

Create And Configure IBM Cloud Services

Project Title	SmartFarmer – IoT Enabled Smart Farming Application
Team ID	PNT2022TMID03604
Content	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, and deep industry expertise, trusted by thousands of enterprises. Below the ad, there are several links: "Watson AI", "IBM Let's Create", "Chat with IBM Sales", and "Modernise Hybrid Cloud". To the right of the search results, there is an image gallery for "IBM cloud computing". The gallery includes the IBM Cloud logo, a diagram of cloud services and networks, and a person interacting with a cloud interface. The gallery also shows a "More images" button and a "Computer software" category.

Google

ibm cloud

Tools

About 20,70,00,000 results (0.48 seconds)

Ad • <https://www.ibm.com/cloud/computing>

IBM Cloud® - Cloud Computing

A robust suite of advanced data and AI tools, and deep industry expertise. Discover a faster, more secure journey to **cloud** trusted by thousands of enterprises. Enterprise-Grade **Cloud**. Chat, Call, or Email **IBM**. Types: Full Stack **Cloud** Platform, Hybrid **Cloud**, Developer Tools.

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.

Modernise Hybrid Cloud
Let's Create Cloud Management That Requires Less Management.

IBM Cloud

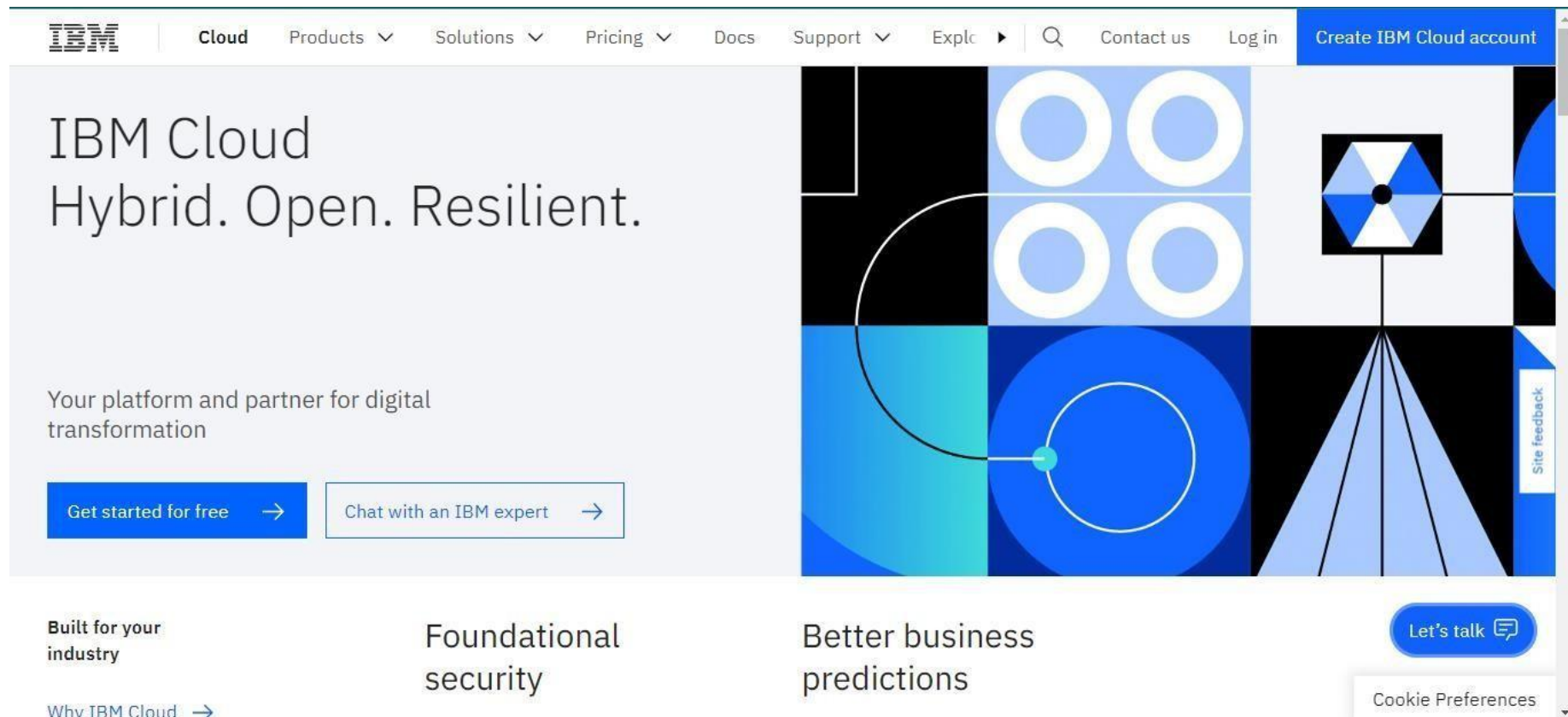
IBM Cloud computing is a set of cloud computing services for business offered by the information

More images

Computer software

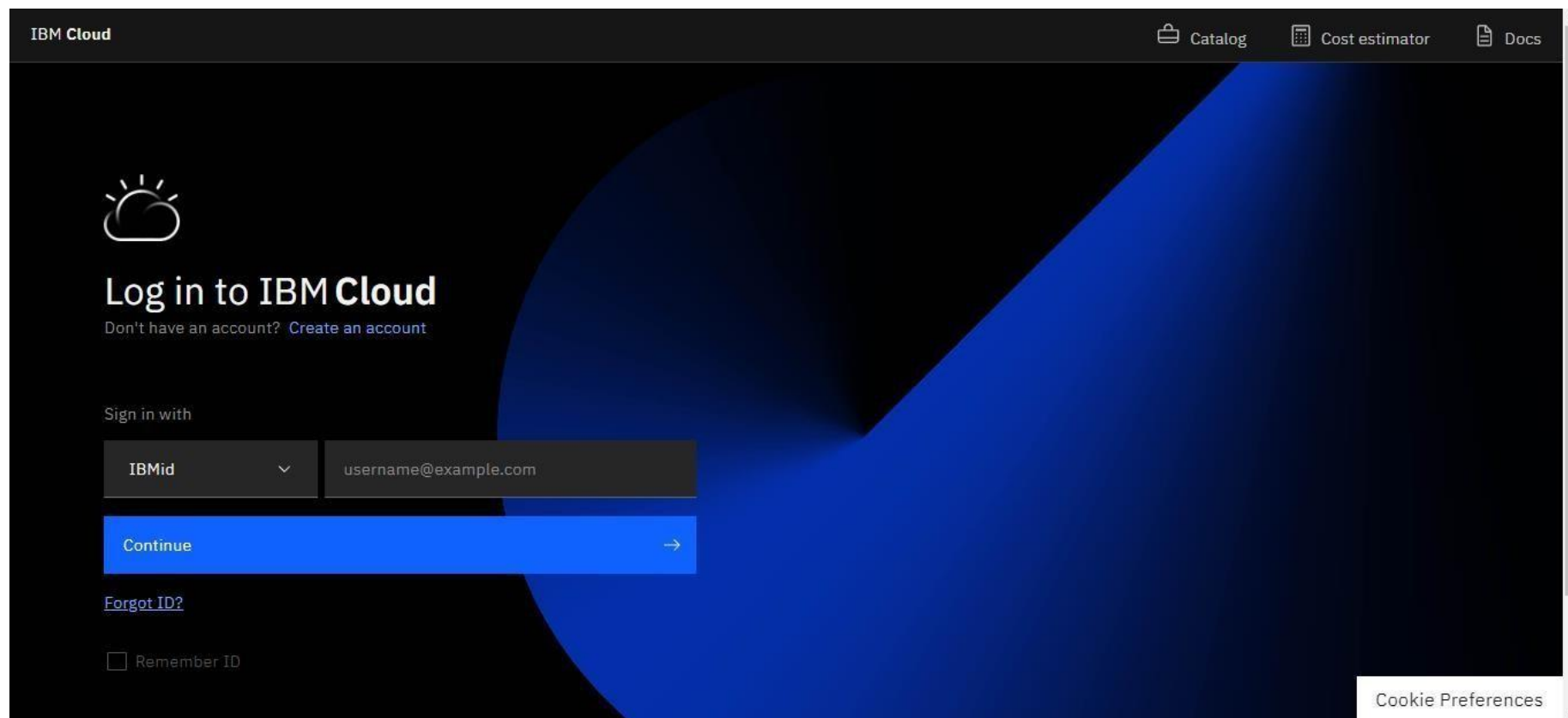
STEP 2:

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, followed by the text 'Log in to IBM Cloud' and a link 'Don't have an account? Create an account'. Below this, 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.

IBM Cloud

Catalog Cost estimator Docs



Log in to IBM Cloud

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

Sign in with

IBMid ▼ username@example.com

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. A search bar at the top left contains the text "Node-Red". A dropdown menu displays the search results:

- Resource Results**
 - [View all resource results](#)
 - node-red-fault-2022--cloudant-1666288193229**
Service
- Catalog Results**
 - [View all catalog results](#)
 - Node-RED App**
Service
 - [Search "Node-Red" in Support Cases](#)
 - [Search "Node-Red" in Docs](#)

The dashboard background shows various sections:

- Dashboard** (with a dropdown arrow)
- For you** section with a "Build" card and a "vm" card.
- Build** card: "Explore IBM Cloud with the selection of easy starter tutorials and services."
- vm** card: "Build a virtual machine. Lift and shift your VMware workloads to the IBM Cloud."
- Build and deploy Node.js apps** card: "Go from zero to production in minutes with your Node.js applications, integrate with Watson and other services, scale your microservices."
- News** section with a "View all" link and three news items: "SLSA Support in IBM Cloud Continuous Delivery", "WebSphere Application Server Support Restatement", and "IBM Adds Lifecycle Services to Enterprise Networking and Deepens Strategic Partnership".
- Recent support cases** section with a "View all" link.
- Planned maintenance** section with a "View all" link.
- IBM Cloud status** section with a "View all" link and a world map visualization.

The bottom of the screen shows a Windows taskbar with the date and time: 1:49 PM, 11/15/2022.

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.

The screenshot shows the IBM Cloud Developer console interface for creating a new application. The browser tabs at the top include IBM, IBM-Project-2172, MIT App Inventor, (305) Ghilli, New Tab, IBM Cloud and N, IBM App Develop, and IBM Watson IoT P. The address bar shows the URL: `dcloud.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 profile (KISHORE KUMAR's Ac...). The main content area is titled 'Tags' and includes a text input field with the placeholder 'Examples: env:dev, version-1'. Below this is the 'Platform' section with a radio button selected for 'Node.js'. The 'Service details' section includes a 'Cloudant' service with a star icon, indicating an existing instance. A note explains that the star means existing instances are available for use. The 'Region' is set to 'London' and the 'Resource group' is 'Default'. The 'Pricing plan' dropdown menu is open, showing the selected plan: 'node-red-faalt-2022--cloudant-1666288193229'. At the bottom, there are 'Cancel' and 'Create' buttons. The system tray at the bottom shows the date and time as 11/15/2022, 1:51 PM, and the language as ENG IN.

STEP 6:

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

The screenshot displays the IBM Cloud Developer console interface. The browser's address bar shows the URL `doud.ibm.com/developer/appservice/apps/8b727ad8-d025-46c2-9612-4fc91ff9d09f`. The page title is "Node RED PWULD 2022-11-15".

Details

App URL	You must deploy your app first
Source	Download code
Resource group	Default
Deployment target	You must deploy your app first
Created	11/15/2022

Services

Cloudant

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

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

Deployment Automation

Configure Continuous Delivery

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

[Deploy your app](#)

[Show desktop](#)

[ASK A QUESTION](#)

29°C Cloudy 1:52 PM 11/15/2022

STEP 7:

Now click Deploy your app option.

Resource list / App details /

Node RED PWULD 2022-11-15

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.

Code Engine

IBM

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 API key

IBM Cloud API key

New +

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 to no 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 provisioned. [Create cluster.](#)

Steps

29°C Cloudy

1:52 PM 11/15/2022

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. At the top, there's a navigation bar with the IBM Cloud logo and a search bar. Below the navigation bar, the main content area displays the 'IBM Cloud API key' section. A text box shows the API key: 'SA6FLUz1j39aDuAs3fjvHKtTN2cASPUYz1oAGX-ONpSa'. To the right of the text box is a 'New' button with a plus sign. Below the API key section, there's a 'Note' stating: 'Your cluster status must be available before you can select it.' Below the note, there are several dropdown menus for configuration: 'Container registry region', 'Container registry namespace', 'Cluster region' (set to 'Dallas'), 'Cluster resource group' (set to 'Default'), 'Cluster namespace' (set to 'default'), and 'Cluster name' (set to 'No clusters available'). A 'Create new' button is located below these dropdowns. At the bottom, there's a 'Deployment type' section with a dropdown menu showing 'Helm' selected. To the right of the main content area, there's a sidebar with a 'Steps' section containing a list of instructions: 1. Create an IBM Cloud API key, or select an existing one from a secrets store. 2. Select the container registry region. 3. Enter the container registry namespace if it is not already completed. 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**. At the bottom right of the sidebar is a button labeled 'ASK A QUESTION'. The bottom of the screen shows a Windows taskbar with various application icons and system information like '29°C Cloudy' and '1:53 PM 11/15/2022'.

IBM Cloud API key

SA6FLUz1j39aDuAs3fjvHKtTN2cASPUYz1oAGX-ONpSa

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

Container registry region: Container registry region

Container registry namespace: Container registry namespace

Cluster region: Dallas

Cluster resource group: Default

Cluster namespace: default

Cluster name: No clusters available

Create new

Deployment type: Helm

Cancel Next

Steps

1. Create an IBM Cloud API key, or select an existing one from a secrets store.
2. Select the container registry region.
3. Enter the container registry namespace if it is not already completed.
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**.

ASK A QUESTION

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 console interface for creating a new Kubernetes cluster. The browser address bar displays `dcloud.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 profile (KISHORE KUMAR's Account). The main content area is titled "Kubernetes cluster" and includes tabs for "Create" and "About". Below the tabs, there is a promotional banner for Red Hat OpenShift. The "Plan details" section shows a "Pricing plan" dropdown menu set to "Free". The "Kubernetes version" section prompts the user to select a version. On the right side, a "Summary" panel displays the selected plan as "Free" for a "Worker node" with specifications: "Free - 2 vCPUs 4GB RAM", "Virtual - shared", and "Ubuntu 18". It also shows the "Total estimated cost" as "Free/mo" and includes a "Create" button and an "Add to estimate" button. The bottom of the screen shows a Windows taskbar with various application icons and system status information (29°C Cloudy, 1:54 PM, 11/15/2022).

IBM Cloud

Search resources and products...

Catalog Manage KISHORE KUMAR's Account

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 about versions, including links to the container platform community release notes, [see the docs](#).

Summary

United States

Kubernetes cluster

1 Worker node Free

Free - 2 vCPUs 4GB RAM
Virtual - shared
Ubuntu 18

Total estimated cost Free/mo

Additional charges for networking and bandwidth might apply.
Actual monthly total will vary with tiered pricing.
Estimate does not include costs for integrations.

Create

Add to estimate

29°C Cloudy

1:54 PM 11/15/2022

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 cluster is in a 'Normal' state and expires in 30 days. The page displays various status metrics and details.

Cluster Overview:

- Cluster Name: mycluster-free
- Status: Normal
- Expires in: 30 days
- Actions: Kubernetes dashboard, Actions...

Overview Sidebar:

- Overview (selected)
- Worker nodes
- Worker pools
- DevOps (New)

Status Metrics:

- Node status: 1 of 1, Normal
- Add-on status: 0 of 0, Normal
- Master status: Normal
- Ingress status: Unknown

Details:

Cluster ID	Version	Infrastructure	Zones
cdpkpijf0mj1ea5lhq50	1.24.7_1542	Classic	Milan 01

Created	Resource group	Image security enforcement
11/15/2022, 1:54 PM	Default	<button>Enable</button>

Node health: [Worker node details](#)

Help Sidebar:

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

System Tray:

- 29°C Cloudy
- Windows Taskbar: Search, File Explorer, Mail, Edge, etc.
- System Icons: Network, Volume, Battery
- Language: ENG IN
- Time: 2:14 PM, 11/15/2022

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 browser address bar displays the URL: `doud.ibm.com/developer/appservice/apps/8b727ad8-d025-46c2-9612-4fc91ff9d09f`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user profile (KISHORE KUMAR's Account).

The main content area displays the cluster creation wizard. The cluster name is set to `mycluster-free`. The deployment type is `Helm`. The cluster region is `Frankfurt`, the cluster resource group is `Default`, and the cluster namespace is `default`. The container registry region is `Dallas` and the container registry namespace is `Container registry namespace`. The IBM Cloud API key is `SA6FLUz1j39aDuAs3fjvHKtTN2cASpuYz1oAGX-ONpSa`.

The 'Next' button is highlighted in blue, indicating the next step in the process.

On the right side, there is a 'Before you begin' section with the following instructions:

- 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 provisioned. [Create cluster.](#)

Below this, there is a 'Steps' section with the following steps:

1. Create an IBM Cloud API key, or select an existing one from a secrets store.
2. Select the container registry region.
3. Enter the container registry namespace if it is not already completed.
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**.

The bottom of the screen shows the Windows taskbar with the date and time: 2:15 PM, 11/15/2022.

STEP 12:
Then click on Create.

STEP 13:
You need to wait until ci-pipeline status success.

The screenshot displays the IBM Cloud Developer console interface. The browser's address bar shows the URL: `doud.ibm.com/developer/appservices/apps/8b727ad8-d025-46c2-9612-4fc91ff9d09f`. The page title is "Node RED PWULD 2022-11-15".

Details

App URL	You must deploy your app first
Source	https://us-south.git.cloud.ibm.com/kishorekumar.ece.sec/NodeREDPWULD20...
Resource group	Default
Deployment target	You must deploy your app first
Created	11/15/2022

Services

Cloudant

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

Credentials ▾

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

Deployment Automation

Name	NodeREDPWULD2022-11-15
Location	Dallas
Tool integrations	

Delivery Pipelines

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

The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating 2:25 PM on 11/15/2022.

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 Resource list page. The browser address bar displays `dcloud.ibm.com/resources`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user profile (KISHORE KUMAR's Ac...). A sidebar on the left contains icons for various IBM Cloud services. The main content area is titled "Resource list" and features a "Create resource" button. Below the title is a table with columns: Name, Group, Location, Product, Status, and Tags. The table is filtered to show "Developer tools (8)" resources. The resources listed are:

Name	Group	Location	Product	Status	Tags
Continuous Delivery	Default	Dallas	Continuous Delivery	Active	—
Node RED BPNVV 2022-10-20	Default	Global	Cloud Application	—	—
Node RED CCWBR 2022-10-20	Default	Global	Cloud Application	—	—
Node RED FAALT 2022-10-20	Default	Global	Cloud Application	—	—
Node RED KMKZN 2022-10-20	Default	Global	Cloud Application	—	—
Node RED KYYHT 2022-10-20	Default	Global	Cloud Application	—	—
Node RED PWULD 2022-11-15	Default	Global	Cloud Application	—	—
NodeREDPWULD2022-11-15	Default	Dallas	Toolchain	—	—

Below the table, there are sections for "Logging and monitoring (0)" and "Migration (0)". The Windows taskbar at the bottom shows the date and time as 2:26 PM on 11/15/2022.

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 console interface. The browser tabs at the top include IBM, IBM-Project-3546, MIT App Inventor, (305) Damaki, New Tab, IBM Cloud and N, IBM App Develop, and mycluster-free. The address bar shows the URL: cloud.ibm.com/developer/appservice/apps/8b727ad8-d025-46c2-9612-4fc91ff9d09f. The page title is "Node RED PWULD 2022-11-15" with an "Add tags" link and an "Actions..." dropdown menu.

Details

App URL	http://159.122.175.139:30232
Source	https://us-south.git.cloud.ibm.com/kishorekumar.ece.sec/NodeREDPWULD20...
Resource group	Default
Deployment target	mycluster-free
Created	11/15/2022

Services

Cloudant

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

Credentials ▾

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

Deployment Automation

Name	NodeREDPWULD2022-11-15
Location	Dallas
Tool integrations	

Delivery Pipelines

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

ASK A QUESTION

Show desktop

29°C Cloudy

2:35 PM 11/15/2022

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.

The screenshot shows a web browser window with multiple tabs open, including IBM, IBM-Project, MIT App Inventor, and Node-RED. The address bar shows a URL starting with 159.122.175.139:30232. The main content area has a dark grey header with the text "Node-RED on IBM Cloud". Below this is a large red banner with the text "Node-RED" in white, followed by "Flow-based programming for the Internet of Things" in a smaller white font. The background of the banner features a wavy pattern. Below the banner, on a light grey background, there is a paragraph: "Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways." This is followed by another paragraph: "This instance is running as an IBM Cloud application, giving it access to the wide range of services available on the platform." Below that is a third paragraph: "More information about Node-RED, including documentation, can be found at nodered.org." To the right of these paragraphs is a button with the text "Go to your Node-RED flow editor". Below the button is a link: "[Learn how to customise Node-RED](#)". At the bottom of the browser window, the Windows taskbar is visible, showing the date and time as 2:28 PM on 11/15/2022, and the language set to ENG IN.

Node-RED on IBM Cloud

Node-RED

Flow-based programming for the Internet of Things

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

This instance is running as an IBM Cloud application, giving it access to the wide range of services available on the platform.

More information about Node-RED, including documentation, can be found at nodered.org.

[Go to your Node-RED flow editor](#)

[Learn how to customise Node-RED](#)