

Lab Center – Hands-On Lab – Self-Deployment

Session 1239 - IBM Think2020 IoT Lab

Hyper-Local Weather and Crop prediction using Watson: Self-Deployment of the Code/LAB at HOME ;)

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Objective

This document describes how to deploy the Node-RED code to IBM Cloud as well provision automatically a Node-RED, IoT instance and a Cloudbant database.

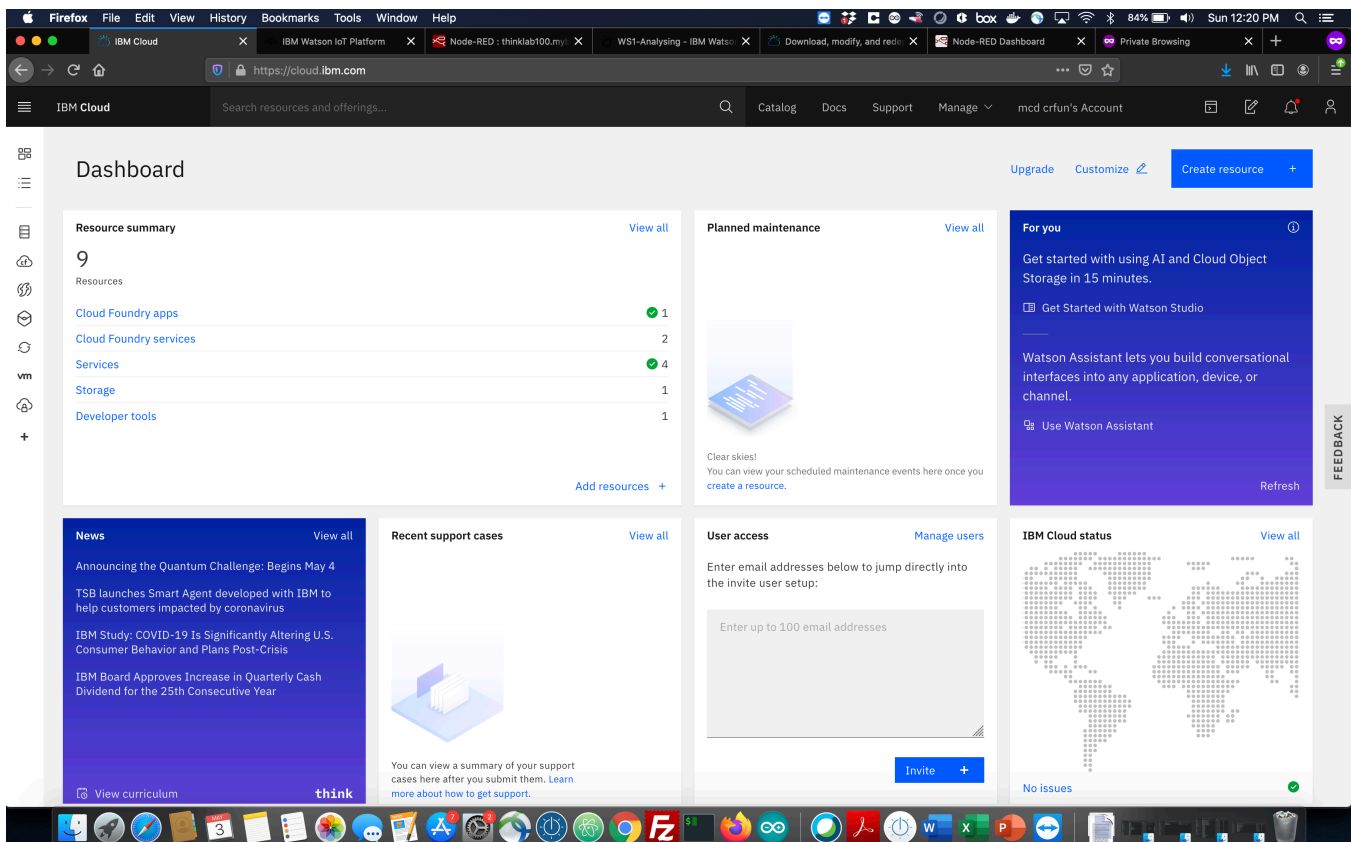
Note: You can run this LAB and the exercises on your own desktop using a local installation of Jupyter Notebook and Node-RED. You can also mix this LAB with different Jupyter Notebook environments like colab and kaggle. Just import the notebooks from the github into your environment of choice. Below are the instruction for the deployment to IBM cloud.

1. Prerequisite

Sign up for a free IBM Cloud account here <https://cloud.ibm.com/>

2. Deployment

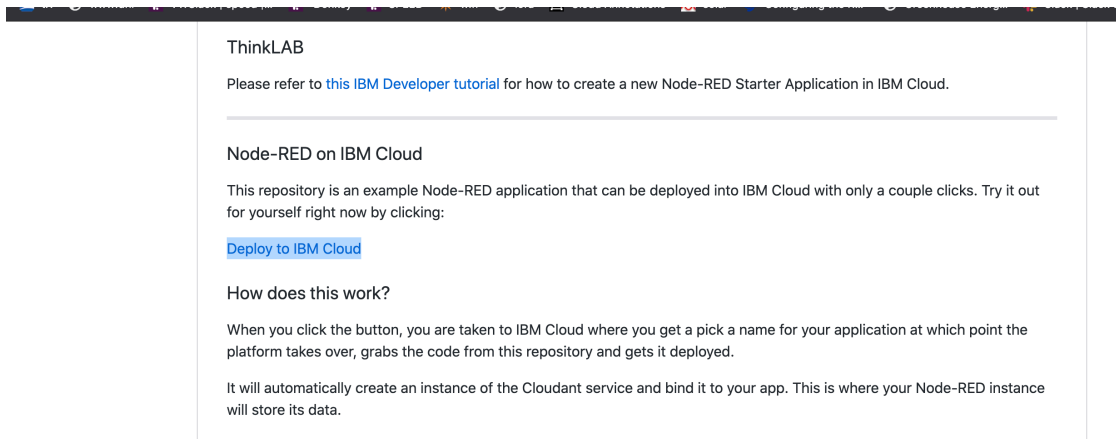
Once you signed up, you should see a screen like below



Open a new browser window and go to the following github url.

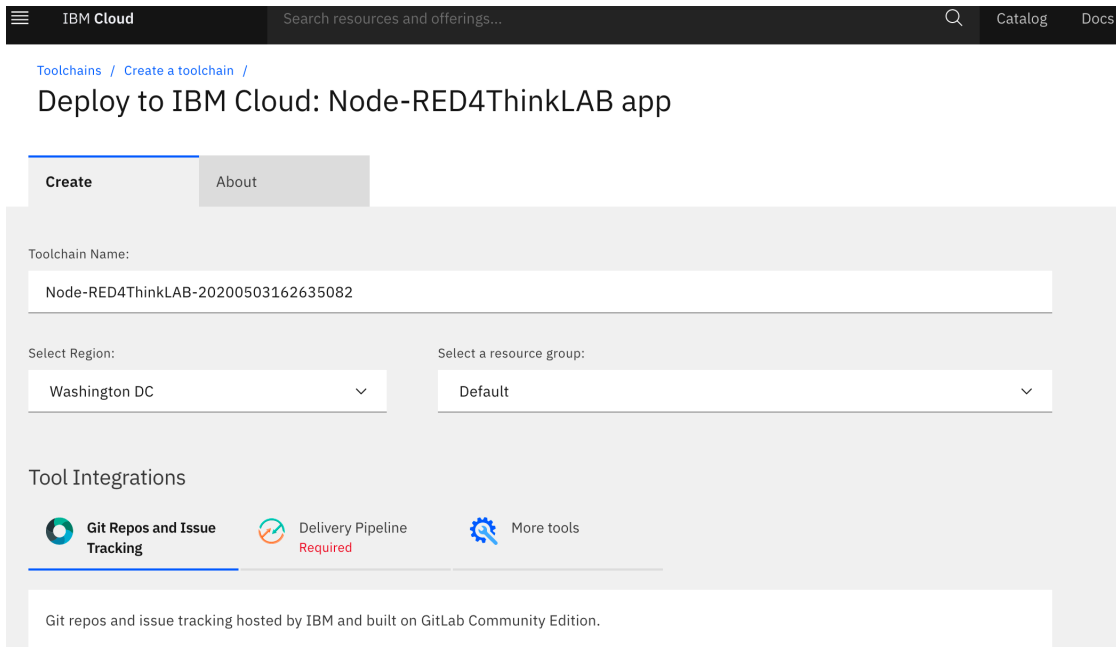
<https://github.com/markusvankempen/Node-RED4ThinkLAB>

scroll down a little and you will see a link called “Deploy to IBM Cloud”



Once you click the button it will redirect to the IBM cloud environment and start the deployment process.

You should see a Screen like this:



Fill out the fields and follow the steps and prompts. I changed the Toolchain name and App name to something like “thinklabYourInitials”. The system will also prompt you to generate some keys etc. just follow the steps.

Once all is filled out you should see the screens like below and have a create button available.

IBM Cloud Search resources and offerings...

Create About

Toolchain Name:
mythinklab51

Select Region:
Dallas

Select a resource group:
Default

Select a CF Organization (deprecated)

Tool Integrations

Git Repos and Issue Tracking Delivery Pipeline More tools

The Delivery Pipeline automates continuous deployment.

App name: ⓘ
mythinklab51

IBM Cloud API key: ⓘ
.....

Region Organization Space ⓘ
Dallas mcdcrfun@gmail... dev

Cancel Create

Click the create button and you will be redirected to a different screen e.g toolchain

Now the system will deploy the github code by parsing/processing the information of the [manifest.yml](#) file from the github repository

The screenshot shows the IBM Cloud Toolchains console for a project named 'mythinklab51'. The interface includes a top navigation bar with the IBM Cloud logo, a search bar, and links to Catalog, Docs, and Support. A left sidebar contains links for Overview, Connections, and Manage. The main content area displays a notification banner stating 'Your app is being created! Quick start: To watch the pipeline deploy your app, click Delivery Pipeline. After the app is deployed, you can see it running by clicking View app.' Below the notification, there are three columns: 'Think', 'Code', and 'Deliver'. The 'Think' column shows 'Issues mythinklab51' with a 'Configured' status. The 'Code' column shows 'Git mythinklab51' with a 'Configured' status. The 'Deliver' column shows 'Delivery Pipeline mythinklab51' with a 'No stages detected' status. Below the 'Code' column, there is an additional section for 'Eclipse Orion Web IDE' which is also 'Configured'.

Click on the delivery pipeline icon and check if the code deployment with running thru and finishes successful.

The screenshot shows the IBM Cloud Delivery Pipeline interface. At the top, there's a search bar and navigation links. The main heading is "mythinklab51 | Delivery Pipeline". Below this, two stage cards are displayed side-by-side.

Build Stage

STAGE PASSED

LAST INPUT: Git URL [↗](#)

Last commit by Markus van Kem... 2d ago
[Update manifest.yml](#)

JOBS [View logs and history](#)

- Build: Passed 2m ago

LAST EXECUTION RESULT

- Build 1

Deploy Stage

STAGE FAILED

LAST INPUT: Stage: Build Stage / Job: B...

Build 1

JOBS [View logs and history](#)

- Deploy: Failed now

LAST EXECUTION RESULT

No results

Sometimes it does not run through the whole chain at once and you have to re-run the deployment. Check the log of the deployment stage and click the redeploy button

The screenshot shows the "mythinklab51 | Stage History" page. It lists a failed job "Deploy 1" with a status of "Failed" and a time of "2m ago". The job details show it was started today at 12:33 PM, took 1 minute and 14 seconds, and was deployed to the Dallas region. The logs section is expanded, showing the following output:

```

Preparing to start the job...
Pipeline image: latest
Preparing the build artifacts...
Pulling pipeline base image latest...
cf login -a "https://api.us-south.cf.cloud.ibm.com" -u apikey -p "*****" -s "mcdcrfun@gmail.com" -s "dev"
API endpoint: https://api.us-south.cf.cloud.ibm.com
Authenticating...
OK
Targeted org mcdcrfun@gmail.com
Targeted space dev
  
```

At the top right of the job details, there are buttons for "Run", "Configure", "Download", and "Redeploy".

Once the deployment is passed. You can go back to the Resource list via the burger menu and launch your Node-RED instance.

Deploy Stage

2 Passed 1d ago

Deploy Passed

1 Failed 1d ago

Deploy 2 Passed 1d ago

STARTED Yesterday at 8:40 AM

DURATION 4 minutes, 11 seconds

DEPLOY TO Target: Dallas - <https://api.us-south.cf.cloud.ibm.com> / Organiza

Logs

```

Preparing to start the job...
Pipeline image: latest
Preparing the build artifacts...
Pulling pipeline base image latest ...
cf login -a "https://api.us-south.cf.cloud.ibm.com" -u apikey -p "****" -o "mcdcrfun@gmail.com" -s "dev"
API endpoint: https://api.us-south.cf.cloud.ibm.com
Authenticating...
OK

Targeted org mcdcrfun@gmail.com

Targeted space dev

API endpoint: https://api.us-south.cf.cloud.ibm.com (API version: 2.147.0)
User: mcdcrfun@gmail.com
Dev: mcdcrfun@gmail.com

```

The screenshot shows the IBM Cloud dashboard with the 'Resource List' sidebar on the left. The main area displays a 'Stage History' table with a row for 'Deploy 2' that is 'Passed' and '1d ago' old. The deployment started 'Yesterday at 8:40'.

The screenshot shows the 'Resource list' page in the IBM Cloud dashboard. It features a search bar and a list of resources categorized by type: Devices (0), VPC Infrastructure (0), Clusters (0), and Cloud Foundry apps (2). Under 'Cloud Foundry apps', two resources are listed: 'mythinklab51' and 'thinklab100'. The 'thinklab100' resource is highlighted, showing its icon and name.

Think 2020

Node-RED will prompt you to setup a username and password. Once that is done you can see Node-RED and the Node-Flow which are automatically deployed.
URL is something like **thinklabYourInitials.mybluemix.net**

Node-RED on IBM Cloud for ThinkLab2020

Node-RED for ThinkLab2020

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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](#)


Node-RED

Node-RED
0.Setup
1.Sensor
2.myPWS
3.allPWS
WeatherHistory

common
inject
debug
complete
catch
status
link in
link out
comment

function

What Can I DO / How does this work ?
Intro <https://nodered.org/>

timestamp
msg.payload

That's it - now you can follow the LAB instruction here ...

<https://github.com/markusvankempen/ThinkLab1239/tree/master/instructions>

For more for information look at the github repository
<https://github.com/markusvankempen/ThinkLab1239>

Cheers

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