

# Day 4

## Info - ReplicationController

- Using ReplicationController one can deploy stateless applications
- This was a older feature from Kubernetes
- ReplicationController supports 2 functionalities
  1. Scale up/down
  2. Rolling update
- ReplicationController also doesn't support declaratively performing scaled up/down, rolling update etc.,
- As per SOLID Design Principle
  - S - Single Responsibility Principle (SRP)
  - O - Open Closed Principle (OCP)
  - L - Liskov Substitution Principle (LSP)
  - I - Interface Segregation
  - D - Dependency Injection or Dependency Inversion or Inversion of Control (IOC)
- To support declarative approach, Red Hat Openshift team added DeploymentConfig which internally makes use of ReplicationController
- Later, Kubernetes refactored ReplicationController into Deployment and ReplicaSet
  - Deployment
    - supports rolling update
  - ReplicaSet
    - supports scale up/down
- Any new application deployment should consider using Deployment & ReplicaSet over ReplicationController
- When Kubernetes introduced Deployment & ReplicaSet, Red Hat openshift team deprecated use of DeploymentConfig as pretty much Deployment and DeploymentConfig does the same
- Hence, we should always consider using Deployment over ReplicationController and DeploymentConfig

## Info - Deployment vs DaemonSet

- Deployment resource is managed by Deployment Controller
- DaemonSet resource is managed by DaemonSet Controller
- It is possible to scale up/down manually and automatically a application deployed using Deployment
- DaemonSet, we can't scale up/down manually, because the DaemonSet Controller automatically detects the number of nodes in the openshift cluster and creates so many Pod matching the number of Nodes, and DaemonSetController ensure one Pod runs in each node
- Deployment Controller ensures the desired number of Pods always runs in the cluster, however it doesn't put any constraint on which nodes those Pods are to be scheduled, it is totally left to scheduler
- DaemonSet is useful in very special cases like

- Prometheus - which is known for collecting performance metrics on the node level as well as on the application(Pod) level
- Hence it is necessary that one Prometheus Pod runs in every node, hence it can be deployed as DaemonSet
- kube-proxy - which support load-balancing of Pods that are represented by service
- One kube-proxy Pod runs in every node, this could be deployed as a DaemonSet
- DNS - which helps in Service Discovery has one Pod running in every node. This is necessary to resolve the service name to its respective service IP on every node level. This could be a DaemonSet.

## Info - StatefulSet

- Initially when Kubernetes was released it was supporting only Stateless applications, which is supported by Deployment
- Later, they saw a need for some Controller that also supports deploying Stateful applications like Databases
- Just like StatefulSet, Deployment also support Persistent Volume, so what exactly is the difference between these two?
  - When we deploy database applications as a Deployment with Persistent Volume with multiple Pod replicas, they don't run a cluster of databases
  - But StatefulSet has an option to create a cluster of databases
  - Just by deploying an application as a statefulset won't make them run as master and slave, we need to explicitly configure them either via ConfigMap or initContainers, PV/PVC or all of them in combination depending on the application type deployed as Statefulset
  - Each Pod created by StatefulSet controller has an unique Pod identifier, which is also stable
  - the order in which the Pod are started also is guaranteed, assume we are deploying mysql as a statefulset with 3 Pods
    - mysql-0 Pod will be created first
    - mysql-1 Pod will only be created after the mysql-0 Pod starts running
    - mysql-2 Pod will only be created after the mysql-1 Pod starts running

## Lab - Creating a one-time job

```
cd ~/openshift-july-2024
git pull
cd Day4/job
oc create -f job.yml --save-config
oc get jobs
oc get po
oc logs -f hello-job-55j85
```

## Expected output

The screenshot shows a terminal window with two tabs. The left tab shows the creation of a job named 'hello-job' with a single container running 'busybox' and an echo command. The right tab shows the creation of a CronJob named 'cronjob' with a schedule of '\*/5 \* \* \* \*'. It lists three MySQL pods: mysql-0, mysql-1, and mysql-2, all in Running state. Logs for the CronJob show the message 'Hello Job Started'.

```
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] ls
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] cat job.yml
apiVersion: batch/v1
kind: Job
metadata:
  name: hello-job
spec:
  template:
    spec:
      containers:
        - name: job-container
          image: busybox
          command: ["sh", "-c", "echo 'Hello Job Started' && sleep 20 && exit 0"]
  restartPolicy: Never
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] oc create -f job.yml
job.batch/hello-job created
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] oc get jobs
NAME      COMPLETIONS   DURATION   AGE
hello-job  0/1           2s         2s
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] oc get po
NAME      READY   STATUS    RESTARTS   AGE
hello-job-55j85  1/1     Running   0          4s
mysql-0       1/1     Running   0          67m
mysql-1       1/1     Running   0          67m
mysql-2       1/1     Running   0          73m
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] oc logs -f hello-job-55j85
Hello Job Started
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main] oc get po
NAME      READY   STATUS    RESTARTS   AGE
hello-job-55j85  0/1     Completed  0          26s
mysql-0       1/1     Running   0          68m
mysql-1       1/1     Running   0          67m
mysql-2       1/1     Running   0          74m
jegan@tektutor.org ~ /openshift-july-2024/Day4/job [2 main]
```

## Lab - Scheduling a recurring job that runs at a specific time

```
cd ~/openshift-july-2024
git pull
cd Day4/cronjob
oc create -f cronjob.yml --save-config
oc get cronjobs
oc get po
oc logs -f
```

## Expected output

```
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● vim cronjob.yml
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● vim cronjob.yml
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc apply -f cronjob.yml
cronjob.batch/cron-job created
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc logs -f cron-job-28667915-8fdgb
break
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc logs -f cron-job-28667915-8fdgb
break
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc logs -f cron-job-28667915-8fdgb
break
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● vim cronjob.yml
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc apply -f cronjob.yml
cronjob.batch/cron-job configured
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc delete -f cronjob.yml
cronjob.batch "cron-job" deleted
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc apply -f cronjob.yml
cronjob.batch/cron-job created
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ●
```

NAME	SCHEDULE	SUSPEND	ACTIVE	LAST SCHEDULE	AGE
cron-job	05 12 * * *	False	0	<none>	13s
cron-job	05 12 * * *	False	1	0s	78s
cron-job	05 12 * * *	False	0	6s	84s
cron-job	05 12 * * *	False	0	6s	84s
cron-job	15 13 * * *	False	0	70s	2m28s
cron-job	15 13 * * *	False	0	83s	2m41s
cron-job	15 13 * * *	False	0	<none>	0s

```
jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc get pod -w
NAME          READY   STATUS    RESTARTS   AGE
hello-job-lbh6d  0/1    Completed   0          21m
mysql-0        1/1    Running    0          60m
mysql-1        1/1    Running    0          60m
mysql-2        1/1    Running    0          66m
^C
x jegan@tektutor.org ~/openshift-july-2024/Day4/cronjob $ main ● oc get pod -w | grep cron-job
■
```

## Info - Helm Overview

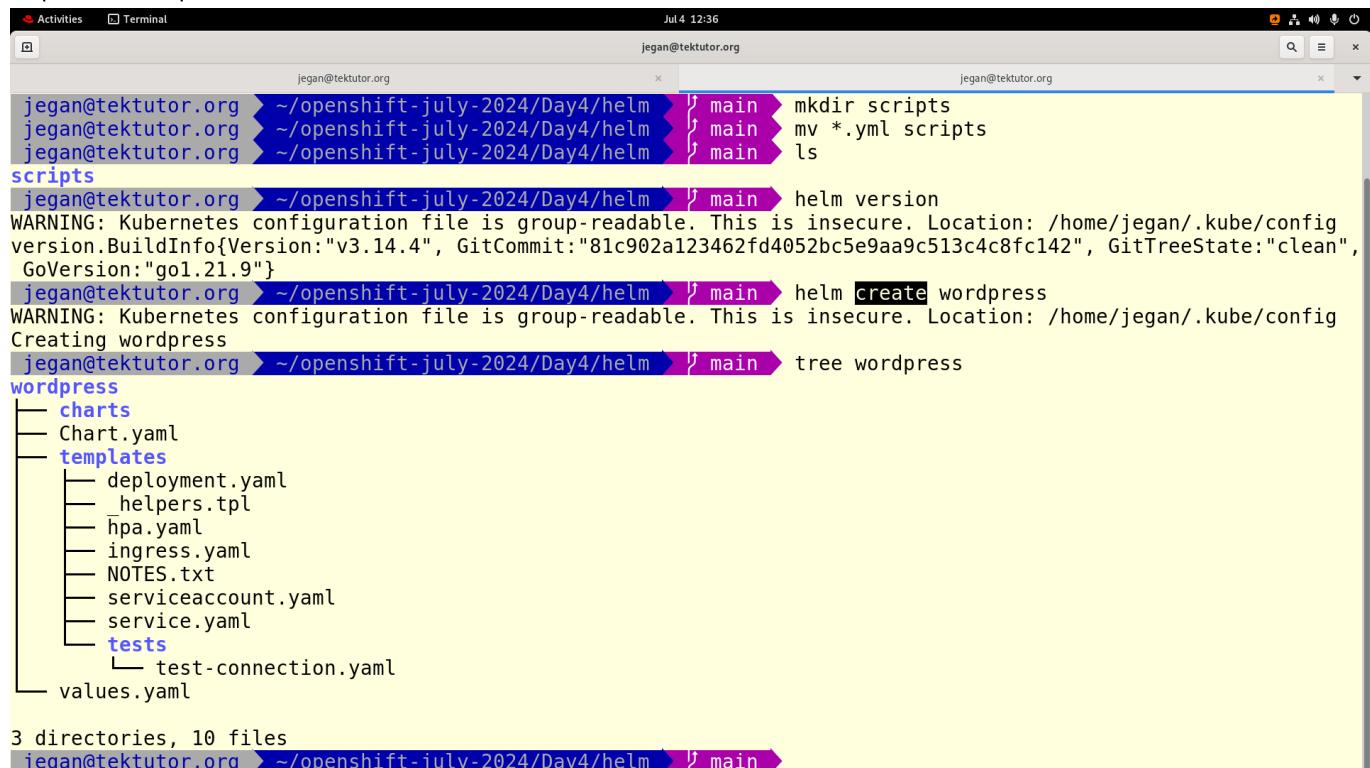
- Just like we have package managers in Linux distributions
- apt-get in Ubuntu
- yum, dnf, rpm in RHEL based Linux distributions
- Helm is a Package manager to install/uninstall/upgrade applications in Kubernetes/OpenShift
- Helm also depends on the kube config just like the oc and kubectl client tool
- helm has to be installed just like oc and kubectl
- instead of deploying the yaml files in a specific order while deploying and reverse while deleting, we can package all the yaml files in a Helm recommended directory structure and compress as a file. The compressed file is called Helm chart.
- Helm charts can then be distributed to your customers, who can install/uninstall/upgrade the complex application using helm
- Helm charts are also available in the

## Lab - Creating custom helm chart (package) for wordpress/mariadb multi-pod application

```
cd ~/openshift-july-2024
git pull
cd Day4/helm
helm version
helm create wordpress
tree wordpress
```

```
cd wordpress/templates
rm -rf *
cd ../..
cp values.yaml wordpress
cp scripts/*.yml wordpress/templates
tree wordpress
helm package wordpress
ls -l
oc delete project jegan
oc new-project jegan
helm install wordpress wordpress-0.1.0.tgz
helm list
oc get deploy,rs,po,svc,route,pv,pvc
```

## Expected output



The screenshot shows a terminal window with two tabs. The left tab is titled 'jegan@tektutor.org' and the right tab is also 'jegan@tektutor.org'. The terminal displays the following command sequence:

```
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | mkdir scripts
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | mv *.yml scripts
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | ls
scripts
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | helm version
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
version.BuildInfo{Version:"v3.14.4", GitCommit:"81c902a123462fd4052bc5e9aa9c513c4c8fc142", GitTreeState:"clean",
GoVersion:"go1.21.9"}
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | helm create wordpress
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
Creating wordpress
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main | tree wordpress
wordpress
└── charts
    └── Chart.yaml
└── templates
    ├── deployment.yaml
    ├── helpers.tpl
    ├── hpa.yaml
    ├── ingress.yaml
    ├── NOTES.txt
    ├── serviceaccount.yaml
    ├── service.yaml
    └── tests
        └── test-connection.yaml
values.yaml

3 directories, 10 files
jegan@tektutor.org ~/openshift-july-2024/Day4/helm > | main |
```

```
jegan@tektutor.org ~/openshift-july-2024/Day4/helm/scripts $ main ls
mariadb-deploy.yml mariadb-svc.yml wordpress-pvc.yml wordpress-secret.yml
mariadb-pvc.yml wordpress-configmap.yml wordpress-pv.yml wordpress-svc.yml
mariadb-pv.yml wordpress-deploy.yml wordpress-route.yml

jegan@tektutor.org ~/openshift-july-2024/Day4/helm/scripts $ main vim mariadb-pv.yml
jegan@tektutor.org ~/openshift-july-2024/Day4/helm/scripts $ main cd ..
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main ls
scripts values.yaml wordpress

jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main cp scripts/*.yml wordpress/templates
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main tree wordpress

wordpress
├── charts
│   └── Chart.yaml
└── templates
    ├── mariadb-deploy.yml
    ├── mariadb-pvc.yml
    ├── mariadb-pv.yml
    ├── mariadb-svc.yml
    ├── wordpress-configmap.yml
    ├── wordpress-deploy.yml
    ├── wordpress-pvc.yml
    ├── wordpress-pv.yml
    ├── wordpress-route.yml
    ├── wordpress-secret.yml
    └── wordpress-svc.yml
values.yaml

2 directories, 13 files
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main

Activities Terminal Jul 4 12:59 jegan@tektutor.org jegan@tektutor.org jegan@tektutor.org
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main oc project
Using project "jegan" on server "https://api.ocp4.tektutor.org.labs:6443".
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main oc get all
Warning: apps.openshift.io/v1 DeploymentConfig is deprecated in v4.14+, unavailable in v4.10000+.
No resources found in jegan namespace.
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME      NAMESPACE      REVISION      UPDATED      STATUS      CHART      APP VERSION
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main tree wordpress
wordpress
├── charts
│   └── Chart.yaml
└── templates
    ├── mariadb-deploy.yml
    ├── mariadb-pvc.yml
    ├── mariadb-pv.yml
    ├── mariadb-svc.yml
    ├── wordpress-configmap.yml
    ├── wordpress-deploy.yml
    ├── wordpress-pvc.yml
    ├── wordpress-pv.yml
    ├── wordpress-route.yml
    ├── wordpress-secret.yml
    └── wordpress-svc.yml
values.yaml

2 directories, 13 files
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main ls -l
total 8
drwxr-xr-x 2 jegan jegan 4096 Jul  4 12:55 scripts
-rw-r--r-- 1 jegan jegan 203 Jul  4 12:50 values.yaml
drwxr-xr-x 4 jegan jegan 93 Jul  4 12:39 wordpress
jegan@tektutor.org ~/openshift-july-2024/Day4/helm $ main
```

```

Activities Terminal Jul 4 13:00 jegan@tektutor.org
jegan@tektutor.org x jegan@tektutor.org x jegan@tektutor.org x
jegan@tektutor.org
├── wordpress-pvc.yml
├── wordpress-pv.yml
├── wordpress-route.yml
└── wordpress-secret.yml
    └── wordpress-svc.yml
values.yaml

2 directories, 13 files
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main > ls -l
total 8
drwxr-xr-x 2 jegan jegan 4096 Jul 4 12:55 scripts
-rw-r--r-- 1 jegan jegan 203 Jul 4 12:50 values.yaml
drwxr-xr-x 4 jegan jegan 93 Jul 4 12:39 wordpress
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main > helm package wordpress
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
Successfully packaged chart and saved it to: /home/jegan/openshift-july-2024/Day4/helm/wordpress-0.1.0.tgz
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main > ls -l
total 12
drwxr-xr-x 2 jegan jegan 4096 Jul 4 12:55 scripts
-rw-r--r-- 1 jegan jegan 203 Jul 4 12:50 values.yaml
drwxr-xr-x 4 jegan jegan 93 Jul 4 12:39 wordpress
-rw-r--r-- 1 jegan jegan 1818 Jul 4 12:59 wordpress-0.1.0.tgz
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main > helm install wordpress wordpress-0.1.0.tgz
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME: wordpress
LAST DEPLOYED: Thu Jul 4 13:00:04 2024
NAMESPACE: jegan
STATUS: deployed
REVISION: 1
TEST SUITE: None
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main > helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME           NAMESPACE      REVISION      UPDATED             STATUS        CHART          APP VERSION
wordpress      jegan          1            2024-07-04 13:00:04.550175612 +0530 IST deployed    wordpress-0.1.0 1.16.0
jegan@tektutor.org > ~/openshift-july-2024/Day4/helm > main >

```

The screenshot shows the Red Hat OpenShift Topology interface. On the left, a sidebar menu includes options like Developer, Topology (which is selected), Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main area displays a cluster graph with three nodes: 'HELM' (enclosed in a dashed box), 'wordpress', and 'mariadb'. Each node has a blue circular icon with the word 'HELM' and a gear icon. Below each node is a blue button labeled 'D' followed by the service name ('wordpress' or 'mariadb') and a vertical ellipsis button. At the bottom of the graph area, there is a green checkmark icon and a search bar.

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe

Search

Functions

Builds

Helm

Project

ConfigMaps

Secrets

Jul 4 13:00 mariadb-5b7b8d6fbf-78spz - Pod - Logs - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/pods/mariadb-5b7b8d6fbf-78spz/logs

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Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Pods > Pod details

mariadb-5b7b8d6fbf-78spz Running

Actions Details Metrics YAML Environment Logs Events Terminal

Log streaming... mariadb Current log Search Show full log Wrap lines Raw Download Expand

84 lines

```

63 2024-07-04 7:31:40 0 [Note] InnoDB: Number of transaction pools: 1
64 2024-07-04 7:31:40 0 [Note] InnoDB: Using crc32 + pclmulqdq instructions
65 2024-07-04 7:31:40 0 [Note] myisld: 0.TMPFILE is not supported on /opt/bitnami/mariadb/tmp (disabling future attempts)
66 2024-07-04 7:31:40 0 [Note] InnoDB: Using Linux native AIO
67 2024-07-04 7:31:40 0 [Note] InnoDB: Initializing buffer pool, total size = 128.000MiB, chunk size = 2.000MiB
68 2024-07-04 7:31:40 0 [Note] InnoDB: Completed initialization of buffer pool
69 2024-07-04 7:31:40 0 [Note] InnoDB: Buffered log writes (block size=512 bytes)
70 2024-07-04 7:31:40 0 [Note] InnoDB: End of log at LSN=47827
71 2024-07-04 7:31:40 0 [Note] InnoDB: Opened 3 undo tablespaces
72 2024-07-04 7:31:40 0 [Note] InnoDB: 128 rollback segments in 3 undo tablespaces are active.
73 2024-07-04 7:31:40 0 [Note] InnoDB: Setting file './ibtmp1' size to 12.000MiB. Physically writing the file full; Please wait ...
74 2024-07-04 7:31:40 0 [Note] InnoDB: File './ibtmp1' size is now 12.000MiB.
75 2024-07-04 7:31:40 0 [Note] InnoDB: log sequence number 47827; transaction id 14
76 2024-07-04 7:31:40 0 [Note] Plugin 'FEEDBACK' is disabled.
77 2024-07-04 7:31:40 0 [Note] Plugin 'wsrep-provider' is disabled.
78 2024-07-04 7:31:40 0 [Note] InnoDB: Loading buffer pool(s) from /bitnami/mariadb/data/ib_buffer_pool
79 2024-07-04 7:31:40 0 [Note] InnoDB: Buffer pool(s) load completed at 240704 7:31:40
80 2024-07-04 7:31:40 0 [Note] Server socket created on IP: '0.0.0.0'.
81 2024-07-04 7:31:40 0 [Warning] 'proxies_priv' entry '% root@ mariadb-5b7b8d6fbf-78spz' ignored in --skip-name-resolve mode.
82 2024-07-04 7:31:40 0 [Note] mysqld: Event Scheduler: Loaded 0 events
83 2024-07-04 7:31:40 0 [Note] /opt/bitnami/mariadb/sbin/mysql: ready for connections.
84 Version: '11.3.2-MariaDB' socket: '/opt/bitnami/mariadb/tmp/mysql.sock' port: 3306 Source distribution

```

Activities Google Chrome Jul 4 13:03

wordpress-5756698855-zsx95 - Pod - Logs - Red Hat OpenShift - Google Chrome

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/pods/wordpress-5756698855-zsx95/logs

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Red Hat OpenShift kube:admin

Developer Project: jegan

Pods > Pod details

wordpress-5756698855-zsx95 Running

Actions

Details Metrics YAML Environment Logs Events Terminal

Log stream paused wordpress Current log Search Show full log Wrap lines Download Expand

36 lines

```

9 Certificate request self-signature ok
10 subject=CN = example.com
11 realpath: /bitnami/apache/conf: No such file or directory
12 wordpress 07:32:25.96 INFO --> Configuring Apache ServerTokens directive
13 wordpress 07:32:25.98 INFO --> Configuring PHP options
14 wordpress 07:32:25.99 INFO --> Setting PHP expose_php option
15 wordpress 07:32:26.00 INFO --> Setting PHP output_buffering option
16 wordpress 07:32:26.02 INFO --> Validating settings in MYSQL_CLIENT.* env vars
17 wordpress 07:32:26.25 INFO --> Restoring persisted WordPress installation
18 wordpress 07:32:26.86 INFO --> Trying to connect to the database server
19 wordpress 07:32:27.74 INFO --> ** WordPress setup finished! **
20
21 wordpress 07:32:27.75 INFO --> ** Starting Apache **
22 [Thu Jul 04 07:32:27.872392 2024] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.59 (Unix) OpenSSL/3.0.13 configured -- resuming normal operations
23 [Thu Jul 04 07:32:27.872502 2024] [core:notice] [pid 1] AH0004: Command line: '/opt/bitnami/apache/bin/httpd -f /opt/bitnami/apache/conf/httpd.conf -D FOREGROUND'
24 10.128.0.2 -- [04/Jul/2024:07:33:09 +0000] "GET / HTTP/1.1" 200 14789
25 10.128.0.2 -- [04/Jul/2024:07:33:11 +0000] "GET /wp-includes(blocks/navigation/style/min.css?ver=6.5.5 HTTP/1.1" 200 2290
26 10.128.0.2 -- [04/Jul/2024:07:33:11 +0000] "GET /wp-includes(blocks/image/style/min.css?ver=6.5.5 HTTP/1.1" 200 1597
27 10.128.0.2 -- [04/Jul/2024:07:33:11 +0000] "GET /wp-includes(blocks/navigation/view.min.js?ver=6.5.5 HTTP/1.1" 200 1135
28 10.128.0.2 -- [04/Jul/2024:07:33:11 +0000] "GET /wp-content/themes/twentytwentyfour/assets/images/building-exterior.webp HTTP/1.1" 200 199724
29 10.128.0.2 -- [04/Jul/2024:07:33:11 +0000] "GET /wp-content/themes/twentytwentyfour/assets/images/tourist-and-building.webp HTTP/1.1" 200 66482

```

Resume stream

Activities Google Chrome Jul 4 13:03

User's blog - Google Chrome

Not secure wordpress-jegan.apps.ocp4.tektutor.org.labs/

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

User's blog Sample Page

## A commitment to innovation and sustainability

Études is a pioneering firm that seamlessly merges creativity and functionality to redefine architectural excellence.

About us



Once you are done with this exercise, you can uninstall wordpress using helm package manager tool

```
helm list
helm uninstall wordpress
```

## Expected output

```

Activities Terminal Jul 4 13:07
jegan@tektutor.org * jegan@tektutor.org * jegan@tektutor.org *
create mode 100644 Day4/helm/scripts/wordpress-secret.yaml
create mode 100644 Day4/helm/scripts/wordpress-svc.yaml
create mode 100644 Day4/helm/values.yaml
jegan@tektutor.org >~/openshift-july-2024> ↵ main > git pull
remote: Enumerating objects: 20, done.
remote: Counting objects: 100% (20/20), done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 17 (delta 8), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (17/17), 5.92 KiB | 1.97 MiB/s, done.
From https://github.com/tektutor/openshift-july-2024
  9ed9e0c..bd2372d main -> origin/main
Merge made by the 'ort' strategy.
 Day4/README.md | 54 ++++++-----+
 1 file changed, 53 insertions(+), 1 deletion(-)
jegan@tektutor.org >~/openshift-july-2024> ↵ main > git push
Enumerating objects: 24, done.
Counting objects: 100% (24/24), done.
Delta compression using up to 48 threads
Compressing objects: 100% (20/20), done.
Writing objects: 100% (20/20), 2.96 KiB | 2.96 MiB/s, done.
Total 20 (delta 7), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (7/7), completed with 3 local objects.
To https://github.com/tektutor/openshift-july-2024.git
 bd2372d..a3b94b7 main -> main
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME      NAMESPACE   REVISION   UPDATED     STATUS    CHART          APP VERSION
wordpress jegan        1          2024-07-04 13:00:04.550175612 +0530 IST deployed  wordpress-0.1.0 1.16.0
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm uninstall wordpress
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
release "wordpress" uninstalled
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME      NAMESPACE   REVISION   UPDATED     STATUS    CHART          APP VERSION
jegan@tektutor.org >~/openshift-july-2024> ↵ main >

```

The screenshot shows a Linux desktop environment with a terminal window and a web browser window.

**Terminal Output:**

```

Activities Terminal Jul 4 13:07
jegan@tektutor.org * jegan@tektutor.org * jegan@tektutor.org *
create mode 100644 Day4/helm/scripts/wordpress-secret.yaml
create mode 100644 Day4/helm/scripts/wordpress-svc.yaml
create mode 100644 Day4/helm/values.yaml
jegan@tektutor.org >~/openshift-july-2024> ↵ main > git pull
remote: Enumerating objects: 20, done.
remote: Counting objects: 100% (20/20), done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 17 (delta 8), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (17/17), 5.92 KiB | 1.97 MiB/s, done.
From https://github.com/tektutor/openshift-july-2024
  9ed9e0c..bd2372d main -> origin/main
Merge made by the 'ort' strategy.
 Day4/README.md | 54 ++++++-----+
 1 file changed, 53 insertions(+), 1 deletion(-)
jegan@tektutor.org >~/openshift-july-2024> ↵ main > git push
Enumerating objects: 24, done.
Counting objects: 100% (24/24), done.
Delta compression using up to 48 threads
Compressing objects: 100% (20/20), done.
Writing objects: 100% (20/20), 2.96 KiB | 2.96 MiB/s, done.
Total 20 (delta 7), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (7/7), completed with 3 local objects.
To https://github.com/tektutor/openshift-july-2024.git
 bd2372d..a3b94b7 main -> main
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME      NAMESPACE   REVISION   UPDATED     STATUS    CHART          APP VERSION
wordpress jegan        1          2024-07-04 13:00:04.550175612 +0530 IST deployed  wordpress-0.1.0 1.16.0
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm uninstall wordpress
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
release "wordpress" uninstalled
jegan@tektutor.org >~/openshift-july-2024> ↵ main > helm list
WARNING: Kubernetes configuration file is group-readable. This is insecure. Location: /home/jegan/.kube/config
NAME      NAMESPACE   REVISION   UPDATED     STATUS    CHART          APP VERSION
jegan@tektutor.org >~/openshift-july-2024> ↵ main >

```

**Web Browser (Red Hat OpenShift Web Console):**

- The browser title is "Topology - Red Hat OpenShift - Google Chrome".
- The address bar shows the URL: "https://console.openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph".
- The page header says "You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in."
- The left sidebar menu includes "Developer", "Topology", "Observe", "Search", "Functions", "Builds", "Helm", "Project", "ConfigMaps", and "Secrets".
- The main content area displays the "Topology" view for the "jegan" project, showing a graph of resources. A message at the top right says "No resources found".
- At the bottom, there are search and filter icons.

## Lab - Deploying Java - Springboot application from Openshift web console

## Open the Openshift webconsole --> Developer context

The screenshot shows the Red Hat OpenShift webconsole interface. The title bar indicates it's running on Jul 4 14:08. The browser tab is 'Topology - Red Hat OpenShift - Google Chrome'. The address bar shows a 'Not secure' connection to <https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph>. The sidebar on the left is titled 'Developer' and includes links for Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main content area is titled 'Project: jegan' and 'Application: All applications'. It features a search bar and a message stating 'No resources found'. Below this, there's a link to 'Start building your application'.

Click on +Add

The screenshot shows the '+Add' page of the Red Hat OpenShift webconsole. The title bar indicates it's running on Jul 4 14:09. The browser tab is '+Add - Red Hat OpenShift - Google Chrome'. The address bar shows a 'Not secure' connection to <https://console-openshift-console.apps.ocp4.tektutor.org.labs/add/ns/jegan>. The sidebar on the left is identical to the previous screenshot. The main content area is titled 'Add' and contains sections for 'Getting started resources' (with links to 'Create applications using samples', 'Build with guided documentation', 'Explore new developer features', and 'View all quick starts') and 'Developer Catalog' (with sections for 'All services', 'Database', 'Eventing', 'Broker', 'Serverless function', 'Import from git', 'Samples', 'Git Repository', 'Import from Git', 'From Local Machine', and 'Import YAML'). A 'Details on' toggle switch is visible in the top right corner.

Under Getting started resources, click "View all sample"

The screenshot shows the Red Hat OpenShift Samples page. The left sidebar has a 'Developer' section with options like '+Add', 'Topology', 'Observe', 'Search', 'Functions', 'Builds', 'Helm', 'Project', 'ConfigMaps', and 'Secrets'. The main area is titled 'Samples' and shows a grid of application builder images. Each item includes a thumbnail, name, provider, and a brief description.

- .NET**: Provided by Red Hat. Build and run .NET 8 applications on UBI 8.
- Go**: Builder Images. Build and run Go applications on UBI 7.
- PHP**: Builder Images. Build and serve static content via Apache HTTP Server (httpd) 2.4 on RHEL 7.
- Java**: Provided by Red Hat, Inc. Build and run Java applications using Maven and OpenJDK 17.
- NGINX**: Builder Images. Build and serve static content via Nginx HTTP server and a reverse proxy (nginx) on RHEL 7.
- Node.js**: Builder Images. Build and run Node.js 18 applications on UBI 8.
- Perl**: Builder Images. Build and run Perl 5.32 applications on UBI 8.
- Python**: Builder Images. Build and run PHP 8.0 applications on UBI 8.
- Ruby**: Builder Images. Build and run Ruby 3.1 applications on UBI 8.

Select "Basic Spring Boot"

The screenshot shows the 'Import from Git' configuration page. The left sidebar is identical to the previous screenshot. The main area is titled 'Import from Git' and shows the 'Git' section. A 'Git Repo URL' field contains 'https://github.com/devfile-samples/devfile-sample-java-springboot-basic.git' with a 'Validated' status. Below it, a component card for 'Basic Spring Boot' (JAVA SPRING) is shown, along with its description and repository link. The 'General' section includes fields for 'Name' (set to 'java-springboot-basic') and 'Security' (with a checked 'Secure Route' checkbox). At the bottom are 'Create' and 'Cancel' buttons.

Click on "Create" button

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex Topology - Red Hat OpenShift - Google Chrome Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... Open URL

Topology

Search

Functions

Builds

Helm

Project

ConfigMaps

Secrets

Sample Application

A sample-app

Resource added Deployment created successfully. https://java-springboot-basic-jegan.apps.ocp4.tektutor.org.labs

Activities Google Chrome java-springboot-basic-1 Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex java-springboot-basic-1 Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/java-springboot-basic-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Builds > Build details

B java-springboot-basic-1 Running

Logs Events

Log streaming... Search

Show full log Wrap lines Raw Download Expand

21 lines

```

1 Cloning "https://github.com/devfile-samples/devfile-sample-java-springboot-basic.git" ...
2 Commit: 558117eae167a8601a7701d43f205d720494ec6 ([DevTools] Update Readme Links (#42))
3 Author: Jordan Dubrick (jdubrick@redhat.com)
4 Date: Fri Mar 1 09:18:05 2024 -0500
5 time="2024-07-04T08:42:01Z" level:info msg="Not using native dtifff for overlay, this may cause degraded performance for building images: kernel has CONFIG_OVERLAY_FS_REDIRECT_DIR enabled"
6 I0704 08:42:01.871019 1 defaults.go:112] Defaulting to storage driver "overlay" with options [mountopt=metacopy].
7 Caching blobs under "/var/cache/blobs".
8
9 Pulling image registry.access.redhat.com/ubi8/openjdk-17-runtimes:1.15.1-1.1682053056 ...
10 Trying to pull registry.access.redhat.com/ubi8/openjdk-17-runtimes:1.15.1-1.1682053056...
11 Getting image source signatures
12 Copying blob sha256:122aca69054b27ff81329f37ab7efffa0a3038861b977ab9377175e065f649107
13 Copying blob sha256:06f86e50a0b74ff9eb161a7d781228877c90e8ff57e9689e8cb8bf092a2x0f9
14 Copying config sha256:8fbbe930e704a3c67bcb081b63dcf705304e35f7a42a7a9dac8b169ce4c94a6
15 Writing manifest to image destination
16
17 Pulling image registry.access.redhat.com/ubi8/openjdk-17:1.15.1-1.1682053058 ...
18 Trying to pull registry.access.redhat.com/ubi8/openjdk-17:1.15.1-1.1682053058...
19 Getting image source signatures
20 Copying blob sha256:3ba333d1709318bb6e11b393259e7fb8977b0afb1489ff4f030ea640ecf428e3
21 Copying blob sha256:06f86e50a0b74ff9eb161a7d781228877c90e8ff57e9689e8cb8bf092a2a9f9

```

**⚠ Some lines have been abridged because they are exceptionally long.**

To view unabridged log content, you can either open the raw file in another window or download it.

```

2016 lines
1972 [INFO] Resolved dependency: spring-web-5.2.10.RLL-Lok.jar
1973 [INFO] Resolved dependency: jackson-annotations-2.11.3.jar
1974 [INFO] Resolved dependency: junit-platform-commons-1.6.3.jar
1975 [INFO] Resolved dependency: jackson-datatype-jdk8-2.11.3.jar
1976 [INFO] Resolved dependency: spring-boot-configuration-2.3.5.RELEASE.jar
1977 [INFO] Resolved dependency: tomcat-embed-core-9.0.39.jar
1978 [INFO] Resolved dependency: byte-buddy-agent-1.10.5.jar
1979 [INFO] Resolved dependency: spring-core-5.2.10.RELEASE.jar
1980 [INFO] Resolved dependency: spring-boot-2.3.5.RELEASE.jar
1981 [INFO] Resolved dependency: jakarta_xml_bind-api-2.3.3.jar
1982 [INFO] Resolved dependency: assertj-core-3.16.1.jar
1983 [INFO] Resolved dependency: jul-to-slf4j-1.7.30.jar
1984 [INFO] Resolved dependency: jackson-core-2.11.3.jar
1985 [INFO] Resolved dependency: snakeyaml-1.26.jar
1986 [INFO] Resolved dependency: spring-beans-5.2.10.RELEASE.jar
1987 [INFO] Resolved dependency: spring-expression-5.2.10.RELEASE.jar
1988 [INFO] Resolved dependency: junit-jupiter-params-5.6.3.jar
1989 [INFO] Resolved dependency: xmlunit-core-2.7.0.jar
1990 [INFO] Resolved dependency: byte-buddy-1.10.5.jar
1991 [INFO] Resolved dependency: spring-boot-test-2.3.5.RELEASE.jar
1992 [INFO] Resolved dependency: spring-test-5.2.10.RELEASE.jar
1993 [INFO] Resolved dependency: logback-core-1.2.3.jar
1994 [INFO] Resolved dependency: apiguardian-api-1.1.0.jar
1995 [INFO] Resolved dependency: mockito-junit-jupiter-3.3.3.jar
1996 [INFO] Resolved dependency: hamcrest-2.2.jar
1997 [INFO] Resolved dependency: junit-platform-engine-1.6.3.jar
1998 [INFO] Resolved dependency: json-path-2.4.0.jar
1999 [INFO] Resolved dependency: spring-jcl-5.2.10.RELEASE.jar
2000 [INFO] Resolved dependency: spring-boot-starter-json-2.3.5.RELEASE.jar
2001 [INFO] Resolved dependency: spring-boot-starter-tomcat-2.3.5.RELEASE.jar
2002 [INFO] Resolved dependency: slf4j-api-1.7.25.jar
2003 [INFO] Resolved dependency: junit-jupiter-apt-5.6.3.jar
2004 [INFO] Resolved dependency: jackson-module-parameter-names-2.11.3.jar
2005 [INFO] Resolved dependency: spring-boot-test-autoconfigure-2.3.5.RELEASE.jar
2006 [INFO] Resolved dependency: android-json-0.0.20131108.vaadin1.jar
2007 [INFO] Resolved dependency: spring-aop-5.2.10.RELEASE.jar
2008 [INFO] Resolved dependency: spring-boot-starter-2.3.5.RELEASE.jar
2009 [INFO] -----
2010 [INFO] BUILD SUCCESS
2011 [INFO] -----
2012 [INFO] Total time: 04:53 min
2013 [INFO] Finished at: 2024-07-04T08:47:24Z
2014 [INFO] -----
2015 --> 6cdb0520945
[1/2] STEP 6/10: COPY src src

```

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: jegan

Builds > Build details

**B java-springboot-basic-1** Running

Actions

Logs Events

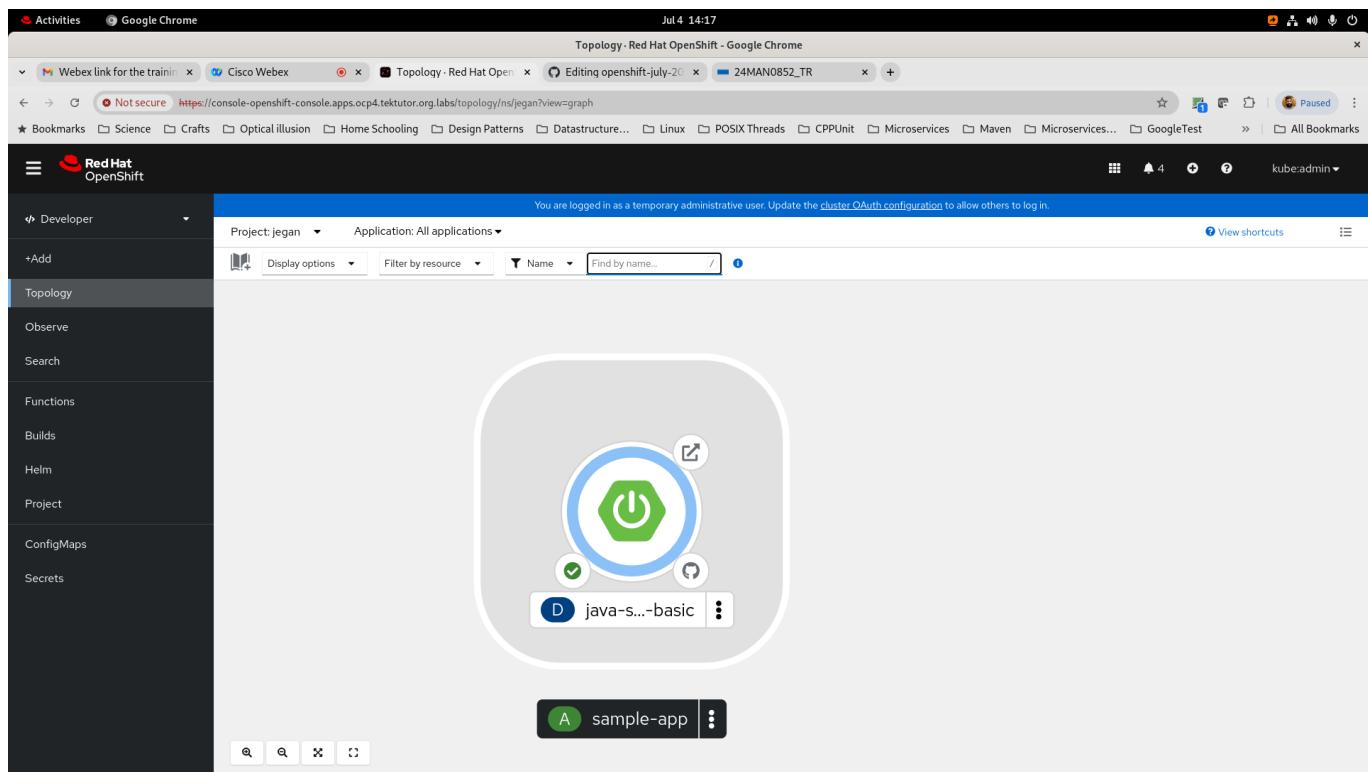
Log stream ended.

2096 lines

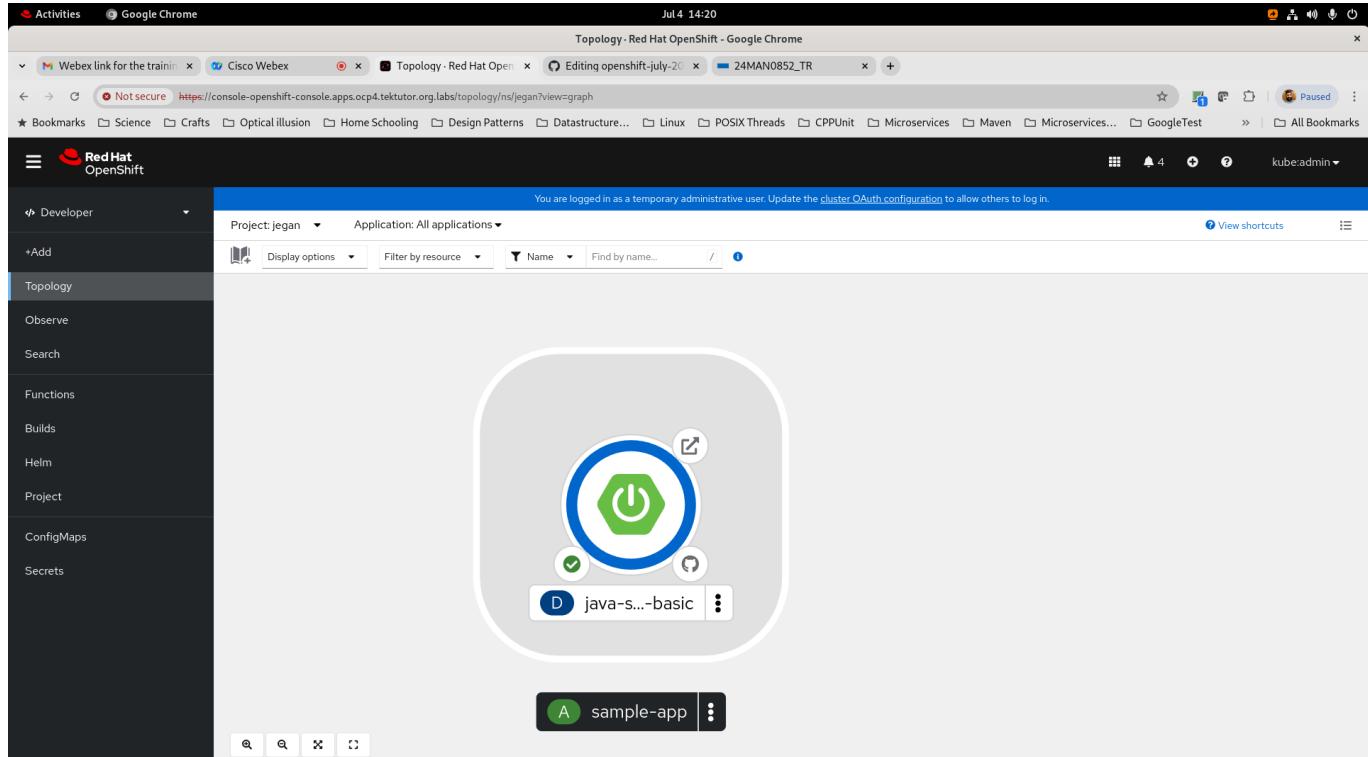
```

2080 [2/2] SLEEP 5s: ENV "OPENSHIFT_BUILD_NAME"="java-springboot-basic-1" "OPENSHIFT_BUILD_NAMESPACE"="jegan" "OPENSHIFT_BUILD_SOURCE"="https://github.com/devfile-samples/devfile-sample-java-s
2081 --> 3200fees6ca1
2082 [2/2] STEP 5/6: LABEL "io.openshift.build.commit.author"="Jordan Dubrick <jdubrick@redhat.com>" "io.openshift.build.commit.date"="Fri Mar 1 09:18:05 2024 -0500" "io.openshift.build.commit
2083 [2/2] COMMIT temp.builder.openshift.lo/jegan/java-springboot-basic-1:73e6fe03
--> eddd310b193c
2085 Successfully tagged temp.builder.openshift.lo/jegan/java-springboot-basic-1:73e6feb3
eddd310b193c:753da7644420c44-713610bf32583262131333b03fbcc77efd
2086
2087 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/java-springboot-basic:latest ...
2088 Getting image source signatures
2089 Copying blob sha256:122aec69054022ff81a29f37ab7fffe0a3038861b977ab327175e06f649107
2090 Copying blob sha256:0f6f965030b74ff9eb1617d78122887790e8ff57e9689e8ccb8bf0923a29f9
2091 Copying blob sha256:0f6f965030b74ff9eb1617d78122887790e8ff57e9689e8ccb8bf0923a29f9
2092 Copying blob sha256:0b84b374b8292c8f5cfbcfc2d23721919d4-71b35119b17b51e34c37289506
2093 Copying config sha256:eddd310b193c:753da7644420c44c713610bf32583262131333b03fbcc77efd
2094 Writing manifest to image destination
2095 Successfully pushed image image-registry.openshift-image-registry.svc:5000/jegan/java-springboot-basic@sha256:330e6e6c04bb1c52815fb174ca275fb1abf33c0ca056cd4220f8fa029d70164
2096 Push successful

```

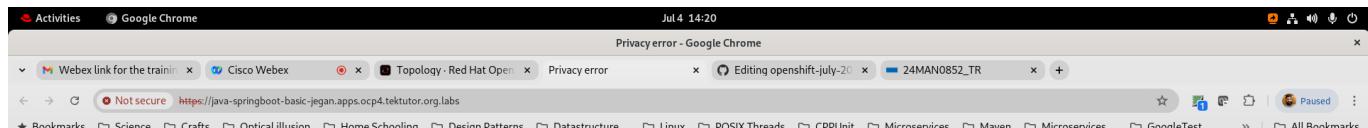


The screenshot shows the Red Hat OpenShift Topology interface in a Google Chrome browser window. The URL is <https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph>. The page displays a single application pod named "sample-app". The pod icon is a green hexagon with a white power button symbol. Below the icon, the text "D java-s...-basic" is visible. To the right of the icon, there is a blue button labeled "A sample-app" with three vertical dots. The left sidebar contains navigation links for Developer, Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The top right corner shows the user "kube:admin" and some status indicators.

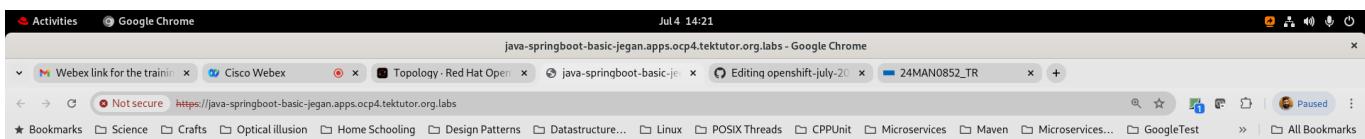
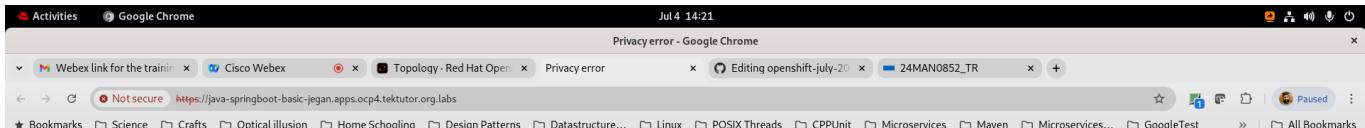


This screenshot is identical to the one above, showing the Red Hat OpenShift Topology interface. The application pod "sample-app" is still present, and no significant changes have occurred since the previous screenshot. The interface remains consistent with the developer tools and navigation options on the left.

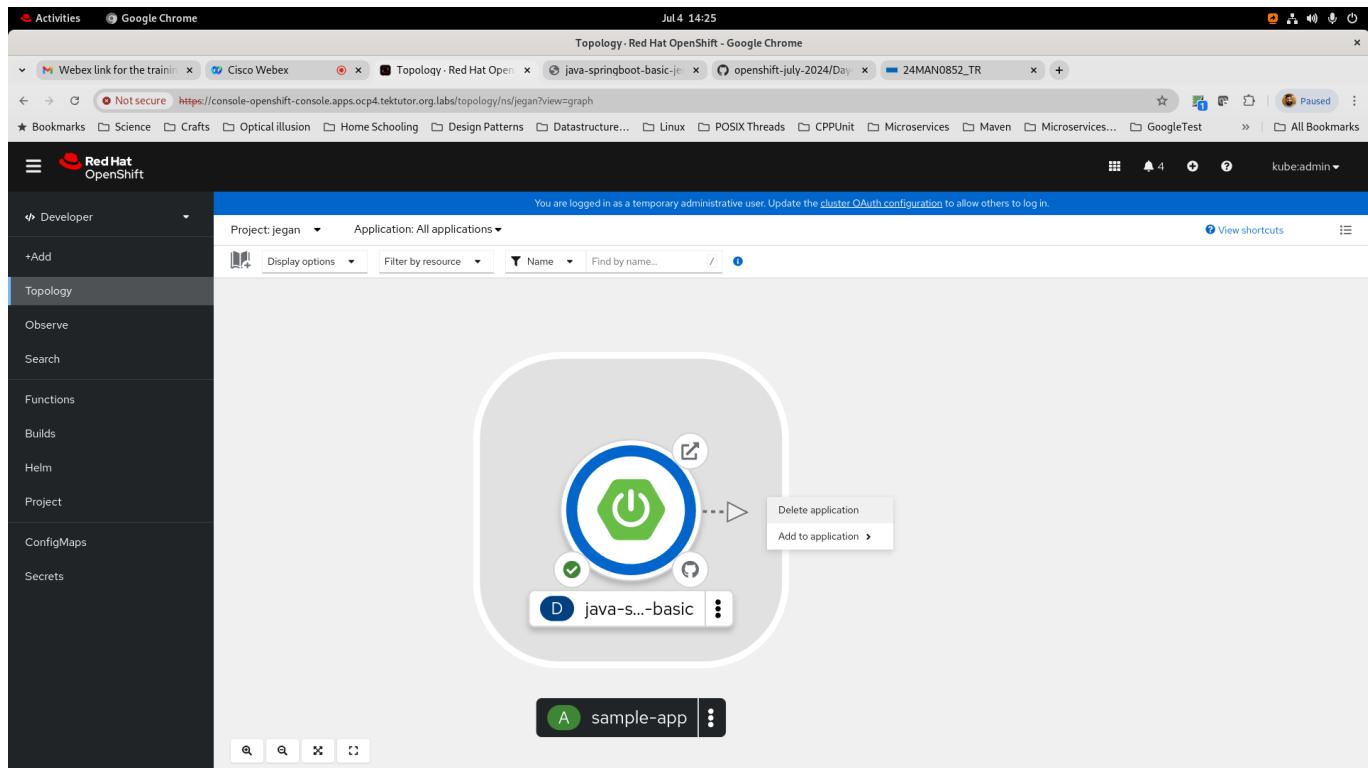
Click on Advanced button



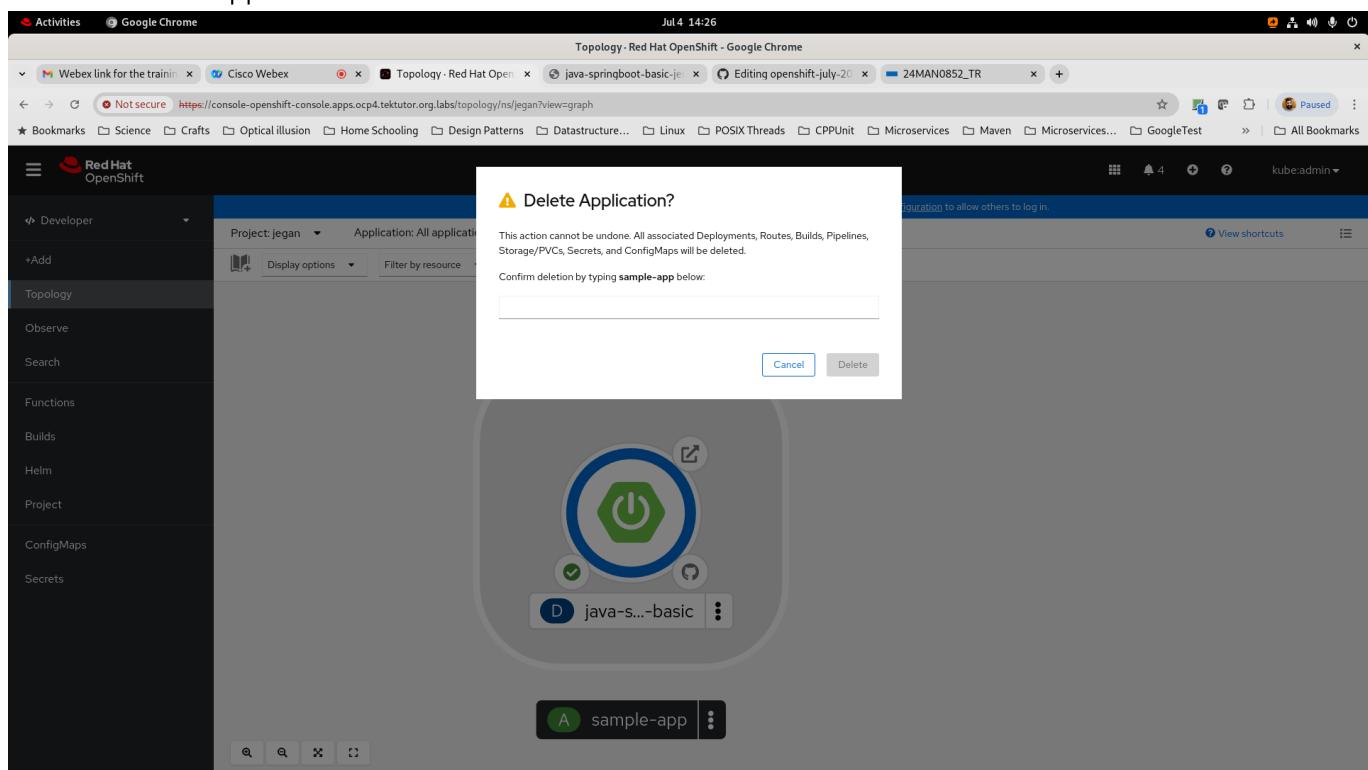
Click on Proceed



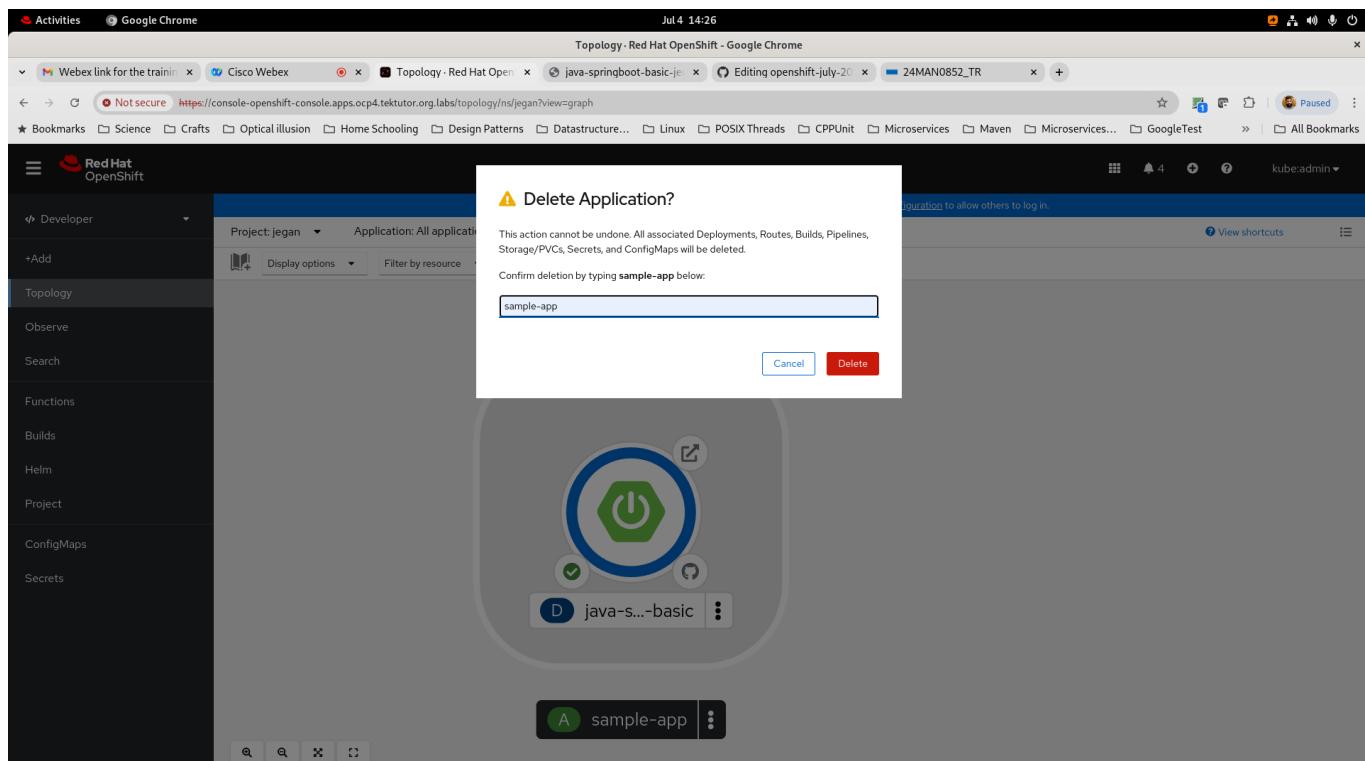
To delete the application from Openshift web console, In the Developer context --> Topology --> Right click on the application



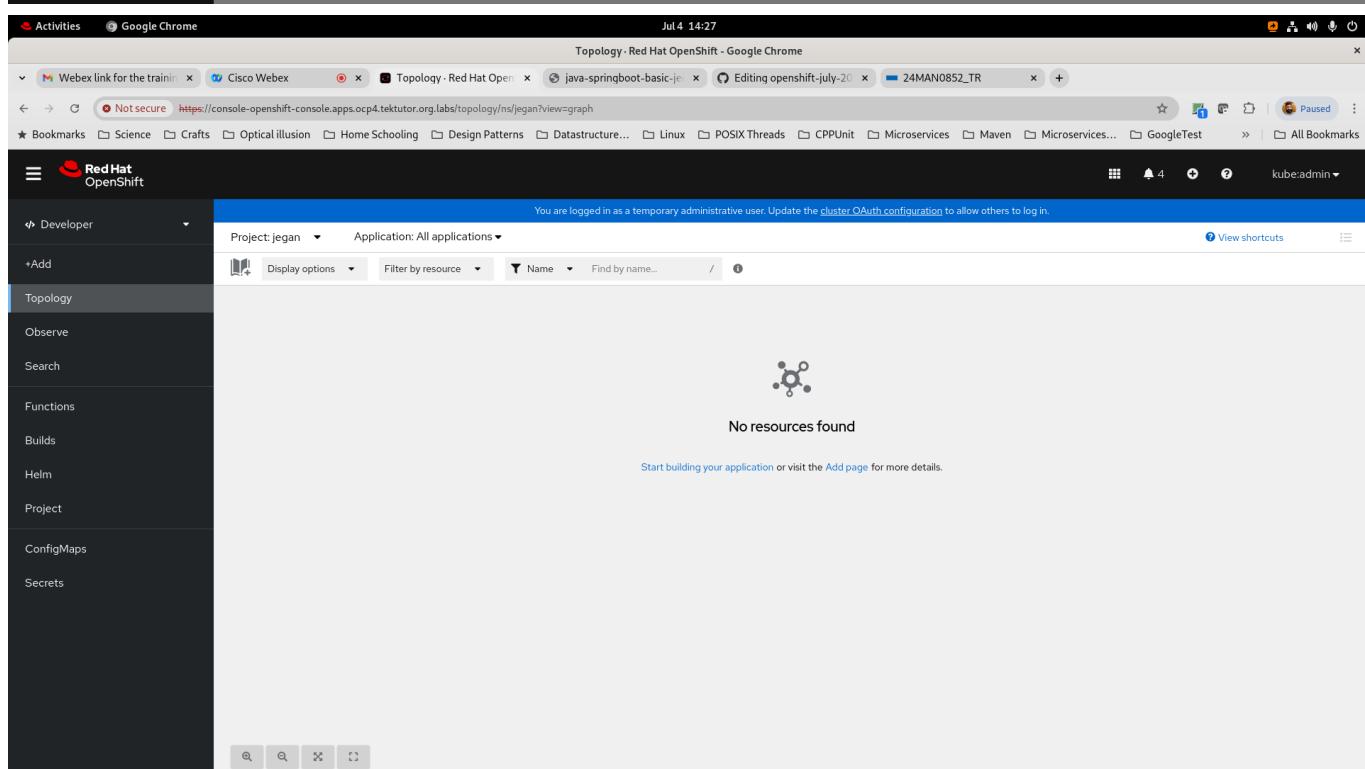
Click on "Delete application"



Type "sample-app" and click on Delete



The screenshot shows the Red Hat OpenShift web console interface. The left sidebar has 'Topology' selected. The main area shows a topology graph with nodes representing different applications. A modal dialog box is overlaid on the screen, prompting the user to confirm the deletion of an application. The modal title is 'Delete Application?' and it contains a warning message: 'This action cannot be undone. All associated Deployments, Routes, Builds, Pipelines, Storage/PVCs, Secrets, and ConfigMaps will be deleted.' Below the message is a text input field containing 'sample-app'. At the bottom of the modal are two buttons: 'Cancel' (white background) and 'Delete' (red background). The background of the main interface shows a network of nodes connected by lines, representing the application topology.



The screenshot shows the Red Hat OpenShift web console interface after the application deletion. The main area now displays a message: 'You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.' Below this message, there is a search bar and filter options. The center of the screen shows a message: 'No resources found' with a small molecular-like icon above it. At the bottom, there is a note: 'Start building your application or visit the Add page for more details.' The left sidebar remains the same as the previous screenshot, with 'Topology' still selected.

## Lab - Deploying .Net application from Openshift web console using Developer context

The screenshot shows the Red Hat OpenShift web console. The top navigation bar indicates it's a 'Not secure' connection. The main title is 'Topology - Red Hat OpenShift - Google Chrome'. The left sidebar has a 'Developer' section with a '+Add' button highlighted. The main content area shows a graph icon and the message 'No resources found'. Below this, there's a link to 'Start building your application'.

Click on +Add

The screenshot shows the '+Add' interface. The left sidebar still has the '+Add' button highlighted. The main content area is titled 'Add' and contains several sections: 'Getting started resources' (with links to 'Create applications using samples', 'Build with guided documentation', and 'Explore new developer features'), 'Developer Catalog' (with 'All services' and 'Database' options), 'Eventing' (with 'Event Source' and 'Broker' options), 'Serverless function' (with 'Import from git' and 'Samples' options), 'Git Repository' (with 'Import from Git' option), 'Container images' (with 'Sharing' option), and 'From Local Machine' (with 'Import YAML' option). A 'Details on' toggle switch is visible in the top right.

Under Getting Started resources, click on "view all samples"

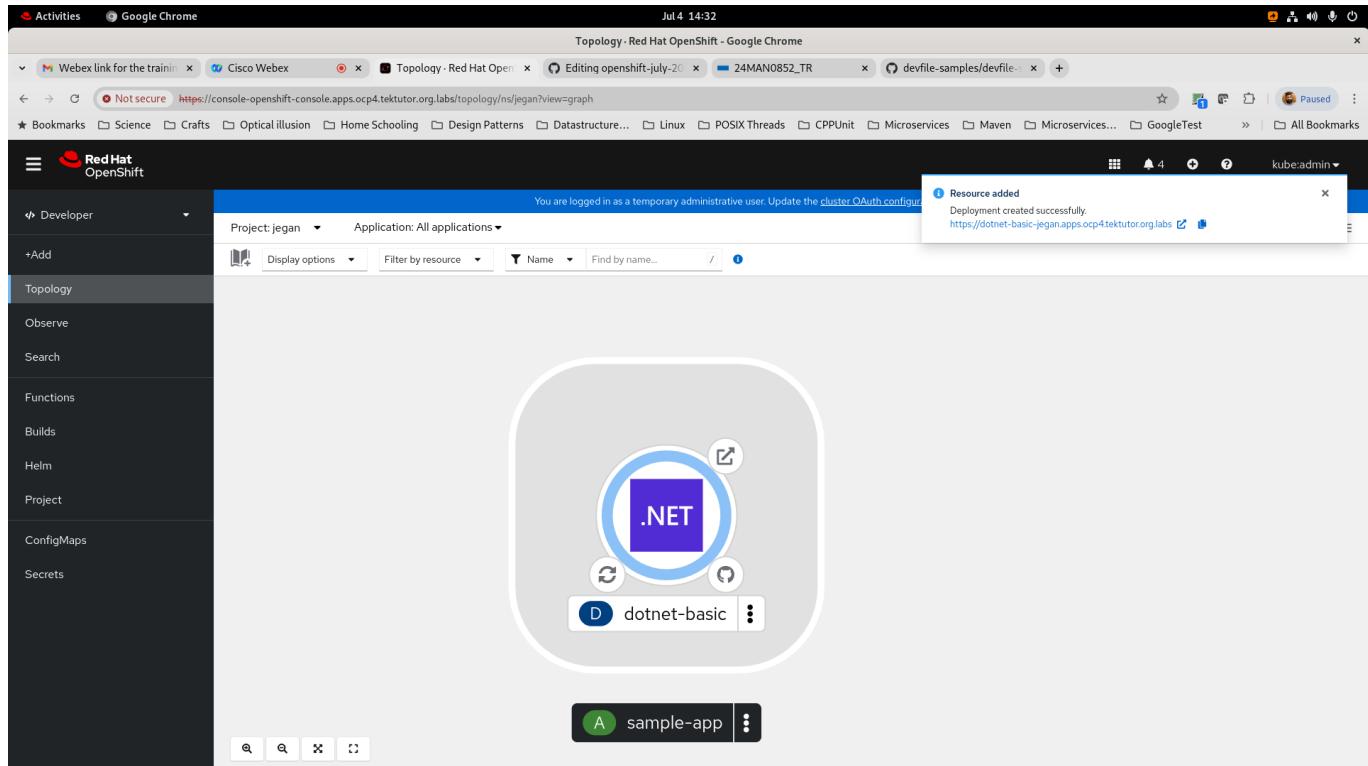
The screenshot shows the Red Hat OpenShift Samples interface. On the left, a sidebar lists navigation options: Developer (+Add), Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main area displays a grid of application samples under the heading "Samples". Each sample card includes a preview icon, name, provider, and brief description. A total of 16 items are listed.

Category	Name	Description
.NET	<a href="#">Basic .NET</a>	MVC .NET 6.0 application
Builder Images	<a href="#">Basic Go</a>	Go 1.16 application
Devfiles	<a href="#">Basic Node.js</a>	Node.js 16 application using Express 4.18.x
Devfiles	<a href="#">Basic Python</a>	Python 3.9.x application with Flask
Devfiles	<a href="#">Basic Quarkus</a>	Java Quarkus application using Maven 4.0 and OpenJDK 17
Devfiles	<a href="#">Basic Spring Boot</a>	Java Spring Boot application using Maven 4.0 and OpenJDK 17
Builder Images	<a href="#">Go</a>	Build and run Go applications on UBI 7. For more information about using this builder image, includin...
Builder Images	<a href="#">Httpd</a>	Build and serve static content via Apache HTTP Server (httpd) 2.4 on RHEL 7. For more informatio...
Builder Images	<a href="#">Java</a>	Build and run Java applications using Maven and OpenJDK 17.

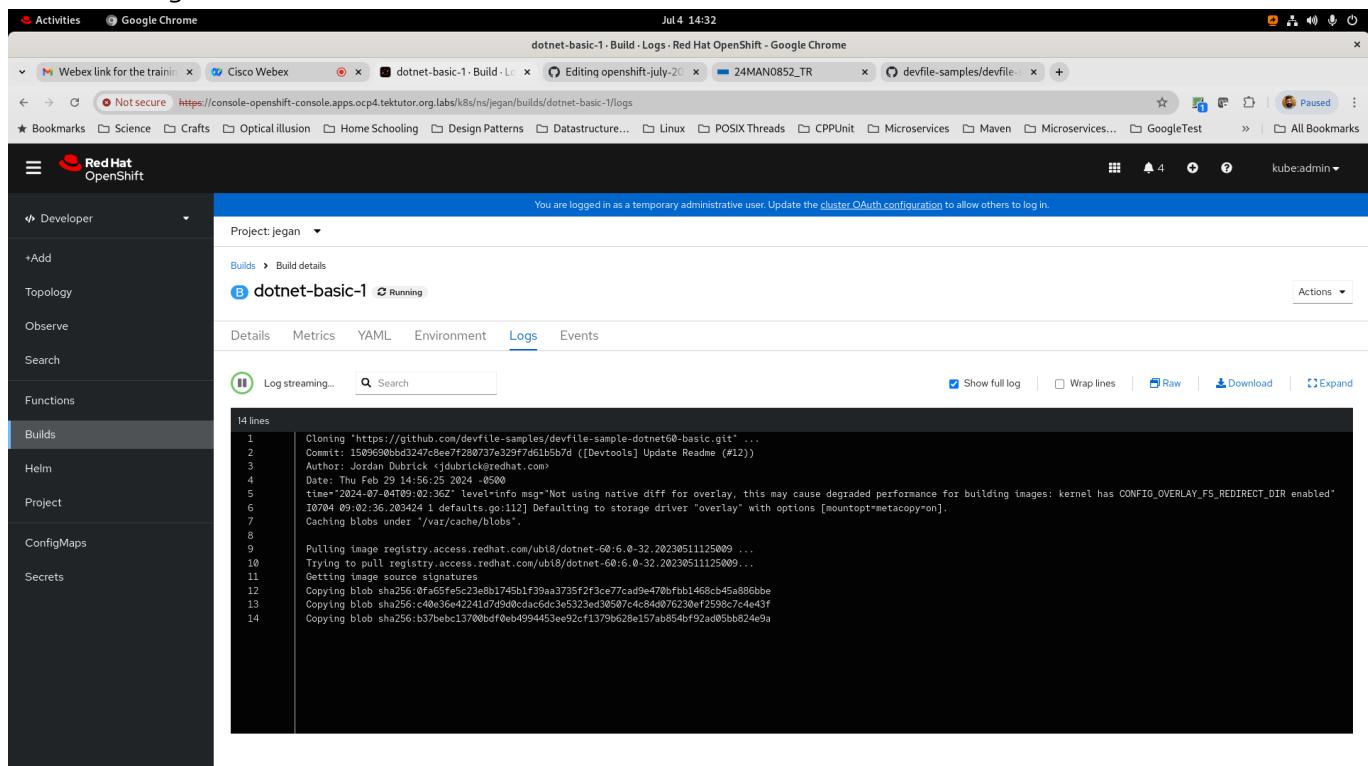
Click on "Basic .Net"

The screenshot shows the "Import from Git" configuration dialog. The sidebar remains the same. The main area has "Project: jegan" selected and "Application: All applications". The "Git" section contains a "Git Repo URL" field with the value "https://github.com/devfile-samples/devfile-sample-dotnet60-basic.git" and a "Validated" status. Below it, a "Basic .NET" component is selected. The "General" section includes fields for "Name" (set to "dotnet-basic") and "Security" (with a checked "Secure Route" checkbox). At the bottom are "Create" and "Cancel" buttons.

Click on "create" button



## Build Running



Activities Google Chrome July 4 14:33 dotnet-basic-1 - Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/dotnet-basic-1/logs Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

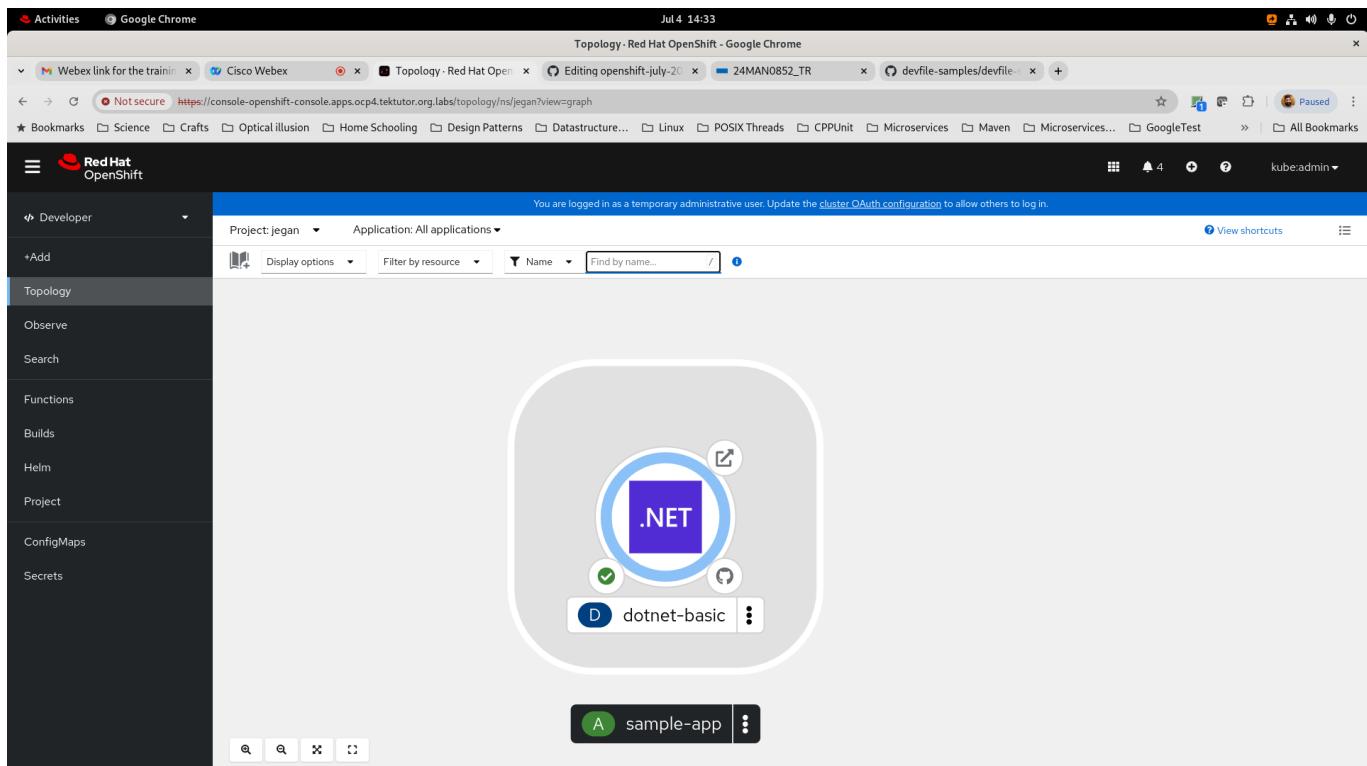
**Red Hat OpenShift**

Developer Project: jegan Builds > Build details **dotnet-basic-1** Complete

Logs Details Metrics YAML Environment Logs Events Actions

Log stream ended. Search Show full log Wrap lines Raw Download Expand

```
62 lines
42 --> 21ac9754860e
43 [2/2] STEP 6/8: CMD ['dotnet','app.dll']
44 --> 067b22667c4
45 [2/2] STEP 7/8: ENV "OPENSHIFT_BUILD_NAME"="dotnet-basic-1" "OPENSHIFT_BUILD_NAMESPACE"="jegan" "OPENSHIFT_BUILD_SOURCE"="https://github.com/devfile-samples/devfile-sample-dotnet60-basic"
46 --> 4bb0b7a26f96
47 [2/2] STEP 8/8: LABEL "io.openshift.build.commit.author"="Jordan Dubrick <jdubrick@redhat.com>" "io.openshift.build.commit.date"="Thu Feb 29 14:56:25 2024 -0500" "io.openshift.build.commit.message"="Initial commit" "io.openshift.build.commit.ref"="main" "io.openshift.build.commit.sha"="sha256:b37b5eb13700bd0f0eb1994453ee92cf1379b628b157ab54bf92ad05bb82449a"
48 [2/2] COMMIT temp.builder.openshift.io/jegan/dotnet-basic-1:8cc6df76
49 --> 166ba42e3394
50 Successfully tagged temp.builder.openshift.io/jegan/dotnet-basic-1:8cc6df76
51 166ba42e339491c5ea65162ba84e01466c70d02260e6958a3fe2286c965d
52 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/dotnet-basic:latest ...
53 Getting image source signatures
54 Copying blob sha256:2d1c400bd58ee291c5e0c039b137f1c714a0bbe3f785dff85a00d7aa24f39748b
55 Copying blob sha256:c40e3647241d7d900dac6d3e5323ed30597c4c54ad076230ef7598c7c4e43f
56 Copying blob sha256:0fa05f5ec236bb1745bf1f39a373f213c677ca9d470bb1468c458a86bbe
57 Copying blob sha256:b37b5eb13700bd0f0eb1994453ee92cf1379b628b157ab54bf92ad05bb82449a
58 Copying blob sha256:b37b5eb13700bd0f0eb1994453ee92cf1379b628b157ab54bf92ad05bb82449a
59 Copying config sha256:166ba42e339491c5ea65162ba84e01466c70d02260e6958a3fe2286c965d
60 Writing manifest to image destination
61 Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/dotnet-basic@sha256:58d1310600e6b8228f410eb41c57988140bb3b5b2f2c5838834fcc294be5e992
62 Push successful
```



Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Topology · Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph&selectId=55dffaf1-38ec-47d6-a994-2add69010212

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

kube:admin

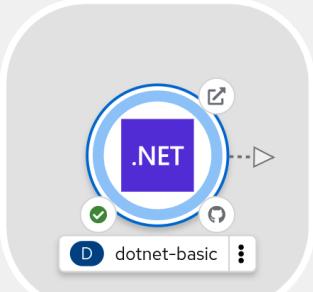
You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe Search Functions Builds Helm Project ConfigMaps Secrets



A sample-app

Health checks Container dotnet-basic does not have health checks to ensure your application is running correctly. Add health checks

Details Resources Observe

Pods

dotnet-basic-5c54dd558c-9n5k5 Image PullBack Off View logs

Builds

dotnet-basic Start Build Build #1 was complete (Just now) View logs

Services

dotnet-basic Service port: http-8081 → Pod port: 8081

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Topology · Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

kube:admin

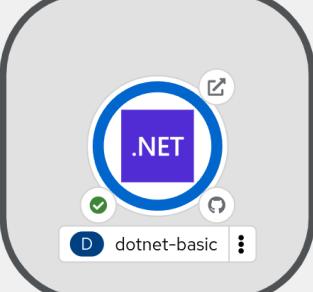
You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan Application: All applications

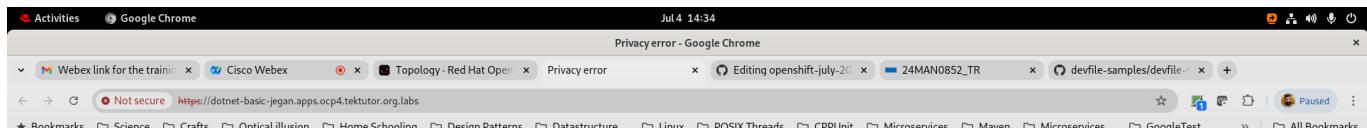
+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe Search Functions Builds Helm Project ConfigMaps Secrets



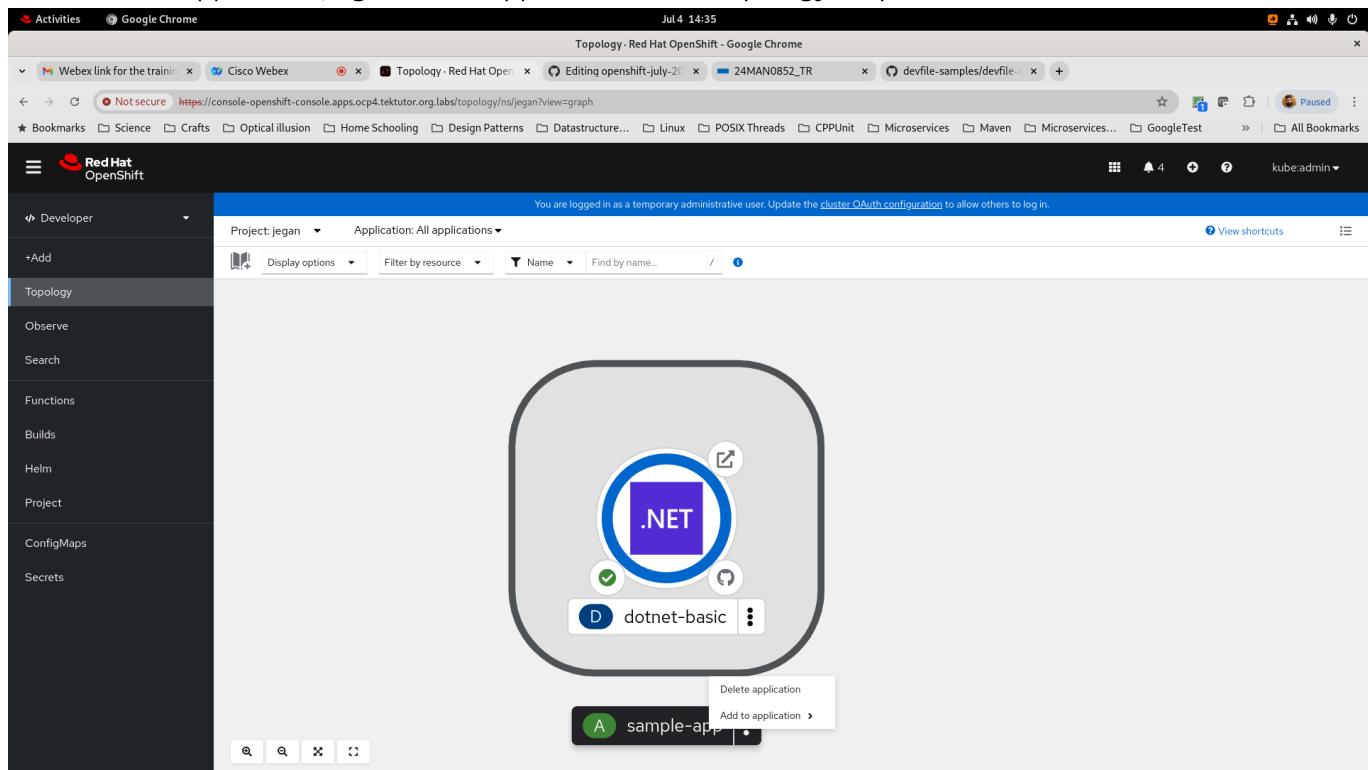
A sample-app



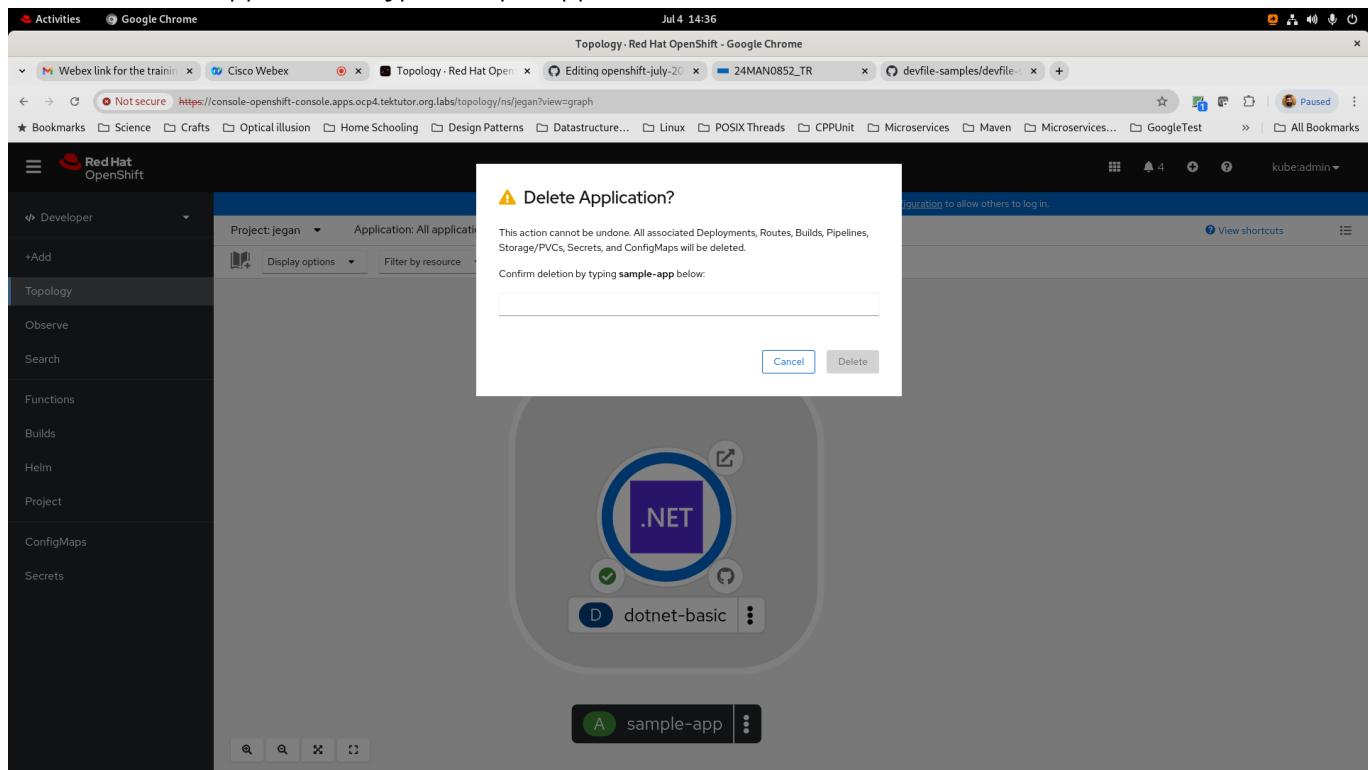
A screenshot of a Google Chrome browser window. The title bar says "Home Page - app - Google Chrome". The address bar shows a "Not secure" warning next to the URL "https://dotnet-basic-jegan.apps.ocp4.tektutor.org.labs". Below the address bar, the page content is visible, showing a "Welcome" message and a link to "Learn about building Web apps with ASP.NET Core". At the bottom of the page, there's a footer with links for "app", "Home", and "Privacy".

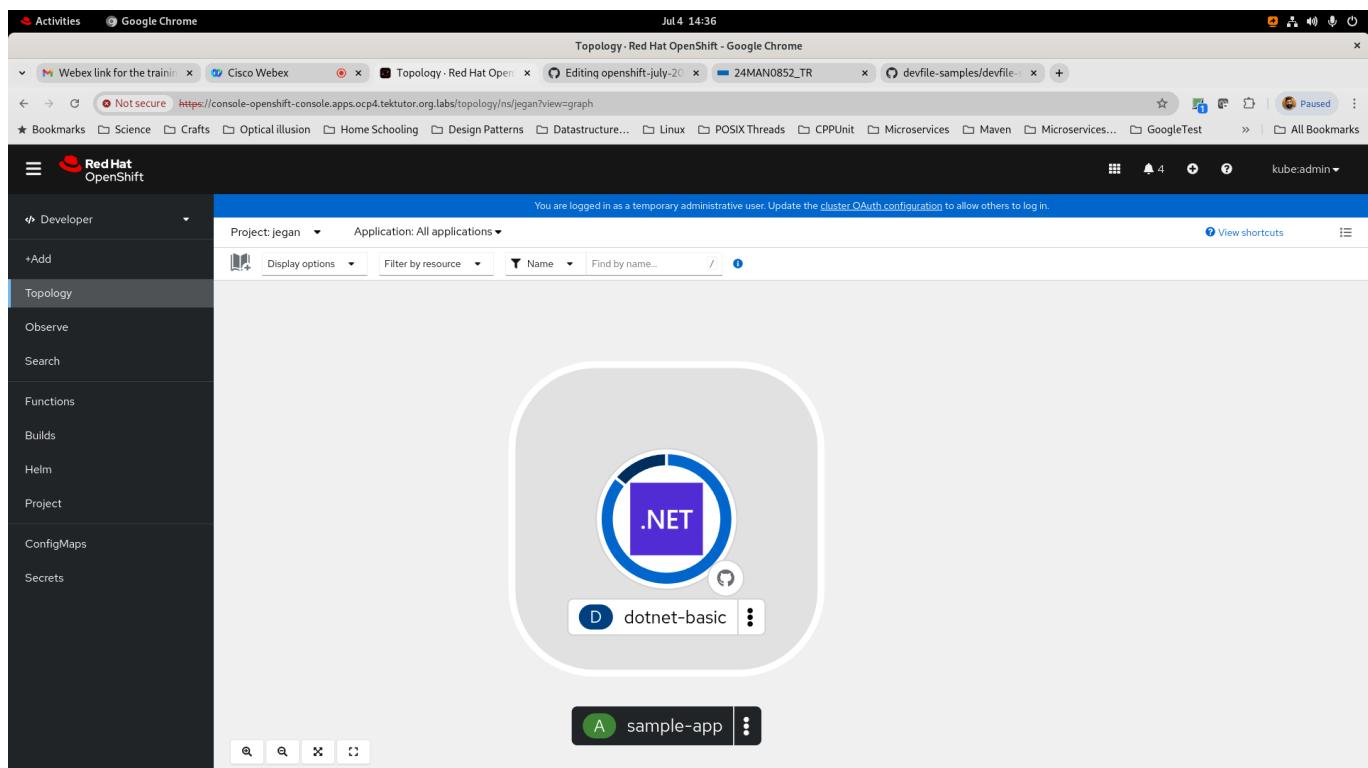
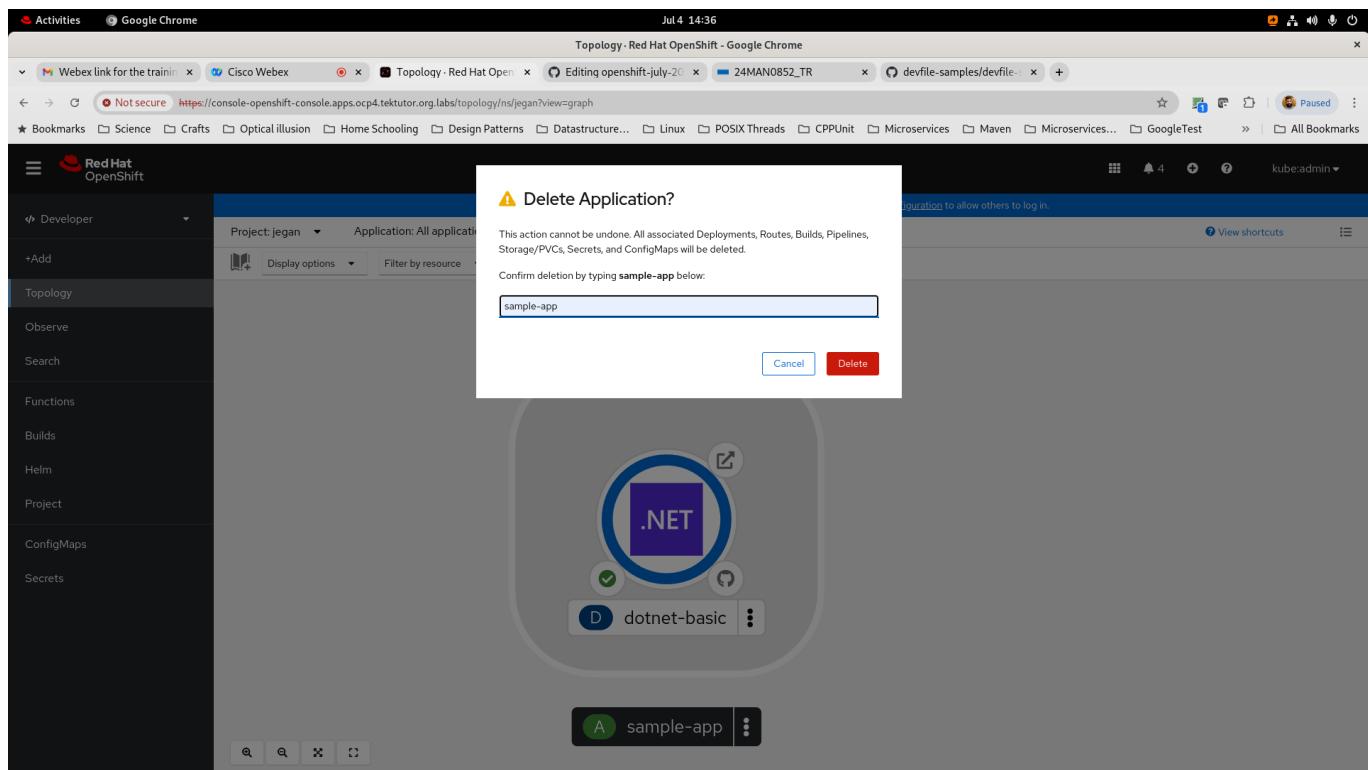
© 2021 - app - [Privacy](#)

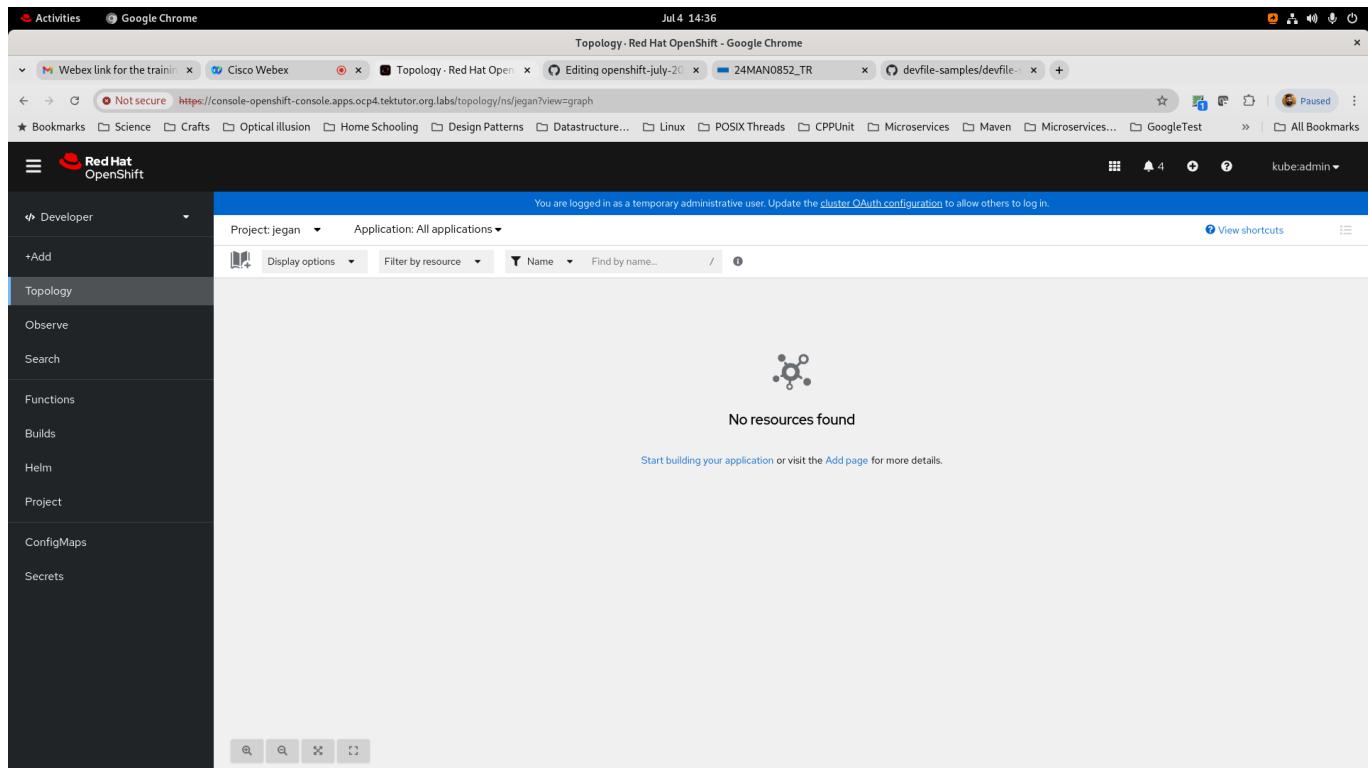
To delete the application, right on the application in the Topology Graph view



Click on "Delete application" Type "sample-app" and click on Delete

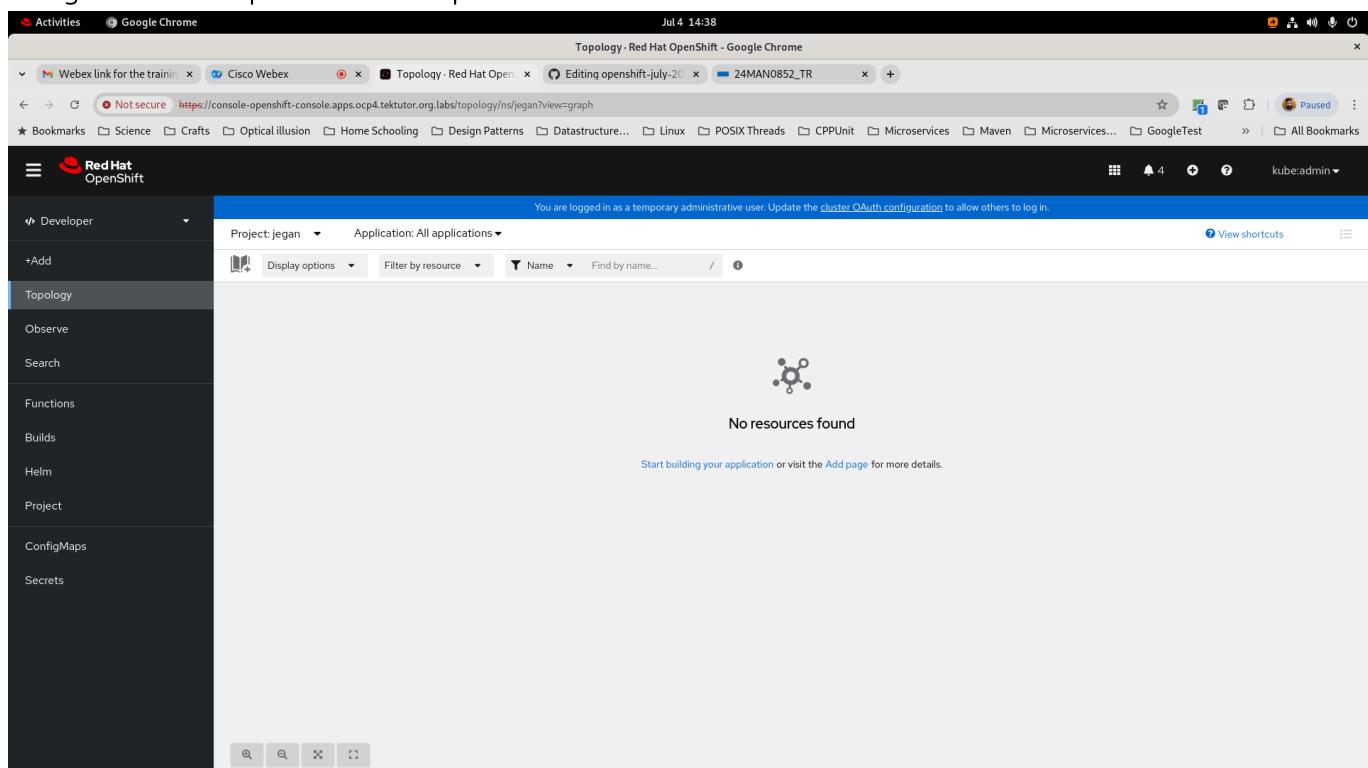






## Lab - Deploying PHP multipod application

Navigate to Developer context in Openshift webconsole



Click +Add

The screenshot shows the Red Hat OpenShift developer console interface. The left sidebar has a dark theme with white text and icons. It includes sections for Developer (selected), Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main content area has a light blue header bar with the text "You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in." Below this, the "Project: jegan" is selected. The main content area features a large "Add" button with a plus sign icon. To its right, there's a "Details on" toggle switch. The page is divided into several sections: "Getting started resources" with links to "Create applications using samples" (Basic Quarkus, Basic Spring Boot) and "Build with guided documentation" (Exploring Serverless applications, Get started with Quarkus using s2i); "Explore new developer features" (Discover certified Helm Charts, Start building your application quickly in topology); and "What's new in OpenShift 4.15". Below these are six cards: "Developer Catalog" (All services, Database), "Eventing" (Event Source, Broker), "Serverless function" (Import from git, Samples), "Git Repository" (Import from Git), "Container images" (Deploy an existing Image), and "Sharing" (From Local Machine, Import YAML).

Under Developer Catalog, click on "All Services"

The screenshot shows the Red Hat OpenShift Developer Catalog interface. The top navigation bar includes tabs for 'Developer Catalog - Red' and 'Editing openshift-july-20'. The left sidebar lists various developer tools and services like CI/CD, Databases, Languages, and Helm. The main content area displays a catalog of shared applications and services, such as .NET Application, a10networks-a1Otc, akeyless-api-gateway, Apache HTTP Server, and ApiServerSource. Each item has a brief description and a 'View Details' button.

Category	Item	Description
All items	.NET Application	A Helm chart to build and deploy .NET applications
	a10networks-a1Otc	A Helm chart for A10 Thunder Kubernetes Connector
	akeyless-api-gateway	A Helm chart for Kubernetes that deploys akeyless-api-gateway
	Apache HTTP Server	An example Apache HTTP Server (httpd) application that serves static content
	ApiServerSource	This object can be used to connect an event sink, such as a Service, Channel, or Broker to the
CI/CD	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Databases	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Languages	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Middleware	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Other	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Type	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Builder Images	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Devfiles	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Event Sources	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Helm Charts	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
A Helm chart for A10 Thunder Kubernetes Connector	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
A Helm chart for Kubernetes that deploys akeyless-api-gateway	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Templates	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates
Event Sources	.NET	Builder Images
	.NET Application	Helm Charts
	a10networks-a1Otc	Helm Charts
	akeyless-api-gateway	Helm Charts
	Apache HTTP Server	Templates

## Search for "PHP"

The screenshot shows the Red Hat OpenShift Developer Catalog interface. The left sidebar is collapsed, showing navigation options like Activities, +Add, Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, Secrets, and Developer. The main area is titled "Developer Catalog" and displays a search result for "PHP". A search bar at the top of the catalog page shows "PHP". Below it, a message says "You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in." The catalog lists several items under the "Templates" category:

- CakePHP + MySQL (Ephemeral)**: Provided by Red Hat, Inc. Description: An example CakePHP application with a MySQL database. For more information about using this...
- PHP**: Provided by Red Hat, Inc. Description: An example CakePHP application with a MySQL database. For more information about using this...
- Red Hat PHP imagestreams on UBI (experimental)**: Provided by Red Hat. Description: This content is experimental, do not use it in production. An example CakePHP application...

On the right side of the catalog, there are two additional sections: "Builder Images" and "Helm Charts".

Select "CakePHP+Mysql Ephemeral"

The screenshot shows the Red Hat OpenShift Developer Catalog interface, similar to the previous one but with a different URL. The main area is titled "Developer Catalog" and displays the details for the "CakePHP + MySQL (Ephemeral)" template. The template card includes:

- Provider**: Red Hat, Inc.
- Created at**: 24 Jun 2024, 07:47
- Support**: Get support
- Documentation**: Refer documentation

The description for the template states: "An example CakePHP application with a MySQL database. For more information about using this template, including OpenShift considerations, see <https://github.com/scrlorg/cakephp-ex/blob/master/README.md>". A warning note below says: "WARNING: Any data stored will be lost upon pod destruction. Only use this template for testing."

Click "Instantiate Template"

The screenshot shows the Red Hat OpenShift console interface. The left sidebar has a 'Developer' section with options like '+Add', 'Topology', 'Observe', 'Search', 'Functions', 'Builds', 'Helm', 'Project', 'ConfigMaps', and 'Secrets'. The main content area is titled 'Instantiate Template' and shows the configuration for a 'cakephp-mysql-example' template. It includes fields for 'Namespace' (set to 'jegan'), 'Name' ('cakephp-mysql-example'), 'Namespace' (set to 'openshift'), 'PHP Version' ('74-ubi8'), 'MySQL Version' ('8.0-el8'), 'Memory Limit' ('512Mi'), and 'Memory Limit (MySQL)' ('512Mi'). A note at the bottom says 'WARNING: Any data stored will be lost upon pod destruction. Only use this template for testing.' To the right, there's a 'CakePHP + MySQL (Ephemeral)' section with a PHP icon, a 'QUICKSTART PHP CAKEPHP' link, and links to 'View documentation' and 'Get support'.

Accept the defaults, scroll down to click "Create" button

This screenshot shows the same 'Instantiate Template' page as the previous one, but with the 'Create' button at the bottom highlighted in blue. The configuration fields are identical: 'Database User' ('cakephp'), 'Database Password' ('generated if empty'), 'CakePHP secret token' ('generated if empty'), 'CakePHP Security Salt' ('generated if empty'), 'OPcache Revalidation Frequency' ('2'), 'Custom Composer Mirror URL' (empty), 'MySQL authentication plugin' ('mysql\_native\_password'), and a note about the default password. The 'Create' button is the final step to instantiate the template.

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe Search Functions Builds Helm Project ConfigMaps Secrets

mysql cakeph...xample

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

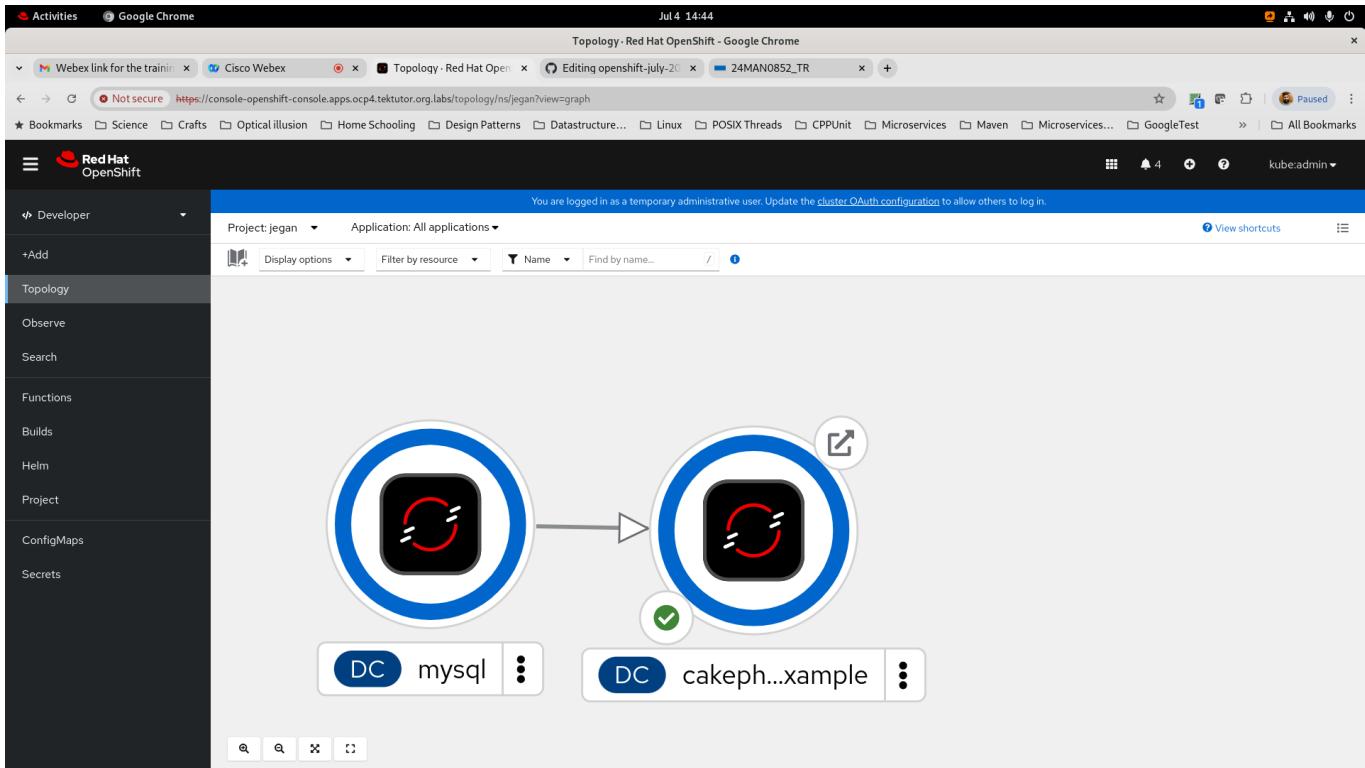
Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe Search Functions Builds Helm Project ConfigMaps Secrets

mysql cakeph...xample



Welcome to your CakePHP application on OpenShift

**How to use this example application**  
For instructions on how to use this application with OpenShift, start by reading the [Developer Guide](#).

**Deploying code changes**  
The source code for this application is available to be forked from the [OpenShift GitHub repository](#). You can configure a webhook in your repository to make OpenShift automatically start a build whenever you push your code:

- From the Web Console homepage, navigate to your project
- Click on Browse > Builds
- Click the link with your BuildConfig name
- Click the Configuration tab
- Click the "Copy to clipboard" icon to the right of the "GitHub webhook URL" field
- Navigate to your repository on GitHub and click on repository settings > webhooks > Add webhook
- Paste your webhook URL provided by OpenShift
- Leave the defaults for the remaining fields — that's it!

After you save your webhook, if you refresh your settings page you can see the status of the ping that GitHub sent to OpenShift to verify it can reach the server.

Note: adding a webhook requires your OpenShift server to be reachable from GitHub.

**Working in your local Git repository**  
If you forked the application from the OpenShift GitHub example, you'll need to manually clone the repository to your local system. Copy the application's source code Git URL and then run:

```
$ git clone <git_url> <directory_to_create>
# Within your project directory
# Commit your changes and push to OpenShift
```

**Managing your application**  
Documentation on how to manage your application from the Web Console or Command Line is available at the [Developer Guide](#).

**Web Console**  
You can use the Web Console to view the state of your application components and launch new builds.

**Command Line**  
With the [OpenShift command line interface \(CLI\)](#), you can create applications and manage projects from a terminal.

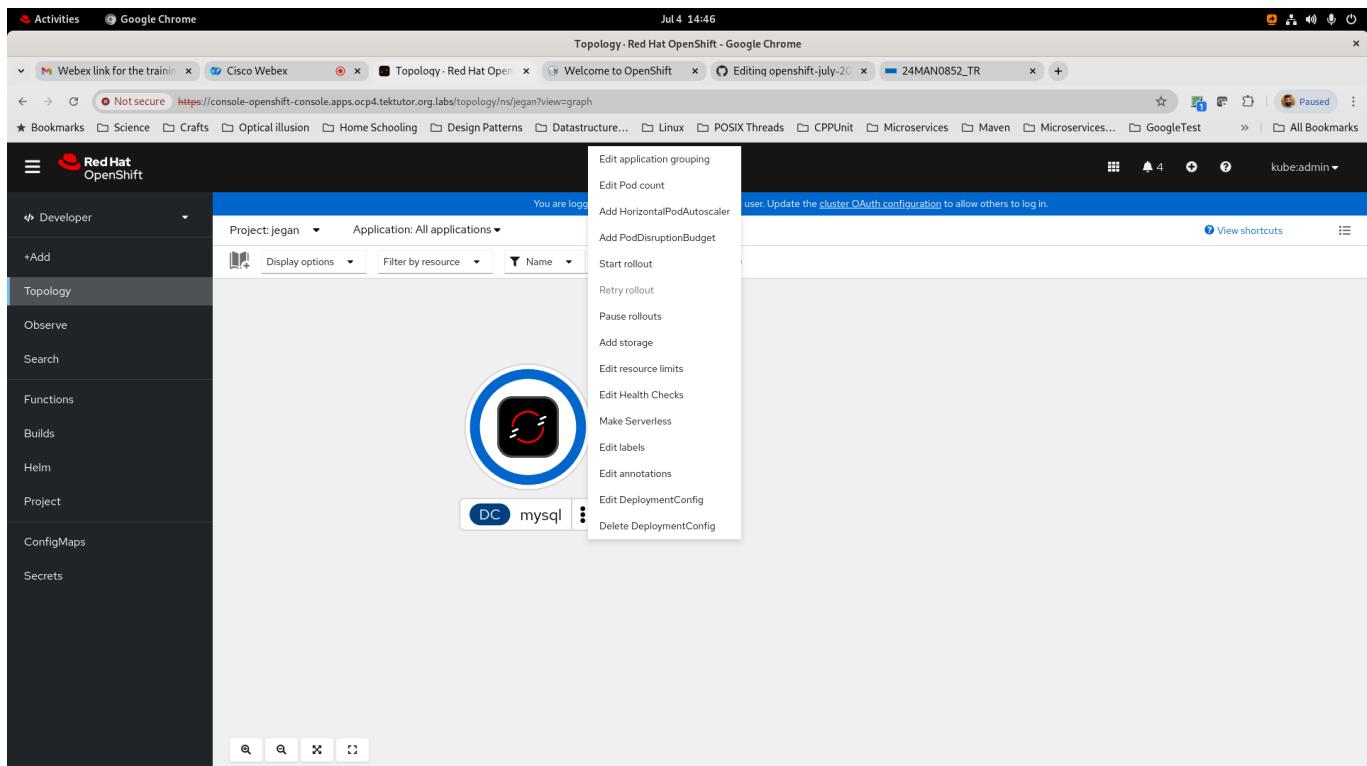
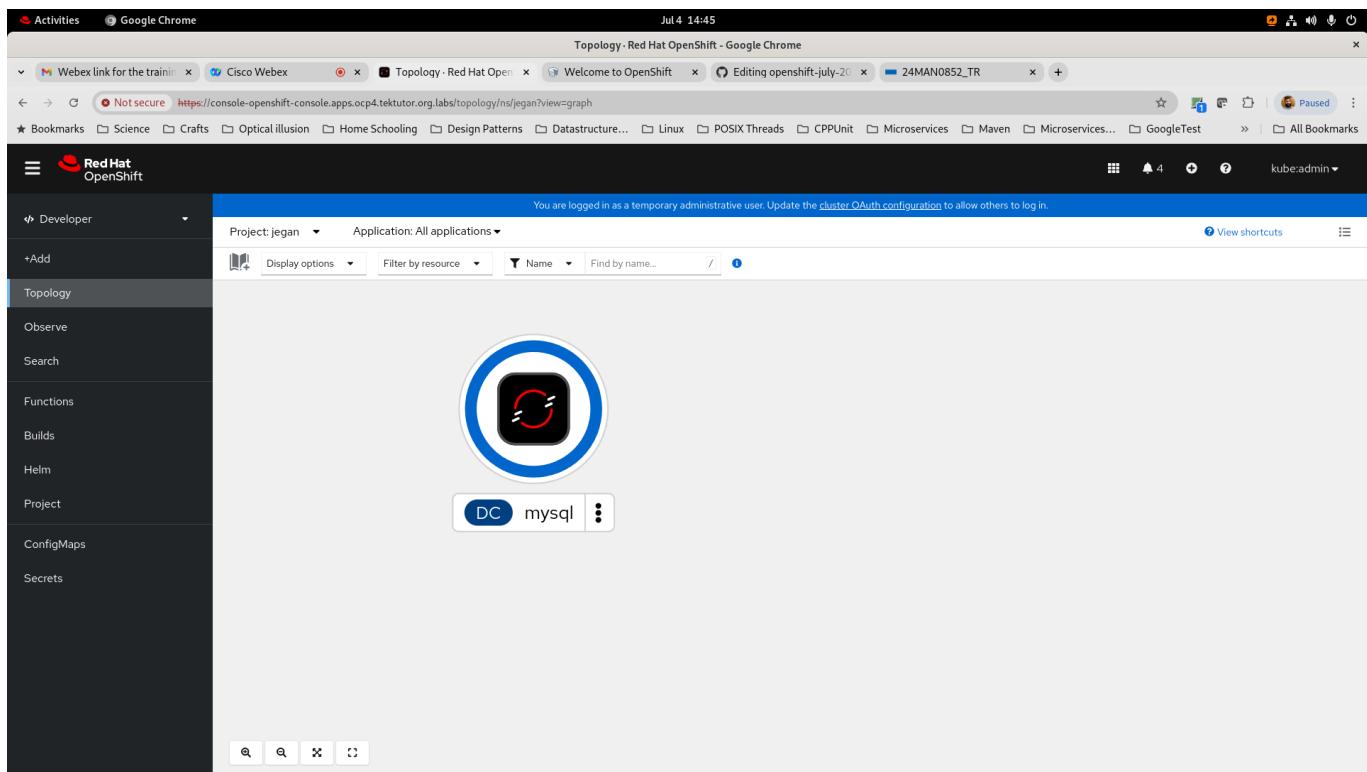
**Development Resources**

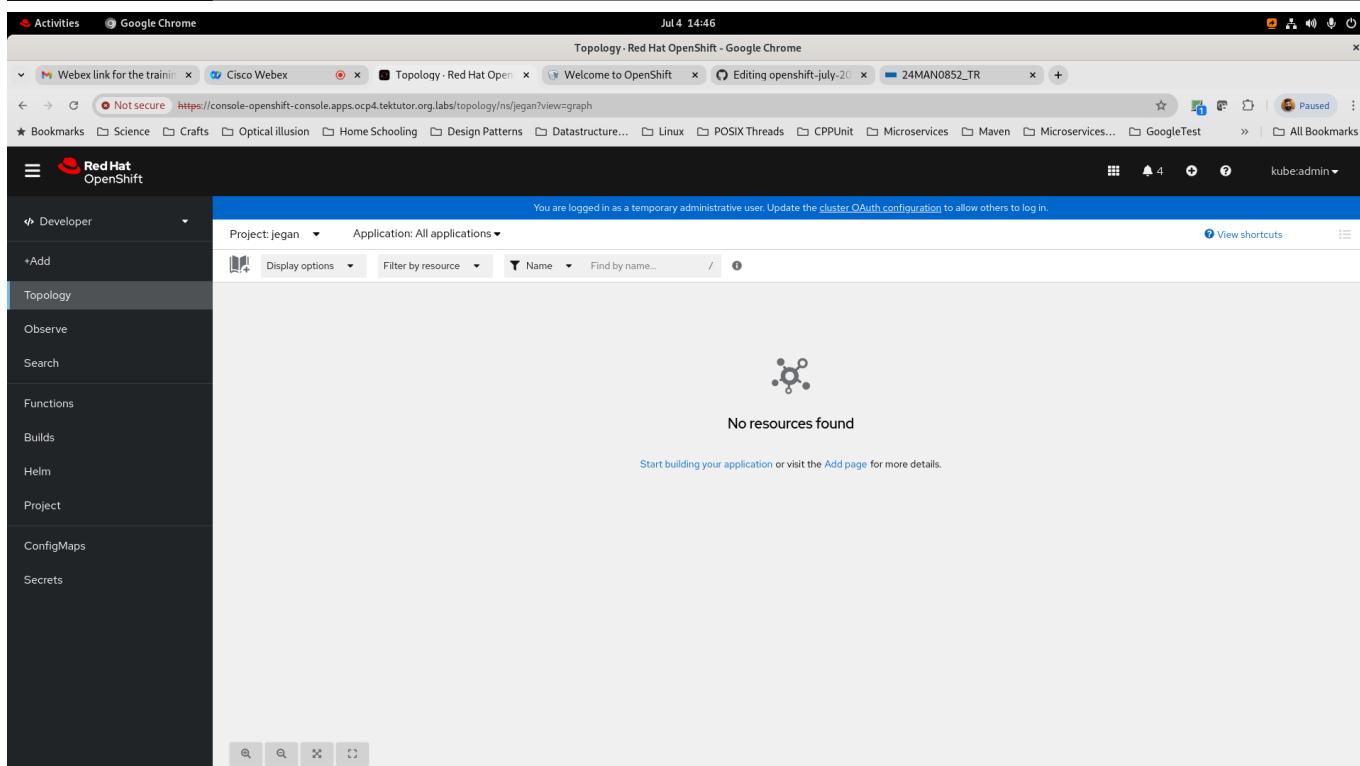
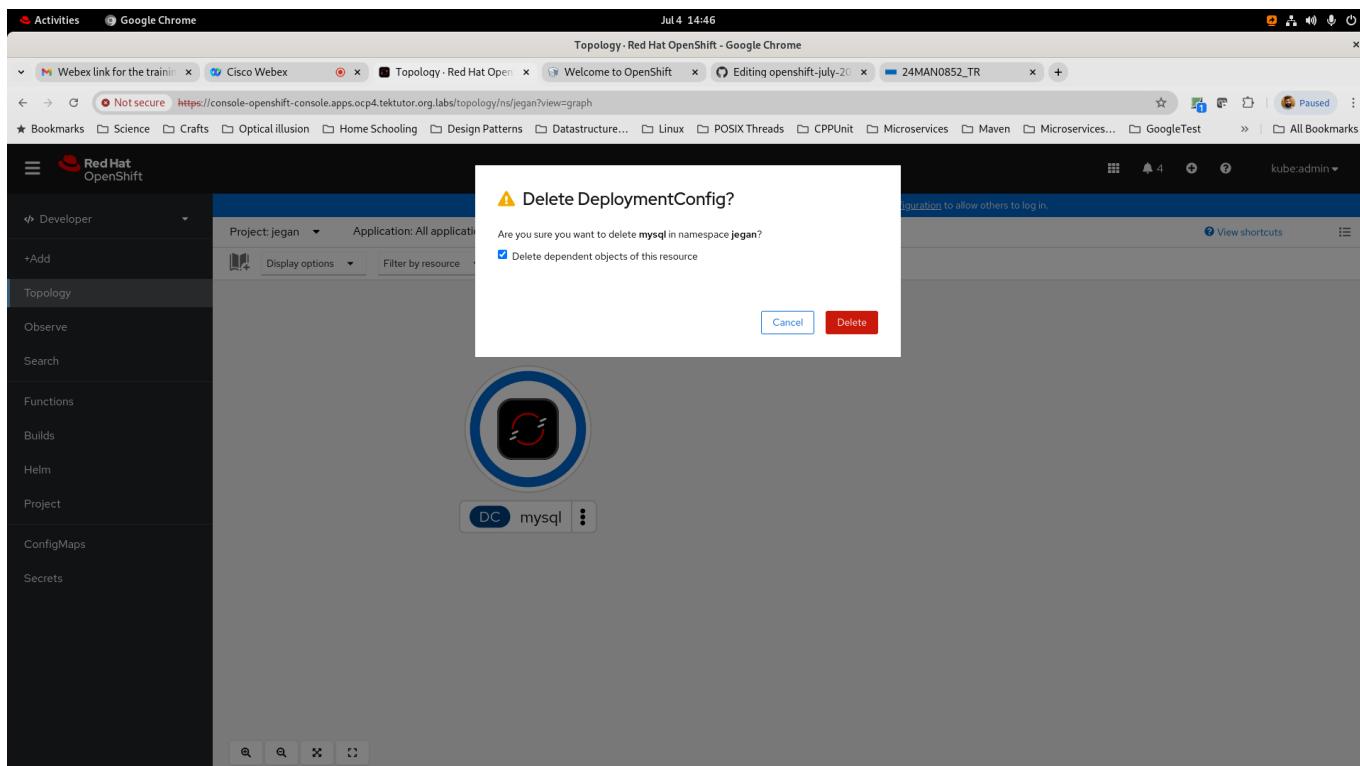
- [OpenShift Documentation](#)
- [OpenShift Origin GitHub](#)
- [Source To Image GitHub](#)
- [Getting Started with PHP on OpenShift](#)
- [Stack Overflow questions for OpenShift](#)
- [Git documentation](#)

**Request information**  
Page view count: 1

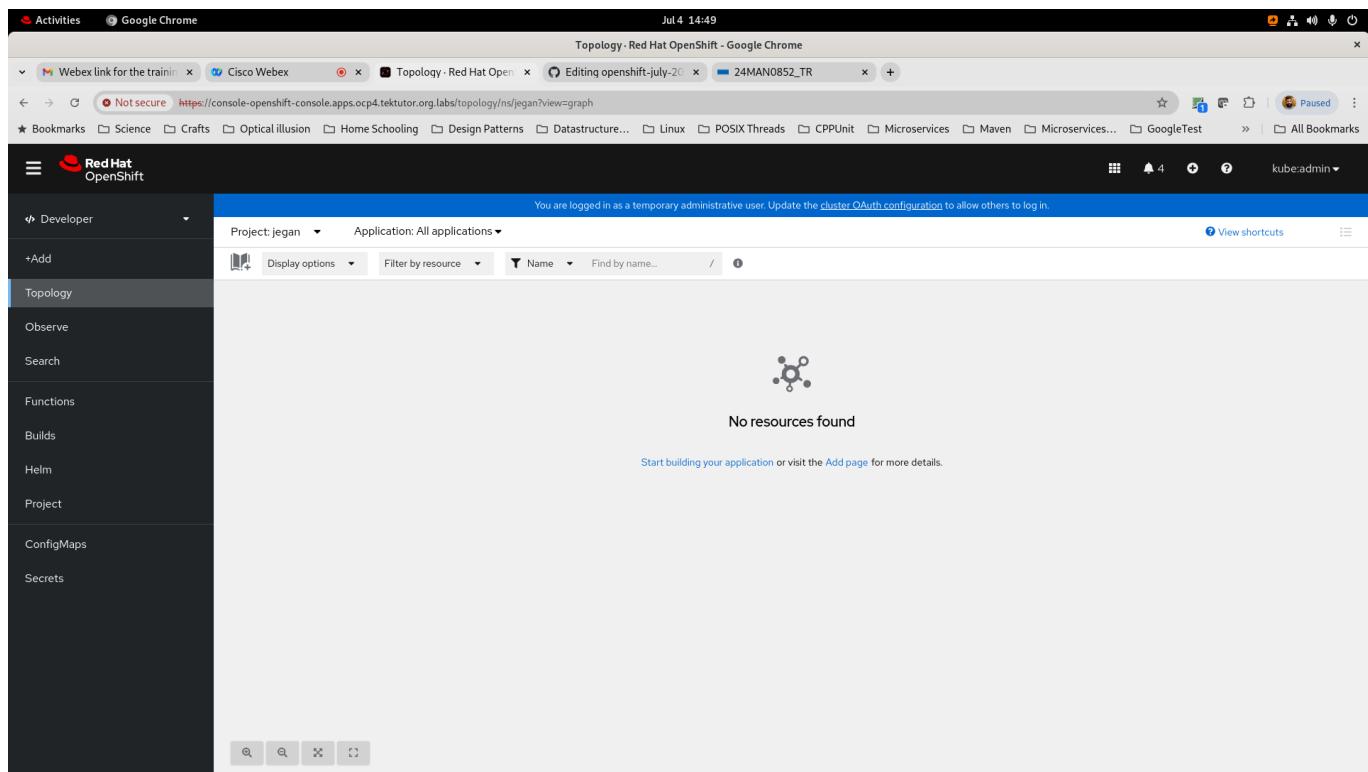
To Delete the application, right click on the application in the Topology View over the Graph

The screenshot shows the Red Hat OpenShift Topology interface. On the left, a sidebar lists various developer tools: Developer, Topology (selected), Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main area displays a topology graph with two nodes: 'mysql' (labeled 'DC') and 'cakephp...xample' (also labeled 'DC'). A context menu is open over the 'mysql' node, listing options such as Edit application grouping, Edit Pod count, Add HorizontalPodAutoscaler, Add PodDisruptionBudget, Start rollout, Retry rollout, Pause rollouts, Add storage, Edit resource limits, Edit Health Checks, Make Serverless, Edit labels, Edit annotations, Edit DeploymentConfig, and Delete DeploymentConfig. At the bottom of the screen, a delete confirmation dialog box is overlaid on the graph, asking 'Are you sure you want to delete cakephp-mysql-example in namespace jegan?' with a checked checkbox for 'Delete dependent objects of this resource'. The dialog has 'Cancel' and 'Delete' buttons.

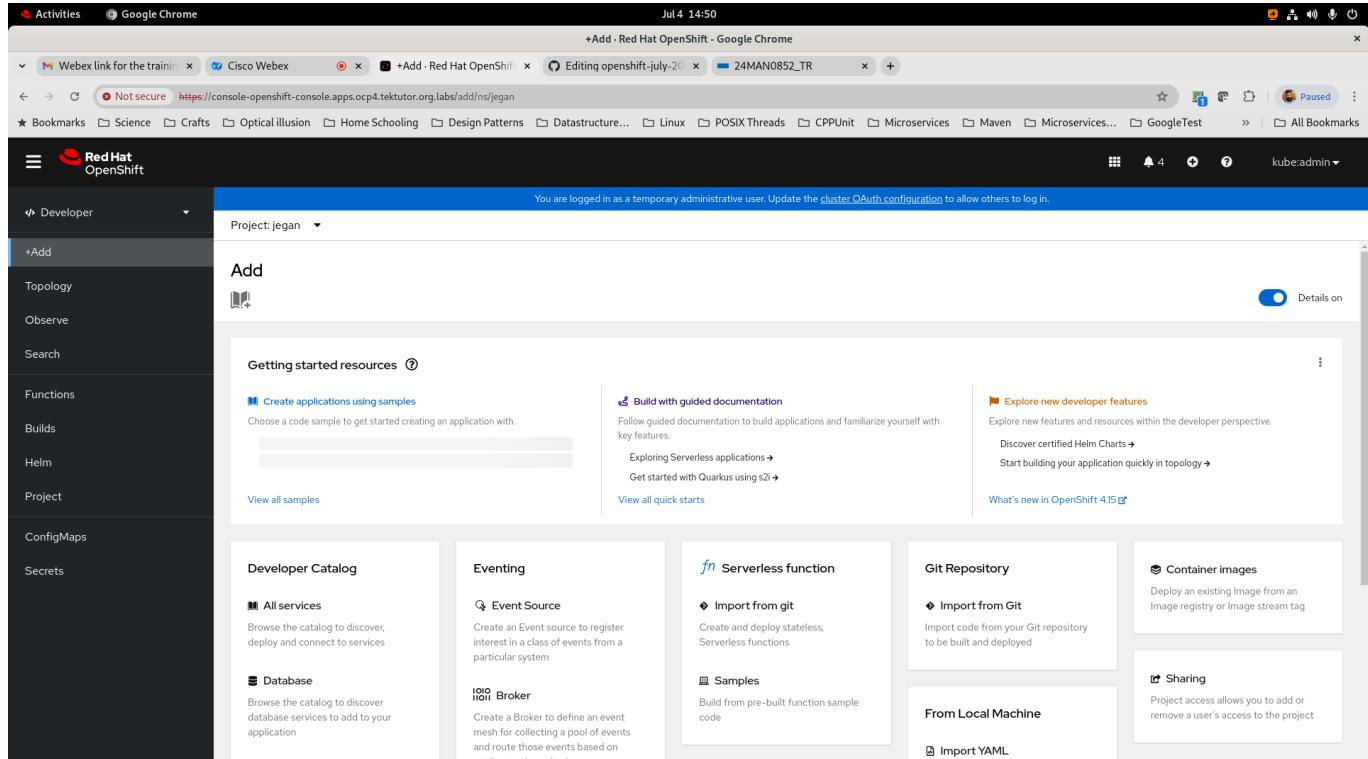




## Lab - Deploying Quarkus application from Develop Context in Openshift webconsole



The screenshot shows the Red Hat OpenShift Topology interface. The left sidebar is titled "Developer" and includes options like "Topology", "Observe", "Search", "Functions", "Builds", "Helm", "Project", "ConfigMaps", and "Secrets". The main content area displays a message: "You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in." Below this, it says "Project: jegan Application: All applications" and "No resources found". A small network graph icon is shown above the message.

The screenshot shows the Red Hat OpenShift "+Add" interface. The left sidebar is identical to the previous screenshot. The main content area is titled "Add" and features a "Getting started resources" section with links to "Create applications using samples", "Build with guided documentation", and "Explore new developer features". Below this, there are several cards: "Developer Catalog" (with "All services" and "Database" sections), "Eventing" (with "Event Source" and "Broker" sections), "Serverless function" (with "Import from git" and "Samples" sections), "Git Repository" (with "Import from Git" and "From Local Machine" sections), and "Container images" (with "Sharing" and "Import YAML" sections). A "Details on" toggle switch is located in the top right corner of the main content area.

Select "Basic Quarkus"

Activities Google Chrome Import from Git - Red Hat OpenShift - Google Chrome

Import from Git - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/import/ns/jegan?formType=sample&importType=devfile&devfileName=code-with-quarkus&git.repository=https%3A%2F%2Fgithub.com%2Fdevfile-sample%2Fcode-with-quarkus.git

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

kube:admin

Red Hat OpenShift

Developer Project: jegan Application: All applications

Import from Git

Git

Git Repo URL \* https://github.com/devfile-samples/devfile-sample-code-with-quarkus.git Validated

Basic Quarkus JAVA QUARKUS

Java Quarkus application using Maven 4.0 and OpenJDK 17  
Sample repository: https://github.com/devfile-samples/devfile-sample-code-with-quarkus.git

General

Name \* code-with-quarkus A unique name given to the component that will be used to name associated resources.

Security  Secure Route Routes can be secured using several TLS termination types for serving certificates.

Create Cancel

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Topology - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

kube:admin

Red Hat OpenShift

Developer Project: jegan Application: All applications

Topology

Display options Filter by resource Name Find by name... :

Resource added Deployment created successfully.  
https://code-with-quarkus-jegan.apps.ocp4.tektutor.org.labs

code-w...uarkus sample-app :

Activities Google Chrome Jul 4 14:51 code-with-quarkus-1 - Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex code-with-quarkus-1 - Bl... Editing openshift-july-20 24MAN0852\_TR Paused

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/code-with-quarkus-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

**Red Hat OpenShift**

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Builds > Build details

**code-with-quarkus-1** Running

Details Metrics YAML Environment Logs Events

Log streaming... Search

13 lines

```

1 Cloning "https://github.com/devfile-samples/devfile-sample-code-with-quarkus.git" ...
2 Commit: 361a8390d9ba948fbcb7b13c1ecc24bbcd273c12e14 [Merge pull request #30 from devfile-samples/fx/parent_version]
3 Author: Theofanis Petkos <thepetk@gmail.com>
4 Date: Fri Apr 19 11:45:48 2024 +0100
5 time="2024-07-04T09:21:02Z" level=info msg="Not using native diff for overlay, this may cause degraded performance for building images: kernel has CONFIG_OVERLAY_FS_REDIRECT_DIR enabled"
6 IO704 09:21:02.410918 1 defaults.go:112] Defaulting to storage driver "overlay" with options [mountopt=metacopy-on].
7 Caching blobs under "/var/cache/blobs".
8
9 Pulling image registry.access.redhat.com/ubi8/openjdk-17-runtim...
10 Trying to pull registry.access.redhat.com/ubi8/openjdk-17-runtim...
11 Getting image source signatures
12 Copying blob sha256:122eac69054b22f81a29f37eb7effe0a3038861b977db932717c5e068f649107
13 Copying blob sha256:0f86e50a0b74ff9eb161a7d781228877c90e8ff57e9689e8cb8b0f092a2a9f9

```

Show full log Wrap lines Raw Download Expand

Activities Google Chrome Jul 4 14:52 code-with-quarkus-1 - Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex code-with-quarkus-1 - Bl... Editing openshift-july-20 24MAN0852\_TR Paused

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/code-with-quarkus-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

**Red Hat OpenShift**

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Builds > Build details

**code-with-quarkus-1** Running

Details Metrics YAML Environment Logs Events

⚠ Some lines have been abridged because they are exceptionally long.  
To view unabridged log content, you can either open the raw file in another window or download it.

Log streaming... Search

1699 lines

```

1679 Progress (1): 4.1/6.0 kBProgress (1): 6.0 kB Downloaded from central: https://repo.maven.apache.org/maven2/io/quarkus/quarkus-resteasy-common/2.13.8.Final/quarkus-resteasy-common-2.13.8.Final.pom
1680 Downloading from central: https://repo.maven.apache.org/maven2/io/quarkus/quarkus-resteasy-common-parent/2.13.8.Final/quarkus-resteasy-common-parent-2.13.8.Final.pom
1681 Progress (1): 799 B Downloaded from central: https://repo.maven.apache.org/maven2/io/quarkus/quarkus-resteasy-common-parent/2.13.8.Final/quarkus-resteasy-common-parent-2.13.8.Final.pom
1682 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-corba/4.7.9.Final/testeasy-corba-4.7.9.Final.pom
1683 Progress (1): 4.1/8.7 kBProgress (1): 8.2/8.7 kBProgress (1): 8.7 kB Downloaded from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-core/4.7.9.Final/testeasy-core-4.7.9.Final.pom
1684 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-jaxrs-all/4.7.9.Final/testeasy-jaxrs-all-4.7.9.Final.pom
1685 Progress (1): 4.1/20 kBProgress (1): 8.2/20 kBProgress (1): 12/20 kB Progress (1): 16/20 kBProgress (1): 20 kB Downloaded from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-jaxrs-all/4.7.9.Final/testeasy-jaxrs-all-4.7.9.Final.pom
1686 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-dependencies/4.7.9.Final/testeasy-dependencies-4.7.9.Final.pom
1687 Progress (1): 4.1/70 kBProgress (1): 8.2/50 kBProgress (1): 12/50 kB Progress (1): 16/50 kBProgress (1): 20/50 kBProgress (1): 25/50 kBProgress (1): 29/50 kBProgress (1): 33/50 kBProgress
1688 Downloading from central: https://repo.maven.apache.org/maven2/io/projectreactor/reactor-bom/2020.0.8/reactor-bom-2020.0.8.pom
1689 Progress (1): 4.1/4.5 kBProgress (1): 4.5 kB Downloaded from central: https://repo.maven.apache.org/maven2/io/projectreactor/reactor-bom/2020.0.8/reactor-bom-2020.0.8.pom (4.5 kB at 205
1690 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/spec/java/ws/rs/jboss-jaxrs-api_2.1.spec/2.0.1.Final/jboss-jaxrs-api_2.1.spec-2.0.1.Final.pom
1691 Progress (1): 4.1/30 kBProgress (1): 12/30 kB Progress (1): 16/30 kBProgress (1): 20/30 kBProgress (1): 25/30 kBProgress (1): 29/30 kBProgress (1): 30 kB Download
1692 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/jboss-parent/35/jboss-parent-35.pom
1693 Progress (1): 4.1/66 kBProgress (1): 12/66 kB Progress (1): 16/66 kBProgress (1): 20/66 kBProgress (1): 24/66 kBProgress (1): 28/66 kBProgress (1): 32/66 kBProg
1694 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/spec/java/xml/bind/jboss-jaxb-api_2.3.spec/2.0.0.Final/jboss-jaxb-api_2.3.spec-2.0.0.Final.pom
1695 Progress (1): 4.1/15 kBProgress (1): 12/15 kB Progress (1): 18 kB Downloaded from central: https://repo.maven.apache.org/maven2/org/jboss/spec/java/xml/bind/jbos
1696 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/spec/java/xml/bind/jboss-jaxb-api_2.3.spec-parent/2.0.0.Final/jboss-jaxb-api_2.3.spec-parent-2.0.0.Final.pom
1697 Progress (1): 4.1/6.1 kBProgress (1): 6.1 kB Downloaded from central: https://repo.maven.apache.org/maven2/org/jboss/spec/java/xml/bind/jboss-jaxb-api_2.3.spec-parent/2.0.0.Final/jbos
1698 Downloading from central: https://repo.maven.apache.org/maven2/org/jboss/testeasy/testeasy-core-spi/4.7.9.Final/testeasy-core-spi-4.7.9.Final.pom
1699 Progress (1): 4.1/8.0 kBProgress (1): 8.0 kB

```

Show full log Wrap lines Raw Download Expand

```

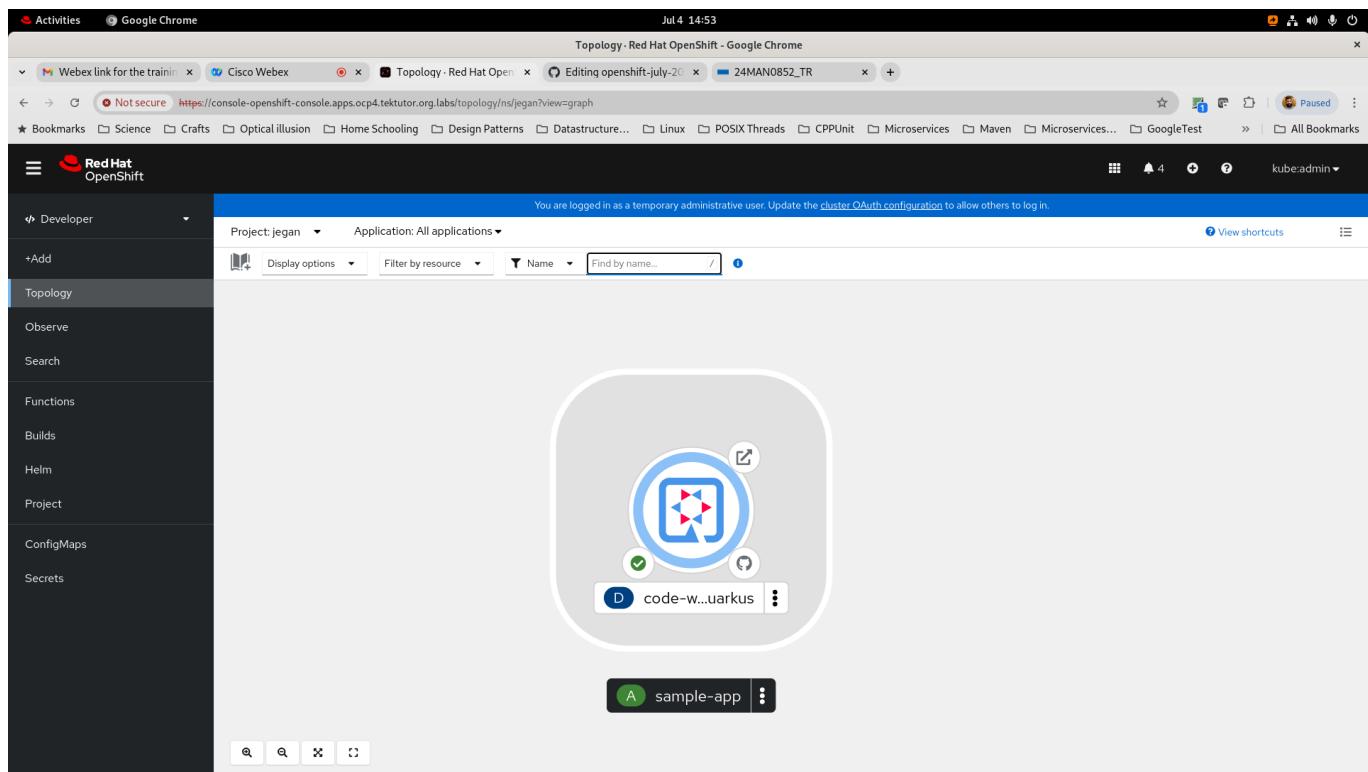
2152 [INFO] Resolved: xparсер-1.2.2.jar
2153 [INFO] Resolved: xmlpull-1.1.3.1.jar
2154 [INFO] Resolved: rest-assured-4.5.1.jar
2155 [INFO] Resolved: groovy-3.0.6.jar
2156 [INFO] Resolved: groovy-xmL-3.0.9.jar
2157 [INFO] Resolved: httpclient-4.5.11.jar
2158 [INFO] Resolved: httpcore-4.4.15.jar
2159 [INFO] Resolved: commons-codec-1.15.jar
2160 [INFO] Resolved: httpmime-4.5.13.jar
2161 [INFO] Resolved: hamcrest-2.1.1.jar
2162 [INFO] Resolved: taglibs-1.2.1.jar
2163 [INFO] Resolved: json-path-4.5.1.jar
2164 [INFO] Resolved: groovy-json-3.0.9.jar
2165 [INFO] Resolved: rest-assured-common-4.5.1.jar
2166 [INFO] Resolved: xml-path-4.5.1.jar
2167 [INFO] Resolved: commons-lang3-3.12.0.jar
2168 -----
2169 [INFO] BUILD SUCCESS
2170 -----
2171 [INFO] Total time: 39.559 s
2172 [INFO] Finished at: 2024-07-04T09:22:07Z
2173 [INFO]

```

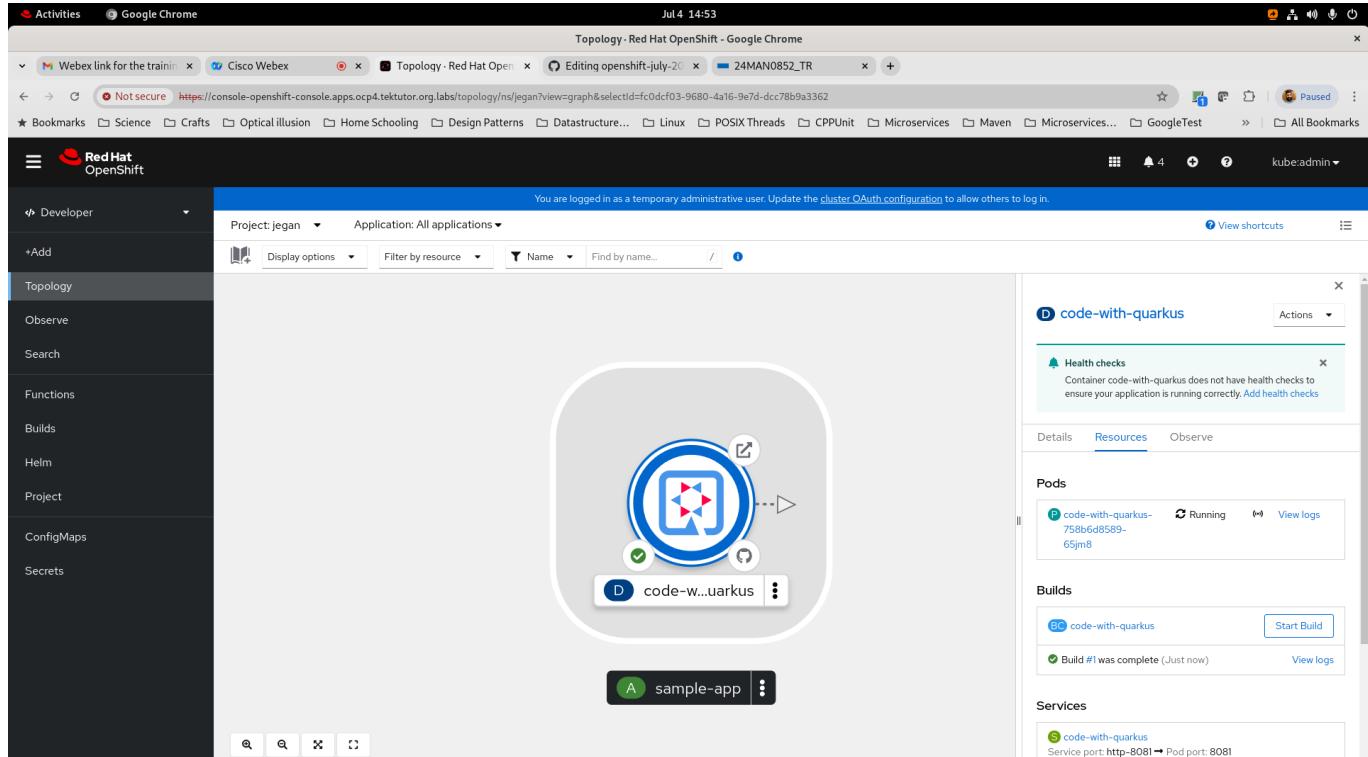
```

2995 --> 5fa0856cd770
2996 [2/2] STEP 10/10: ENV "OPENSHIFT_BUILD_NAME"="code-with-quarkus-1" "OPENSHIFT_BUILD_NAMESPACE"="jegan" "OPENSHIFT_BUILD_SOURCE"="https://github.com/devfile-samples/devfile-sample-code-wt"
2997 <-- 8835092e2a26
2998 [3/2] STEP 10/10: LABEL "io.openshift.build.commit.author"="Thefanis Petkos <thepek@gmail.com>" "io.openshift.build.commit.date"="Fri Apr 19 11:45:48 2024 +0100" "io.openshift.build.o
2999 [3/2] COMMIT temp.builder.openshift.io/jegan/code-with-quarkus-1:1c70a631
3000 --> 3a76b056d785f95b86f347cecd274ba978c12214cc5c9e571ac017c5346c7
3001 Successfully tagged temp.builder.openshift.io/jegan/code-with-quarkus-1:1c70a631
3002 3a76b056d785f95b86f347cecd274ba978c12214cc5c9e571ac017c5346c7
3003
3004 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/code-with-quarkus:latest ...
3005 Getting image source signatures
3006 Copying blob sha256:e05ab5431f78cb9d3f6747d1d050a01c5bde84784e93590932fe0c058858faf
3007 Copying blob sha256:0ef5f6e50a0b74ff9fe161a7d781278877790a8ff57e9689e8cb8bf092a2a9f9
3008 Copying blob sha256:716bed50fcfa9fd3c919ea3997315691e4429c:a0b00011aa3e7fb8bd55594b
3009 Copying blob sha256:e7e9509bfbca2030762df2c7598c5c2e1949e0435f22c117655fa9dead77
3010 Copying blob sha256:122acc69054b27f81a129f37ab7ffffa03038861b977a93271775e063f649107
3011 Copying blob sha256:37938c9c40f98a192e0df1d74db89027a704767d4b174094bc3a28fc8da0ba93
3012 Writing config sha256:3a76b056d785f95b86f347cecd274ba978c12214cc5c9e571ac017c5346c7
3013
3014 Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/code-with-quarkus@sha256:46653acd074baf01fc1b0566111d5cdf89a0f1311281f2e251ab4bd7423a
3015 Push successful

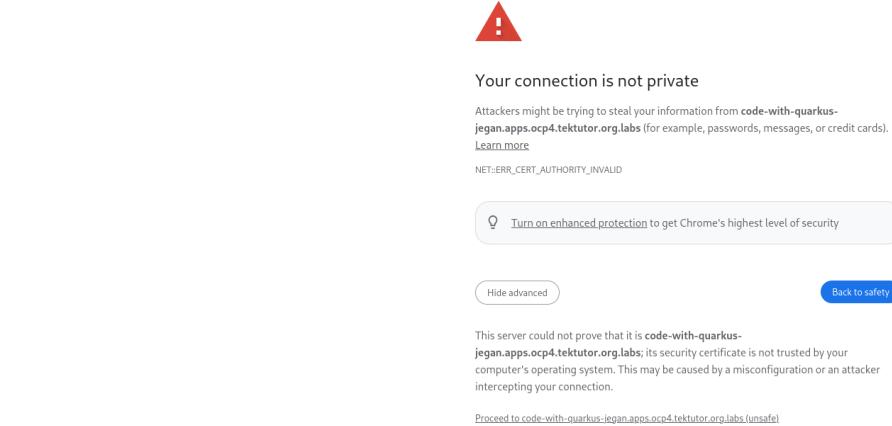
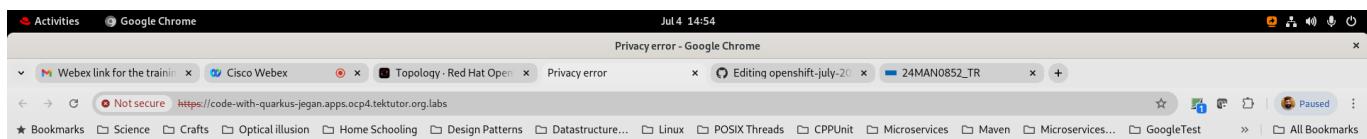
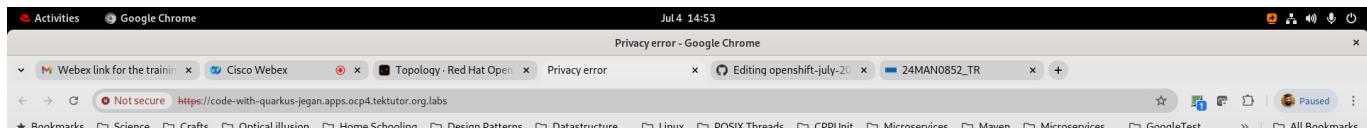
```

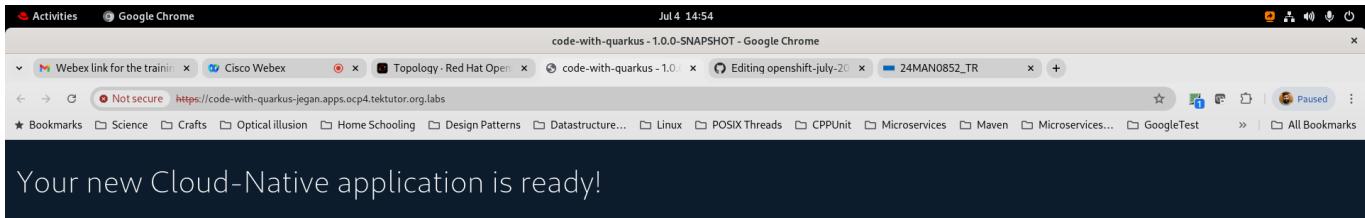


The screenshot shows the Red Hat OpenShift Topology interface. The left sidebar menu includes Developer, Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main content area displays a single pod named "sample-app" represented by a blue icon with a white square and a red cross. Below the icon is a button labeled "D code-w...uarkus". At the bottom of the screen are standard browser navigation buttons.

The screenshot shows the Red Hat OpenShift Topology interface with a detailed sidebar panel for the "code-with-quarkus" container. The sidebar includes sections for Health checks (warning: "Container code-with-quarkus does not have health checks to ensure your application is running correctly. Add health checks"), Details, Resources (selected), and Observe. Under the Resources tab, it shows a single pod named "code-with-quarkus-75bb6d8589-65jm8" in a Running state. It also shows a build history with "Build #1 was complete (Just now)" and a services section listing "code-with-quarkus" with a service port of "http-8081" and a pod port of "8081".





Congratulations, you have created a new Quarkus cloud application.

### What is this page?

This page is served by Quarkus. The source is in [src/main/resources/META-INF/resources/index.html](#).

### What are your next steps?

If not already done, run the application in *dev mode* using: `./mvnw compile quarkus:dev`.

- Your static assets are located in [src/main/resources/META-INF/resources](#).
- Configure your application in [src/main/resources/application.properties](#).
- Quarkus now ships with a [Dev UI](#) (available in dev mode only)
- Play with the getting started example code located in [src/main/java](#):

#### RESTEasy JAX-RS example

REST is easy peasy with this Hello World RESTEasy resource.

[@Path: /hello-resteasy](#)

[Related guide section...](#)

### Application

GroupId: `org.acme`  
ArtifactId: `code-with-quarkus`  
Version: `1.0.0-SNAPSHOT`  
Quarkus Version: `1.13.2.Final`

### Do you like Quarkus?

[Go give it a star on GitHub](#).

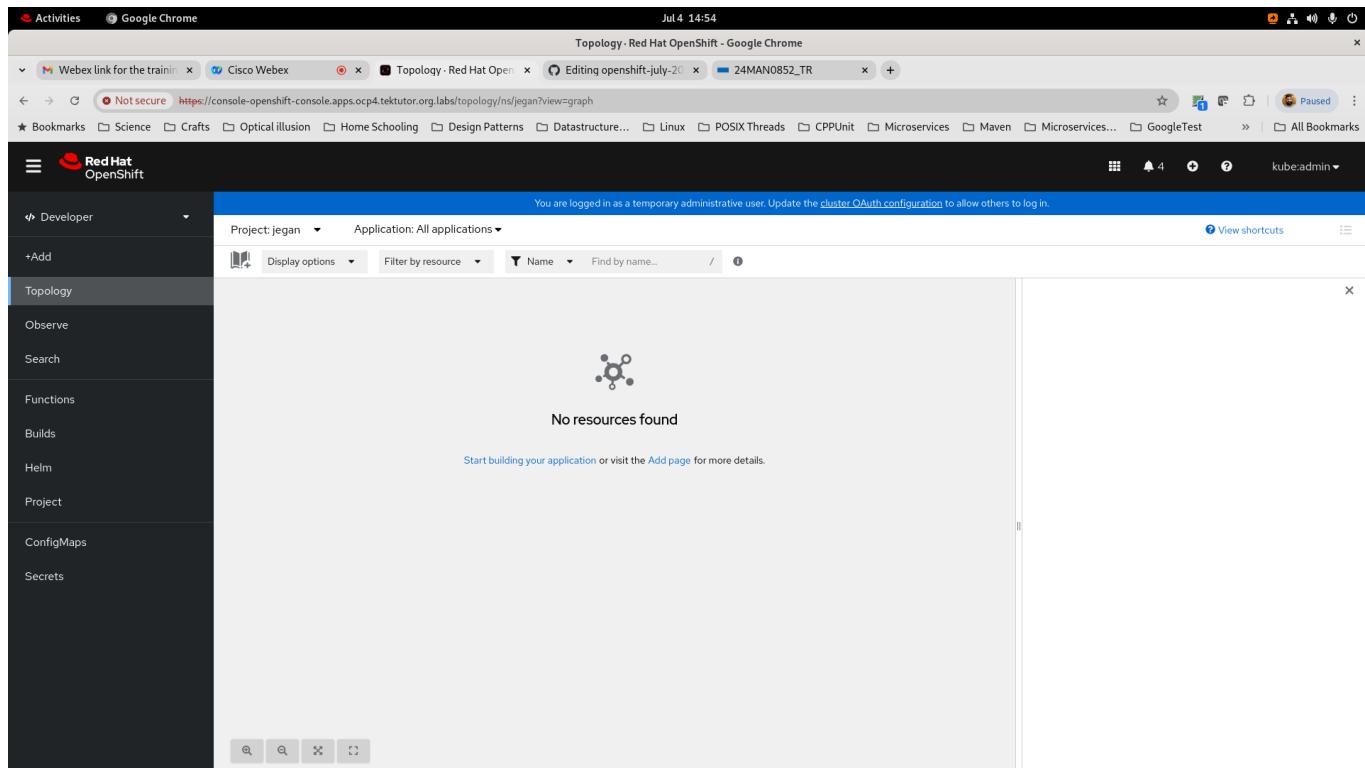
### Selected extensions guides

[RESTEasy JAX-RS guide](#)

### More reading

[Setup your IDE](#)  
[Getting started](#)  
[All guides](#)  
[Quarkus Web Site](#)

## To delete the application



## Lab - Deploying multi-pod python application

**Topology - Red Hat OpenShift - Google Chrome**

Jul 4 14:55

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

Project: jegan Application: All applications ▾

+Add Display options Filter by resource Name Find by name... /

Topology

No resources found

Start building your application or visit the [Add page](#) for more details.

**+Add - Red Hat OpenShift - Google Chrome**

Jul 4 14:55

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

Project: jegan

Add

Getting started resources

- Create applications using samples
- Build with guided documentation
- Explore new developer features

Developer Catalog

- All services
- Database

Eventing

- Event Source
- IQIO Broker

fn Serverless function

- Import from git
- Samples

Git Repository

- Import from Git

From Local Machine

- Import YAML

Container images

Sharing

<https://console-openshift-console.apps.ocp4.tektutor.org.labs/add/ns/jegan>

## All Services

The screenshot shows the Red Hat OpenShift Developer Catalog interface. The left sidebar is collapsed, showing navigation options like Developer, Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main area is titled "Developer Catalog" and displays a list of shared applications, services, event sources, or source-to-image builders for the project "jegan". A search bar at the top right shows the URL: "https://console.openshift-console.apps.ocp4.tektutor.org.labs/catalog/ns/jegan?keyword=Django". The search results show 166 items, with the first two being "Django + PostgreSQL" variants:

- Django + PostgreSQL** (Template) - Provided by Red Hat, Inc. An example Django application with a PostgreSQL database.
- Django + PostgreSQL (Ephemeral)** (Template) - Provided by Red Hat, Inc. An example Django application with a PostgreSQL database.

## Search for "Django"

This screenshot shows the same developer catalog interface after performing a search for "Django". The search bar now contains "Django" and the results show 2 items. The second item, "Django + PostgreSQL (Ephemeral)", is highlighted with a blue border, indicating it has been selected.

Select Ephemeral variant

The screenshot shows the Red Hat OpenShift Developer Catalog interface. On the left, a sidebar lists various developer tools: Activities, Topology, Observe, Search, Functions, Builds, Helm, Project, ConfigMaps, and Secrets. The main area is titled "Developer Catalog" and shows a search bar with "Django" and a dropdown menu "All items". Below the search bar, there are two card-like entries for "Django + PostgreSQL (Ephemeral)" templates. The right side of the screen displays detailed information about the selected template, including its provider (Red Hat, Inc.), creation date (24 Jun 2024, 07:47), support information, and documentation links.

Instantiate, accept default, move to bottom and click create button.

The screenshot shows the "Instantiate Template" dialog box. It contains several input fields: "Database Service Name" (set to "postgresql"), "Database Engine" (set to "postgresql"), "Database Name" (set to "default"), "Database Username" (set to "django"), and "Database User Password" (a placeholder "(generated if empty)"). There are also fields for "Application Configuration File Path" (empty), "Django Secret Key" (a placeholder "(generated if empty)", with a note to set it to a long random string), and "Custom PyPi Index URL" (empty). At the bottom of the dialog are two buttons: "Create" (highlighted in blue) and "Cancel".

Activities Google Chrome Topology - Red Hat OpenShift - Google Chrome

Topology · Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan Application: All applications

+Add Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe

Search

Functions

Builds

Helm

Project

ConfigMaps

Secrets



Activities Google Chrome Jul 4 14:58

django-psql-example-1 · Build · Logs - Red Hat OpenShift - Google Chrome

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/django-psql-example-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Builds > Build details

**B django-psql-example-1** Running

Actions

Details Metrics YAML Environment Logs Events

Log streaming... Search

Show full log Wrap lines Raw Download Expand

41 lines

```

21 [1/3] STEP 3/9: ENV OPENSHIFT_BUILD_NAME="django-psql-example-1" OPENSHIFT_BUILD_NAMESPACE="jegan" OPENSHIFT_BUILD_SOURCE="https://github.com/scrlorg/django-ex.git" OPENSHIFT_BUILD_COMMIT=""
22 [1/3] STEP 4/9: USER root
23 [1/3] STEP 5/9: COPY . /tmp/src
24 [1/3] STEP 6/9: RUN chown -R 1001:0 /tmp/src
25 [1/3] STEP 7/9: USER 1001
26 [1/3] STEP 8/9: RUN /usr/libexec/s2i/assemble
27 ---- Installing application source ...
28 ---- Installing dependencies
29 Collecting django<1.12,>=1.11 (from -r requirements.txt (line 1))
30 Obtaining dependency information for django<1.12,>=1.11 from https://files.pythonhosted.org/packages/49/49/178daa8725d29c475216259eb19e90b2aa0b8c0431af8c7e9b490ae6481d/Django-1.11.29-py2...
31 Downloading Django-1.11.29-py2.py3-none-any.whl.metadata (1.5 kB)
32 Collecting django-debug-toolbar<1.11.1 (from -r requirements.txt (line 2))
33 Obtaining dependency information for django-debug-toolbar<1.11.1 from https://files.pythonhosted.org/packages/6f/66/21218e91f67d1e005388b1c87ae3283cd7b7835145c72f5fef721b51c628/django_de...
34 Downloading django_debug_toolbar-1.11.1-py2.py3-none-any.whl.metadata (3.2 kB)
35 Collecting gunicorn==19.5.0 (from -r requirements.txt (line 3))
36 Obtaining dependency information for gunicorn==19.5.0 from https://files.pythonhosted.org/packages/f9/4e/f4076ala57fc1e75edc0828db365cf9005f9fb04a51b489a39a91eb4be/gunicorn-19.5.0-py2.p...
37 Downloading gunicorn-19.5.0-py2.py3-none-any.whl.metadata (2.6 kB)
38 Collecting psycopg2-binary==2.8.5 (from -r requirements.txt (line 4))
39 Downloading psycopg2-binary-2.8.5.tar.gz (381 kB)
40 381.7/381.7 kB 9.2 MB/s eta 0:00:00
41 Installing build dependencies: started

```

Activities Google Chrome Jul 4 14:58

django-psql-example-1 · Build · Logs - Red Hat OpenShift - Google Chrome

Webex link for the trainin Cisco Webex django-psql-example-1 Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/django-psql-example-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift kube:admin

Developer Project: jegan

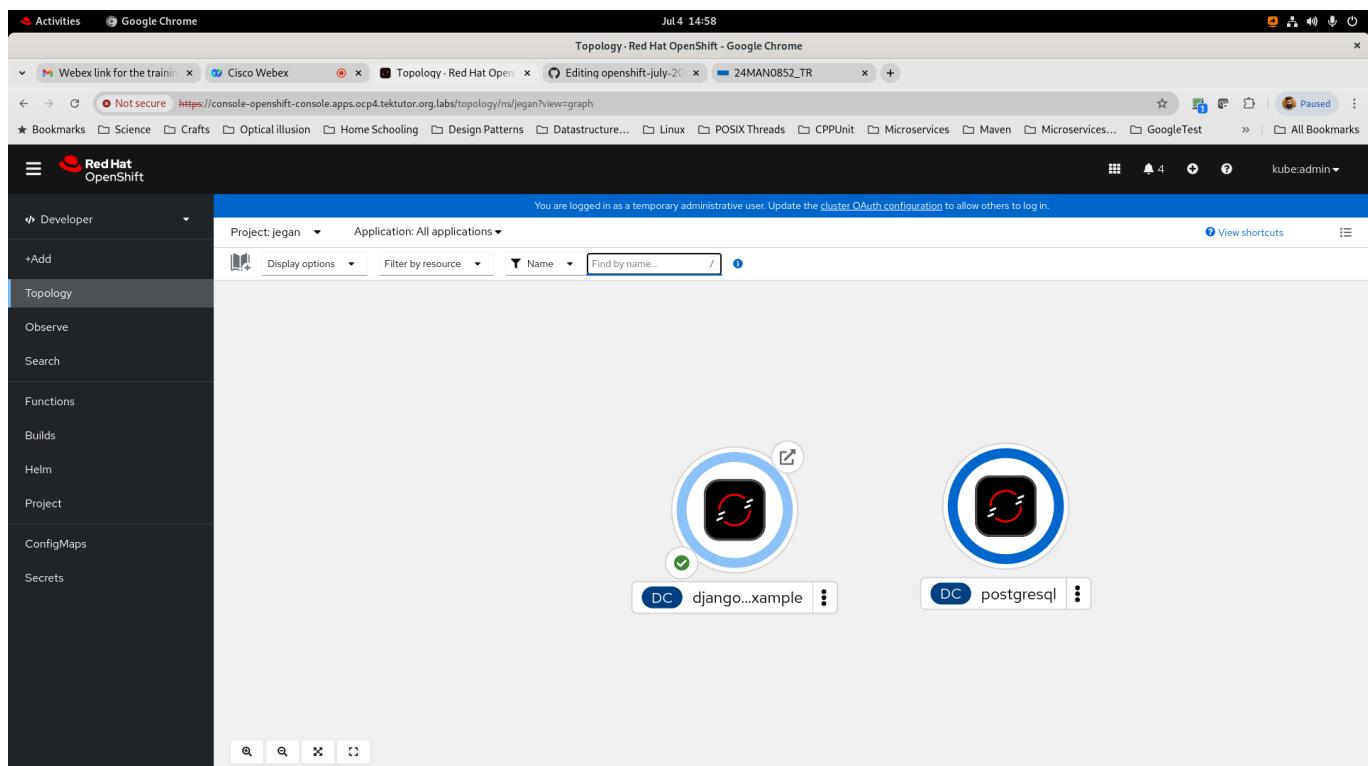
Builds > Build details

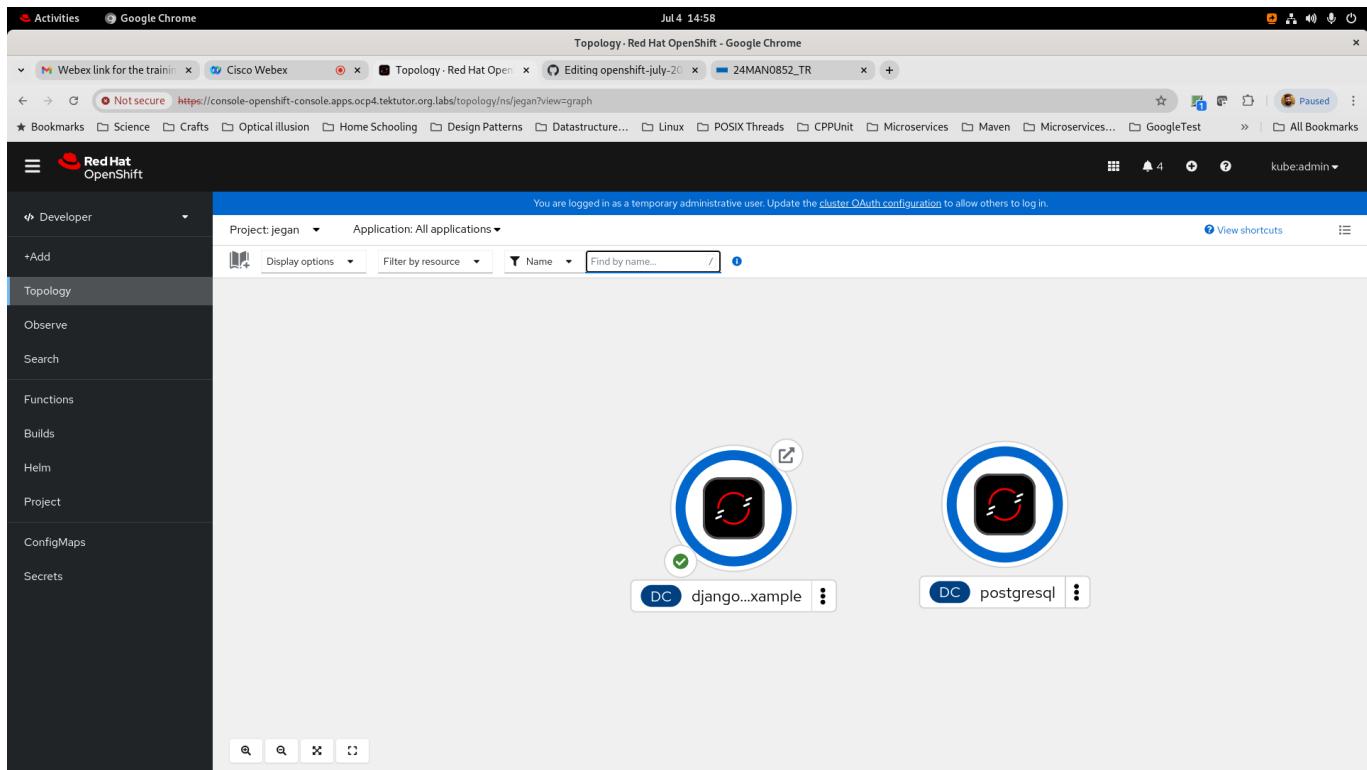
**django-psql-example-1** Running

Details Metrics YAML Environment Logs Events Actions

Log stream ended. Search Show full log Wrap lines Raw Download Expand

```
289 lines
268 -----
269 Ran 3 tests in 0.051s
270
271 OK
272 Destroying test database for alias 'default'...
273 [3/3] STEP 1/1: FROM 9c84466517337452f62d7db2b8d1630af4ff42e0f77e01ac3dd856e7fa134
274 [3/3] COMMIT temp.builder.openshift.io/jegan/django-psql-example-1:84bedc17
--> 9c8446651773
275 Successfully tagged temp.builder.openshift.io/jegan/django-psql-example-1:84bedc17
276 9c844665177337452f62d7db2b8d1630af4ff42e0f77e01ac3dd856e7fa134
277
278 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/django-psql-example:latest ...
279 Getting image source signatures
280 Copying blob sha256:4c0974a05353b5f3e0d2560cc4fb226edbb6a71d4974ceeb4706183640e8
281 Copying blob sha256:c7965a7086645a59db0b13a1f16da19d7cf7af4133e59f8ecdf393dade8eb01
282 Copying blob sha256:15defe5f14352018ae1cd6282fc52a0f927977b0380560385edd45497eb051
283 Copying blob sha256:05ce489ff7d0d7a74746cc1ee6664c666713478fb81113c62001587bf2005b
284 Copying blob sha256:629f551eb35561edddfb4df147019d1b61fecb5fc49308830466f66c73287
285 Copying config sha256:9c844665177337452f62d7db2b8d1630af4ff42e0f77e01ac3dd856e7fa134
286 Writing manifest to image destination
287 Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/django-psql-example@sha256:513ef4d29cf060c4e2d40bc92c629f6441c76c7f7a0d3d3ef70975358504de8b
288 Push successful
```





Welcome to your Django application on OpenShift

#### How to use this example application

For instructions on how to use this application with OpenShift, start by reading the [Developer Guide](#).

#### Deploying code changes

The source code for this application is available to be forked from the [OpenShift GitHub repository](#). You can configure a webhook in your repository to make OpenShift automatically start a build whenever you push your code:

- From the Web Console homepage, navigate to your project
- Click on Browse > Builds
- Click the link with your BuildConfig name
- Click the Configuration tab
- Click the "Copy to clipboard" icon to the right of the "GitHub webhook URL" field
- Navigate to your repository on GitHub and click on repository settings > webhooks > Add webhook
- Paste your webhook URL provided by OpenShift
- From the "Content Type" dropdown, select "application/json"
- Leave the defaults for the remaining fields — that's it!

After you save your webhook, if you refresh your settings page you can see the status of the ping that GitHub sent to OpenShift to verify it can reach the server.

Note: adding a webhook requires your OpenShift server to be reachable from GitHub.

#### Working in your local Git repository

If you forked the application from the OpenShift GitHub example, you'll need to manually clone the repository to your local system. Copy the application's source code Git URL and then run:

```
$ git clone <git_url> <directory_to_create>
# Within your project directory
# Commit your changes and push to OpenShift
```

#### Managing your application

Documentation on how to manage your application from the [Web Console](#) or [Command Line](#) is available at the OKD Documentation.

#### Web Console

You can use the Web Console to view the state of your application components and launch new builds.

#### Command Line

With the [OpenShift command line interface \(CLI\)](#), you can create applications and manage projects from a terminal.

#### Development Resources

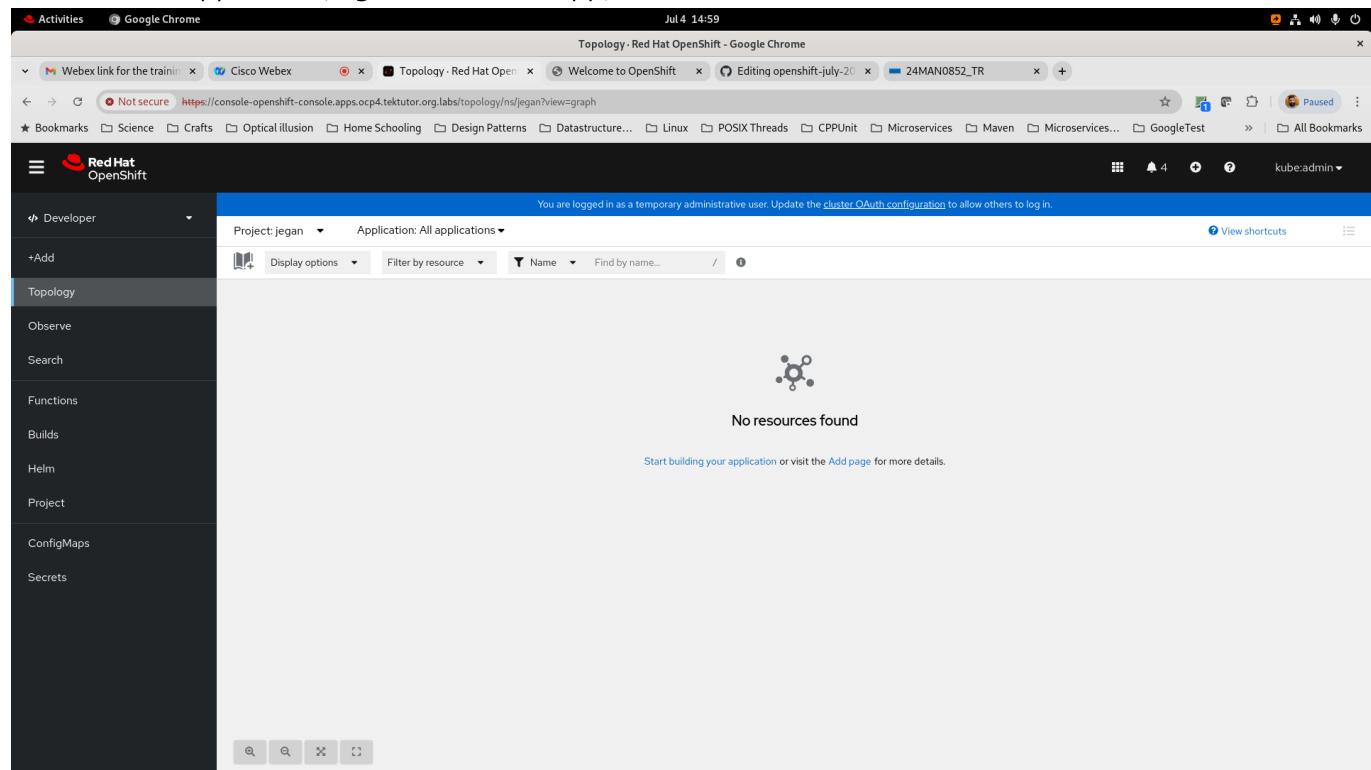
- [OpenShift Documentation](#)
- [OpenShift Origin GitHub](#)
- [Source To Image GitHub](#)
- [Getting Started with Python on OpenShift](#)
- [Stack Overflow questions for OpenShift](#)
- [Git documentation](#)

#### Request information

Server hostname: django-psql-example-1-rgmf5  
Database server: PostgreSQL (172.30.185.143:5432/default)

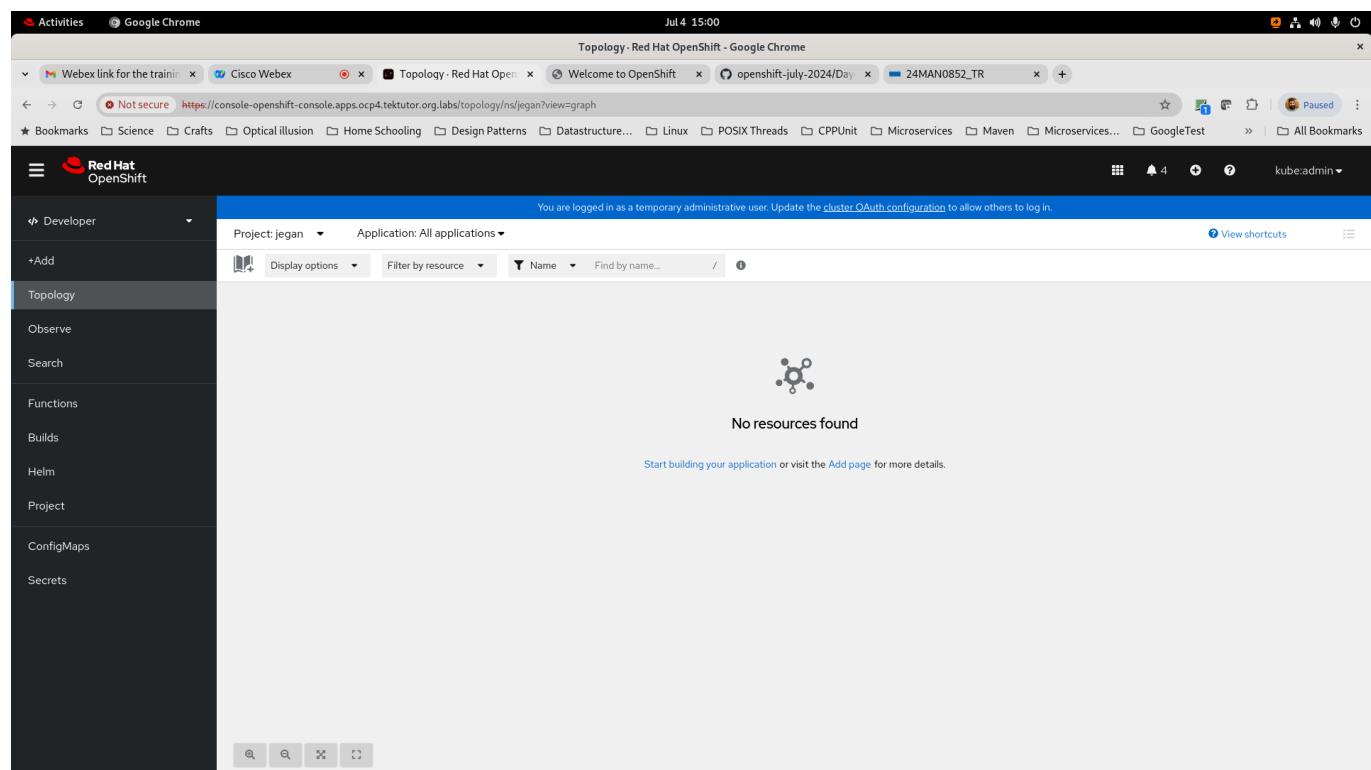
Page views: 1

To delete the application, right click on the App, click delete



The screenshot shows the Red Hat OpenShift web console with the URL <https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph>. The page title is "Topology - Red Hat OpenShift - Google Chrome". The top navigation bar includes links for "Activities", "Google Chrome", "Topology - Red Hat OpenShift", "Welcome to OpenShift", "Editing openshift-july-2024", and "24MAN0852\_TR". The left sidebar has a "Developer" section with "Topology" selected, along with other options like "Observe", "Search", "Functions", "Builds", "Helm", "Project", "ConfigMaps", and "Secrets". The main content area displays a search bar, filter options, and a message: "No resources found". Below the message is a small cluster icon and the text "Start building your application or visit the [Add page](#) for more details."

## Lab - Deploying Nodejs multi-pod application



This screenshot is identical to the one above, showing the Red Hat OpenShift web console at the same URL and time. It displays the "Topology" view for the "jegan" project, showing no resources found and a message to start building the application.

All Service, search for "NodeJS" and select "NodeJS+Postgresql Ephemeral"

Developer Catalog - Red Hat OpenShift - Google Chrome

Jul 4 15:01

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/catalog/ns/jegan?keyword=Node&selectedId=90aaff2f-28c1-459a-94df-08ea65b3273b

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

kube:admin

**Developer Catalog**

You are logged in as a temporary administrator

Project: jegan

+Add

Topology

Observe

Search

All items

CI/CD Databases Languages Middleware Other

Node A-Z

Helm Charts

D Alaz is an open-source Ddosify eBPF agent that can inspect and collect Kubernetes (K8s) service traffic without the need for code instrumentation, sidecars, or service restarts. Alaz can create a Service Map that helps identify golden signals and problems like high latencies, 5xx errors, zombie services, SQL queries. Additionally, it can gather system information and resources via the Prometheus Node Exporter, which is readily available on the agent.

Basic Node.js Node.js 16 application Express 4.18.x

Type Builder Images Devfiles Helm Charts Templates (3)

Provider Red Hat, Inc.

**Node.js + PostgreSQL (Ephemeral)**

Provided by Red Hat, Inc.

**Instantiate Template**

**Provider** Red Hat, Inc.

**Description** An example Node.js application with a PostgreSQL database. For more information about using this template, including OpenShift considerations, see <https://github.com/nodeshift-starters/nodejs-rest-http-crud/blob/master/README.md>.

**Created at** 24 Jun 2024, 07:47

**Support** Get support

**Documentation** Refer documentation

Developer Catalog - Red Hat OpenShift - Google Chrome

Jul 4 15:01

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kube:admin

**Developer Catalog**

You are logged in as a temporary administrator. Update the cluster OAuth configuration to allow others to log in.

+Add

Topology

Observe

Search

Namespace \* jegan

Name \* nodejs-postgresql-example

The name assigned to all of the frontend objects defined in this template.

Namespace \* openshift

The OpenShift Namespace where the ImageStream resides.

Version of NodeJS Image \* 16-ubi8

Version of NodeJS image to be used (14-ubi8, 16-ubi8, or latest).

Version of PostgreSQL Image \* 12-el8

Version of PostgreSQL image to be used (12-el8, or latest).

Memory Limit \* 256Mi

Maximum amount of memory the Node.js container can use.

Memory Limit (PostgreSQL) \* 256Mi

Maximum amount of memory the PostgreSQL container can use.

Git Repository URL \*

**Node.js + PostgreSQL (Ephemeral)**

QUICKSTART NODEJS

- View documentation
- Get support

An example Node.js application with a PostgreSQL database. For more information about using this template, including OpenShift considerations, see <https://github.com/nodeshift-starters/nodejs-rest-http-crud/blob/master/README.md>.

WARNING: Any data stored will be lost upon pod destruction. Only use this template for testing.

The following resources will be created:

- BuildConfig
- DeploymentConfig
- ImageStream
- Route
- Secret
- Service

Activities Google Chrome Jul 4 15:01 Instantiate Template - Red Hat OpenShift - Google Chrome

Webex link for the trainin... Cisco Webex Instantiate Template - Re... Welcome to OpenShift Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/catalog/instantiate-template?template=nodejs-postgresql-example&template-ns=openshift&preselected-ns=jegan

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Red Hat OpenShift kube:admin

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer +Add Topology Observe Search Functions Builds Helm Project ConfigMaps Secrets

**Generic Webhook Secret**  
(generated if empty)  
A secret string used to configure the Generic webhook.

**Database Service Name \***  
postgresql

**PostgreSQL Username**  
(generated if empty)  
Username for PostgreSQL user that will be used for accessing the database.

**PostgreSQL Password**  
(generated if empty)  
Password for the PostgreSQL user.

**Database Name \***  
my\_data

**Database Administrator Password**  
(generated if empty)  
Password for the database admin user.

**Custom NPM Mirror URL**

The custom NPM mirror URL

Create Cancel

Activities Google Chrome Jul 4 15:01 Topology - Red Hat OpenShift - Google Chrome

Webex link for the trainin... Cisco Webex Topology - Red Hat Open... Welcome to OpenShift Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks

Red Hat OpenShift kube:admin

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer +Add Topology Observe Search Functions Builds Helm Project ConfigMaps Secrets

Project: jegan Application: All applications

Display options Filter by resource Name Find by name... View shortcuts

nodejs...example DC postgresql DC

Activities Google Chrome July 4 15:02 nodejs-postgresql-example-1 - Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the trainin Cisco Webex nodejs-postgresql-exam Welcome to OpenShift Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/nodejs-postgresql-example-1/logs

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUNIT Microservices Maven Microservices... GoogleTest All Bookmarks

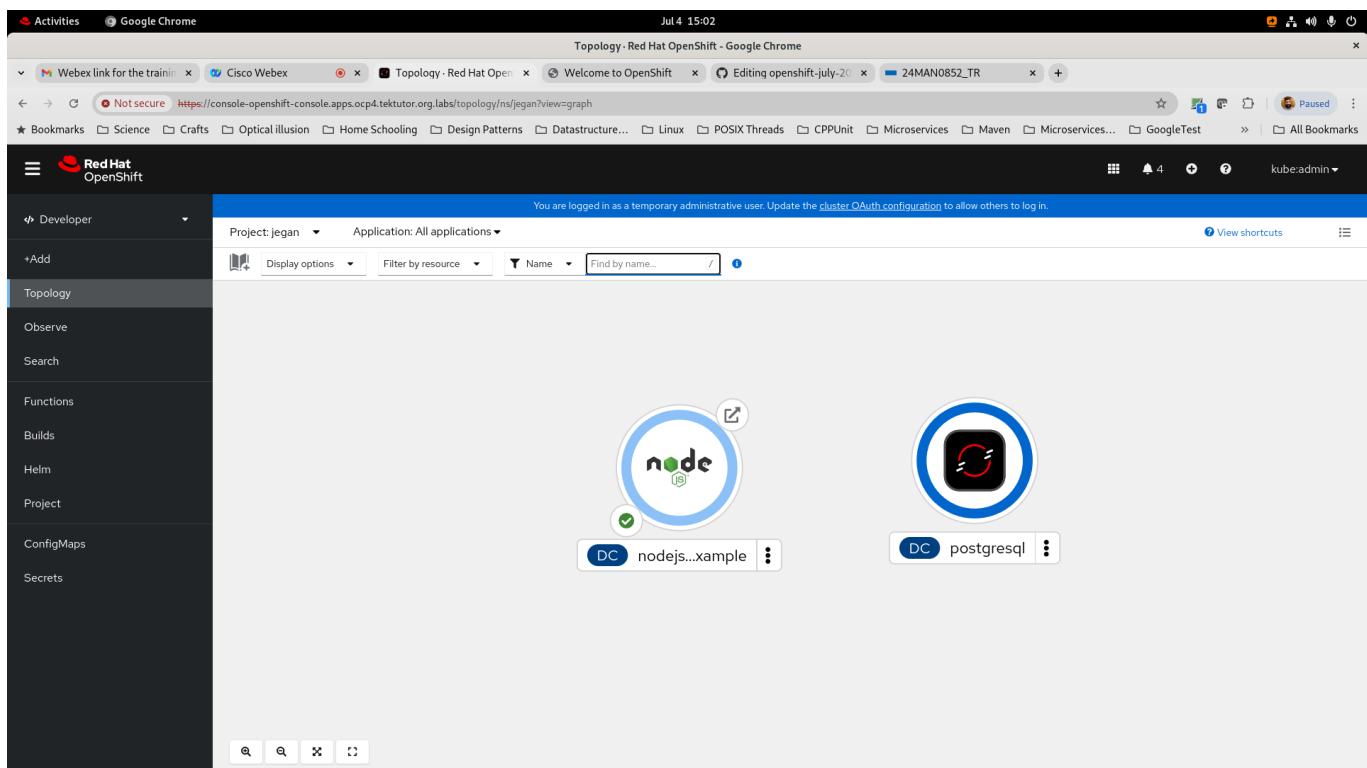
Red Hat OpenShift kube:admin

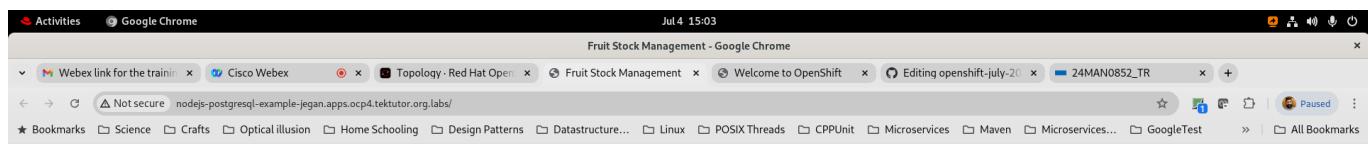
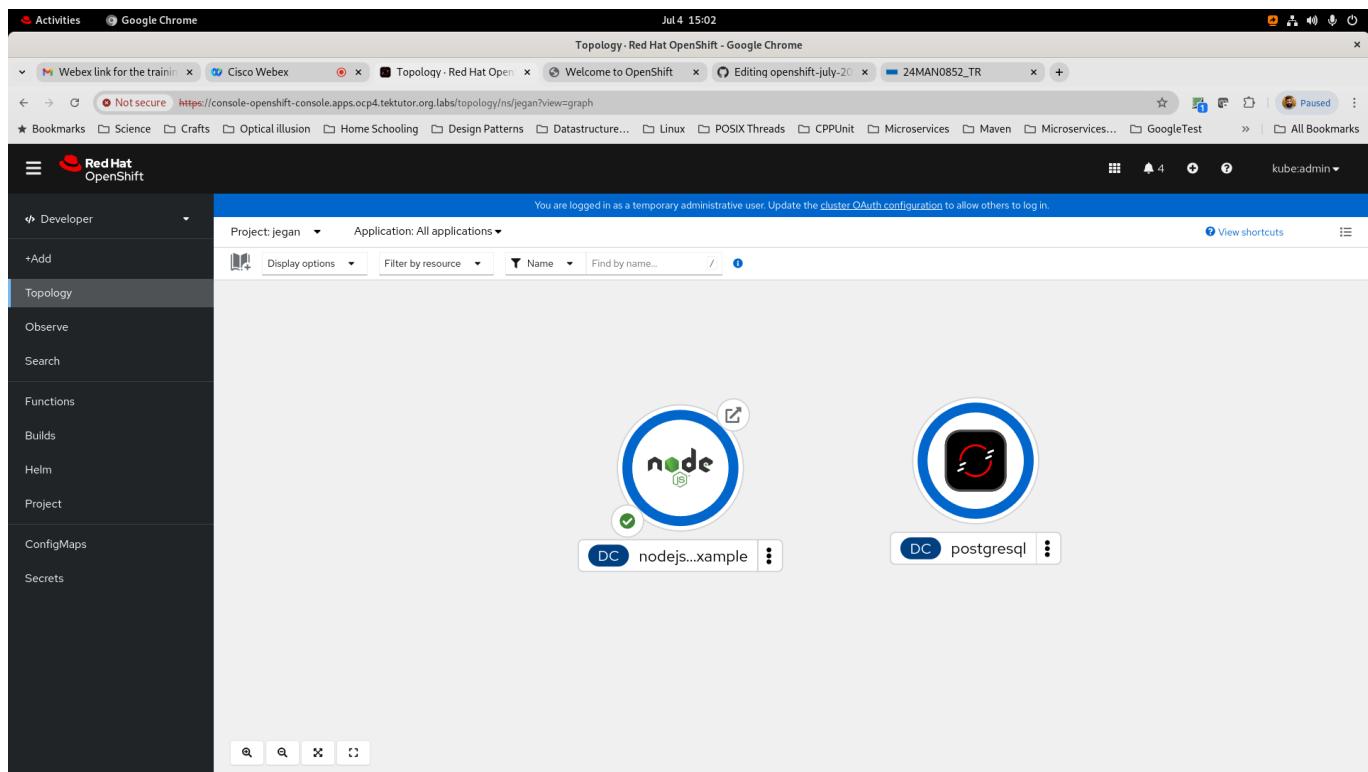
Developer Project: jegan Builds > Build details nodejs-postgresql-example-1 Running

Details Metrics YAML Environment Logs Events Actions

Log stream ended. Search Show full log Wrap lines Raw Download Expand

```
IOLines
80 COMMIT temp.builder.openshift.io/jegan/nodejs-postgresql-example-1:cddab4b1
81 Getting image source signatures
82 Copying blob sha256:31ef0364e9a5059ff7f79d6ba42ccac8398c4aadd2d838872e7f5f1b7774562
83 Copying blob sha256:c0d94478e3781bf6abaa4b2b4a484814296d65f7e712e3e4f963137644a0
84 Copying blob sha256:dc7b816954c9d879fe1e122805d406f943a8de79485c2cf65e8d3c7b9a0
85 Copying blob sha256:c19d22a1daafe0fdbaa9745ce30cac51749879a686d68e1d97523c21d44e6
86 Writing config sha256:c79dac04975d968a2cc2c857a99306c269da6f4ee3728c6fddd74b4965950d
87 Writing manifest to image destination
88 --> c79dac04975
89 Successfully tagged temp.builder.openshift.io/jegan/nodejs-postgresql-example-1:cddab4b1
90 c79dac04975d968a2cc2c8857a99306c269da6f4ee3728c6fddd74b4965950d
91
92 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/nodejs-postgresql-example:latest ...
93 Getting image source signatures
94 Copying blob sha256:ac19d22a1daafe0fdbaa9745ce30cac517d9879a686d6c8e1d97523c21d44e6
95 Copying blob sha256:d00882c4b1c5772067807aa2f43f30f6905dee69d68a4667d23f30f3c468
96 Copying blob sha256:c073fa88c2d0d438e154b05e59e0cce2d17c5cb96685f7a5a1b7639855d6
97 Copying blob sha256:c073fa88c2d0d438e154b05e59e0cce2d17c5cb96685f7a5a1b7639855d6
98 Copying config sha256:c79dac04975d968a2cc2c857a99306c269da6f4ee3728c6fddd74b4965950d
99 Writing manifest to image destination
100 Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/nodejs-postgresql-example@sha256:8271eea6f5c17b4e6ccb630eb552b343d44f3e0b2a97ec2f3e5461587b9ee6f7
101 Push successful
```





## Node.js Crud Application

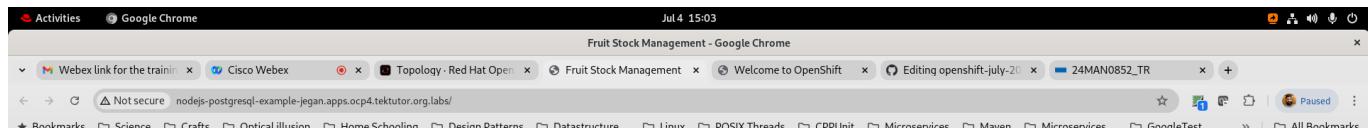
This application demonstrates how a Node.js application implements a CRUD endpoint to manage *fruits*. This management interface invokes the CRUD service endpoint, that interact with a PosgreSQL database .

### Add/Edit a fruit

Apple	10
<input type="button" value="SAVE"/>	

### Fruit List

Name	Stock		
Apple	10	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>
Orange	10	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>
Pear	10	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>



## Node.js Crud Application

This application demonstrates how a Node.js application implements a CRUD endpoint to manage fruits. This management interface invokes the CRUD service endpoint, that interact with a PosgreSQL database .

### Add/Edit a fruit

Name	0
<input type="button" value="SAVE"/>	

### Fruit List

Name	Stock		
Orange	10	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>
Pear	10	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>
Apple	15	<input type="button" value="EDIT"/>	<input type="button" value="REMOVE"/>

## Lab - Deploying Reactjs application

The screenshot shows the Red Hat OpenShift Developer Catalog interface. On the left, a sidebar menu includes options like 'Developer', '+Add', 'Topology', 'Observe', 'Search', 'Functions', 'Builds', 'Helm', 'Project', 'ConfigMaps', 'Secrets', and 'Type'. The main area is titled 'Developer Catalog' and displays a search bar with 'React' typed in. Below the search bar, there's a 'Languages' section with a dropdown menu set to 'React'. A search result card for 'React Web Application' is shown, featuring a yellow 'JS' icon, the title 'React Web Application', and a brief description: 'Build a basic React Web Application'. A small note at the top right of the catalog area says '1 items'.

This screenshot shows the same developer catalog interface, but the 'React Web Application' template from the previous screenshot is now open in a modal window. The modal has a yellow 'JS' icon and the title 'React Web Application'. It contains a button labeled 'Instantiate Template'. Below the button, there are two columns: 'Provider' (N/A) and 'Description' (Build a basic React Web Application). Further down, it shows 'Created at' (24 Jun 2024, 07:47), 'Support' (N/A), and 'Documentation' (N/A).

Activities Google Chrome Jul 4 15:04 Instantiate Template - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex Instantiate Template - Re Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/catalog/instantiate-template?template=react-web-app-example&template-ns=openshift&preselected-ns=jegan

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

### Instantiate Template

Namespace \* jegan

Name \* react-web-app

The name assigned to all of the frontend objects defined in this template.

Namespace \* openshift

The OpenShift Namespace where the ImageStream resides.

Version of NodeJS Image \* 16-ubi8

Version of NodeJS image to be used (14-ubi8, 16-ubi8, or latest).

Memory Limit \* 512Mi

Maximum amount of memory the container can use.

Source URL \* https://github.com/nodeshift-blog-examples/react-web-app

The source URL for the application

Source Branch \* main

The branch name for the application

Source Directory \*

React Web Application  
NODEJS REACT WEB APP

Build a basic React Web Application

The following resources will be created:

- BuildConfig
- DeploymentConfig
- ImageStream
- Route
- Service

Activities Google Chrome Jul 4 15:05 Instantiate Template - Red Hat OpenShift - Google Chrome

Webex link for the training Cisco Webex Instantiate Template - Re Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/catalog/instantiate-template?template=react-web-app-example&template-ns=openshift&preselected-ns=jegan

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

### Instantiate Template

Version of NodeJS Image \* 16-ubi8

Version of NodeJS image to be used (14-ubi8, 16-ubi8, or latest).

Memory Limit \* 512Mi

Maximum amount of memory the container can use.

Source URL \* https://github.com/nodeshift-blog-examples/react-web-app

The source URL for the application

Source Branch \* main

The branch name for the application

Source Directory \*

Custom NPM mirror URL

The custom NPM mirror URL.

GitHub Webhook Secret (generated if empty)

A secret string used to configure the GitHub webhook.

Create Cancel

**Topology - Red Hat OpenShift - Google Chrome**

Jul 4 15:05

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: jegan Application: All applications

Display options Filter by resource Name Find by name... View shortcuts

Topology

Observe

Search

Functions

Builds

Helm

Project

ConfigMaps

Secrets

react-web-app

DC

**react-web-app-1-Build - Red Hat OpenShift - Google Chrome**

Jul 4 15:06

Not secure https://console-openshift-console.apps.ocp4.tektutor.org.labs/k8s/ns/jegan/builds/react-web-app-1/logs

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: jegan

Builds > Build details

react-web-app-1 Running

Actions

Details Metrics YAML Environment Logs Events

Log streaming... Search Show full log Wrap lines Raw Download Expand

```

1 Cloning "https://github.com/nodeshift-blog-examples/react-web-app" ...
2 Commit: 38aefec8e2debf4bbf8429be4b5fc0e2871901 (Port to UBI nodeshift builder image (#24))
3 Author: Yassov Selkovitz <yassov@redhat.com>
4 Date: Tue Jul 5 09:28:48 2022 -0400
5 time="2024-07-04T09:35:17Z" level:info msg="Not using native dtifff for overlay, this may cause degraded performance for building images: kernel has CONFIG_OVERLAY_FS_REDIRECT_DIR enabled"
6 I0704 09:35:11.796260 1 defaults.go:112] Defaulting to storage driver "overlay" with options [mountopt=metacopy-on].
7 Caching blobs under "/var/cache/blobs".
8 Trying to pull image-registry.openshift-image-registry.svc:5000/openshift/nodejs@sha256:35fb559bc20aaee99944c6fe4f875efd27f7ad0aa42eac4ea788449249a36864...
9 Getting image source signatures
10 Copying blob sha256:c77fa88c2d40b438e154bc5e539e06ceec2d17cd5cb96685f7a5a1b7639855d6
11 Copying blob sha256:2fefa45c087dd02784f6aa3739ef4a788be9a65f428ff6555b971308ff70615
12 Copying blob sha256:d000882c4b1c5772067907aa27443f30f6005dee69a6984ab667da232f3a0ffcc3468
13 Copying config sha256:2488989f9b1361abecffa651c0d91a4b2591a4ad9ef1a27f104c5f7a8aded030
14 Writing manifest to image destination
15 Generating dockerfile with builder image image-registry.openshift-image-registry.svc:5000/openshift/nodejs@sha256:35fb559bc20aaee99944c6fe4f875efd27f7ad0aa42eac4ea788449249a36864
16 Adding transient rw bind mount for /run/secrets/rhsnmp
17 STEP 1/9: FROM image-registry.openshift-image-registry.svc:5000/openshift/nodejs@sha256:35fb559bc20aaee99944c6fe4f875efd27f7ad0aa42eac4ea788449249a36864
18 STEP 2/9: LABEL "io.openshift.build.image=image-registry.openshift-image-registry.svc:5000/openshift/nodejs@sha256:35fb559bc20aaee99944c6fe4f875efd27f7ad0aa42eac4ea788449249a36864" "io.openshift.build.name=react-web-app-1" "OPENSHIFT_BUILD_NAMESPACE=jegan" "OPENSHIFT_BUILD_SOURCE=https://github.com/nodeshift-blog-examples/react-web-app" "OPENSHIFT_BUILD_REF=HEAD"
19 STEP 3/9: ENV OPENSHIFT_BUILD_NAME="react-web-app-1" OPENSHIFT_BUILD_NAMESPACE="jegan" OPENSHIFT_BUILD_SOURCE="https://github.com/nodeshift-blog-examples/react-web-app" OPENSHIFT_BUILD_REF=HEAD
20 STEP 4/9: USER root
21 STEP 5/9: COPY upload/src /tmp/src

```

Activities Google Chrome July 4 15:06 react-web-app-1 Build - Logs - Red Hat OpenShift - Google Chrome

Webex link for the trainin Cisco Webex react-web-app-1 Build Editing openshift-july-20 24MAN0852\_TR

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Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

Red Hat OpenShift

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan

+Add Topology Observe Search Functions

Builds Builds > Build details react-web-app-1 Running

Details Metrics YAML Environment Logs Events Actions

Log stream ended. Search Show full log Wrap lines Raw Download Expand

```
146 lines
125 COMMIT temp.builder.openshift.io/jegan/react-web-app-1:8669bcde
126 Getting image source signatures
127 Copying blob sha256:31ef0364ea95089ff7fd96ab4a2ccac8398c4aaedd2d838b72e7f5f1b77a4562
128 Copying blob sha256:c0d94478e3781a6f6abda4b2b4a4841429e6d65f5a7c712e03e4f963137644ad0
129 Copying blob sha256:dc781696549d879fe1b22805d406f943a8de794852cfe5b8d83d7b9a0
130 Copying blob sha256:190fae5f06b2d629a9110a3ee812ea0e92f2672c45503ee0f159073ac67af
131 Copying config sha256:183993ce7c7c6da923189ec71cbff775656bceee59e6d435287358b758f769
132 Writing manifest to image destination
133 --> 183993ce7c7c6da923189ec71cbff775656bceee59e6d435287358b758f769
134 Successfully tagged temp.builder.openshift.io/jegan/react-web-app-1:8669bcde
135 183993ce7c7c6da923189ec71cbff775656bceee59e6d435287358b758f769
136
137 Pushing image image-registry.openshift-image-registry.svc:5000/jegan/react-web-app:latest ...
138 Getting image source signatures
139 Copying blob sha256:190fae5f06b2d629a9110a3ee812ea0e92f2672c45503ee0f159073ac67af
140 Copying blob sha256:2efe45c087dd2784f6a0a338e6f4a788bea9df5d280f655b971300f70615
141 Copying blob sha256:d008824b1c5772067807aa743f30f6905de69d684a8667da23f30f73468
142 Copying blob sha256:c0d73af88c2d0d438e154bcb5e59e0cce2d17c5c96669f7a5a1b763985d6
143 Copying config sha256:183993ce7c7c6da923189ec71cbff775656bceee59e6d435287358b758f769
144 Writing manifest to image destination
145 Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/react-web-app@sha256:d2129c257e2fb6fff256a337c11273263f58e68239ff764b11b5abf8832
146 Push successful
```

Activities Google Chrome July 4 15:06 Topology - Red Hat OpenShift - Google Chrome

Webex link for the trainin Cisco Webex Topology - Red Hat Open Editing openshift-july-20 24MAN0852\_TR

Not secure https://console.openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph

Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks kube:admin

Red Hat OpenShift

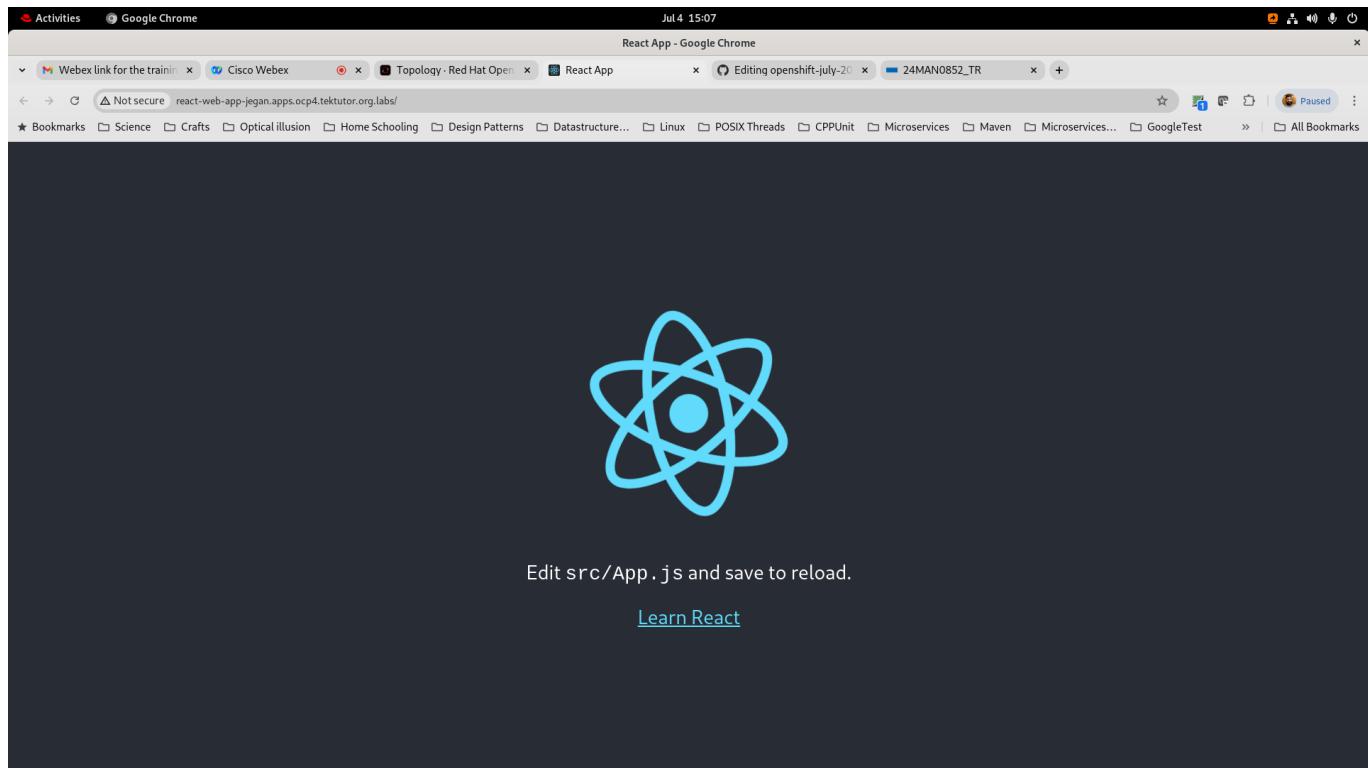
You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Developer Project: jegan Application: All applications

+Add Topology Observe Search Functions

Display options Filter by resource Name Find by name... View shortcuts

react-web-app



## Lab - Deploying angular application into openshift using S2I docker strategy

```
oc new-app --name=angular https://github.com/tektutor/openshift-july-2024.git --context-dir=Day4/angular/Angular-openshift-example --strategy=docker
```

To check the build logs

```
oc logs -f buildconfig/angular
```

## Expected output

```

Activities Terminal Jul 4 15:19
jegan@tektutor.org jegan@tektutor.org jegan@tektutor.org
jegan@tektutor.org ➤ oc new-app --name=angular https://github.com/tektutor/openshift-july-2024.git --context-dir=Day4/angular/Angular-openshift-example --strategy=docker
--> Found container image 4cec503 (9 months old) from registry.access.redhat.com for "registry.access.redhat.com/ubi8/nodejs-18:1-71.1695741533"
Node.js 18
-----
Node.js 18 available as container is a base platform for building and running various Node.js 18 applications and frameworks. Node.js is a platform built on Chrome's JavaScript runtime for easily building fast, scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Tags: builder, nodejs, nodejs18
* An image stream tag will be created as "nodejs-18:1-71.1695741533" that will track the source image
* A Docker build using source code from https://github.com/tektutor/openshift-july-2024.git will be created
  * The resulting image will be pushed to image stream tag "angular:latest"
  * Every time "nodejs-18:1-71.1695741533" changes a new build will be triggered

--> Creating resources ...
imagestream.image.openshift.io "nodejs-18" created
imagestream.image.openshift.io "angular" created
buildconfig.build.openshift.io "angular" created
deployment.apps "angular" created
service "angular" created
--> Success
Build scheduled, use 'oc logs -f buildconfig/angular' to track its progress.
Application is not exposed. You can expose services to the outside world by executing one or more of the commands below:
'oc expose service/angular'
Run 'oc status' to view your app.
jegan@tektutor.org ➤ oc logs -f buildconfig/angular
Cloning "https://github.com/tektutor/openshift-july-2024.git" ...
  Commit: d75faa22af8cda73d3be9a6d5722117b66125bc8 (Added Day4 lab exercises)
  Author: Jeganathan Swaminathan <mail2jegan@gmail.com>
  Date: Thu Jul 4 15:09:53 2024 +0530
Replaced Dockerfile FROM image registry.access.redhat.com/ubi8/nodejs-18:1-71.1695741533
Activities Terminal Jul 4 15:19
jegan@tektutor.org jegan@tektutor.org jegan@tektutor.org
jegan@tektutor.org ➤ 'oc expose service/angular'
Run 'oc status' to view your app.
jegan@tektutor.org ➤ oc logs -f buildconfig/angular
Cloning "https://github.com/tektutor/openshift-july-2024.git" ...
  Commit: d75faa22af8cda73d3be9a6d5722117b66125bc8 (Added Day4 lab exercises)
  Author: Jeganathan Swaminathan <mail2jegan@gmail.com>
  Date: Thu Jul 4 15:09:53 2024 +0530
Replaced Dockerfile FROM image registry.access.redhat.com/ubi8/nodejs-18:1-71.1695741533
time="2024-07-04T09:46:25Z" level=info msg="Not using native diff for overlay, this may cause degraded performance for building images: kernel has CONFIG_OVERLAY_FS_REDIRECT_DIR enabled"
I0704 09:46:25.405622 [    1 defaults.go:112] Defaulting to storage driver "overlay" with options [mountopt=metacopy=on].
Caching blobs under "/var/cache/blobs".
Pulling image registry.access.redhat.com/ubi8/nodejs-18@sha256:f73f1b50385b23840cc15dfd6c84560b52275046fd9b687cc16a57b...
Trying to pull registry.access.redhat.com/ubi8/nodejs-18@sha256:f73f1b50385b23840cc15dfd6c84560b52275046fd9b687cc16a57b...
Getting image source signatures
Copying blob sha256:d3d24615d38ddbddea85be1040d50e0fcfa768908e2cea889d721ea7d520a6dad
Copying blob sha256:36270d048bc746f67dd912ba6fff18894c44b04ada5631ed834bf9f38ee909dc
Copying blob sha256:1d359a4146e4fec6c81a3025174d73437ac8fa1018f8d60735b0859b0959980d
Copying config sha256:4cec5030f8310b588b6c4fe4cb14e9278a1e46f3dc072af1cc466dd8db8f7341
Writing manifest to image destination
Adding transient rw bind mount for /run/secrets/rhsm
STEP 1/10: FROM registry.access.redhat.com/ubi8/nodejs-18@sha256:f73f1b50385b23840cc15dfd6c84560b52275046fd9b687cc16a57b
STEP 2/10: WORKDIR /project
--> a7elf7927e90
STEP 3/10: COPY --chown=1001:1001 package.json package-lock.json ./
--> 2d40352d6e4d
STEP 4/10: RUN npm ci
npm WARN deprecated w3c-hr-time@1.0.2: Use your platform's native performance.now() and performance.timeOrigin.
npm WARN deprecated @wessberg/ts-evaluator@0.0.27: this package has been renamed to ts-evaluator. Please install ts-evaluator instead
npm WARN deprecated @babel/plugin-proposal-unicode-property-regex@7.18.6: This proposal has been merged to the ECMAScript standard and thus this plugin is no longer maintained. Please use @babel/plugin-transform-unicode-property-regex instead.
npm WARN deprecated @babel/plugin-proposal-async-generator-functions@7.20.7: This proposal has been merged to the ECMAScript standard and thus this plugin is no longer maintained. Please use @babel/plugin-transform-async-generator-functions instead.
added 0 packages, and audited 0 packages in 16s

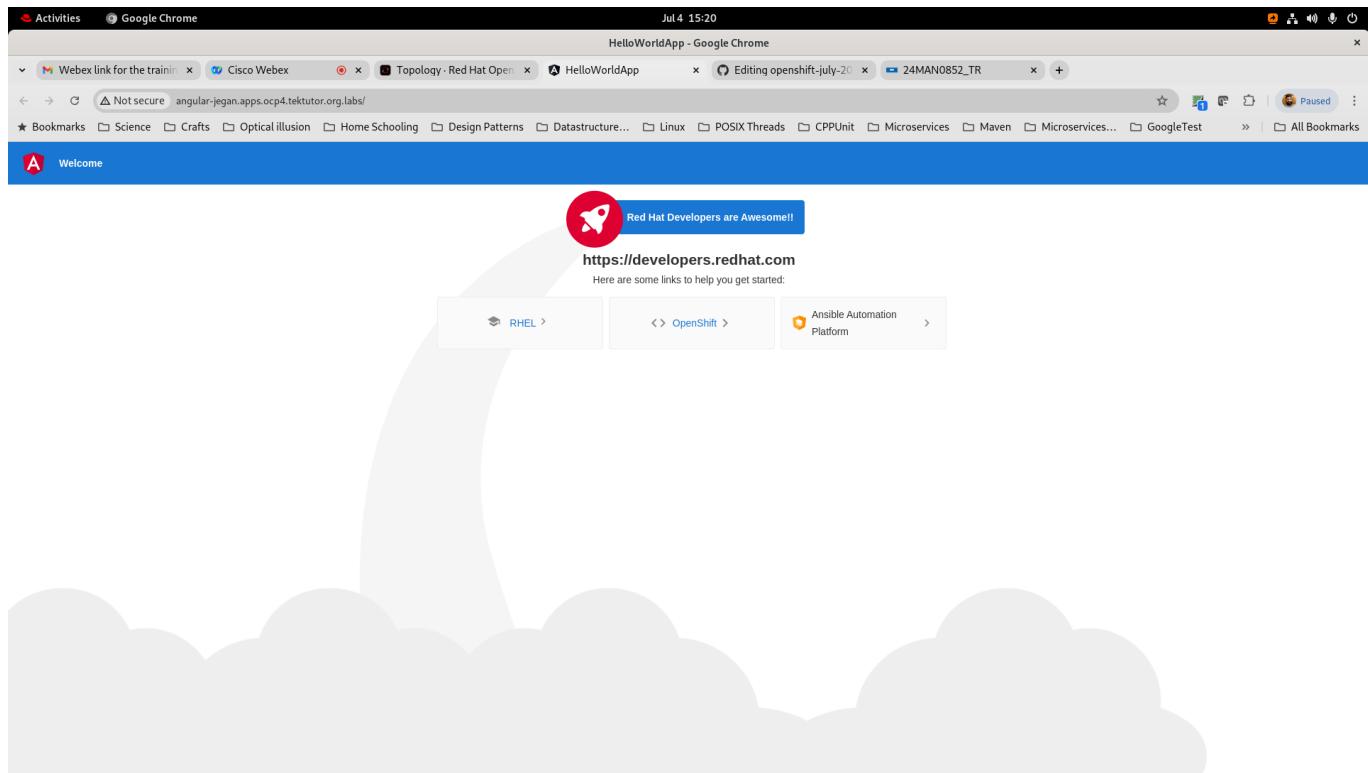
```

```

Activities Terminal Jul 4 15:19
jegan@tektutor.org jegan@tektutor.org jegan@tektutor.org
STEP 6/10: VOLUME ["/project/.angular"]
--> b2569a844a5b
STEP 7/10: EXPOSE 8080
--> 3030c4698364
STEP 8/10: CMD ["npm","start"]
--> 0118ccff345f
STEP 9/10: ENV "OPENSHIFT_BUILD_NAME"="angular-1" "OPENSHIFT_BUILD_NAMESPACE"="jegan" "OPENSHIFT_BUILD_SOURCE"="https://github.com/tektutor/openshift-july-2024.git" "OPENSHIFT_BUILD_COMMIT"="d75faa22af8cd73d3be9a6d5722117b66125bc8"
--> c0cc9de75a10
STEP 10/10: LABEL "io.openshift.build.commit.author"="Jeganathan Swaminathan <mail2jegan@gmail.com>" "io.openshift.build.commit.date"="Thu Jul 4 15:09:53 2024 +0530" "io.openshift.build.commit.id"="d75faa22af8cd73d3be9a6d5722117b66125bc8" "io.openshift.build.commit.message"="Added Day4 lab exercises" "io.openshift.build.commit.ref"="main" "io.openshift.build.name"="angular-1" "io.openshift.build.namespace"="jegan" "io.openshift.build.source-context-dir"="Day4/angular/Angular-openshift-example" "io.openshift.build.source-location"="https://github.com/tektutor/openshift-july-2024.git"
COMMIT temp.builder.openshift.io/jegan/angular-1:79d06f39
--> 5bc5067bd1b8fc989dcc8c4c1aa3c492b42f170c20ca2ef40c5b09ff77e2725
Successfully tagged temp.builder.openshift.io/jegan/angular-1:79d06f39
5bc5067bd1b8fc989dcc8c4c1aa3c492b42f170c20ca2ef40c5b09ff77e2725
Pushing image image-registry.openshift-image-registry.svc:5000/jegan/angular:latest ...
Getting image source signatures
Copying blob sha256:36270d048bc746f67dd912ba[...]
Copying blob sha256:d3d24615d38ddbde[...]
Copying blob sha256:99ca55ea60d8942d0a0dc4713d2e[...]
Copying blob sha256:47de9d2bddc6d0654d96757fc[...]
Copying blob sha256:280ae[...]
Copying blob sha256:1d359a4146e4fec6c81a3025174d73437ac8fa[...]
Copying config sha256:5bc5067bd1b8fc989dcc8c4c1aa3c492b42f170c20ca2ef40c5b09ff77e2725
Writing manifest to image destination
Successfully pushed image-registry.openshift-image-registry.svc:5000/jegan/angular@sha256:db71f5b89b711646ad95fc81b5eccaa9015d020289d826
a1a685fd6c26fad46
Push successful
jegan@tektutor.org ➔ oc expose service/angular
route/angular exposed
jegan@tektutor.org ➔ oc expose service/angular

```

The screenshot shows the Red Hat OpenShift web interface. The left sidebar has 'Topology' selected. The main area displays a single pod named 'angular' represented by a circular icon with a red 'C' symbol. Below the icon is a blue button labeled 'D angular'. The top navigation bar shows the URL as https://console-openshift-console.apps.ocp4.tektutor.org.labs/topology/ns/jegan?view=graph.



## Lab - Creating an edge route

```
oc delete project jegan  
oc new-project jegan  
oc new-app --name=hello --image=tektutor/spring-ms:1.0 --replicas=3
```

Find your base domain of your openshift cluster

```
oc get ingresses.config/cluster -o jsonpath={.spec.domain}
```

We need to create a private key with openssl

```
openssl genrsa -out key.key
```

We need to create a public key using the private key with your openshift cluster domain

```
openssl req -new -key key.key -out csr.csr -subj="/CN=hello-  
jegan.apps.ocp4.tektutor.org.labs"
```

We need to sign the public key using the private key and generate a certificate(.crt)

```
openssl x509 -req -in csr.csr --signkey key.key -out crt.crt  
oc create route edge --service hello --hostname hello-  
jegan.apps.ocp4.tektutor.org.labs --key key.key --cert crt.crt
```

In the above command, the hello-jegan.apps.ocp4.tektutor.org.labs format is

hello - is the service name  
jegan - is the project name  
apps.ocp4.tektutor.org.labs - is the base domain of openshift cluster

## List your route

```
oc get route  
curl -k https://hello-jegan.apps.ocp4.tektutor.org.labs
```

## Expected output

```
Activities Terminal Jul 4 16:56
jegan@tektutor.org
angular cronjob hello-microservice helm job README.md statefulset
jegan@tektutor.org > ~/openshift-july-2024/Day4/ | main mkdir edge-route
jegan@tektutor.org > ~/openshift-july-2024/Day4/ | main cd edge-route
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main ls
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main oc get ingresses.config/cluster -o jsonpath={{.spec.domain}}
error: error parsing jsonpath {{.spec.domain}}_ unrecognized character in action: U+007B '{'
x jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main oc get ingresses.config/cluster -o jsonpath={.spec.domain}

apps.ocp4.tektutor.org.labs:
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main oc get deploy
NAME READY UP-TO-DATE AVAILABLE AGE
hello 3/3 3 3 31m
mysql 1/1 1 1 29m
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main oc get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
hello ClusterIP 172.30.250.46 <none> 8080/TCP 30m
mysql ClusterIP 172.30.231.232 <none> 3306/TCP 25m
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main # Generate private key
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main openssl genrsa -out key.key
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main ls -l
total 4
-rw----- 1 jegan jegan 1704 Jul 4 16:49 key.key
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main openssl req -new -key key.key -out csr.csr -subj="/CN=hello-jegan
apps.ocp4.tektutor.org.labs"
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main ls
csr.csr key.key
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main openssl x509 -req -in csr.csr -signkey key.key -out crt.crt
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main ls -l
total 12
-rw-r--r-- 1 jegan jegan 1070 Jul 4 16:51 crt.crt
-rw-r--r-- 1 jegan jegan 932 Jul 4 16:50 csr.csr
-rw----- 1 jegan jegan 1704 Jul 4 16:49 key.key
jegan@tektutor.org > ~/openshift-july-2024/Day4/edge-route | main oc create route edge --service hello --hostname hello-jegan.apps.
ocp4.tektutor.org.labs --key key.key --cert crt.crt
Error from server (AlreadyExists): routes.route.openshift_in "hello" already exists
```

```

Activities Terminal Jul 4 16:57
jegan@tektutor.org
jegan@tektutor.org
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main oc get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
hello ClusterIP 172.30.250.46 <none> 8080/TCP 30m
mysql ClusterIP 172.30.231.232 <none> 3306/TCP 25m
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main # Generate private key
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main openssl genrsa -out key.key
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main ls -l
total 4
-rw----- 1 jegan jegan 1704 Jul 4 16:49 key.key
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main openssl req -new -key key.key -out csr.csr -subj="/CN=hello-jegan
apps.ocp4.tektutor.org.labs"
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main ls
csr.csr key.key
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main openssl x509 -req -in csr.csr -signkey key.key -out crt.crt
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main ls -l
total 12
-rw-r--r-- 1 jegan jegan 1070 Jul 4 16:51 crt.crt
-rw-r--r-- 1 jegan jegan 932 Jul 4 16:50 csr.csr
-rw----- 1 jegan jegan 1704 Jul 4 16:49 key.key
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main oc create route edge --service hello --hostname hello-jegan.apps.
ocp4.tektutor.org.labs --key key.key --cert crt.crt
Error from server (AlreadyExists): routes.route.openshift.io "hello" already exists
x jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main oc delete route/hello
route.route.openshift.io "hello" deleted
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main oc create route edge --service hello --hostname hello-jegan.apps.
ocp4.tektutor.org.labs --key key.key --cert crt.crt
route/hello created
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main oc get route
NAME HOST/PORT PATH SERVICES PORT TERMINATION WILDCARD
hello hello-jegan.apps.ocp4.tektutor.org.labs hello <all> edge None
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main curl -k https://hello-jegan.apps.ocp4.tektutor.org.labs
Hello Microservice v1.0%
jegan@tektutor.org ~ /openshift-july-2024/Day4/edge-route ⌘ main

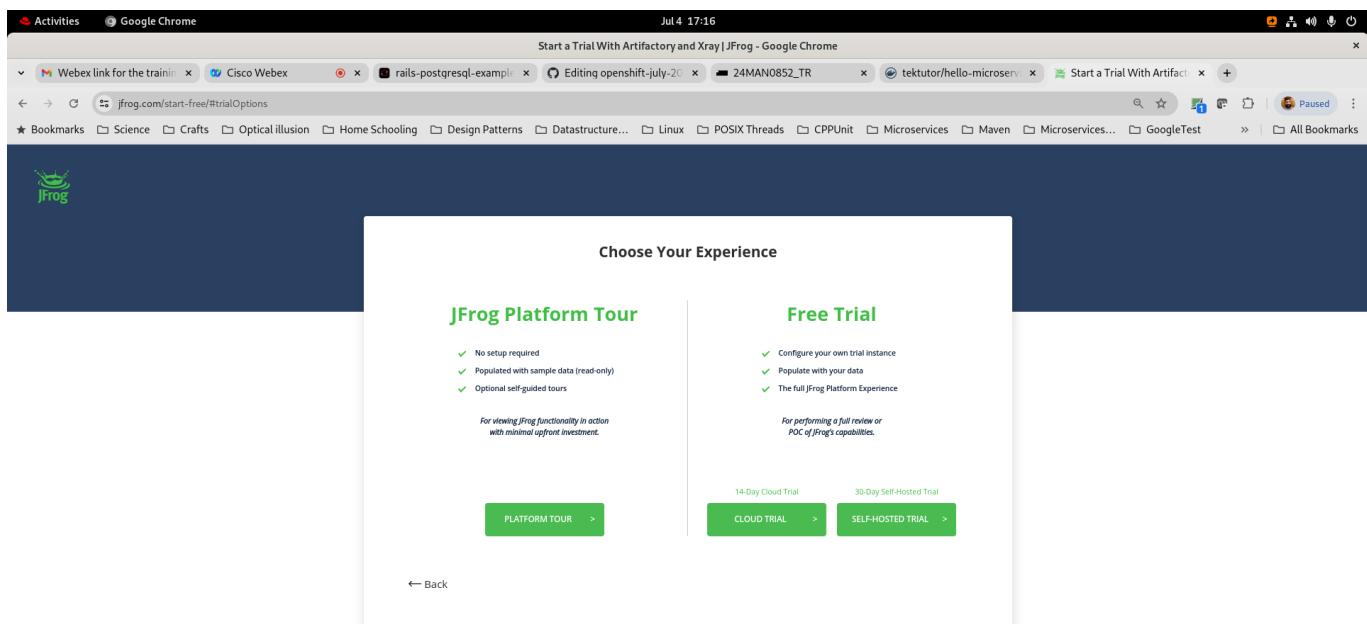
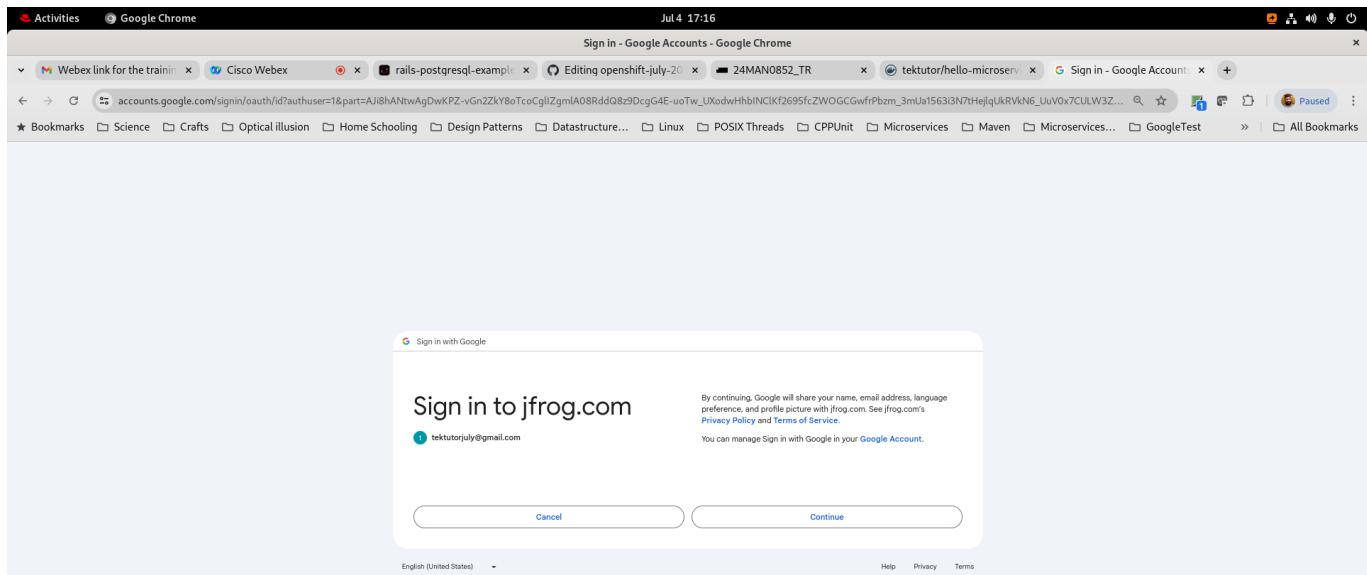
```

## Lab - Creating a JFrog Artifactory - 14 days cloud trial

You need to create a trial JFrog Artifactory (14-days Cloud Trial) @ <https://jfrog.com/start-free/#trialOptions> with your personal gmail account(No credit cards required)

By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.

[Cookies Settings](#) [Accept All Cookies](#)



The screenshot shows a Google Chrome browser window with multiple tabs open. The active tab is titled "Start a Trial With Artifactory and Xray | JFrog - Google Chrome". The page content is a form titled "Set up your JFrog Platform Environment" with a "Free 14-Day Trial" button. The form fields include:

- Company\*: A dropdown menu with "Enter your company name" selected.
- Phone: A field with "+358" and "Enter your phone number".
- Create a Hostname\*: A field with "Your company's name or another unique name".
- First Name\*: A field with "Enter your first name".
- Last Name\*: A field with "Enter your last name".
- Hosting Preferences: A section with "Select a Cloud Provider for your JFrog Environment" and three options: AWS, Google Cloud, and Microsoft Azure. The AWS option is highlighted.
- Cloud Region\*: A dropdown menu with "US East (N.Virginia)" selected.

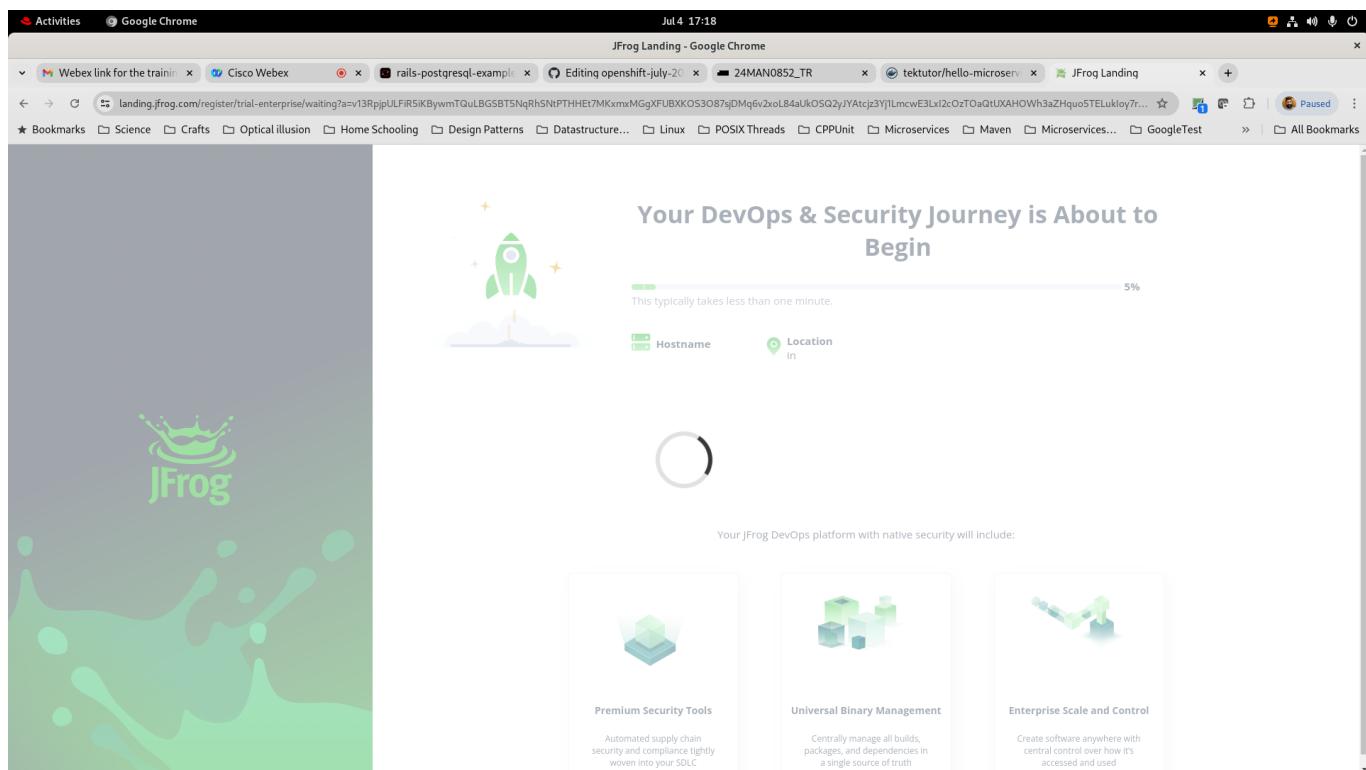
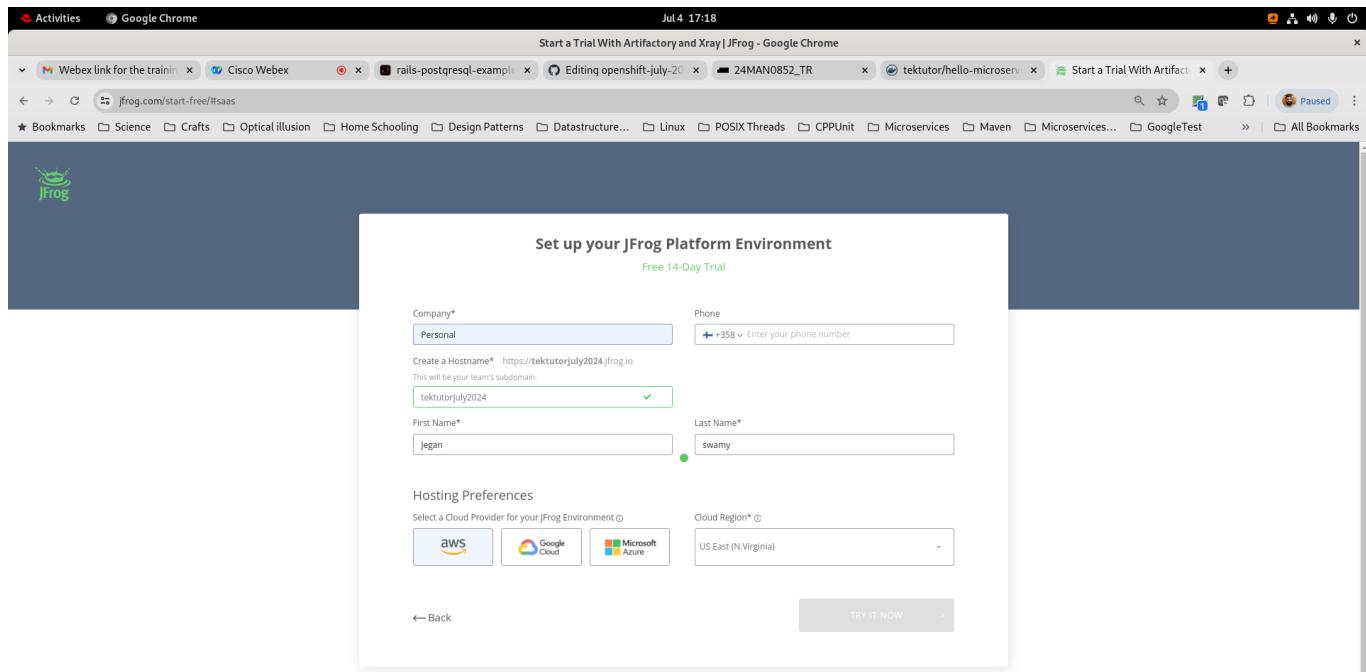
At the bottom are "TRY IT NOW" and "Back" buttons.

The screenshot shows the same Google Chrome browser window with the JFrog setup page. The form fields now contain specific values:

- Company\*: "Personal" (selected from a dropdown).
- Phone: "+358" and "Enter your phone number".
- Create a Hostname\*: "https://tekutorjuly2024.jfrog.io" (highlighted with a green border).
- First Name\*: "Jegan" (highlighted with a green border).
- Last Name\*: "Swamy" (highlighted with a green border).
- Hosting Preferences: The AWS option is highlighted.
- Cloud Region\*: "US East (N.Virginia)" (selected from a dropdown).

At the bottom are "TRY IT NOW" and "Back" buttons.

You could choose AWS ( they use their own cloud account, hence no charges are applicable to us - I didn't give my mobile number )

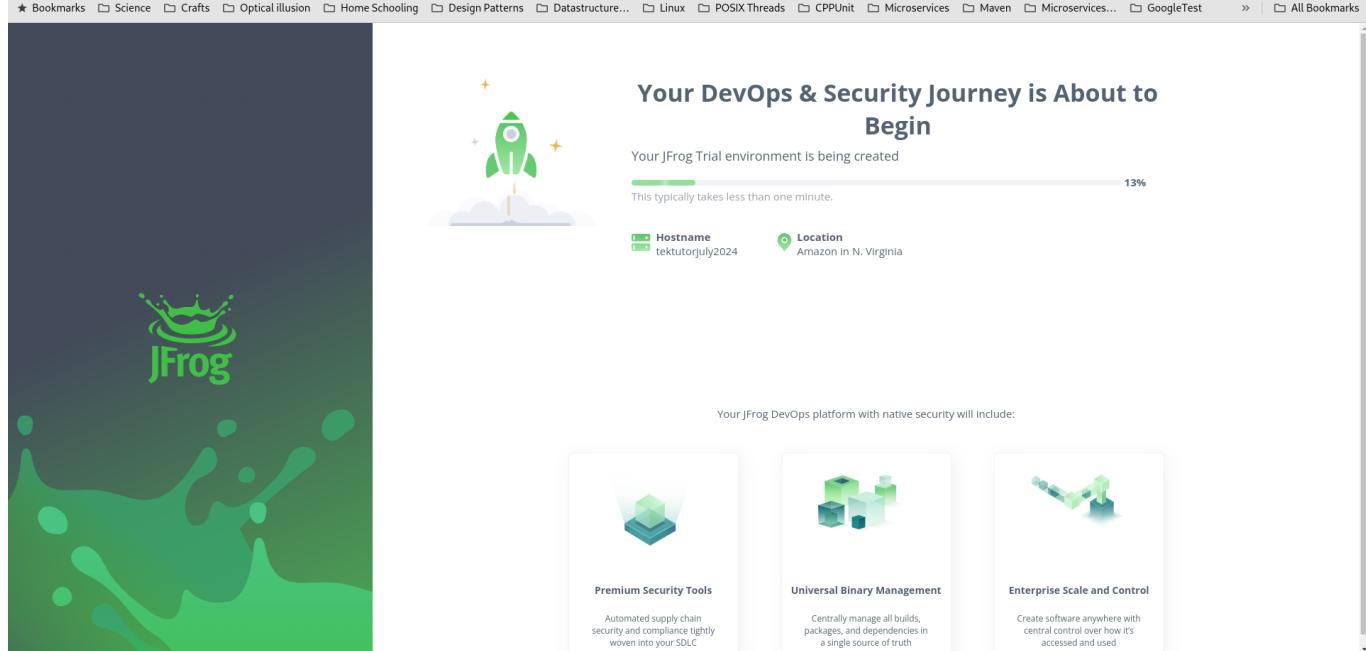


Activities Google Chrome Jul 4 17:18 JFrog Landing - Google Chrome

Webex link for the training Cisco Webex rails-postgresql-example Editing openshift-july-20 24MAN0852\_TR tekutor/hello-microservices JFrog Landing

landing.jfrog.com/register/trial-enterprise/waiting?a=v13RpjpULFir5iKBywmTQuLBGSBT5NqRhSNrPTHEt7MKxmxMggXFUBXKOS3O87gDMq6v2xoL84aUk05Q2yJYAtcJz3YJLmcwE3LxI2cOzToaQtUXAHOWh3aZHquo5TELuk... Paused All Bookmarks

★ Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks



Your DevOps & Security Journey is About to Begin

Your JFrog Trial environment is being created  
This typically takes less than one minute. 13%

Hostname: tekutorjuly2024 Location: Amazon in N. Virginia

Your JFrog DevOps platform with native security will include:

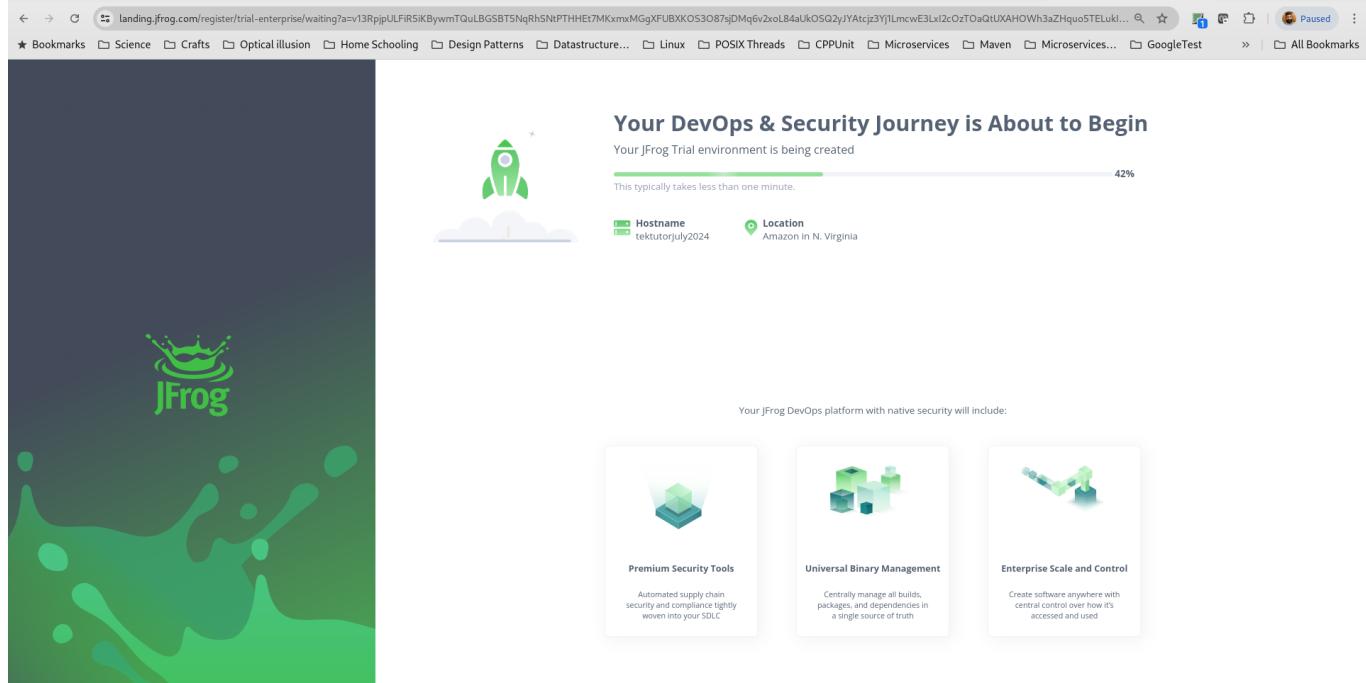
- Premium Security Tools: Automated supply chain security and compliance tightly woven into your SDLC
- Universal Binary Management: Centrally manage all builds, packages, and dependencies in a single source of truth
- Enterprise Scale and Control: Create software anywhere with central control over how it's accessed and used

Activities Google Chrome Jul 4 17:18 JFrog Landing - Google Chrome

Webex link for the training Cisco Webex rails-postgresql-example Editing openshift-july-20 24MAN0852\_TR tekutor/hello-microservices JFrog Landing

landing.jfrog.com/register/trial-enterprise/waiting?a=v13RpjpULFir5iKBywmTQuLBGSBT5NqRhSNrPTHEt7MKxmxMggXFUBXKOS3O87gDMq6v2xoL84aUk05Q2yJYAtcJz3YJLmcwE3LxI2cOzToaQtUXAHOWh3aZHquo5TELuk... Paused All Bookmarks

★ Bookmarks Science Crafts Optical illusion Home Schooling Design Patterns Datastructure... Linux POSIX Threads CPPUnit Microservices Maven Microservices... GoogleTest All Bookmarks



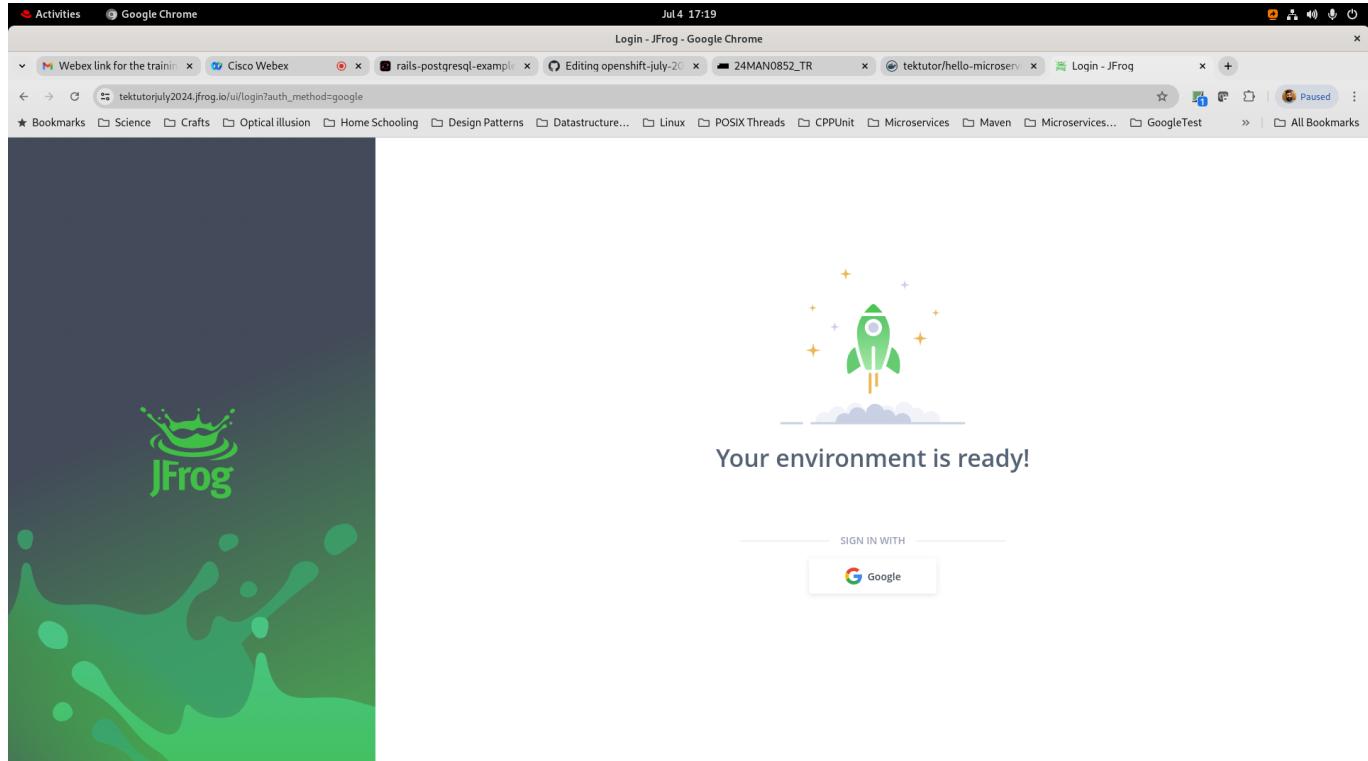
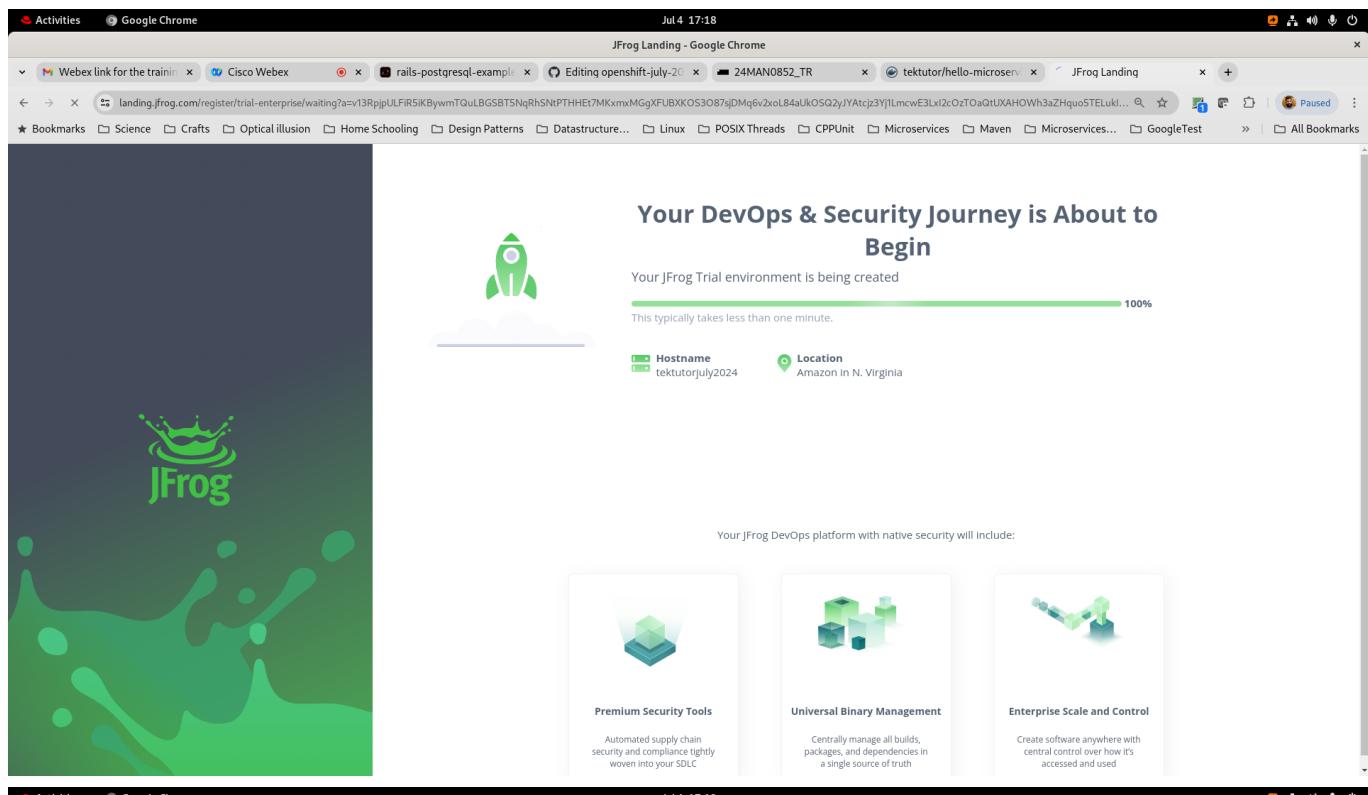
Your DevOps & Security Journey is About to Begin

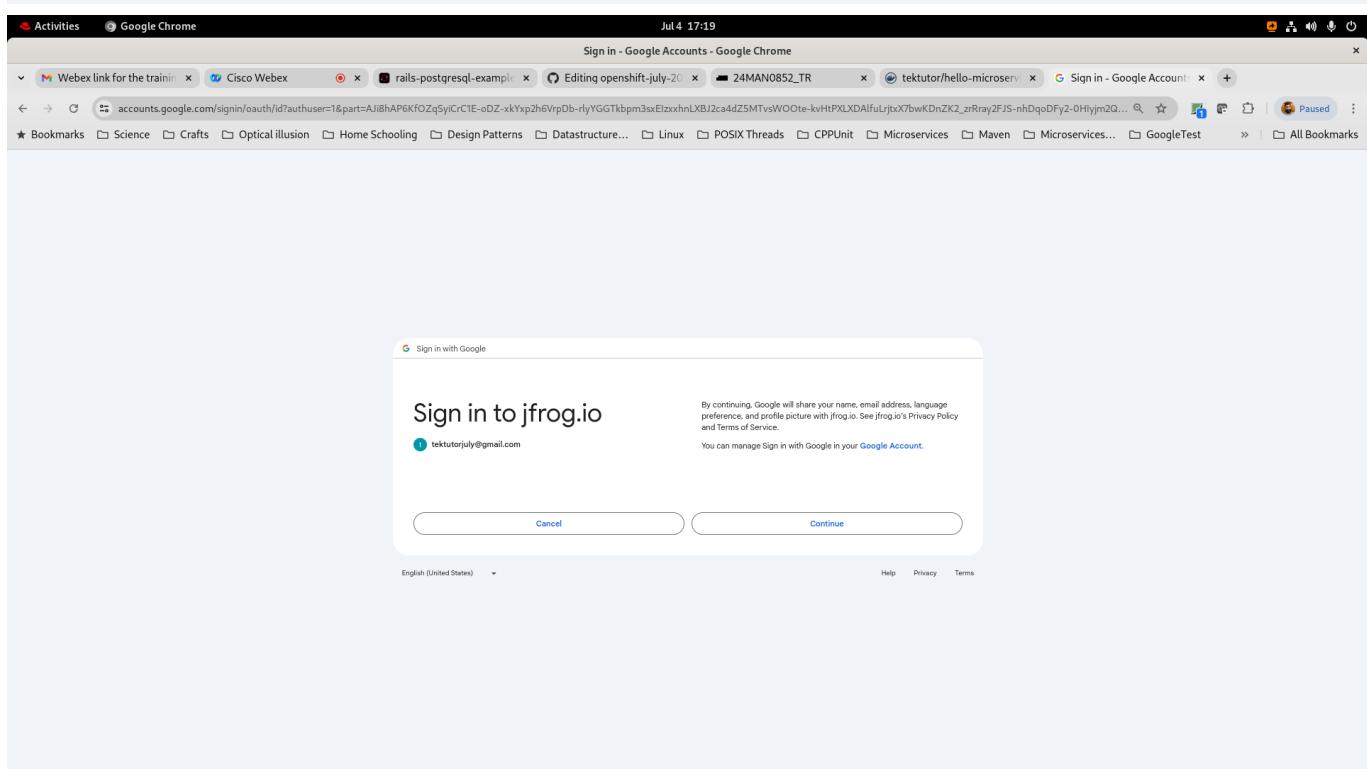
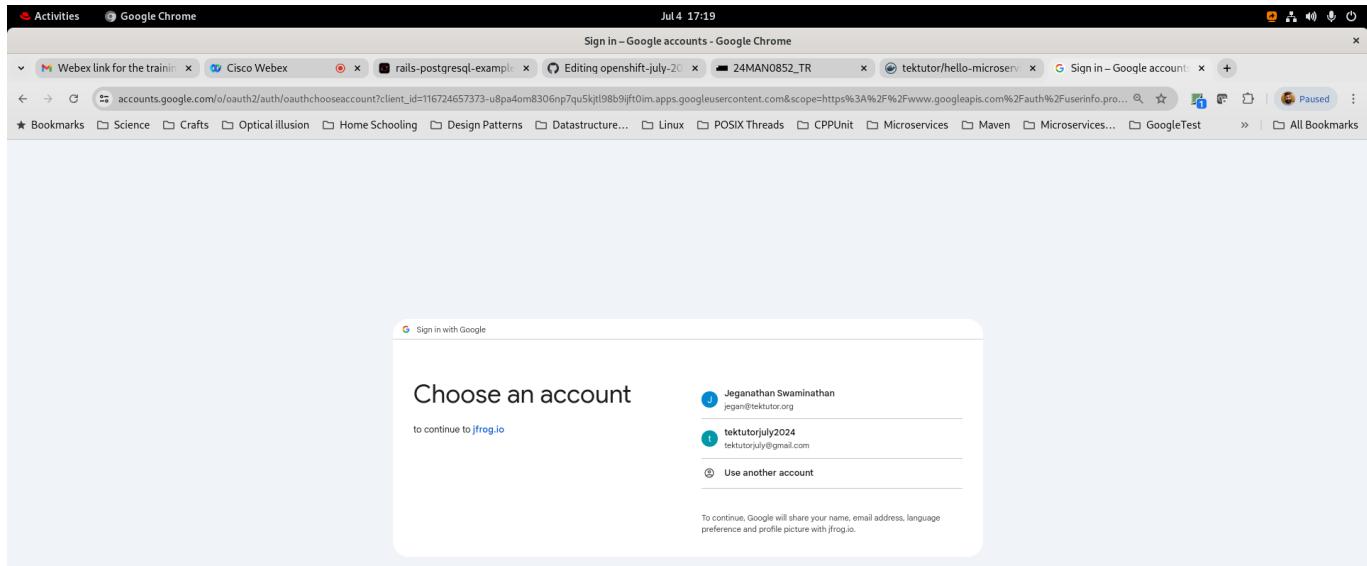
Your JFrog Trial environment is being created  
This typically takes less than one minute. 42%

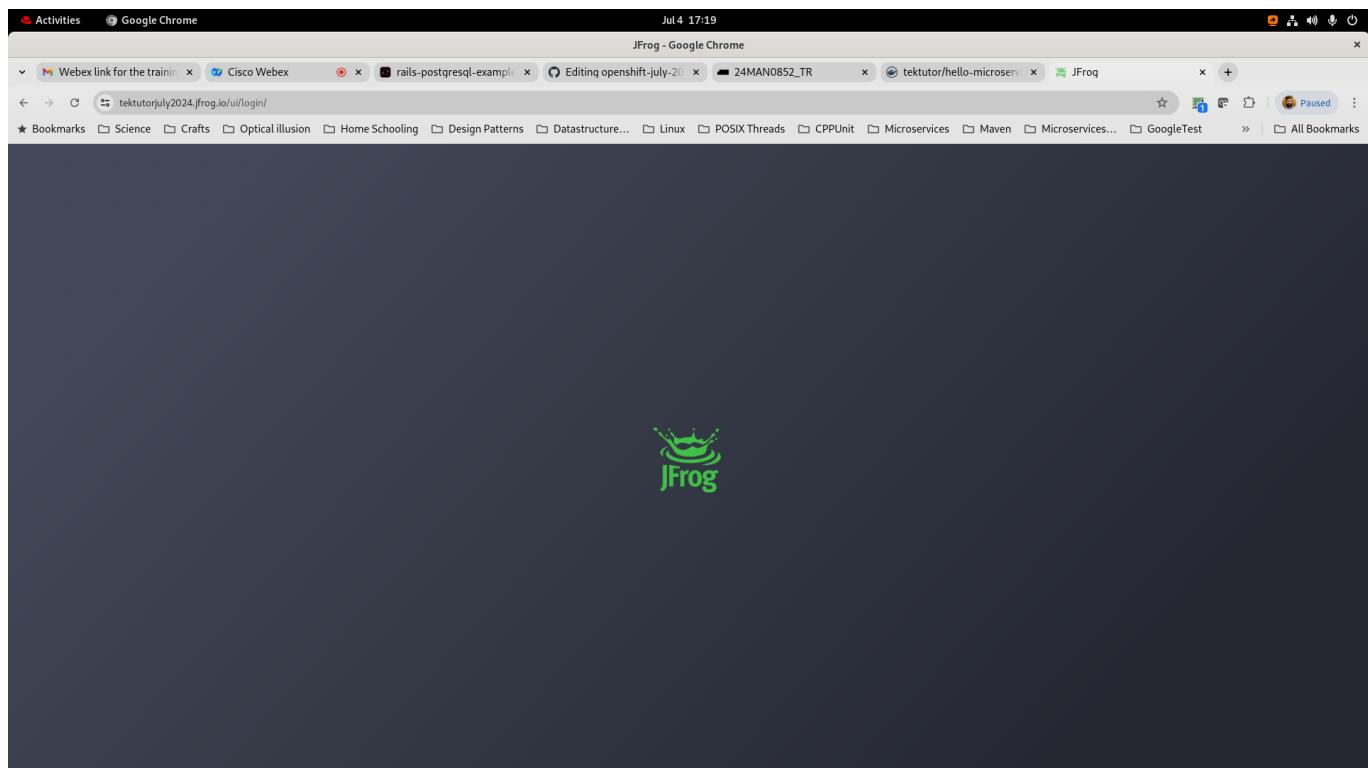
Hostname: tekutorjuly2024 Location: Amazon in N. Virginia

Your JFrog DevOps platform with native security will include:

- Premium Security Tools: Automated supply chain security and compliance tightly woven into your SDLC
- Universal Binary Management: Centrally manage all builds, packages, and dependencies in a single source of truth
- Enterprise Scale and Control: Create software anywhere with central control over how it's accessed and used







A screenshot of the JFrog Platform interface. The top navigation bar includes "Activities", "Google Chrome", the date "Jul 4 17:19", and the title "JFrog - Google Chrome". The address bar shows the URL "tektutorjuly2024.jfrog.io/ui/get\_started". The main content area is titled "Get Started with JFrog" and features a sub-section "We recommend these steps to get you started". It lists two sections: "Set up your workflow" (3 steps) and "Secure your packages" (5 steps). Each step is numbered, has a brief description, a duration estimate, and a "Go" button. The sidebar on the left shows navigation links for "Get Started", "Artifactory", "Xray", "Distribution", "Pipelines", "Integrations", and "MyJFrog Portal". The bottom footer includes the text "JFrog Platform", "JFrog Cloud", and "© Copyright 2024 JFrog Ltd".

## Switch to Administration Tab

The screenshot shows the JFrog Platform interface in Google Chrome. The title bar reads "JFrog - Google Chrome". The address bar shows the URL "tekutorJuly2024.jfrog.io/ui/admin/projects/list". The top navigation bar includes links for "Activities", "Google Chrome", "Cisco Webex", "rails-postgresql-example", "openshift-july-2024/Day", "24MAN0852\_TR", "tekutor/hello-microservice", and "JFrog". Below the navigation bar, there are "Bookmarks", "Science", "Crafts", "Optical illusion", "Home Schooling", "Design Patterns", "Datastructure...", "Linux", "POSIX Threads", "CPPUnit", "Microservices", "Maven", "Microservices...", "GoogleTest", and "All Bookmarks". A banner at the top says "Day 1/14 | Free Trial until Jul 18, 2024". The main menu on the left has sections for "Projects", "Environments", "Repositories", "User Management", "User Authentication", "Platform Security", "General Management", "Platform Monitoring", "Topology", "Artifactory Settings", "Xray Settings", and "Workers" (Beta). The "Administration" tab is currently selected. A modal window titled "Delegate Daily Tasks" is open, featuring a 3D train icon, a "Description" field, and a "Next" button. The main content area shows a table with columns for "Name", "Project Key", "Admins", and "Description".

This screenshot is identical to the one above, showing the JFrog Platform interface in Google Chrome. The "Administration" tab is selected. A modal window titled "Delegate Daily Tasks" is still open. The main content area displays a table with the following columns: "Name", "Project Key", "Admins", and "Description". The table is empty, with a message "No results were found" and a note "Try to change your search".

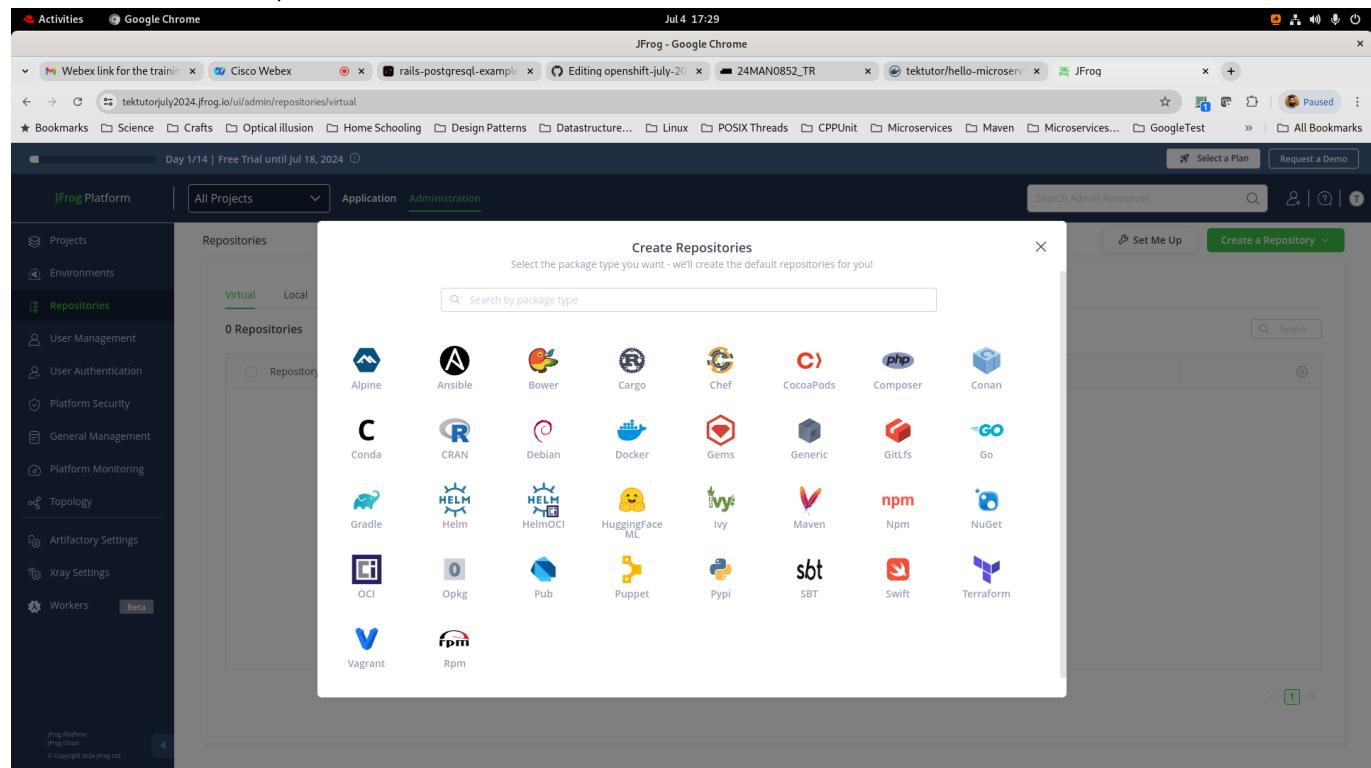
On the left side menus, select "Repositories"

The screenshot shows the JFrog Platform interface in a Google Chrome browser window. The title bar says 'JFrog - Google Chrome'. The address bar shows the URL 'tekutorjuly2024.jfrog.io/ui/admin/repositories/virtual'. The top navigation bar has tabs for 'All Projects', 'Application', and 'Administration'. The 'Administration' tab is selected. On the left, a sidebar menu includes 'Projects', 'Environments', 'Repositories' (which is selected and highlighted in green), 'User Management', 'User Authentication', 'Platform Security', 'General Management', 'Platform Monitoring', 'Topology', 'Artifactory Settings', 'Xray Settings', and 'Workers'. A 'Beta' button is also present. The main content area is titled 'Repositories' and shows a table header for '0 Repositories'. The table columns are 'Repository Key', 'Type', 'Project', 'Environment', 'Selected Repositories', 'Shared With', and 'Actions'. Below the table, a message says 'No results were found' with a sub-instruction 'Try to change your search'. At the bottom right of the main area, there are navigation icons for back, forward, and search.

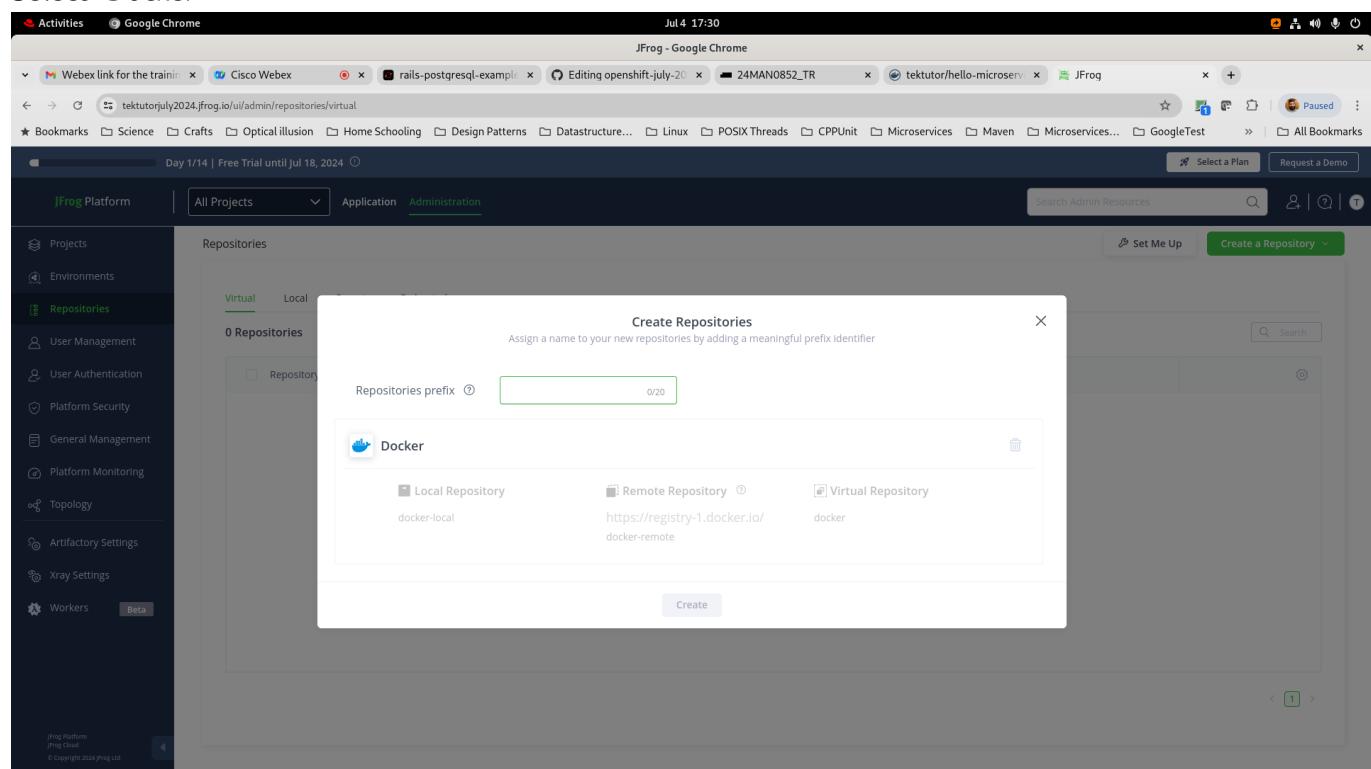
On top right corner, click "Create Repository"

This screenshot is similar to the previous one, showing the JFrog Platform interface in Google Chrome. The 'Administration' tab is selected in the top navigation bar. The left sidebar includes 'Repositories' (selected). A modal window is open on the right side, titled 'Create a Repository'. The modal has a 'Pre-Built Setup' section with a 'JFrog Best Practice' link, which is underlined. It also contains sections for 'Virtual', 'Local', 'Remote', and 'Federated' repository types, each with a brief description. The bottom right of the modal has navigation icons. The rest of the interface is identical to the first screenshot, including the sidebar and the 'No results were found' message in the main content area.

## Select "Pre-built setup"



## Select "Docker"



Type your name

The screenshot shows the JFrog Platform interface. On the left, there's a sidebar with various navigation options like Projects, Environments, and Repositories. The main area is titled 'Repositories' and shows a 'Virtual' tab selected. A modal window titled 'Create Repositories' is open, prompting the user to 'Assign a name to your new repositories by adding a meaningful prefix identifier'. In the 'Repositories prefix' input field, 'jegan' is typed. Below this, there are three options: 'Local Repository' (selected), 'Remote Repository', and 'Virtual Repository'. Under 'Local Repository', there are two entries: 'jegan-docker-local' and 'jegan-docker-remote'. At the bottom of the modal is a green 'Create' button.

Click on "Create" button

The screenshot shows the JFrog Platform interface after the 'Create' button was clicked. A success message 'Your docker Repository was Created Successfully!' is displayed. It includes the Docker Repository name 'jegan-docker' and its URL 'https://tektutorjuly2024.jfrog.io/artifactory/api/docker/jegan-docker'. Below this message, there's a note: 'Next, connect your repository to a project build or a docker client.' Two buttons are available: 'I'll Do It Later' and 'Continue'. The background shows the same 'Create Repositories' dialog from the previous step, now with a success icon and message.

## Click on "Continue" button

The screenshot shows the JFrog Platform interface. A modal window is open in the center, titled "What Would You Like To Connect To?". It contains two main sections: "CI Tool" and "Docker Client".

- CI Tool:** Shows an icon of a box with a green checkmark and a red error icon. Below it says "Integrate your CI tool with your JFrog repository." and "Estimated time - 8 min".
- Docker Client:** Shows an icon of a Docker container. Below it says "Set up your local Docker client to push and pull images to your JFrog repository." and "Estimated time - 6 min".

At the bottom right of the modal, there is a green "Next" button.

Select "Docker client", keep saving all the instructions it shows in a text file for your tomorrow's lab exercises.

The screenshot shows the JFrog Platform interface with a modal window titled "Set Up Your Docker Client".

- Step 1:** "Run this Docker command in your terminal to authenticate" with the command: `docker login -utktutorjuly@gmail.com tektutorjuly2024.jfrog.io`. There is a "Copy" button next to the command.
- Step 2:** "When asked for a password, enter your identity token" with a "Generate" button.

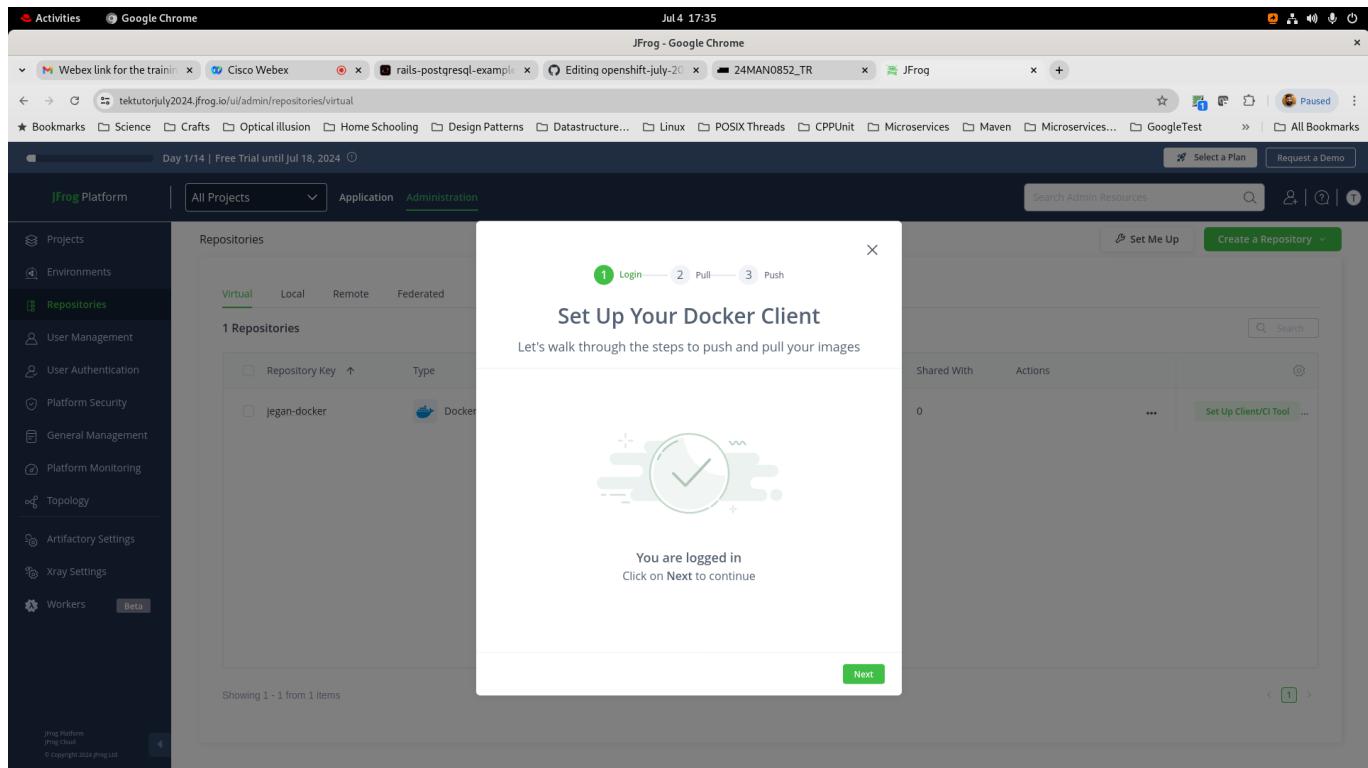
At the bottom of the modal, there is a "Waiting for your action" message and a "Next" button.

Click on "Generate", save the token generated in the text file

The screenshot shows the JFrog Platform interface with the 'Administration' tab selected. On the left, there's a sidebar with various management options like User Management, General Management, and Artifactory Settings. The main area is titled 'Repositories' and shows a 'Virtual' repository named 'jegan-docker'. A modal window titled 'Set Up Your Docker Client' provides instructions for authenticating with Docker. It includes two numbered steps: 1. Run the command 'docker login -utektutorjuly@gmail.com tektutorjuly2024.jfrog.io' and 2. Enter the identity token when prompted. Step 1 has a 'Copy' button, and step 2 has both a 'Copy' and 'Generate' button. A green 'Next' button is at the bottom right of the modal.

We need to execute the commands in the linux terminal

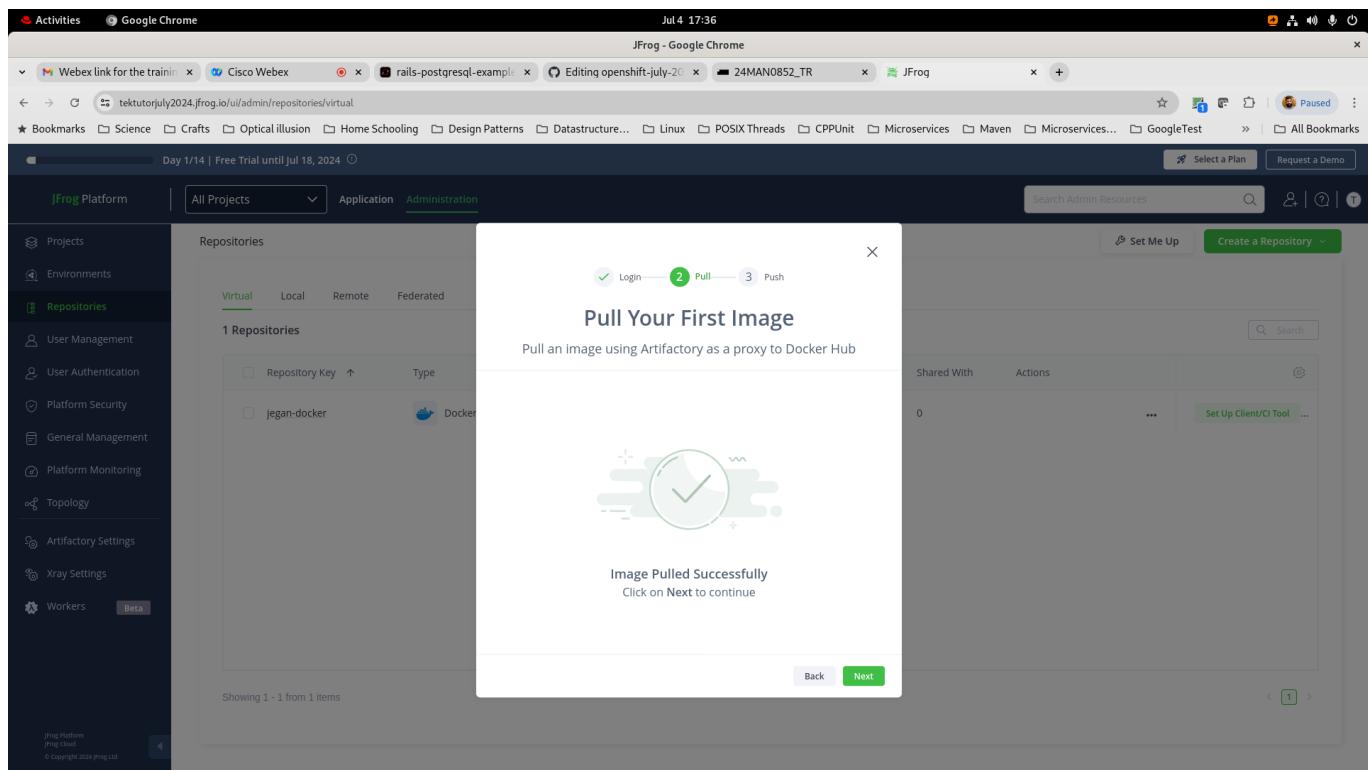
The screenshot shows a terminal window with a yellow background. The user is executing the command 'docker login -utektutorjuly@gmail.com tektutorjuly2024.jfrog.io'. The terminal displays a warning message: 'WARNING! Your password will be stored unencrypted in /home/jegan/.docker/config.json. Configure a credential helper to remove this warning. See https://docs.docker.com/engine/reference/commandline/login/#credential-stores'. After the command is run, the terminal shows 'Login Succeeded'.



Click "Next" button, copy the instruction in the text file and execute the command in the terminal

```
jegan@tektutor.org ➤ docker login -u jegan@tektutor.org tektutorjuly2024.jfrog.io
Password:
WARNING! Your password will be stored unencrypted in /home/jegan/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credential-stores

Login Succeeded
jegan@tektutor.org ➤ docker pull tektutorjuly2024.jfrog.io/jegan-docker/hello-world:latest
latest: Pulling from jegan-docker/hello-world
c1ec31eb5944: Pull complete
Digest: sha256:94323f3e5e09a8b9515d74337010375a456c909543e1ff1538f5116d38ab3989
Status: Downloaded newer image for tektutorjuly2024.jfrog.io/jegan-docker/hello-world:latest
jegan@tektutor.org ➤
```



Click "Next" button, save the instructions in the text file and execute the command shown in the screen on the terminal

**Retag and Push Your Image**

Last step: re-tag and push this Docker image

1. Tag the image

```
docker tag tektutorjuly2024.jfrog.io/jegan-docker/hello-world
tektutorjuly2024.jfrog.io/jegan-docker/hello-world:1.0.0
```

2. Push the image

```
docker push tektutorjuly2024.jfrog.io/jegan-docker/hello-
world:1.0.0
```

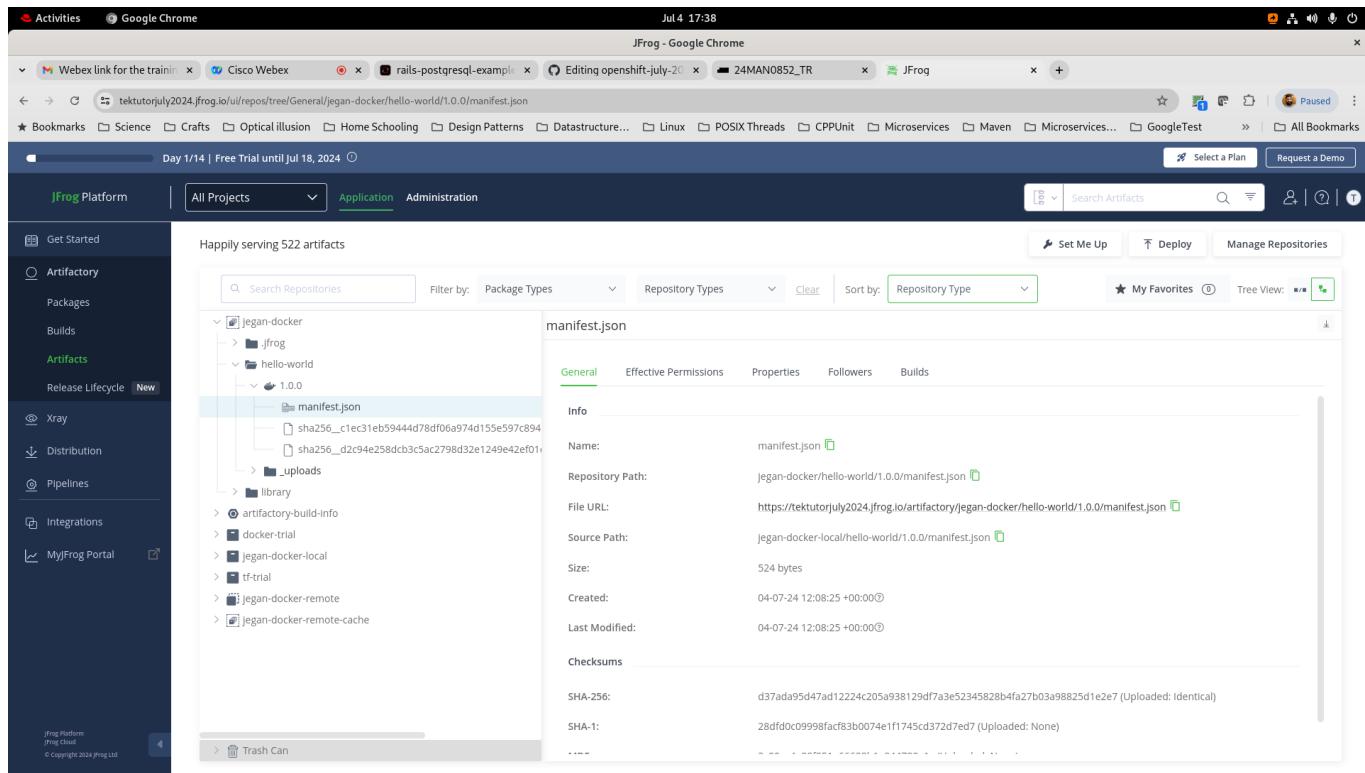
Waiting for your action

**Retag and Push Your Image**

Last step: re-tag and push this Docker image

Image Pushed Successfully  
Click 'Done' to go to your JFrog packages

Click "done" button Now you should be able to see the hello-world docker image you pushed from your local machine in the JFrog Artifactory cloud environment.



## Request - Kindly create a GitHub account for tomorrow's CI/CD Lab exercise

- If you already have a personal GitHub account, you may use your existing personal account
- If you don't have one, kindly create a personal GitHub account
- You need a Personal GitHub account for couple of reasons
  1. To fork my Training Repository into your GitHub account for your future references
  2. To perform CI/CD lab exercise tomorrow