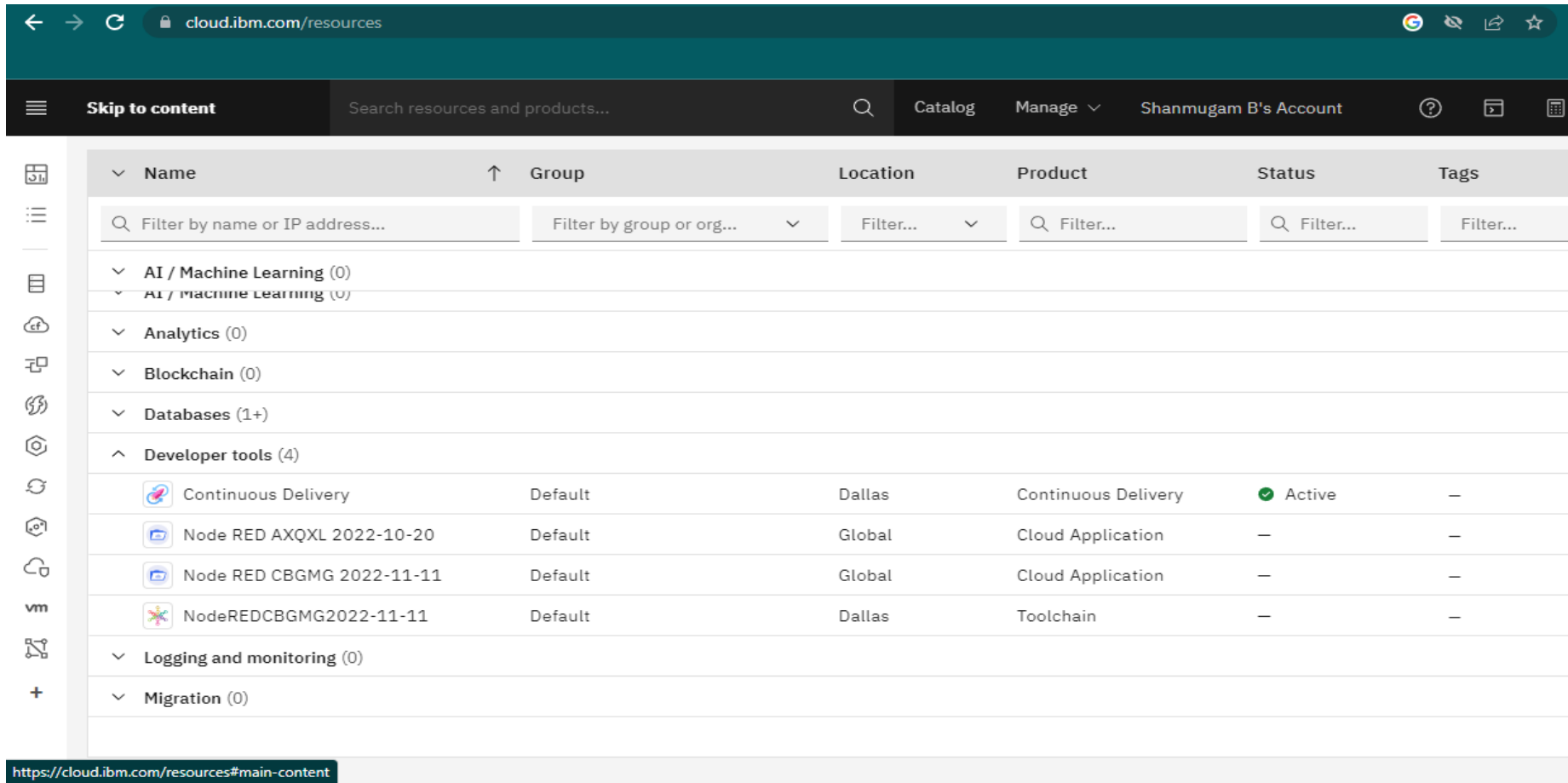
The screenshot displays the IBM Cloud DevOps console interface. The browser's address bar shows the URL: `cloud.ibm.com/devops/pipelines/tekton/f73a87da-35a8-474e-af26-d7c81f7607dc/runs/82984e44-a7e4-4339-a1e6-6f26d9b60529/publish-deployable-task?env_id...`. The page title is "ci-pipeline PipelineRun". The left sidebar contains a navigation menu with "PipelineRuns" selected. The main content area shows the details of a specific PipelineRun: "simple-hosted-pipeline-82984e44-a7e4-4339-a1e6-6f26d...". The status is "Running", with "Tasks Completed: 2 (Failed: 0, Cancelled 0), Incomplete: 4, Skipped: 0". The duration is "11m 34s". The first task, "#1", was triggered by "ansiyarose2001@gmail.com" via "manual-run" on a worker "IBM Managed workers in LONDON". A list of tasks is shown on the left: "extract-repository-...", "clone-task", "code-risk-analyzer", "build", and "rolling-deploy-task". The "publish-deployable-task" is currently "Pending". The console output shows the following steps:

```
1 steps:
2   - name: publish-deployable-mapping
```

The Windows taskbar at the bottom shows the time as 12:27 PM on 11/17/2022, with a temperature of 30°C and language set to ENG IN.

## STEP 14:

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



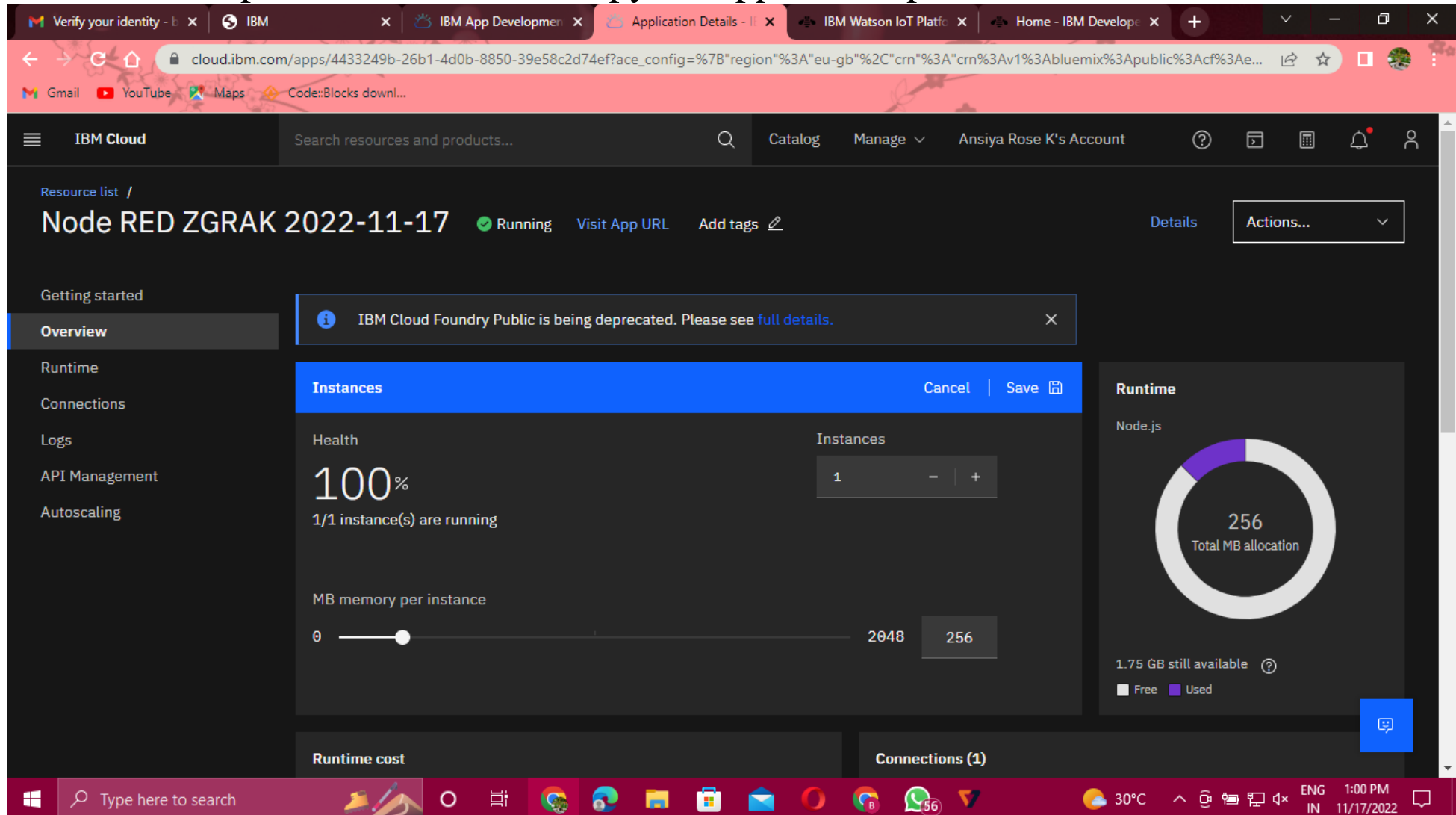
The screenshot shows the IBM Cloud Resources page. The browser address bar displays [cloud.ibm.com/resources](https://cloud.ibm.com/resources). The page header includes a search bar, navigation links (Catalog, Manage), and the user's account (Shanmugam B's Account). The left sidebar contains a menu with icons for various resource categories. The main content area displays a table of resources, with the 'Developer tools' section expanded. The table has columns for Name, Group, Location, Product, Status, and Tags. The resources listed are:

Name	Group	Location	Product	Status	Tags
AI / Machine Learning (0)					
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:

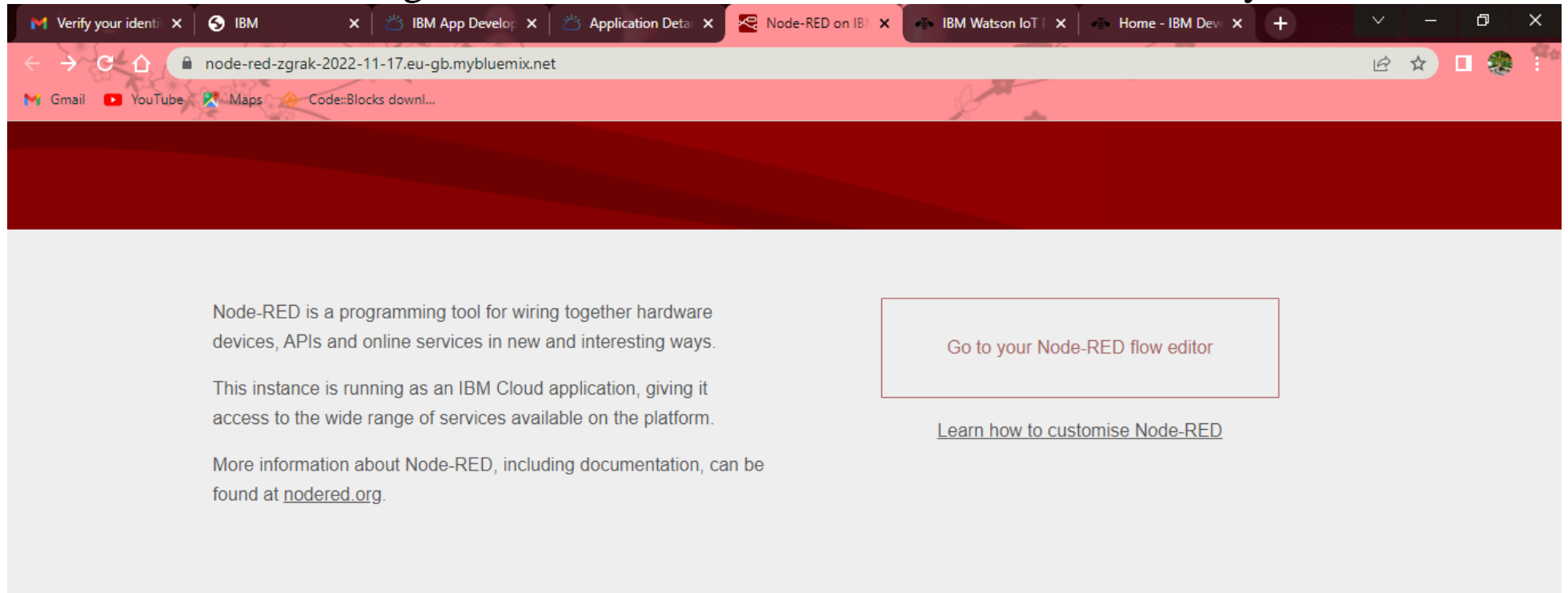
Now you will be redirected your Node-red app there you can see your App url and Source. To open Node-red editor copy the app url and paste in new tab.





## 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.



### Customising your instance of Node-RED

This instance of Node-RED is enough to get you started creating flows.

You may want to customise it for your needs, for example replacing this introduction page with your own, adding http authentication to the flow editor or adding new nodes to the palette.