

# How to consume Watson APIs using Node-RED



1. Go to <http://bluemix.net/>
2. Login or Signup for an account
3. You will be presented with Dashboard

Dashboard - IBM Cloud Catalog - IBM Cloud

https://console.bluemix.net/dashboard/apps/ Search

IBM Cloud Catalog Docs Support Manage

### Dashboard

RESOURCE GROUP All Resources REGION US South CLOUD FOUNDRY ORG sudharshan.govin...in.ibm.com CLOUD FOUNDRY SPACE dev Filter by resource name... Create resource

#### Cloud Foundry Apps 768 MB/8 GB Used

Name	Route	Memory (MB)	State
node-red-sg1	<a href="http://node-red-sg1.mybluemix.net">node-red-sg1.mybluemix.net</a>	512	Running (1/1)
TelcoChatBot-20171024094658225	<a href="http://telcochatbot-2017102409465...">telcochatbot-2017102409465...</a>	256	Running (1/1)

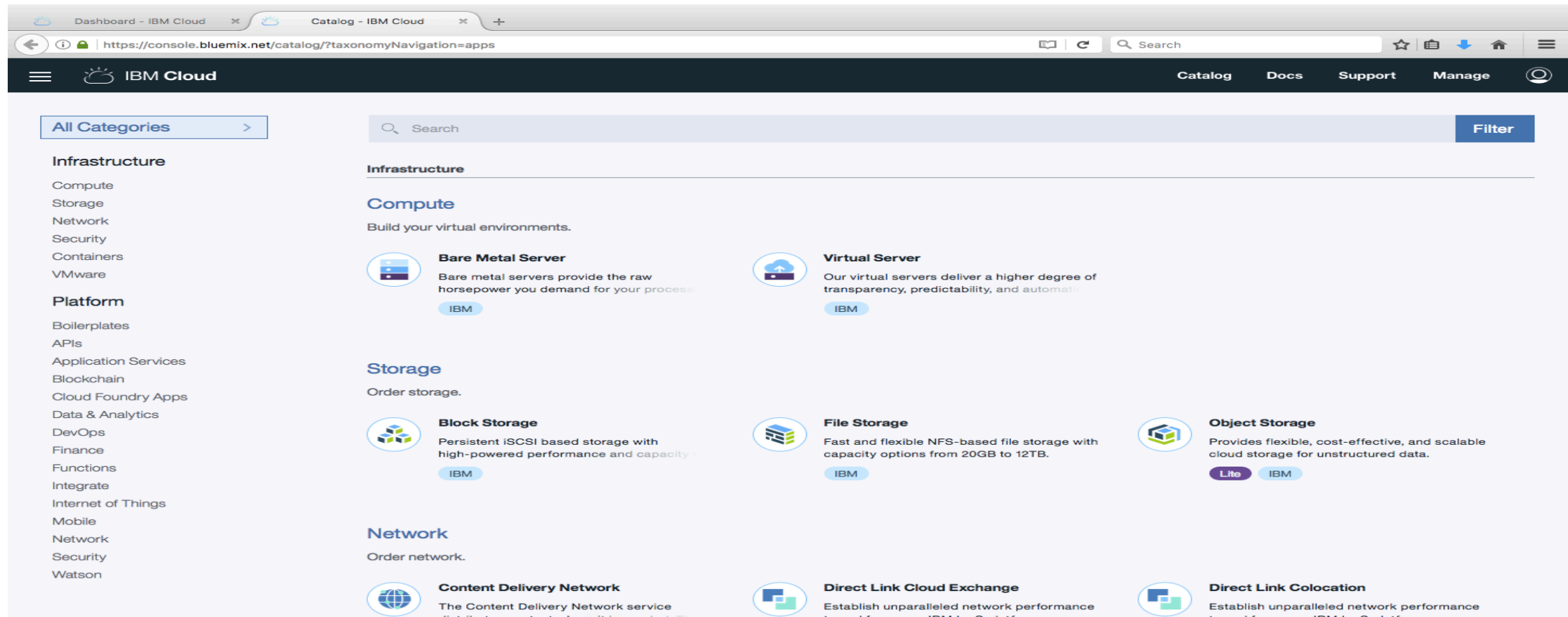
#### Clusters

Name	Location	Nodes	Kube version	Status
wordpress-cluster	us-south-hou02	1	1.74_1503 -->...	Ready

#### Cloud Foundry Services 4/40 Used

Name	Service Offering	Plan
cloudant-db	Cloudant NoSQL DB	Lite
Continuous Delivery	Continuous Delivery	Free
conversation-service	Conversation	Lite

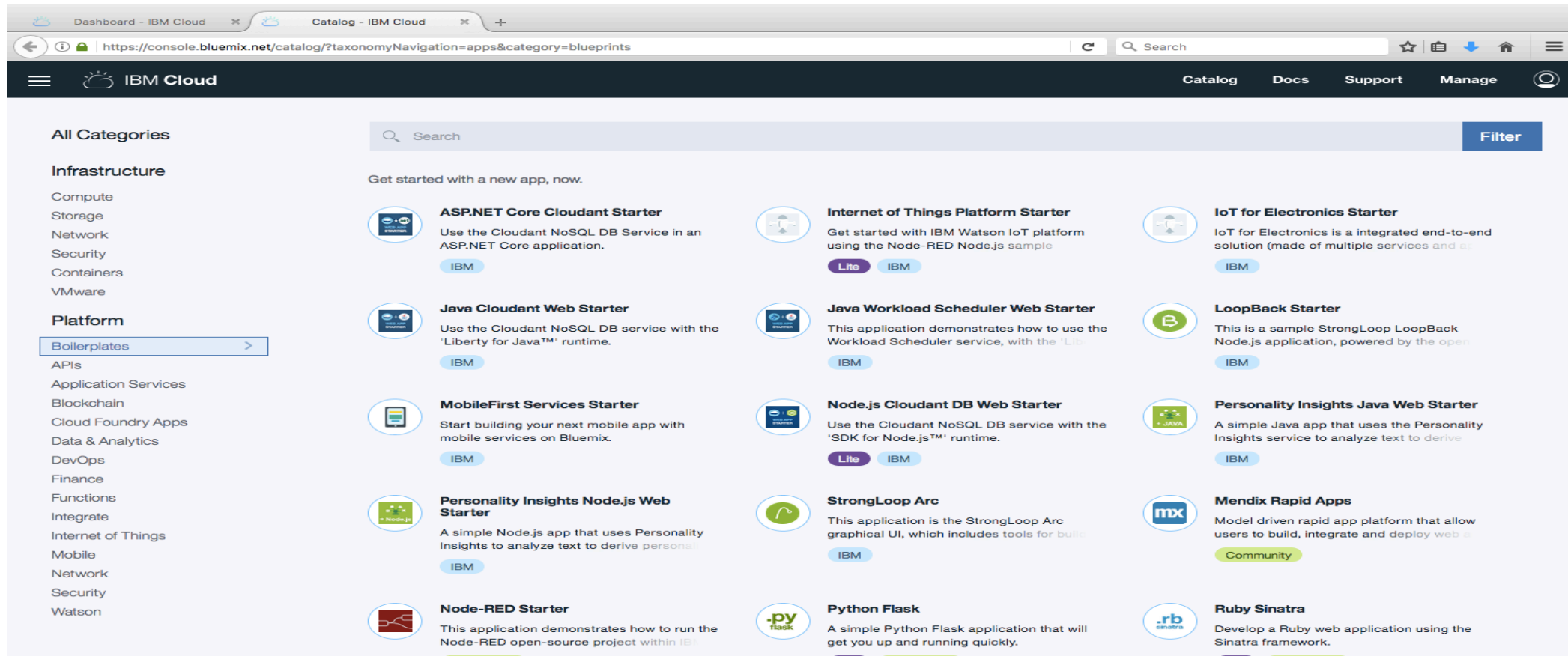
4. Click on the Catalog link at the top right
5. You will be presented with the following screen



The screenshot displays the IBM Cloud Catalog interface. The browser address bar shows the URL <https://console.ibmcloud.net/catalog/?taxonomyNavigation=apps>. The top navigation bar includes links for Catalog, Docs, Support, and Manage. On the left, a sidebar lists categories under Infrastructure (Compute, Storage, Network, Security, Containers, VMware) and Platform (Boilerplates, APIs, Application Services, Blockchain, Cloud Foundry Apps, Data & Analytics, DevOps, Finance, Functions, Integrate, Internet of Things, Mobile, Network, Security, Watson). The main content area features a search bar and a 'Filter' button. Below, the 'Infrastructure' section is expanded, showing 'Compute' and 'Storage' categories. Under 'Compute', there are cards for 'Bare Metal Server' and 'Virtual Server', both with an 'IBM' tag. Under 'Storage', there are cards for 'Block Storage', 'File Storage', and 'Object Storage'. 'Block Storage' and 'File Storage' have an 'IBM' tag, while 'Object Storage' has 'Lite' and 'IBM' tags. The 'Network' section is partially visible at the bottom, showing 'Content Delivery Network', 'Direct Link Cloud Exchange', and 'Direct Link Colocation'.

6. Click on Boilerplates from Platform category on left hand side menu

7. You will be presented with the following screen

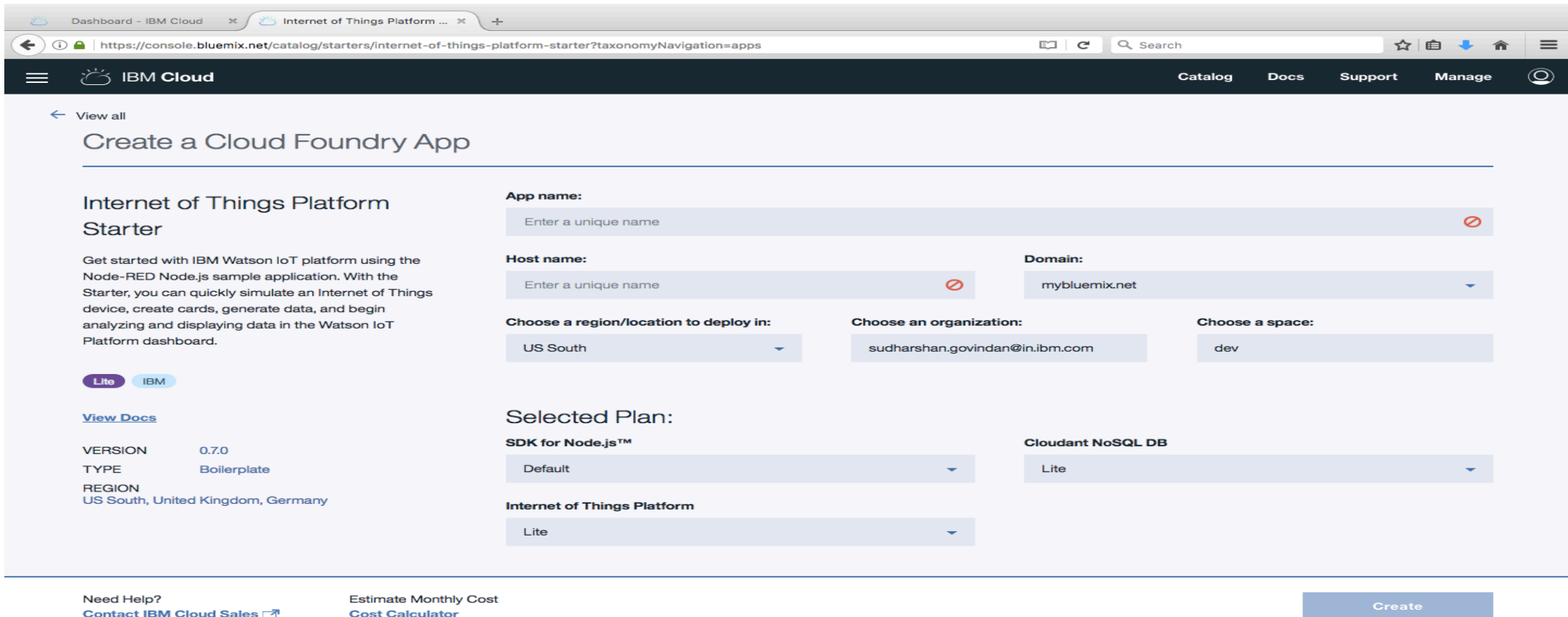


The screenshot displays the IBM Cloud Catalog interface. The left-hand navigation menu is open, showing the 'Platform' category selected, with 'Boilerplates' highlighted. The main content area displays a grid of application starters under the heading 'Get started with a new app, now.' The grid includes:

- ASP.NET Core Cloudant Starter**: Use the Cloudant NoSQL DB Service in an ASP.NET Core application. (IBM)
- Internet of Things Platform Starter**: Get started with IBM Watson IoT platform using the Node-RED Node.js sample. (Lite, IBM)
- IoT for Electronics Starter**: IoT for Electronics is an integrated end-to-end solution (made of multiple services and APIs). (IBM)
- Java Cloudant Web Starter**: Use the Cloudant NoSQL DB service with the 'Liberty for Java™' runtime. (IBM)
- Java Workload Scheduler Web Starter**: This application demonstrates how to use the Workload Scheduler service, with the 'Liberty for Java™' runtime. (IBM)
- LoopBack Starter**: This is a sample StrongLoop LoopBack Node.js application, powered by the open-source Express.js framework. (IBM)
- MobileFirst Services Starter**: Start building your next mobile app with mobile services on Bluemix. (IBM)
- Node.js Cloudant DB Web Starter**: Use the Cloudant NoSQL DB service with the 'SDK for Node.js™' runtime. (Lite, IBM)
- Personality Insights Java Web Starter**: A simple Java app that uses the Personality Insights service to analyze text to derive insights. (IBM)
- Personality Insights Node.js Web Starter**: A simple Node.js app that uses Personality Insights to analyze text to derive insights. (IBM)
- StrongLoop Arc**: This application is the StrongLoop Arc graphical UI, which includes tools for building, testing, and deploying applications. (IBM)
- Mendix Rapid Apps**: Model driven rapid app platform that allows users to build, integrate and deploy web applications. (Community)
- Node-RED Starter**: This application demonstrates how to run the Node-RED open-source project within IBM Cloud. (IBM)
- Python Flask**: A simple Python Flask application that will get you up and running quickly. (IBM)
- Ruby Sinatra**: Develop a Ruby web application using the Sinatra framework. (IBM)

8. Select “Internet of Things Platform Starter”

9. You will see a screen like this



The screenshot shows the IBM Cloud console interface for creating a new Cloud Foundry application. The browser address bar indicates the URL: <https://console.bluemix.net/catalog/starters/internet-of-things-platform-starter?taxonomyNavigation=apps>. The page title is "Create a Cloud Foundry App".

**Internet of Things Platform Starter**

Get started with IBM Watson IoT platform using the Node-RED Node.js sample application. With the Starter, you can quickly simulate an Internet of Things device, create cards, generate data, and begin analyzing and displaying data in the Watson IoT Platform dashboard.

**Lite** **IBM**

[View Docs](#)

VERSION 0.7.0  
TYPE Boilerplate  
REGION US South, United Kingdom, Germany

**App name:**  
Enter a unique name

**Host name:**  
Enter a unique name

**Domain:**  
mybluemix.net

**Choose a region/location to deploy in:**  
US South

**Choose an organization:**  
sudharshan.govindan@in.ibm.com

**Choose a space:**  
dev

**Selected Plan:**

**SDK for Node.js™**  
Default

**Cloudant NoSQL DB**  
Lite

**Internet of Things Platform**  
Lite

[Need Help?](#)  
[Contact IBM Cloud Sales](#)

[Estimate Monthly Cost](#)  
[Cost Calculator](#)

**Create**

10. Fill in the required values. The app name must be unique.
11. Select the correct Region, Org and Space, if not shown properly
12. Click on Create

Dashboard - IBM Cloud x Internet of Things Platform ... x

https://console.bluemix.net/catalog/starters/internet-of-things-platform-starter?taxonomyNavigation=apps

Search

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## Create a Cloud Foundry App

### Internet of Things Platform Starter

Get started with IBM Watson IoT platform using the Node-RED Node.js sample application. With the Starter, you can quickly simulate an Internet of Things device, create cards, generate data, and begin analyzing and displaying data in the Watson IoT Platform dashboard.

**Lite** IBM

[View Docs](#)

VERSION 0.7.0  
TYPE Boilerplate  
REGION US South, United Kingdom, Germany

**App name:**  
watson-node-red-1

**Host name:**  
watson-node-red-1

**Domain:**  
mybluemix.net

**Choose a region/location to deploy in:**  
US South

**Choose an organization:**  
sudharshan.govindan@in.ibm.com

**Choose a space:**  
dev

**Selected Plan:**

**SDK for Node.js™**  
Default

**Cloudant NoSQL DB**  
Lite

**Internet of Things Platform**  
Lite

Need Help?  
[Contact IBM Cloud Sales](#)

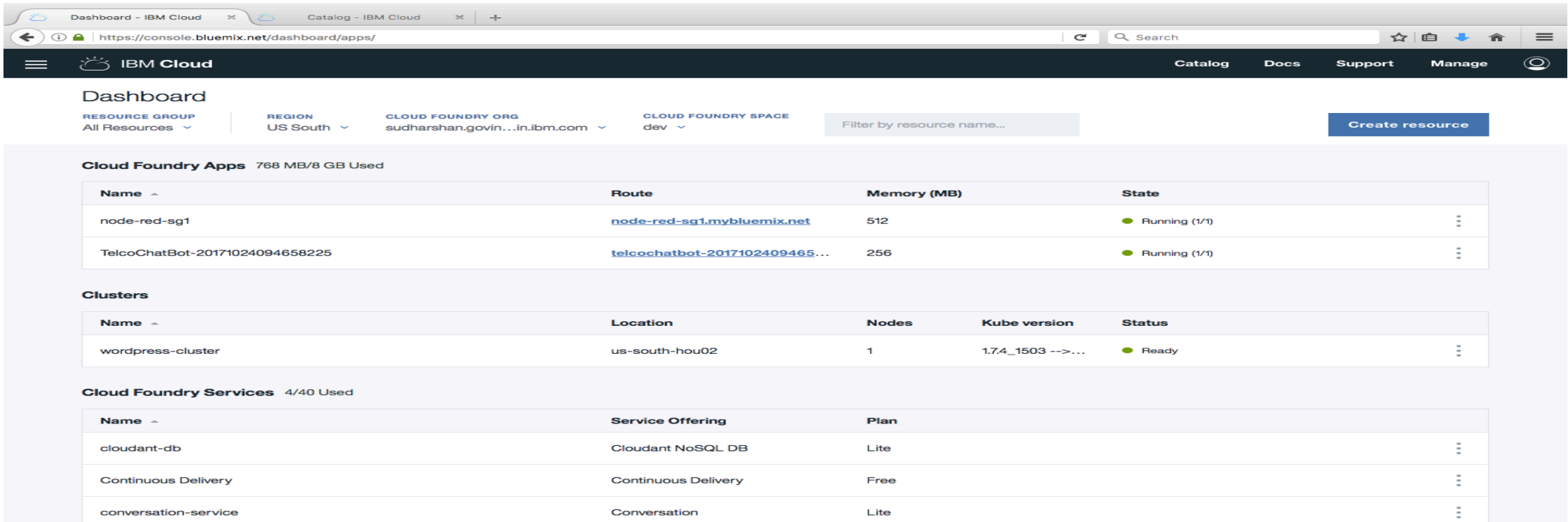
Estimate Monthly Cost  
[Cost Calculator](#)

Create

13. Go to your Dashboard to see the Cloud Foundry App and Service getting created

14. The app will be deployed and the following services are provisioned:

- Node.js runtime
- Cloudant database



The screenshot displays the IBM Cloud Dashboard interface. At the top, there's a navigation bar with 'Catalog', 'Docs', 'Support', and 'Manage' links. Below this, the 'Dashboard' section shows filters for 'RESOURCE GROUP' (All Resources), 'REGION' (US South), 'CLOUD FOUNDRY ORG' (sudharshan.govin...in.ibm.com), and 'CLOUD FOUNDRY SPACE' (dev). A 'Create resource' button is visible on the right.

**Cloud Foundry Apps** 768 MB/8 GB Used

Name	Route	Memory (MB)	State
node-red-sg1	<a href="https://node-red-sg1.mybluemix.net">node-red-sg1.mybluemix.net</a>	512	Running (1/1)
TelcoChatBot-20171024094658225	<a href="https://telcochatbot-20171024094658225.mybluemix.net">telcochatbot-20171024094658225...</a>	256	Running (1/1)

**Clusters**

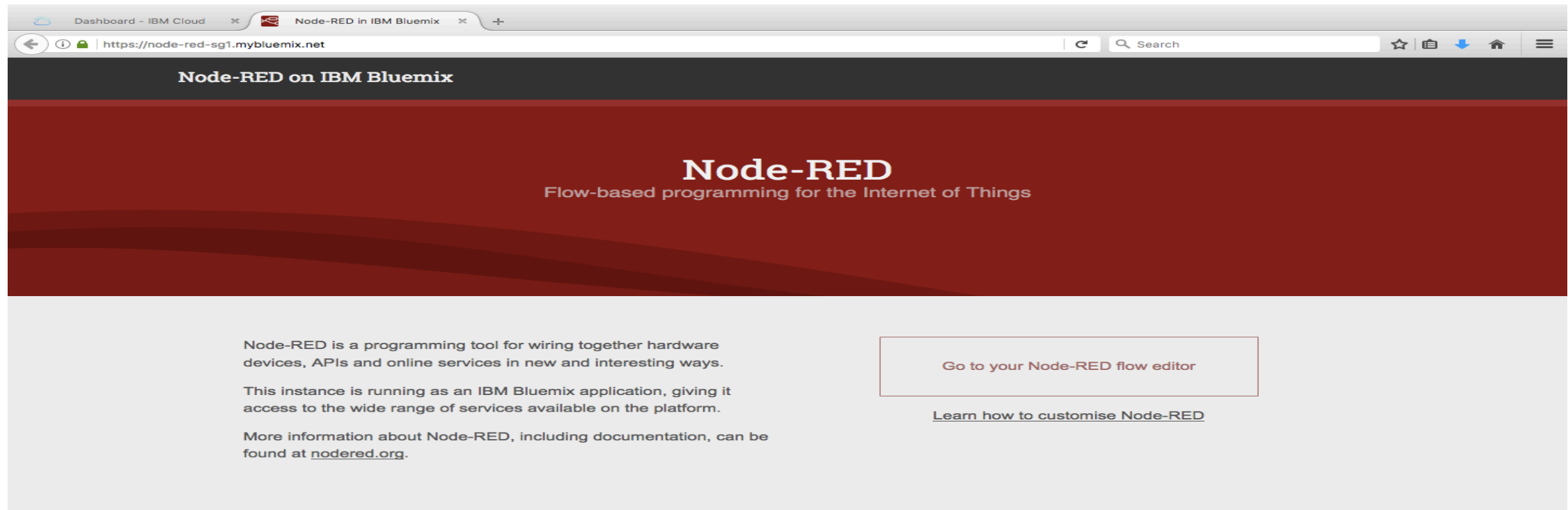
Name	Location	Nodes	Kube version	Status
wordpress-cluster	us-south-hou02	1	1.74_1503 -->...	Ready

**Cloud Foundry Services** 4/40 Used

Name	Service Offering	Plan
cloudant-db	Cloudant NoSQL DB	Lite
Continuous Delivery	Continuous Delivery	Free
conversation-service	Conversation	Lite

15. Click on the app name (node-red-sg1) from Cloud Foundry Apps section

16. It will take you to the Node-RED editor



The screenshot shows a web browser window with two tabs: 'Dashboard - IBM Cloud' and 'Node-RED in IBM Bluemix'. The address bar shows the URL 'https://node-red-sg1.mybluemix.net'. The page has a dark header with the text 'Node-RED on IBM Bluemix'. Below this is a large red banner with the text 'Node-RED' and 'Flow-based programming for the Internet of Things'. The main content area is light gray and contains three paragraphs of text on the left and two buttons on the right. The first paragraph states that Node-RED is a programming tool for wiring together hardware devices, APIs and online services. The second paragraph states that this instance is running as an IBM Bluemix application, giving it access to the wide range of services available on the platform. The third paragraph states that more information about Node-RED, including documentation, can be found at [nodered.org](https://nodered.org). The first button is labeled 'Go to your Node-RED flow editor' and the second button is labeled 'Learn how to customise Node-RED'.

Node-RED on IBM Bluemix

## 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 Bluemix 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](https://nodered.org).

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

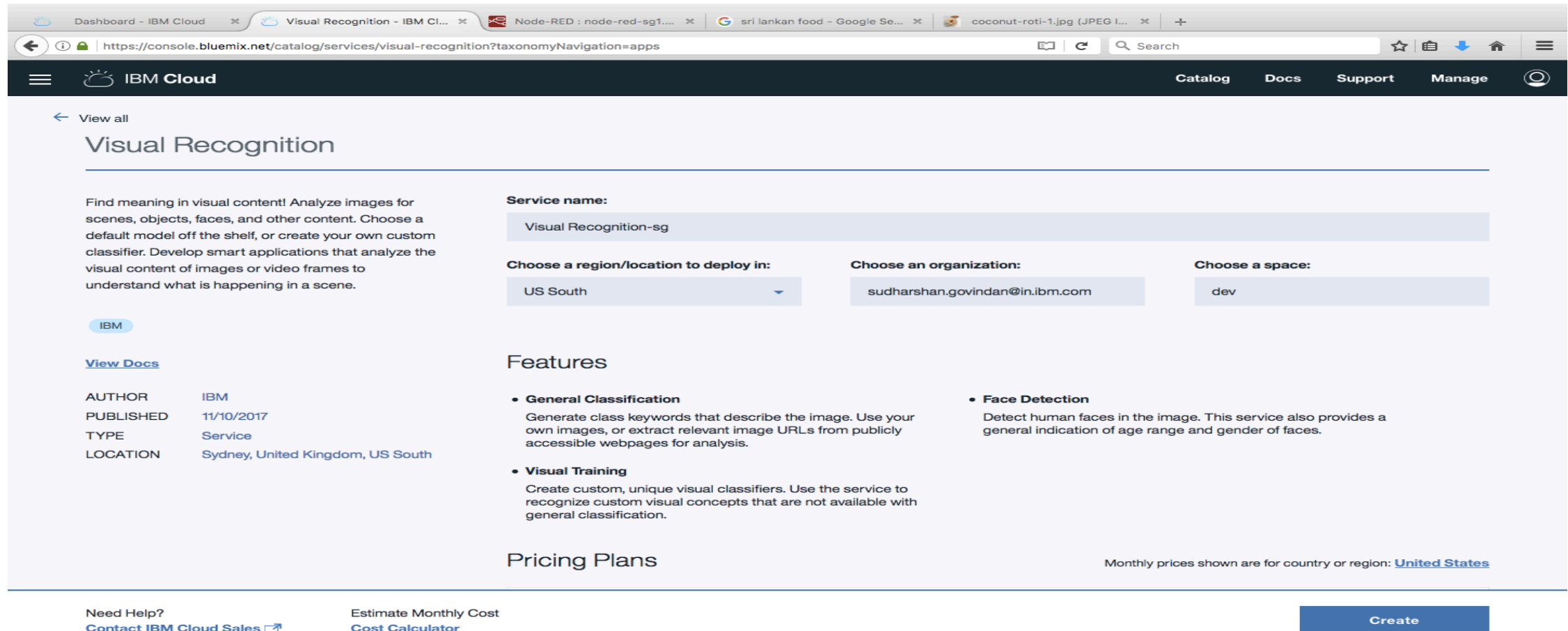
[Learn how to customise Node-RED](#)

### Customising your instance of Node-RED

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



## 17. From Catalog of IBM Cloud console, create a Visual Recognition Service



The screenshot shows the IBM Cloud console interface for the Visual Recognition service. The browser tabs include 'Dashboard - IBM Cloud', 'Visual Recognition - IBM Cl...', 'Node-RED : node-red-sg1...', 'sri lankan food - Google Se...', and 'coconut-roti-1.jpg (JPEG I...'. The address bar shows the URL 'https://console.bluemix.net/catalog/services/visual-recognition?taxonomyNavigation=apps'. The navigation bar includes 'Catalog', 'Docs', 'Support', and 'Manage'. The main content area is titled 'Visual Recognition' and includes a description: 'Find meaning in visual content! Analyze images for scenes, objects, faces, and other content. Choose a default model off the shelf, or create your own custom classifier. Develop smart applications that analyze the visual content of images or video frames to understand what is happening in a scene.' Below this, there are three dropdown menus for configuration: 'Service name:' (Visual Recognition-sg), 'Choose a region/location to deploy in:' (US South), 'Choose an organization:' (sudharshan.govindan@in.ibm.com), and 'Choose a space:' (dev). The 'Features' section lists 'General Classification' (Generate class keywords that describe the image. Use your own images, or extract relevant image URLs from publicly accessible webpages for analysis.), 'Face Detection' (Detect human faces in the image. This service also provides a general indication of age range and gender of faces.), and 'Visual Training' (Create custom, unique visual classifiers. Use the service to recognize custom visual concepts that are not available with general classification.). The 'Pricing Plans' section is partially visible at the bottom. A 'Create' button is located at the bottom right.

Dashboard - IBM Cloud Visual Recognition - IBM Cl... Node-RED : node-red-sg1... sri lankan food - Google Se... coconut-roti-1.jpg (JPEG I... +

https://console.bluemix.net/catalog/services/visual-recognition?taxonomyNavigation=apps

IBM Cloud Catalog Docs Support Manage

View all

### Visual Recognition

Find meaning in visual content! Analyze images for scenes, objects, faces, and other content. Choose a default model off the shelf, or create your own custom classifier. Develop smart applications that analyze the visual content of images or video frames to understand what is happening in a scene.

IBM

[View Docs](#)

AUTHOR	IBM
PUBLISHED	11/10/2017
TYPE	Service
LOCATION	Sydney, United Kingdom, US South

**Service name:**

Visual Recognition-sg

**Choose a region/location to deploy in:**

US South

**Choose an organization:**

sudharshan.govindan@in.ibm.com

**Choose a space:**

dev

### Features

- **General Classification**  
Generate class keywords that describe the image. Use your own images, or extract relevant image URLs from publicly accessible webpages for analysis.
- **Face Detection**  
Detect human faces in the image. This service also provides a general indication of age range and gender of faces.
- **Visual Training**  
Create custom, unique visual classifiers. Use the service to recognize custom visual concepts that are not available with general classification.

### Pricing Plans

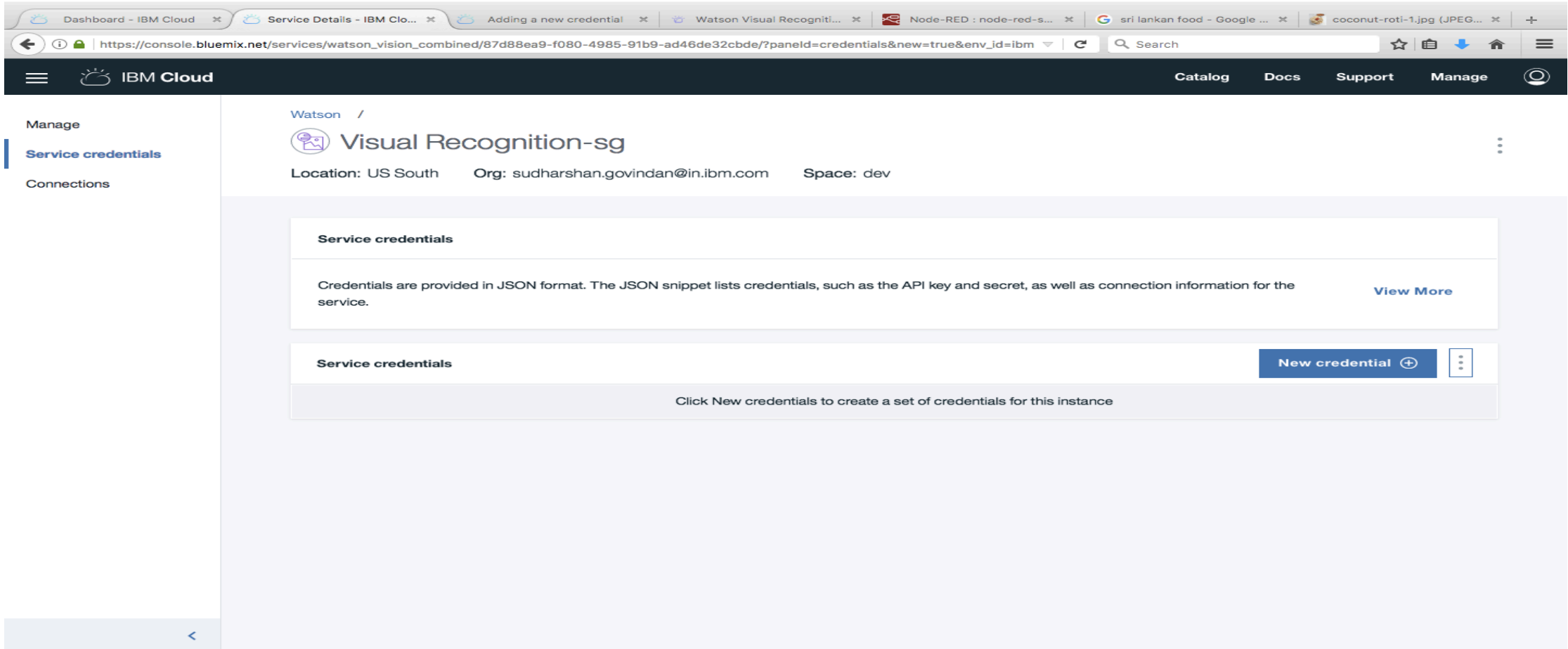
Monthly prices shown are for country or region: [United States](#)

Need Help?  
[Contact IBM Cloud Sales](#)

Estimate Monthly Cost  
[Cost Calculator](#)

Create

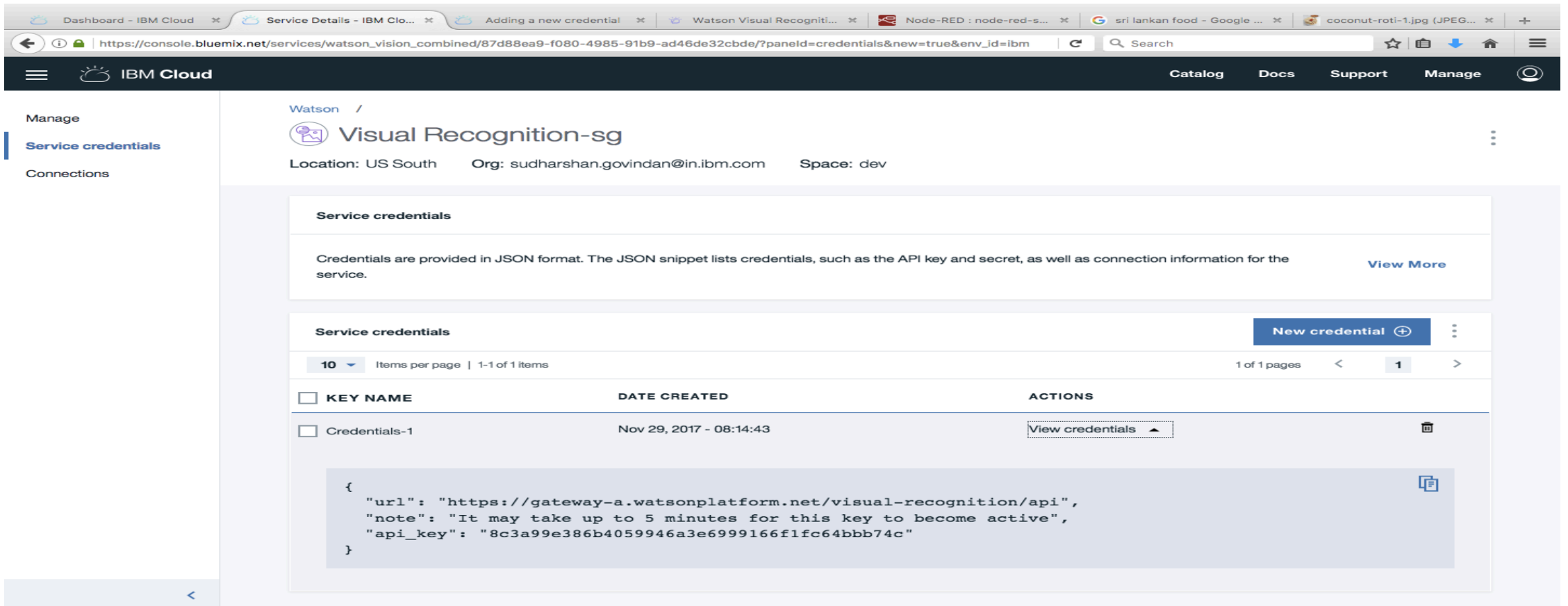
## 18. Click on Service credentials link from LHS menu



The screenshot shows the IBM Cloud console interface. The browser tabs at the top include 'Dashboard - IBM Cloud', 'Service Details - IBM Clo...', 'Adding a new credential', 'Watson Visual Recogniti...', 'Node-RED : node-red-s...', 'sri lankan food - Google ...', and 'coconut-roti-1.jpg (JPEG...'. The address bar shows the URL: [https://console.bluemix.net/services/watson\\_vision\\_combined/87d88ea9-f080-4985-91b9-ad46de32cbde/?panelId=credentials&new=true&env\\_id=ibm](https://console.bluemix.net/services/watson_vision_combined/87d88ea9-f080-4985-91b9-ad46de32cbde/?panelId=credentials&new=true&env_id=ibm). The left sidebar (LHS) menu is open, showing 'Manage', 'Service credentials' (highlighted), and 'Connections'. The main content area displays the 'Visual Recognition-sg' service instance details. It shows 'Location: US South', 'Org: sudharshan.govindan@in.ibm.com', and 'Space: dev'. Below this, there is a section titled 'Service credentials' with a description: 'Credentials are provided in JSON format. The JSON snippet lists credentials, such as the API key and secret, as well as connection information for the service.' A 'View More' link is present. At the bottom, there is a 'New credential' button and a message: 'Click New credentials to create a set of credentials for this instance'.

19. Click on “New credential” button

20. Note down the api\_key



The screenshot shows the IBM Cloud console interface for the Watson Visual Recognition service. The left sidebar contains navigation links for 'Manage', 'Service credentials', and 'Connections'. The main content area is titled 'Visual Recognition-sg' and shows the 'Service credentials' section. A 'New credential' button is visible in the top right of the credentials list. Below the button, a table lists the credentials. The table has columns for 'KEY NAME', 'DATE CREATED', and 'ACTIONS'. The first row shows a credential named 'Credentials-1' created on 'Nov 29, 2017 - 08:14:43'. The 'ACTIONS' column for this credential includes a 'View credentials' button. Below the table, a JSON snippet is displayed, showing the API key and URL for the service.

```
{
  "url": "https://gateway-a.watsonplatform.net/visual-recognition/api",
  "note": "It may take up to 5 minutes for this key to become active",
  "api_key": "8c3a99e386b4059946a3e6999166f1fc64bbb74c"
}
```

21. From the Node-RED editor, drag

- “inject” node from input
- “visual recognition” from IBM Watson
- “debug” from output



The screenshot shows the Node-RED web interface in a browser. The left sidebar contains a palette of nodes, with the 'IBM Watson' category expanded, showing nodes like 'conversation', 'discovery', and 'visual recognition'. The main workspace displays a flow named 'Flow 2' with three nodes connected in sequence: 'timestamp', 'visual recognition', and 'msg.payload'. The right sidebar shows the 'info' tab for 'Flow 2', displaying its ID as '49c59838.8ce02' and status as 'Enabled'.

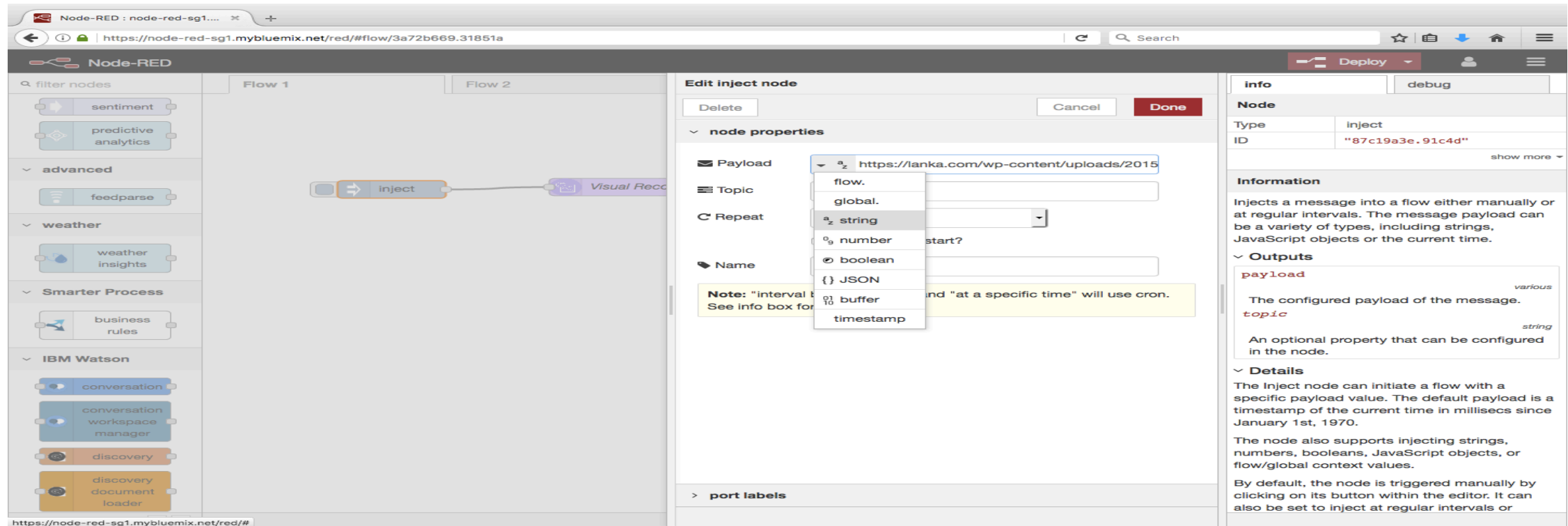
Flow	
Name	Flow 2
ID	"49c59838.8ce02"
Status	Enabled

Information	
-------------	--

22. Drag to connect all the nodes

23. Double click on inject node. Select “string” from Payload drop-down.

24. Enter this url - <https://lanka.com/wp-content/uploads/2015/04/coconut-roti-1.jpg> as its value and click Done



The screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow with an 'inject' node connected to a 'Visual Recognition' node. The 'inject' node is selected, and the 'Edit inject node' dialog is open. In this dialog, the 'Payload' dropdown menu is open, showing various options. The 'string' option is highlighted. The 'Topic' field contains the URL 'https://lanka.com/wp-content/uploads/2015/04/coconut-roti-1.jpg'. The 'Repeat' field is empty. The 'Name' field is empty. The 'Info' panel on the right shows details about the inject node, including its type, ID, and a description of its functionality.

**Edit inject node**

node properties

Payload: https://lanka.com/wp-content/uploads/2015/04/coconut-roti-1.jpg

Topic:

Repeat:

Name:

Note: "interval" and "at a specific time" will use cron.

port labels

**Info**

Node

Type: inject

ID: "87c19a3e.91c4d"

Information

Injects a message into a flow either manually or at regular intervals. The message payload can be a variety of types, including strings, JavaScript objects or the current time.

Outputs

payload: various

The configured payload of the message.

topic: string

An optional property that can be configured in the node.

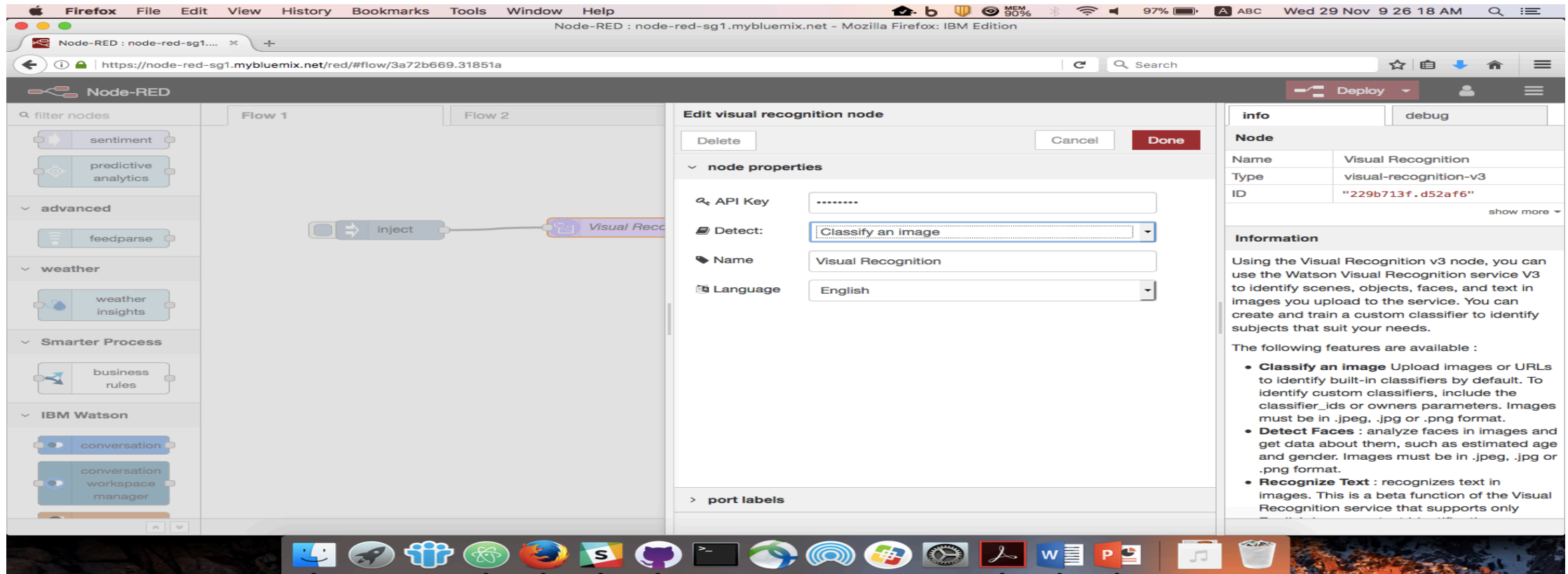
Details

The Inject node can initiate a flow with a specific payload value. The default payload is a timestamp of the current time in millisecs since January 1st, 1970.

The node also supports injecting strings, numbers, booleans, JavaScript objects, or flow/global context values.

By default, the node is triggered manually by clicking on its button within the editor. It can also be set to inject at regular intervals or

25. Double click Visual Recognition node
26. Enter the API Key from #20
27. Select “Classify an image” for Detect and click Done



The screenshot shows the Node-RED web interface in a Firefox browser. The main workspace displays a flow with an 'inject' node connected to a 'Visual Recognition' node. The 'Visual Recognition' node is selected, and its configuration panel is open on the right. The configuration panel includes a 'Delete' button, 'Cancel', and 'Done' buttons. Under 'node properties', the 'API Key' is masked with dots, 'Detect' is set to 'Classify an image', 'Name' is 'Visual Recognition', and 'Language' is 'English'. The right sidebar shows the 'info' tab with details about the 'Visual Recognition' node, including its type 'visual-recognition-v3' and ID '229b713f.d52af6'. Below this, an 'Information' section provides details about the Visual Recognition v3 service and its features.

**Node**


Name	Visual Recognition
Type	visual-recognition-v3
ID	"229b713f.d52af6"

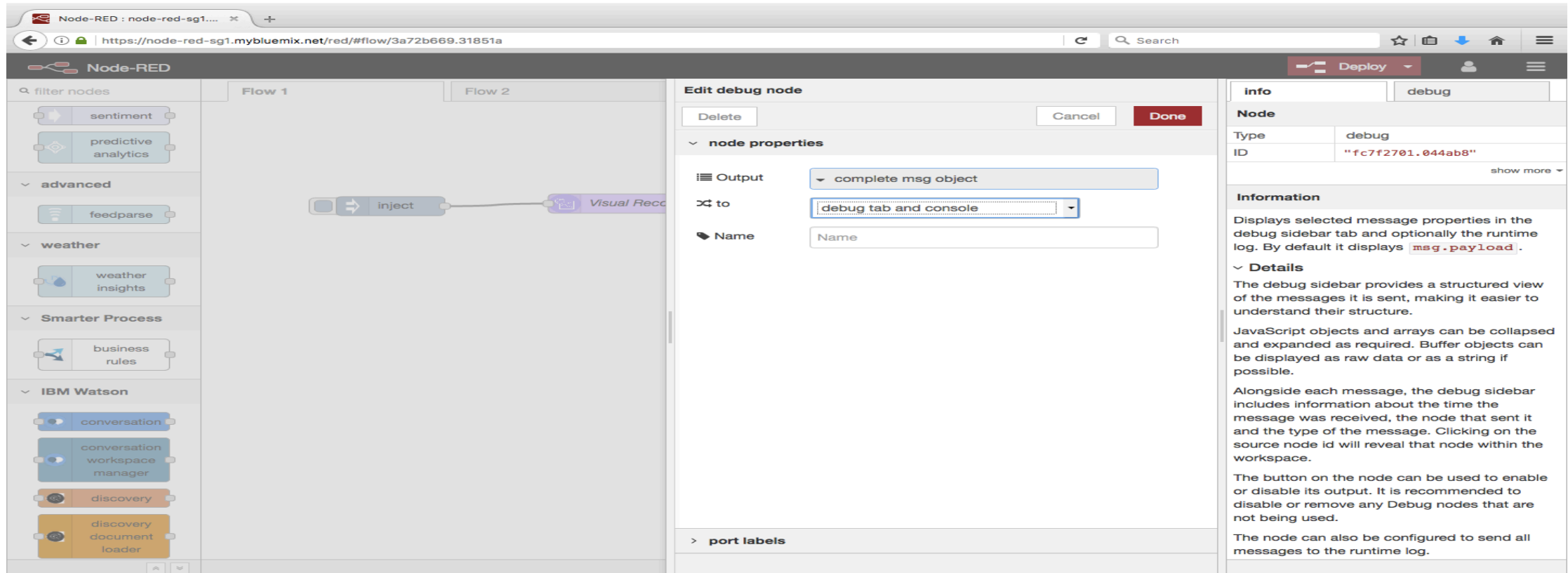
**Information**

Using the Visual Recognition v3 node, you can use the Watson Visual Recognition service V3 to identify scenes, objects, faces, and text in images you upload to the service. You can create and train a custom classifier to identify subjects that suit your needs.

The following features are available :

- **Classify an image** Upload images or URLs to identify built-in classifiers by default. To identify custom classifiers, include the classifier\_ids or owners parameters. Images must be in .jpeg, .jpg or .png format.
- **Detect Faces** : analyze faces in images and get data about them, such as estimated age and gender. Images must be in .jpeg, .jpg or .png format.
- **Recognize Text** : recognizes text in images. This is a beta function of the Visual Recognition service that supports only

28. Double click the output node
29. Select “complete msg object” from Output drop-down
30. Select “debug tab and console” for  to



The screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow with an 'inject' node connected to a 'Visual Recorder' node. On the left sidebar, the 'filter nodes' search bar is active, and the 'IBM Watson' category is expanded, showing nodes like 'conversation', 'discovery', and 'document loader'. On the right, the 'Edit debug node' dialog is open. The 'node properties' section shows the 'Output' dropdown set to 'complete msg object' and the 'to' dropdown set to 'debug tab and console'. The 'Name' field is empty. The 'port labels' section is collapsed. The right sidebar shows the 'info' tab selected, displaying node details and information about the debug sidebar.

Node	
Type	debug
ID	"fc7f2701.044ab8"

**Information**

Displays selected message properties in the debug sidebar tab and optionally the runtime log. By default it displays `msg.payload`.

**Details**

The debug sidebar provides a structured view of the messages it is sent, making it easier to understand their structure.

JavaScript objects and arrays can be collapsed and expanded as required. Buffer objects can be displayed as raw data or as a string if possible.

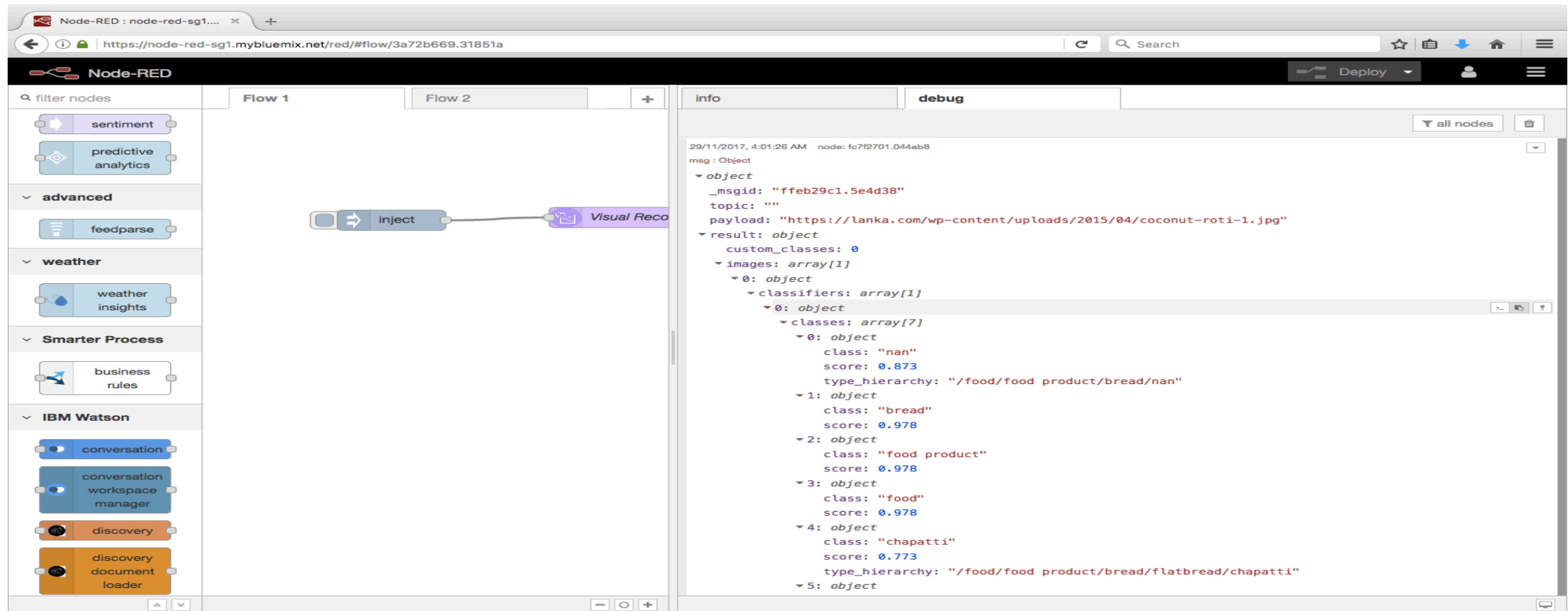
Alongside each message, the debug sidebar includes information about the time the message was received, the node that sent it and the type of the message. Clicking on the source node id will reveal that node within the workspace.

The button on the node can be used to enable or disable its output. It is recommended to disable or remove any Debug nodes that are not being used.

The node can also be configured to send all messages to the runtime log.

31. Click on Deploy button on the top right

32. After successful deploy, click on the input button of inject node to view the output

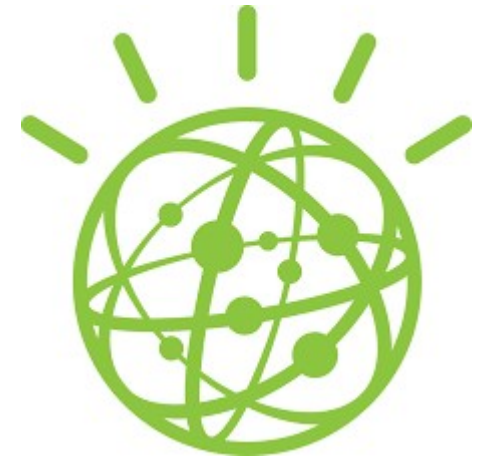


The screenshot shows the Node-RED web interface in a browser. The top bar includes a "Deploy" button. The left sidebar contains a "filter nodes" search bar and a list of nodes categorized by "advanced", "weather", "Smarter Process", and "IBM Watson". The main workspace shows a flow with two nodes: an "inject" node and a "Visual Recognition" node. The right sidebar has tabs for "info" and "debug". The "debug" tab is active, showing a log of messages. The first message is an object with a payload of a URL to a coconut roti image. The "result" field contains an array of classifiers, each with a list of classes and their scores.

```
29/11/2017, 4:01:26 AM node: fc7f2701.044ab8
msg: Object
  object
    _msgid: "ffeb29c1.5e4d38"
    topic: ""
    payload: "https://lanka.com/wp-content/uploads/2015/04/coconut-roti-1.jpg"
  result: object
    custom_classes: 0
    images: array[1]
      0: object
        classifiers: array[1]
          0: object
            classes: array[7]
              0: object
                class: "nan"
                score: 0.873
                type_hierarchy: "/food/food product/bread/nan"
              1: object
                class: "bread"
                score: 0.978
              2: object
                class: "food product"
                score: 0.978
              3: object
                class: "food"
                score: 0.978
              4: object
                class: "chapatti"
                score: 0.773
                type_hierarchy: "/food/food product/bread/flatbread/chapatti"
              5: object
```



# Thank You



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