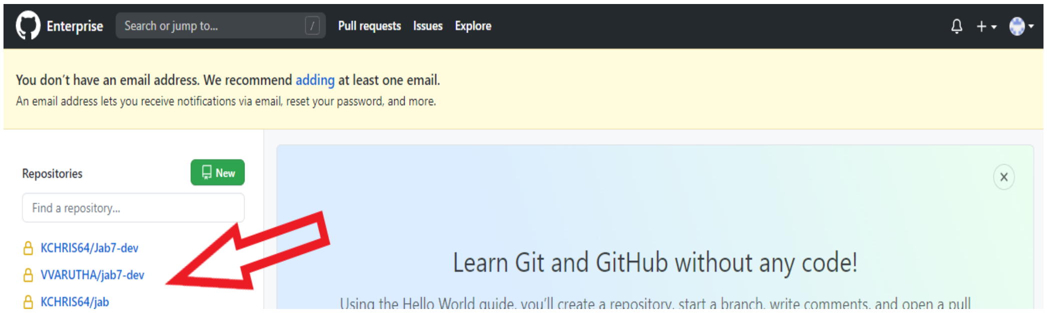
Contents

Version	Date	Author	Reviewed by
2.0	**29-Nov-2021**	**Kiruba Wincelin**	**Sundar**

TEKTON-PIPELINE

Step 1: Adding Collaborator to Git Hub

➔ Need to select the repository



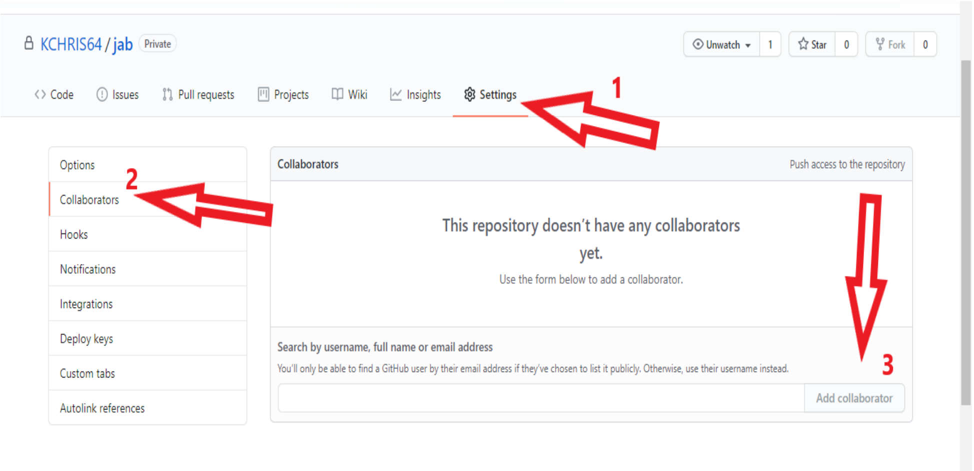
You don't have an email address. We recommend adding at least one email.

An email address lets you receive notifications via email, reset your password, and more.

Learn Git and GitHub without any code!

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull

➔ Go to Collaborator



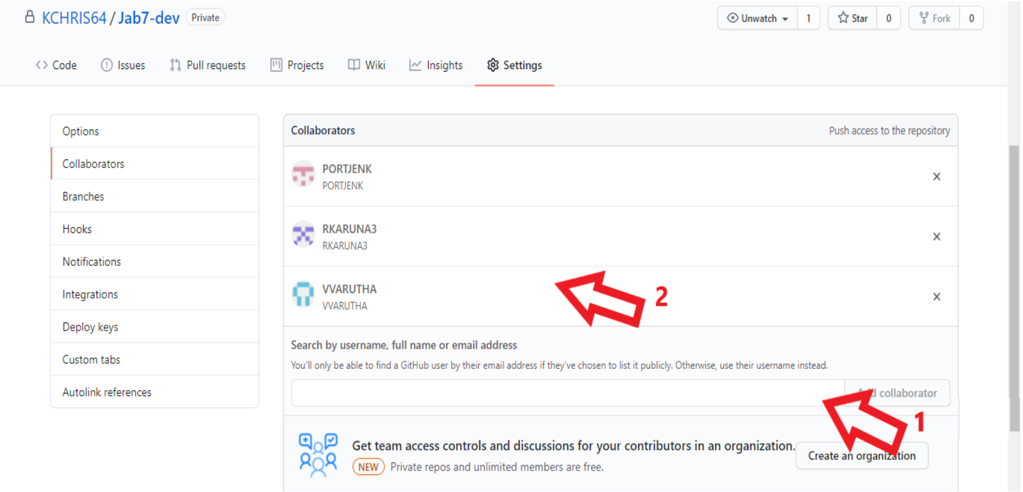
This repository doesn't have any collaborators yet.

Use the form below to add a collaborator.

Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

➔ Select name and give add collaborator to cdsid and portjenk



Search by username, full name or email address

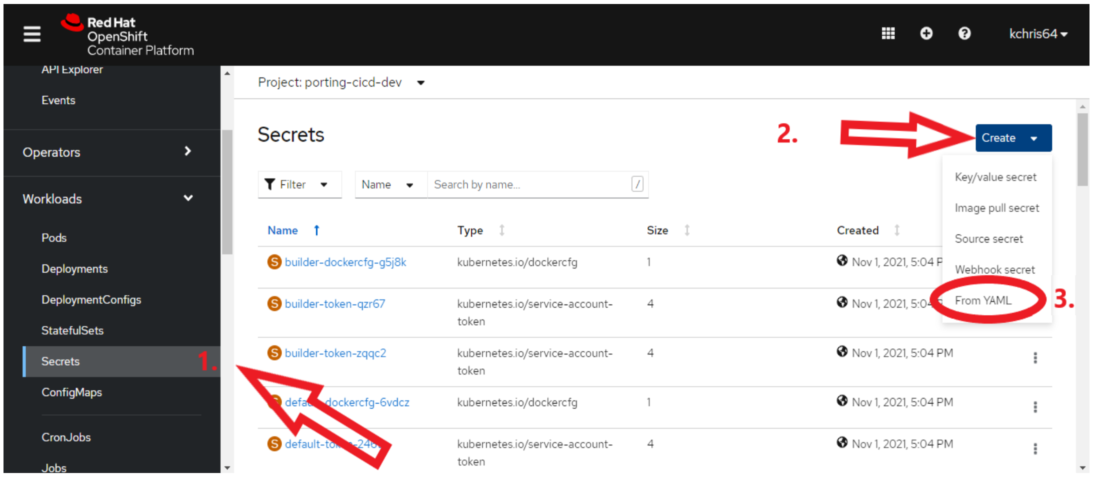
You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

Get team access controls and discussions for your contributors in an organization.

NEW Private repos and unlimited members are free.

Step 2: OpenShift to GitHub Handshake

➔ GitHub Secret Configuration in OpenShift



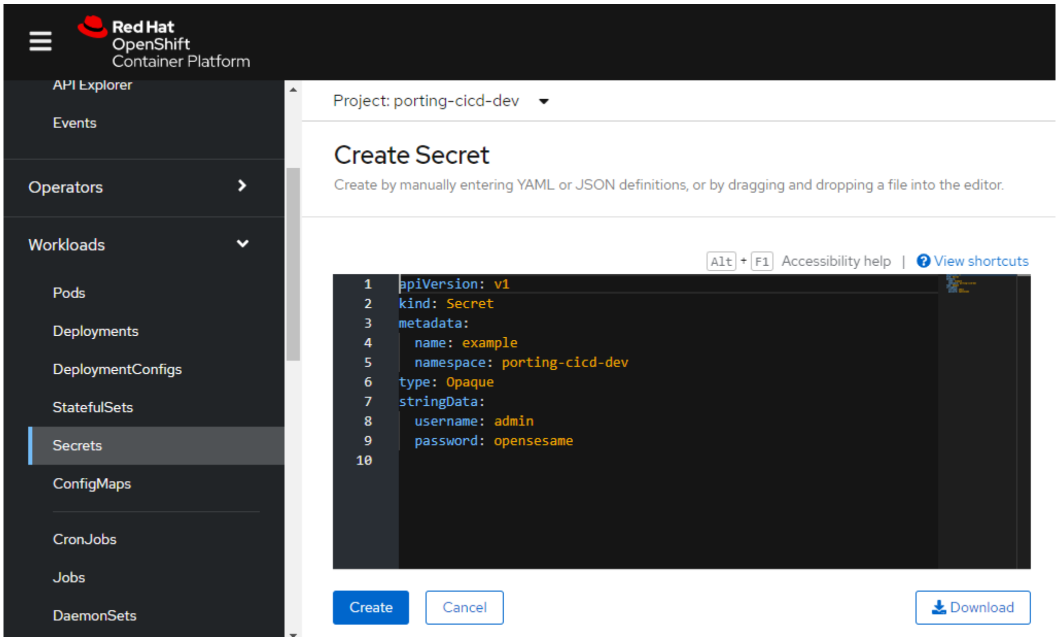
Project: porting-cicd-dev

Secrets

Name	Type	Size	Created
builder-dockercfg-g5j8k	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 P
builder-token-qzr67	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:0
builder-token-zqqc2	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM
defa dockercfg-6vdcz	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 PM
default-to -246	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM

Select from YAML and

Modify the below yaml So, in below image instead of username and password need to give **SSH Key** and **Known Hosts** and paste the value of the key and host.



Project: porting-cicd-dev

Create Secret

Create by manually entering YAML or JSON definitions, or by dragging and dropping a file into the editor.

```yaml
apiVersion: v1
kind: Secret
metadata:
  name: example
  namespace: porting-cicd-dev
type: Opaque
stringData:
  username: admin
  password: opensesame
```

To get SSH Key Need to run some command in command prompt

b. Note: To paste commands in the git bash prompt, either middle-click your mouse, or press SHIFT+INSERT. Pressing CTRL+V will not work.

2. Type this command at the prompt.

Creating ~/.ssh directory

```
mkdir ~/.ssh
```

3. Type this command at the prompt.

Create an ssh key pair

```
ssh-keygen -t rsa -N '' -f ~/.ssh/id_rsa
```

Your screen will look like this example.

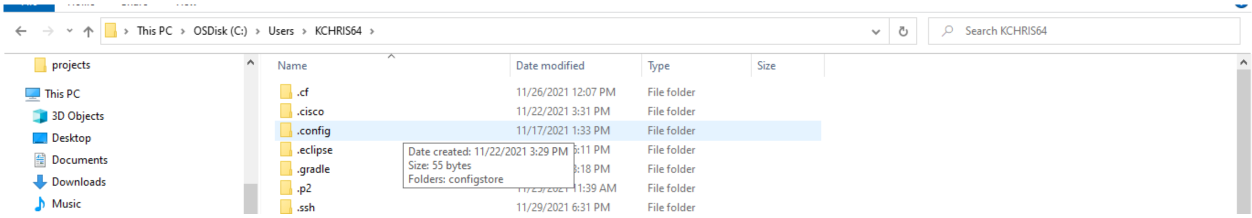
› **** SSH Example ****

4. Copy the value in the ~/.ssh/id_rsa.pub file. You can run this command to copy it.

```
cat ~/.ssh/id_rsa.pub  | clip
```

5. Visit https://github.ford.com, click the your avatar at the top-right of the page, click "settings" in the popup menu, click "SSH and GPG keys", select "New SSH key"
6. Paste the value of your SSH key, and a descriptive title, and click "Add SSH Key"

The created ssh key will be in with the file name .ssh refer the below image.

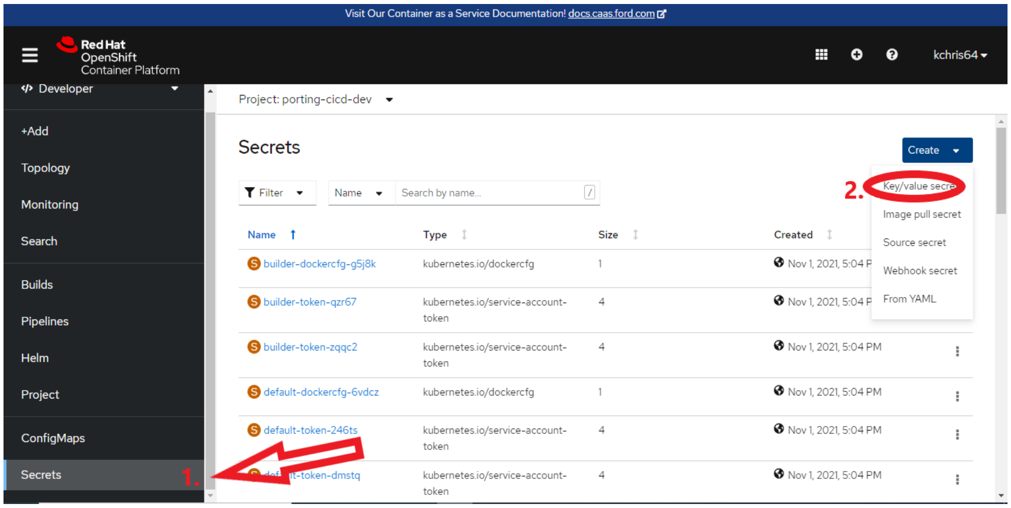


Name	Date modified	Type	Size
.cf	11/26/2021 12:07 PM	File folder	
.cisco	11/22/2021 3:31 PM	File folder	
.config	11/17/2021 1:33 PM	File folder	
.eclipse	:11 PM	File folder	
.gradle	:18 PM	File folder	
.p2	1:39 AM	File folder	
.ssh	11/29/2021 6:31 PM	File folder	

Date created: 11/22/2021 3:29 PM
Size: 55 bytes
Folders: configstore

Step 3: OpenShift to PCF Handshake

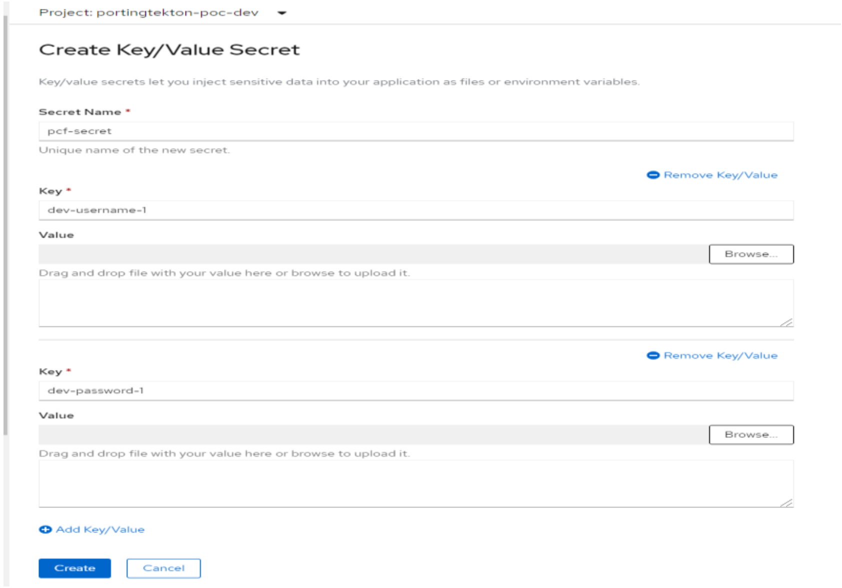
PCF secret configuration in open shift



Project: porting-cicd-dev

Secrets

Name	Type	Size	Created
builder-dockercfg-g5j8k	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 P
builder-token-qzr67	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 P
builder-token-zqqc2	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM
default-dockercfg-6vdcz	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 PM
default-token-246ts	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM
def t-token-dmstq	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM



Project: portingtekton-poc-dev

Create Key/Value Secret

Key/value secrets let you inject sensitive data into your application as files or environment variables.

Secret Name *
pcf-secret
Unique name of the new secret.

Key *
dev-username-1

Value

Drag and drop file with your value here or browse to upload it.

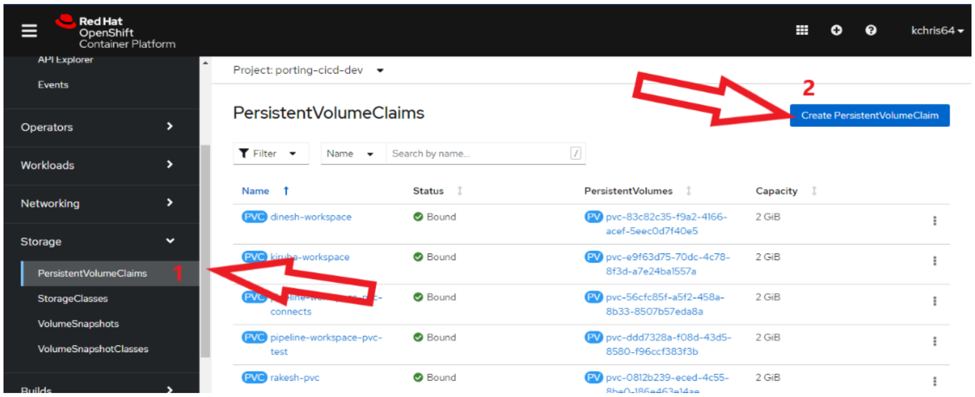
Key *
dev-password-1

Value

Drag and drop file with your value here or browse to upload it.

Step 4: PVC Creation

First, we need to create the PVC like the below images.

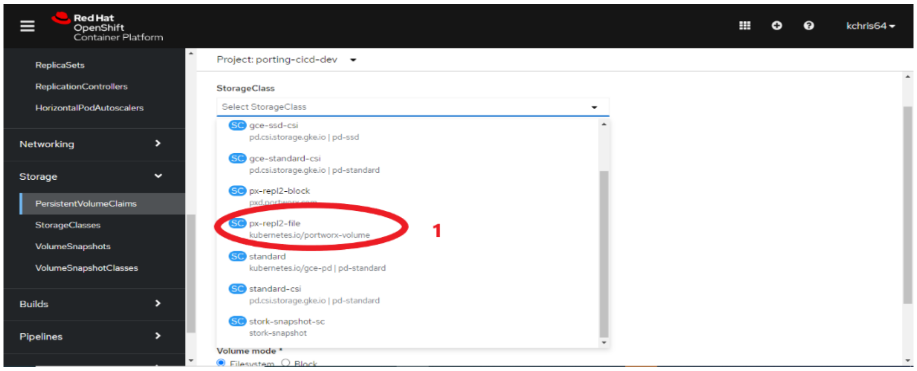


Project: porting-cicd-dev

PersistentVolumeClaims

Name	Status	PersistentVolumes	Capacity
PVC dinesh-workspace	Bound	PV pvc-83c82c35-f9a2-4166-acef-5eec0d7f40e5	2 GiB
PVC kiruba-workspace	Bound	PV pvc-e9f63d75-70dc-4c78-8f3d-a7e24ba1557a	2 GiB
PVC pipeline-workspace-pvc-connects	Bound	PV pvc-56cfc85f-a5f2-458a-8b33-8507b57eda8a	2 GiB
PVC pipeline-workspace-pvc-test	Bound	PV pvc-ddd7328a-f08d-43d5-8580-f96ccf383f3b	2 GiB
PVC rakesh-pvc	Bound	PV pvc-0812b239-eced-4c55-8be0-186e463e14ae	2 GiB

In Storage class we need to select the px-repl2-file.



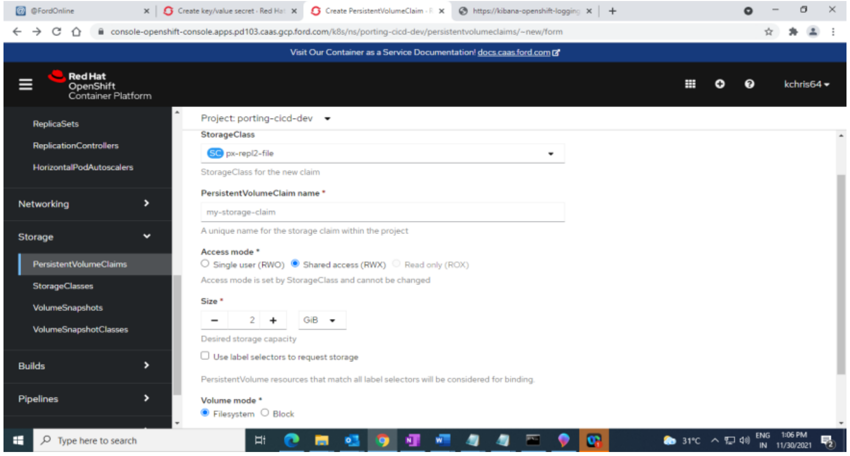
Project: porting-cicd-dev

StorageClass
Select StorageClass

- SC gce-ssd-csi
  pd.csi.storage.gke.io | pd-ssd
- SC gce-standard-csi
  pd.csi.storage.gke.io | pd-standard
- SC px-repl2-block
  pxd.portworx.com
- SC px-repl2-file
  kubernetes.io/portworx-volume
- SC standard
  kubernetes.io/gce-pd | pd-standard
- SC standard-csi
  pd.csi.storage.gke.io | pd-standard
- SC stork-snapshot-sc
  stork-snapshot

Volume mode *
● Filesystem ○ Block

After selecting the storage class, create the PVC Name then change the access mode to shared access, then select the size of the PVC upto 2gb not more than that. Volume mode will be constant, after giving all this details we need to click the create button. Now the PVC will be created.



console-openshift-console.apps.pd103.caas.gcp.ford.com/k8s/ns/porting-cicd-dev/persistentvolumeclaims/~new/form

Project: porting-cicd-dev

StorageClass

SC px-repl2-file

StorageClass for the new claim

PersistentVolumeClaim name *

my-storage-claim

A unique name for the storage claim within the project

Access mode *

○ Single user (RWO) ● Shared access (RWX) ○ Read only (ROX)

Access mode is set by StorageClass and cannot be changed

Size *

− 2 + GiB

Desired storage capacity

☐ Use label selectors to request storage

PersistentVolume resources that match all label selectors will be considered for binding.

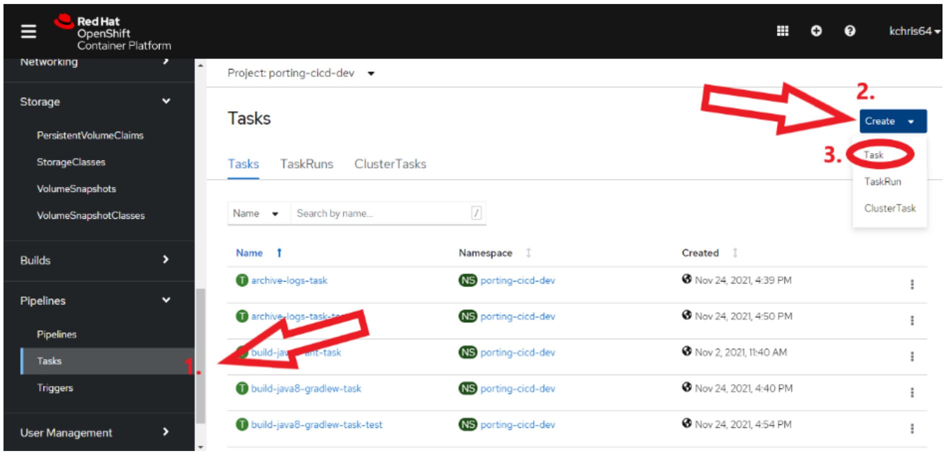
Volume mode *

● Filesystem ○ Block

Note: Dynamic PVC Creation is in Progress

Step 5: Task Creation for Tekton Pipeline

For this step Go to Pipelines -> Task -> Create -> Task

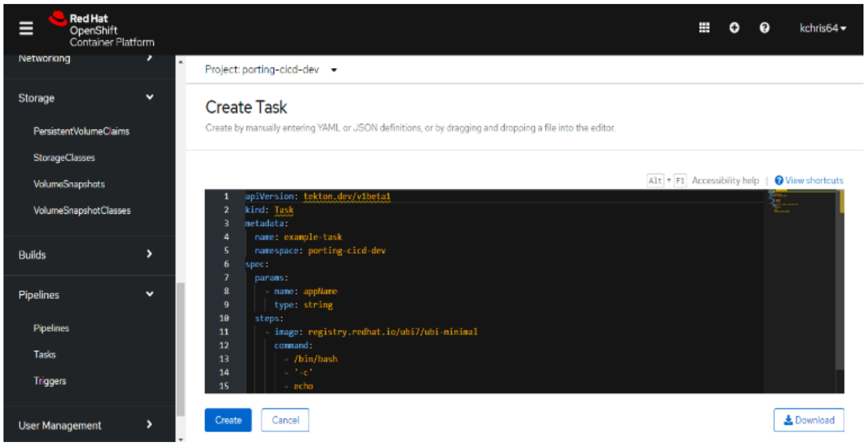


Project: porting-cicd-dev

Tasks

Name	Namespace	Created
T archive-logs-task	NS porting-cicd-dev	Nov 24, 2021, 4:39 PM
T archive-logs-task-te	NS porting-cicd-dev	Nov 24, 2021, 4:50 PM
build-jav ant-task	NS porting-cicd-dev	Nov 2, 2021, 11:40 AM
T build-java8-gradlew-task	NS porting-cicd-dev	Nov 24, 2021, 4:40 PM
T build-java8-gradlew-task-test	NS porting-cicd-dev	Nov 24, 2021, 4:54 PM

After clicking the task, the screen will look like this



Project: porting-cicd-dev

Create Task

Create by manually entering YAML or JSON definitions, or by dragging and dropping a file into the editor.

```
apiVersion: tekton.dev/v1beta1
kind: Task
metadata:
  name: example-task
  namespace: porting-cicd-dev
spec:
  params:
    - name: appName
      type: string
  steps:
    - image: registry.redhat.io/ubi7/ubi-minimal
      command:
        - /bin/bash
        - '-c'
        - echo
```

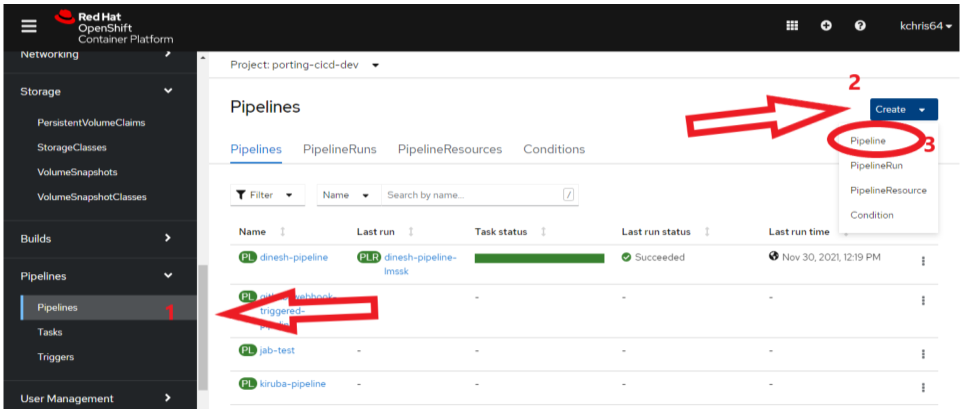
From this yaml file we need to create the following tasks which was given in notepad.

1. Git clone Task- task-kiruba-clone-task.yaml
2. Update Task - task-kiruba-update-folder-permissions-task.yaml
3. Build Task - task-kiruba-build-java8-gradlew-task.yaml
4. Deploy Task - task-kiruba-deploy-task-pcf.yaml

Note: - In this order only we need to create the task.

Step 6: Pipeline Creation for Tekton

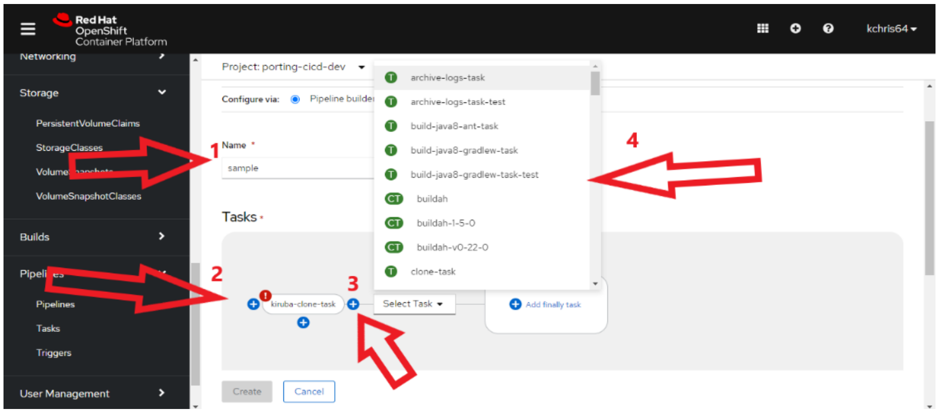
Go to Pipelines -> Pipeline ->Create->Pipeline



Name	Last run	Task status	Last run status	Last run time
PL dinesh-pipeline	PLR dinesh-pipeline-lmssk	🟩	Succeeded	Nov 30, 2021, 12:19 PM
PL [illegible]webhook-triggered-[illegible]	-	-	-	-
PL jab-test	-	-	-	-
PL kiruba-pipeline	-	-	-	-

So here we can create the pipeline in two ways via pipeline builder or yaml view.

Using Pipeline Builder:



Project: porting-cicd-dev

Configure via: ● Pipeline builder

Name * sample

So, in

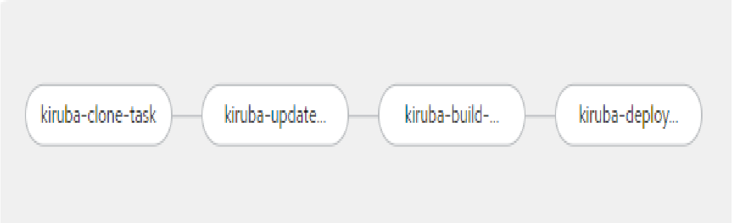
1. We need to give the pipeline name

2. Need to select the first git clone task like point 4.

3. That + icon will be able to add the new task.

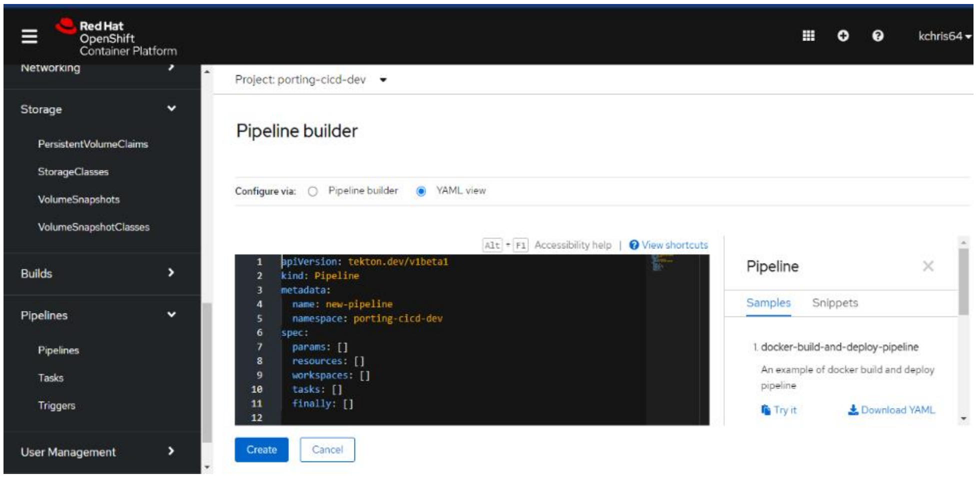
4.We need to select the second task from the dropdown

Finally, the pipeline will look like below image



Then press the create button, now pipeline will be created.

Using Yaml View:



Project: porting-cicd-dev

Pipeline builder

Configure via: ○ Pipeline builder ● YAML view

```
apiVersion: tekton.dev/v1beta1
kind: Pipeline
metadata:
  name: new-pipeline
  namespace: porting-cicd-dev
spec:
  params: []
  resources: []
  workspaces: []
  tasks: []
  finally: []

```

Yaml view will look like this. Then need to add the pipeline yaml file.

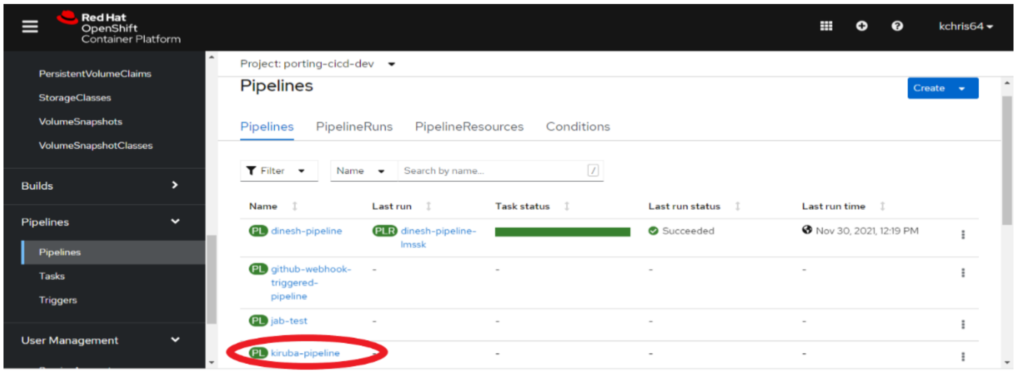
pipeline-kiruba-pipeline.yaml

Step 7: To Run a pipeline

If we want to run the pipeline, we need to do some changes in deploy task file.

How to make change in deploy file:

Need to select the pipeline which we have created

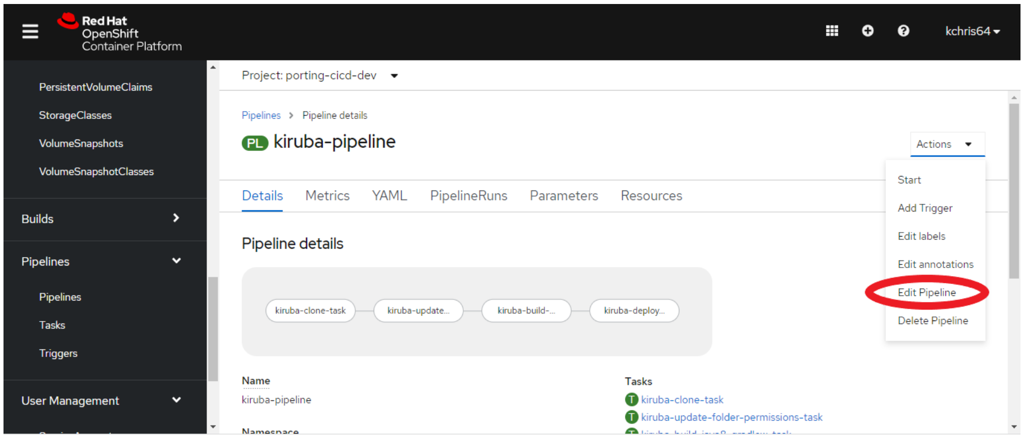


Project: porting-cicd-dev

Pipelines

Name	Last run	Task status	Last run status	Last run time
PL dinesh-pipeline	PLR dinesh-pipeline-lmssk	🟩	Succeeded	Nov 30, 2021, 12:19 PM
PL github-webhook-triggered-pipeline	-	-	-	-
PL jab-test	-	-	-	-
PL kiruba-pipeline	-	-	-	-

Then need to edit the pipeline,



Project: porting-cicd-dev

PL kiruba-pipeline

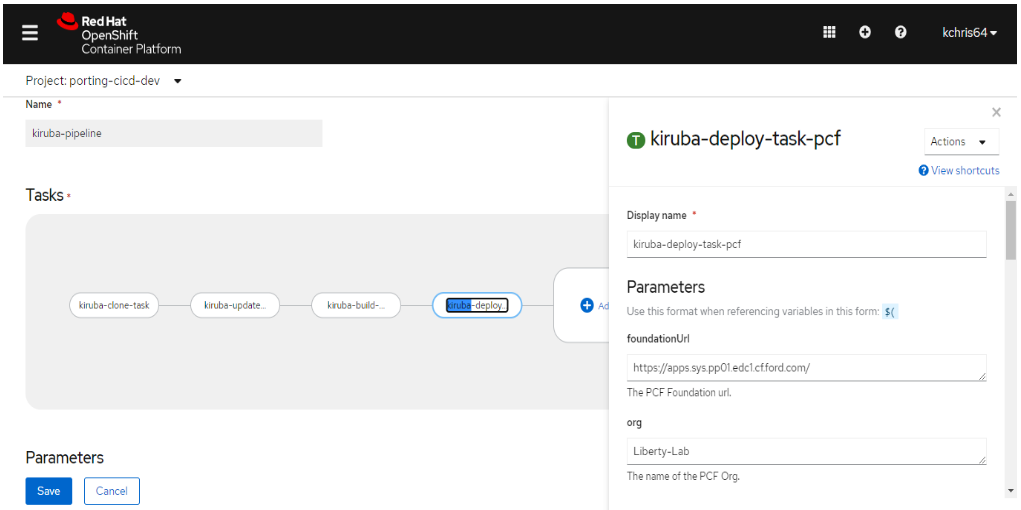
Pipeline details

Name
kiruba-pipeline

Tasks
T kiruba-clone-task
T kiruba-update-folder-permissions-task

Namespace

After clicking the edit pipeline, the image will look like below image



Project: porting-cicd-dev

Name *

kiruba-pipeline

Tasks *

Parameters

kiruba-deploy-task-pcf

Display name *

kiruba-deploy-task-pcf

Parameters

Use this format when referencing variables in this form: `$(`

foundationUrl

https://apps.sys.pp01.edc1.cf.ford.com/

The PCF Foundation url.

org

Liberty-Lab

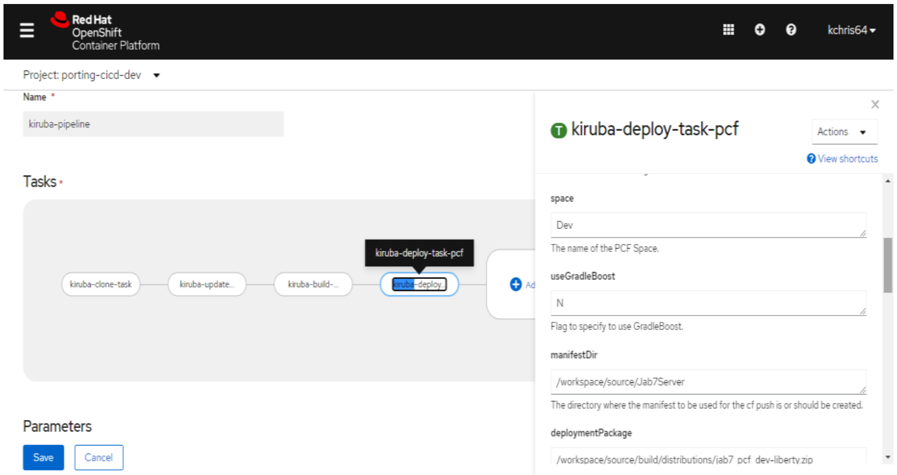
The name of the PCF Org.

Need to double click the deploy task and edit option will be open like above image.

There we need to add the parameters

In foundation Url: Need to give PCF URL. Ref- https://apps.sys.pp01.edc1.cf.ford.com/

In Org: Need to get from PCF



Project: porting-cicd-dev

Name *

kiruba-pipeline

Tasks *

Parameters

kiruba-deploy-task-pcf

space

Dev

The name of the PCF Space.

useGradleBoost

N

Flag to specify to use GradleBoost.

manifestDir

/workspace/source/Jab7Server

The directory where the manifest to be used for the cf push is or should be created.

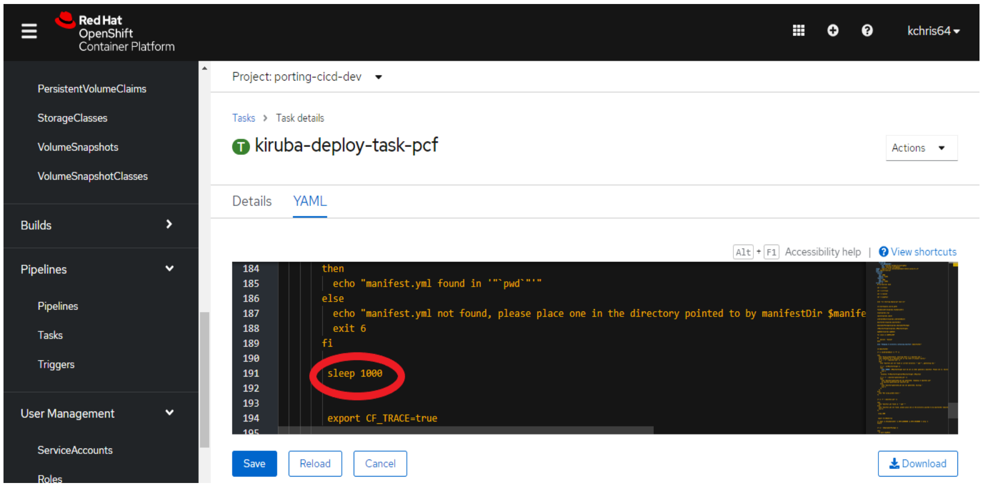
deploymentPackage

/workspace/source/build/distributions/jab7_pcf_dev-liberty.zip

In Space: Need to give dev space

In manifest Dir: Need to give the manifest path, which was built in Tekton pipeline, to get that path we need to run the pod

Step 1: In deploy yaml task, we need to add the **sleep 1000**

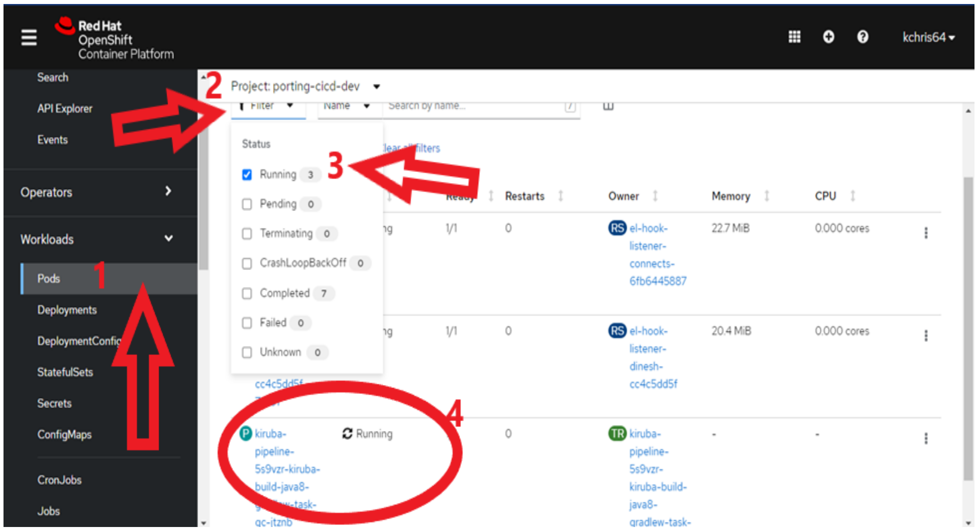


```
      then
        echo "manifest.yml found in '"`pwd`"'"
      else
        echo "manifest.yml not found, please place one in the directory pointed to by manifestDir $manife
        exit 6
      fi

       sleep 1000


       export CF_TRACE=true
```

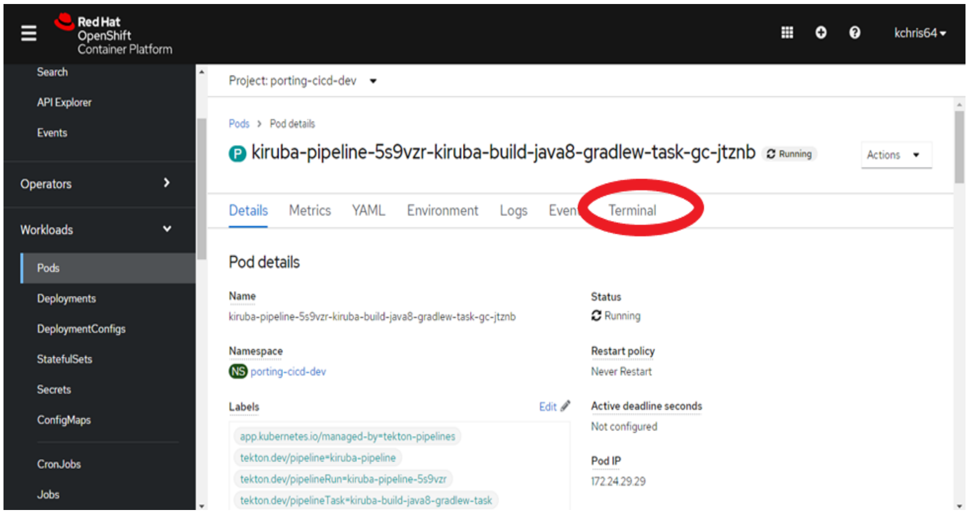
After adding the sleep, we need to run the pipeline, will explain how to run the pipeline later.

Step 2: To get the manifest path

Go to



Go to Terminal



kiruba-pipeline-5s9vzr-kiruba-build-java8-gradlew-task-gc-jtznb Running

Pod details

Name
kiruba-pipeline-5s9vzr-kiruba-build-java8-gradlew-task-gc-jtznb

Status
Running

Namespace
NS porting-cicd-dev

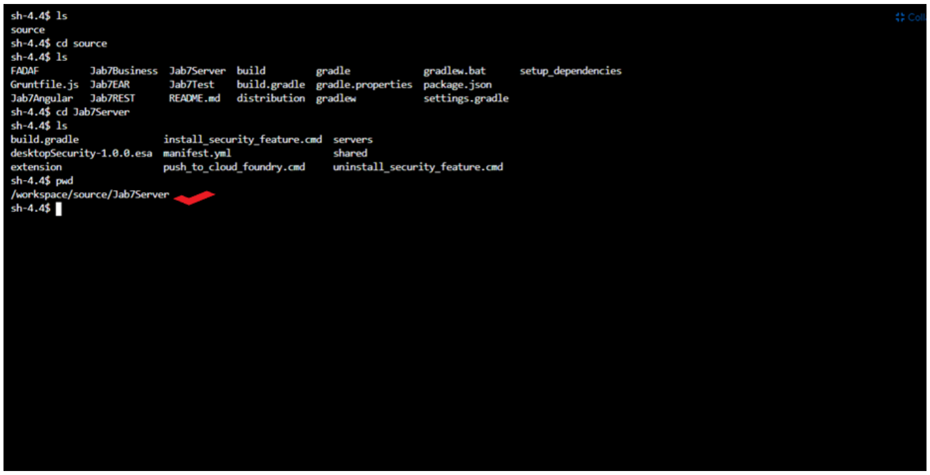
Restart policy
Never Restart

Labels Edit
app.kubernetes.io/managed-by=tekton-pipelines
tekton.dev/pipeline=kiruba-pipeline
tekton.dev/pipelineRun=kiruba-pipeline-5s9vzr
tekton.dev/pipelineTask=kiruba-build-java8-gradlew-task

Active deadline seconds
Not configured

Pod IP
172.24.29.29

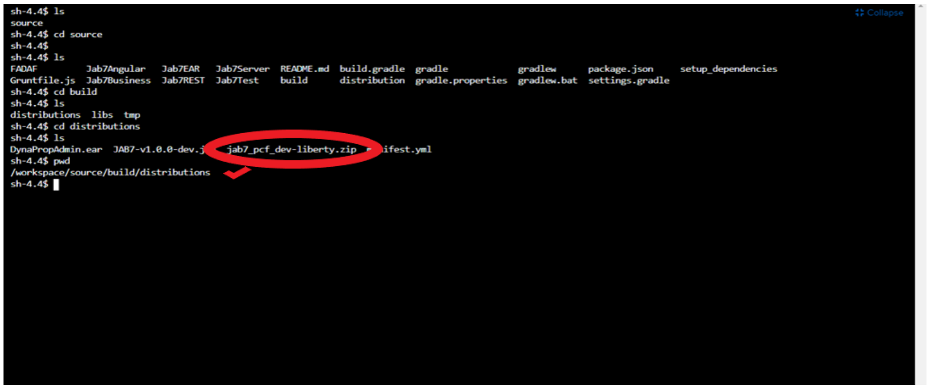
And give the commands from the below image



```
sh-4.4$ ls
source
sh-4.4$ cd source
sh-4.4$ ls
FADAF         Jab7Business  Jab7Server  build         gradle             gradlew.bat      setup_dependencies
Gruntfile.js  Jab7EAR       Jab7Test    build.gradle  gradle.properties  package.json
Jab7Angular   Jab7REST      README.md   distribution  gradlew            settings.gradle
sh-4.4$ cd Jab7Server
sh-4.4$ ls
build.gradle               install_security_feature.cmd  servers
desktopSecurity-1.0.0.esa  manifest.yml                  shared
extension                  push_to_cloud_foundry.cmd     uninstall_security_feature.cmd
sh-4.4$ pwd
/workspace/source/Jab7Server
sh-4.4$
```

Now give the path to the manifest Dir, while editing the deploy task

Like same we need to get for employment package



```
sh-4.4$ ls
source
sh-4.4$ cd source
sh-4.4$
sh-4.4$ ls
FADAF         Jab7Angular   Jab7EAR   Jab7Server  README.md  build.gradle  gradle             gradlew      package.json     setup_dependencies
Gruntfile.js  Jab7Business  Jab7REST  Jab7Test    build      distribution  gradle.properties  gradlew.bat  settings.gradle
sh-4.4$ cd build
sh-4.4$ ls
distributions  libs  tmp
sh-4.4$ cd distributions
sh-4.4$ ls
DynaPropAdmin.ear  JAB7-v1.0.0-dev.j   jab7_pcf_dev-liberty.zip   ifest.yml
sh-4.4$ pwd
/workspace/source/build/distributions
sh-4.4$
```

Now the path will look like: /workspace/source/build/distributions/jab7_pcf_dev-liberty.zip

In this path default it will be created one dot we need to remove it

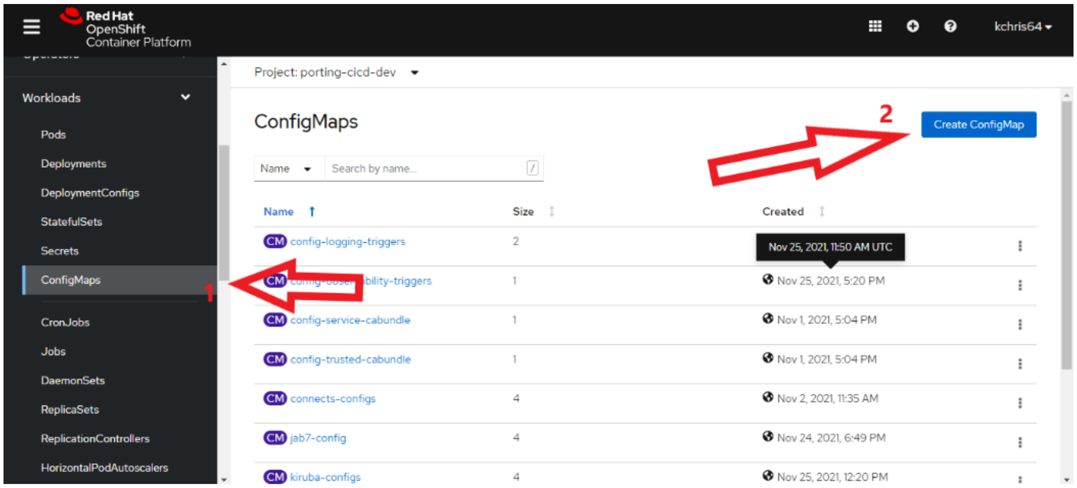
The Zip file will take more time to create

Then Again go to deploy edit pipeline,

In App – Give app name

In Config Name- Give your config name.

To create config file.



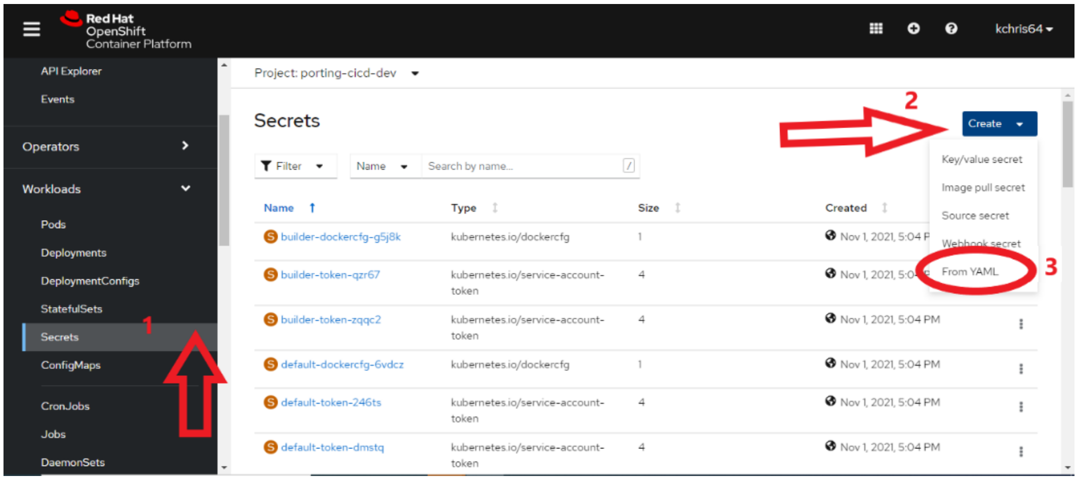
Project: porting-cicd-dev

ConfigMaps

Name	Size	Created
CM config-logging-triggers	2	Nov 25, 2021, 11:50 AM UTC
CM config-observability-triggers	1	Nov 25, 2021, 5:20 PM
CM config-service-cabundle	1	Nov 1, 2021, 5:04 PM
CM config-trusted-cabundle	1	Nov 1, 2021, 5:04 PM
CM connects-configs	4	Nov 2, 2021, 11:35 AM
CM jab7-config	4	Nov 24, 2021, 6:49 PM
CM kiruba-configs	4	Nov 25, 2021, 12:20 PM

Click Create Config map and add the given yaml file - configmap-kiruba-configs.yaml

In Secret Name: Give your secret name, by creating like below



Project: porting-cicd-dev

Secrets

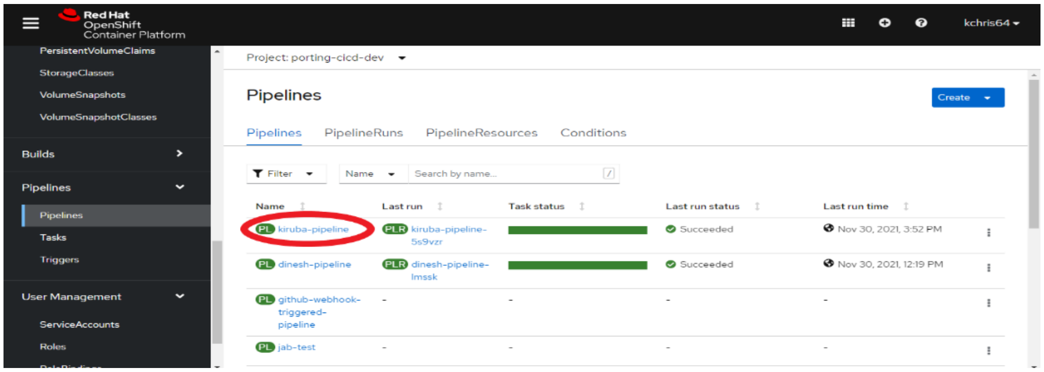
Name	Type	Size	Created
S builder-dockercfg-g5j8k	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 P
S builder-token-qzr67	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:0
S builder-token-zqqc2	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM
S default-dockercfg-6vdcz	kubernetes.io/dockercfg	1	Nov 1, 2021, 5:04 PM
S default-token-246ts	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM
S default-token-dmstq	kubernetes.io/service-account-token	4	Nov 1, 2021, 5:04 PM

secret-kiruba-pcf-credentials.yaml

- copy from this file and paste it in from yaml

So, after giving all this details we need to run our pipeline

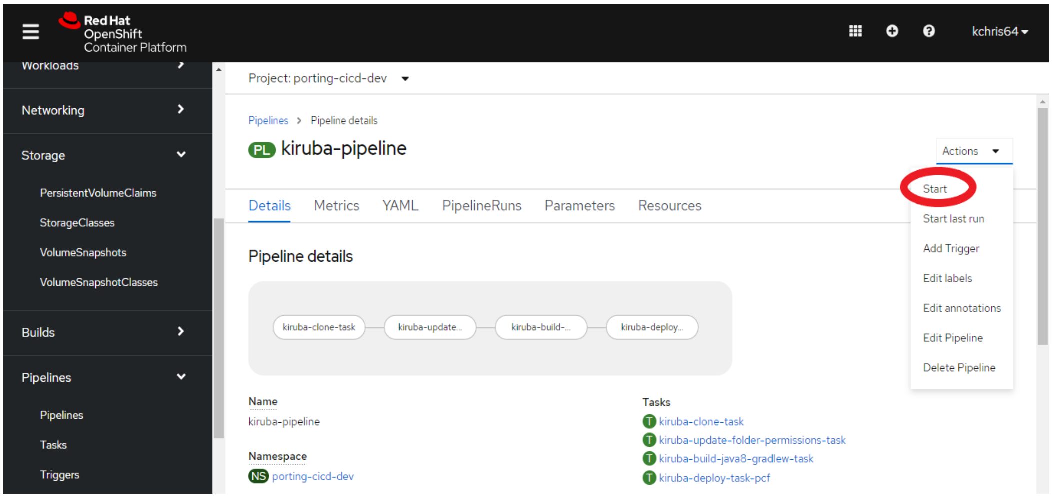
➔ Click your pipeline



Pipelines

Name	Last run	Task status	Last run status	Last run time
PL kiruba-pipeline	PLR kiruba-pipeline-5s9vzr	🟩	Succeeded	Nov 30, 2021, 3:52 PM
PL dinesh-pipeline	PLR dinesh-pipeline-lmssk	🟩	Succeeded	Nov 30, 2021, 12:19 PM
PL github-webhook-triggered-pipeline	-	-	-	-
PL jab-test	-	-	-	-

➔ Click start



PL kiruba-pipeline

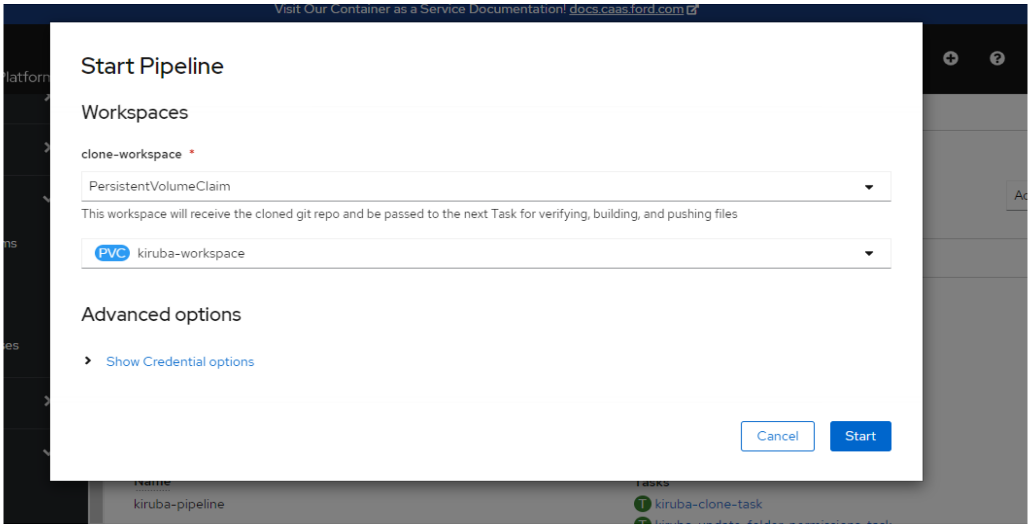
Pipeline details

Name
kiruba-pipeline

Namespace
NS porting-cicd-dev

Tasks
T kiruba-clone-task
T kiruba-update-folder-permissions-task
T kiruba-build-java8-gradlew-task
T kiruba-deploy-task-pcf

After clicking start you will be moved to one pop up window there you need select the PVC (Persistent Volume Claims) and give the PVC Name like below image



Visit Our Container as a Service Documentation! docs.caas.ford.com

Start Pipeline

Workspaces

clone-workspace *

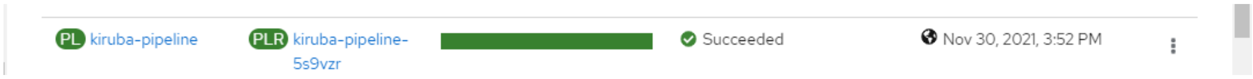
PersistentVolumeClaim

This workspace will receive the cloned git repo and be passed to the next Task for verifying, building, and pushing files

PVC kiruba-workspace

Advanced options

Now the pipeline will start run. If the pipeline runs successfully It will look like below image



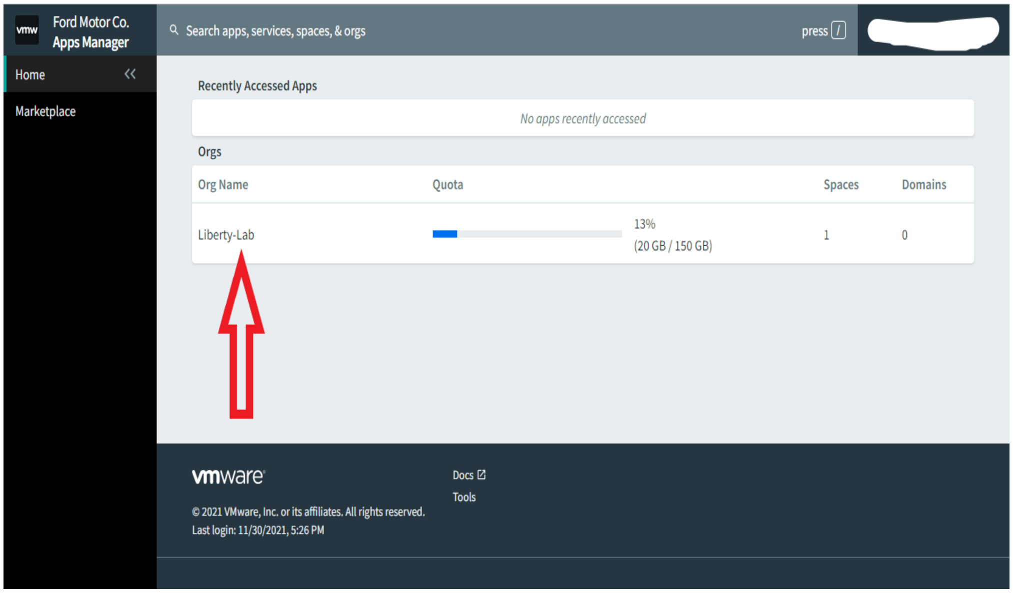
PL kiruba-pipeline	PLR kiruba-pipeline-5s9vzr	🟩	Succeeded	Nov 30, 2021, 3:52 PM

If it fails means red bar will appear.

Step 8: PCF

To view the deploy application in PCF we need to do following steps refer the below images

Go to Liberty-lab



Ford Motor Co. Apps Manager

[redacted]

Recently Accessed Apps

No apps recently accessed

Orgs

Org Name	Quota	Spaces	Domains
Liberty-Lab	13% (20 GB / 150 GB)	1	0

vmware

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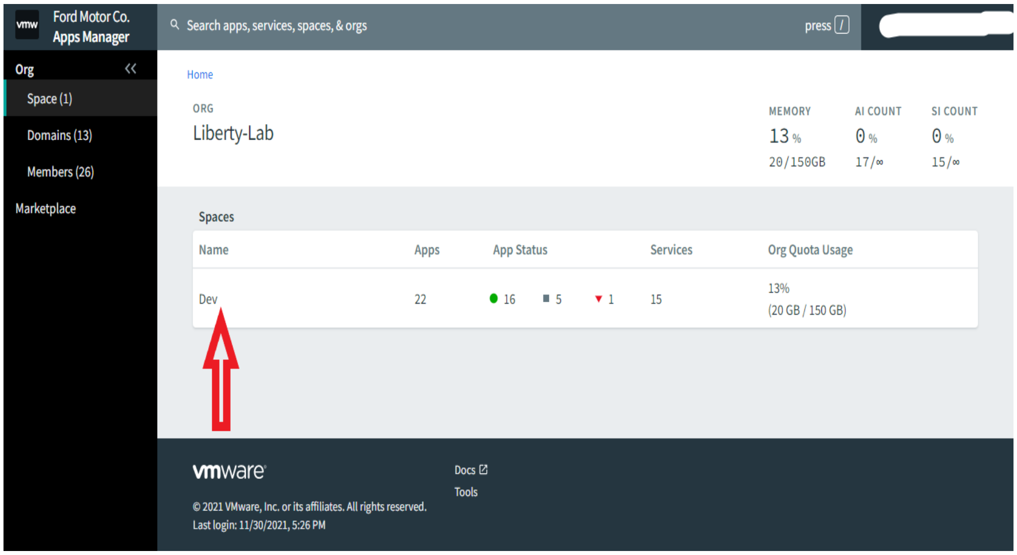
Last login: 11/30/2021, 5:26 PM

Then Dev



Ford Motor Co.
Apps Manager

Search apps, services, spaces, & orgs

press /

[redacted]

Org

- Space (1)
- Domains (13)
- Members (26)

Marketplace

Home

ORG
Liberty-Lab

MEMORY	AI COUNT	SI COUNT
13 %	0 %	0 %
20/150GB	17/∞	15/∞

Spaces

Name	Apps	App Status	Services	Org Quota Usage
Dev	22	● 16 ■ 5 ▼ 1	15	13% (20 GB / 150 GB)

vmware

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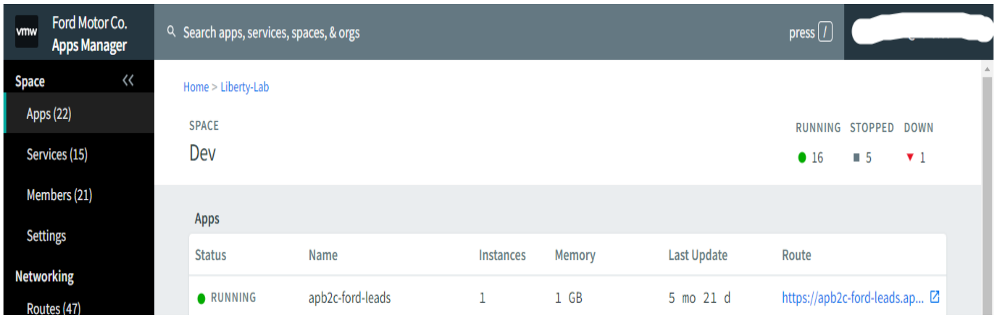
Last login: 11/30/2021, 5:26 PM

Docs
Tools

In Dev you will see the deployed application is running or stopped



Ford Motor Co.
Apps Manager

Search apps, services, spaces, & orgs

press /

[redacted]

Space

- Apps (22)
- Services (15)
- Members (21)
- Settings

Networking

- Routes (47)

Home > Liberty-Lab

SPACE
Dev

RUNNING	STOPPED	DOWN
● 16	■ 5	▼ 1

Apps

Status	Name	Instances	Memory	Last Update	Route
● RUNNING	apb2c-ford-leads	1	1 GB	5 mo 21 d	https://apb2c-ford-leads.ap...