copy files from this location :

http://content.example.com/rhexam/do280v3.9/

Main link for cluster and developer Guide :

http://content.example.com/ocp3.9/x86_64/docs/

developer guide :

http://materials/docs/html/developer_guide/

Cluster admin guide :

http://materials/docs/html/cluster_administration/

Google Drive link for openshift vieos by gopal:

https://drive.google.com/drive/folders/1_wxYT4jmbKx3gdZ6bG9yZOKmf9ZBLhib

```
 [root@master ~]#   oc projects
You have access to the following projects and can switch between them with 'oc project <projectname>':

    default
    kube-public
    kube-service-catalog
    kube-system
    logging
    management-infra
  * nginix
    openshift
    openshift-ansible-service-broker
    openshift-infra
    openshift-node
    openshift-template-service-broker
    openshift-web-console

Using project "nginix" on server "https://master.lab.example.com".
[root@master ~]#
[root@master ~]# oc get projects
NAME                                DISPLAY NAME   STATUS
default                                            Active
kube-public                                        Active
kube-service-catalog                               Active
kube-system                                        Active
logging                                            Active
management-infra                                   Active
nginix                                             Active
openshift                                          Active
openshift-ansible-service-broker                   Active
openshift-infra                                    Active
openshift-node                                     Active
openshift-template-service-broker                  Active
openshift-web-console                              Active
[root@master ~]#
[root@master ~]#

================================================================================================================
==============


  1.Authenticating Users:-
-------------------------
Enable  "HTPasswdPasswordIdentityProvider" as an identity provider method.
Ensure no other user should
Create three users
        lene
        joe
        greg
        anthony

to access oc gui and cli having password "zaldebro".
Use "HTPasswdPasswordIdentityProvider" as an identity provider method.
Ensure no other user should be allowed to access any oc projects.

User password information are stored under
/etc/origin/master/htpasswd


[root@master ~]# oc project default
Now using project "default" on server "https://master.lab.example.com".
[root@master ~]#
[root@master ~]# htpasswd -b /etc/origin/master/htpasswd greg zeldebra
Adding password for user greg
[root@master ~]#
[root@master ~]# htpasswd -b /etc/origin/master/htpasswd joe zladebra
Adding password for user joe
[root@master ~]#
[root@master ~]# htpasswd -b /etc/origin/master/htpasswd antony zaldebra
Adding password for user antony
[root@master ~]#
[root@master ~]# oc adm policy remove-cluster-role-from-group self-provisioner system:authenticated
system:authenticated:oauth
cluster role "self-provisioner" removed: ["system:authenticated" "system:authenticated:oauth"]
[root@master ~]#
[root@master ~]#
[root@master ~]# cat /etc/origin/master/htpasswd
```

```
admin:$apr1$4ZbKL26l$3eKL/6AQM8O94lRwTAu611
developer:$apr1$4ZbKL26l$3eKL/6AQM8O94lRwTAu611
greg:$apr1$ejG3tSj0$VWp/VWdvHTYq30wPxZ1bt/
joe:$apr1$4UWZMZDG$ZtX3YlTgDWsUkAKC1zSar1
antony:$apr1$ANGXSkC2$cI5tLmooTMWywGSBooCSM0
[root@master ~]#
[root@master ~]#
```

==========

2.Create a persisten Volume of "exam-registry-volume" using /OCP_registry
"exam-registry-volume" to be bound with a PVC "exam-registry-claim" for
substituting/replacing the default "docker-registry" volume.Project (Default)

Create PV an PVC with below steps.

```
[root@master ~]# cat docker-pv.yml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: exam-registry-volume
spec:
  capacity:
    storage: 5Gi
  accessModes:
  - ReadWriteMany
  nfs:
    path: /OSE_registry
    server: workstation.lab.example.com
  persistentVolumeReclaimPolicy: Recycle
  claimRef:
    name: exam-registry-claim
    namespace: default
[root@master ~]#

[root@master ~]# oc get pv
NAME                  CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
        STORAGECLASS   REASON    AGE
etcd-vol2-volume      1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                           1d
exam-registry-volume  5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                  3m
registry-volume       40Gi       RWX            Retain           Bound     default/registry-claim
                                  1d
[root@master ~]#


[root@master ~]# oc get pvc
NAME                 STATUS    VOLUME                CAPACITY   ACCESS MODES   STORAGECLASS   AGE
exam-registry-claim  Bound     exam-registry-volume  5Gi        RWX                           2m
registry-claim       Bound     registry-volume       40Gi       RWX                           1d
[root@master ~]#

[root@master ~]# oc delete pvc exam-registry-claim
persistentvolumeclaim "exam-registry-claim" deleted
[root@master ~]#

[root@master ~]# oc delete pv exam-registry-volume
persistentvolume "exam-registry-volume" deleted
[root@master ~]#

[root@master ~]# oc get pv
NAME              CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
       STORAGECLASS   REASON    AGE
etcd-vol2-volume  1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                          1d
registry-volume   40Gi       RWX            Retain           Bound     default/registry-claim
                             1d
[root@master ~]#

[root@master ~]# oc get pvc
NAME            STATUS    VOLUME           CAPACITY   ACCESS MODES   STORAGECLASS   AGE
registry-claim  Bound     registry-volume  40Gi       RWX                           1d
[root@master ~]#
[root@master ~]# oc create -f docker-pv.yml
persistentvolume "exam-registry-volume" created
[root@master ~]#

[root@master ~]# oc set volume dc/docker-registry --add --overwrite --name=exam-registry-volume -t pvc
--claim-name=exam-registry-claim --claim-mode="ReadWriteMany" --claim-size="5Gi"
persistentvolumeclaims/exam-registry-claim
info: deploymentconfigs "docker-registry" was not changed
[root@master ~]#

[root@master ~]# oc get pv
NAME                  CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
        STORAGECLASS   REASON    AGE
etcd-vol2-volume      1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                           1d
exam-registry-volume  5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                  4m
registry-volume       40Gi       RWX            Retain           Bound     default/registry-claim
                                  1d
[root@master ~]#
```

```
[root@master ~]# oc get pvc
NAME                  STATUS    VOLUME                  CAPACITY   ACCESS MODES   STORAGECLASS   AGE
exam-registry-claim   Bound     exam-registry-volume    5Gi        RWX                           14s
registry-claim        Bound     registry-volume         40Gi       RWX                           1d
[root@master ~]#
```

==========

3. Roles to users:-

Create five projects
- samples
- lobster
- dito
- tokyo
- nginx
- having a description "EX280 Project For application deployment"

accessible to only greg and anthony.

greg should have admin access over "stanley" and "sydney".
anthony should be able to view "sydney" project but should not be able to modify/customize.
anthony should have admin access over project "farm"
joe has administrative access to tokyo nad nginx

```
[root@master ~]# oc new-project sydney --description="EX280 project for application deployment"
Now using project "sydney" on server "https://master.lab.example.com".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app centos/ruby-22-centos7~https://github.com/openshift/ruby-ex.git

to build a new example application in Ruby.
[root@master ~]#
[root@master ~]#
[root@master ~]# oc new-project farm --description="EX280 project for application deployment"
Now using project "farm" on server "https://master.lab.example.com".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app centos/ruby-22-centos7~https://github.com/openshift/ruby-ex.git

to build a new example application in Ruby.
[root@master ~]#
[root@master ~]#
[root@master ~]# oc new-project tokyo --description="EX280 project for application deployment"
Now using project "tokyo" on server "https://master.lab.example.com".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app centos/ruby-22-centos7~https://github.com/openshift/ruby-ex.git

to build a new example application in Ruby.
[root@master ~]#
[root@master ~]#
[root@master ~]# oc new-project nginix --description="EX280 project for application deployment"
Error from server (AlreadyExists): project.project.openshift.io "nginix" already exists
[root@master ~]#
[root@master ~]#

[root@master ~]# oc adm policy add-role-to-user admin greg -n sydney
role "admin" added: "greg"
[root@master ~]#
[root@master ~]# oc adm policy add-role-to-user admin joe -n tokyo
role "admin" added: "joe"
[root@master ~]#
[root@master ~]# oc adm policy add-role-to-user view antony -n nginix
role "view" added: "antony"
[root@master ~]#
```

==========

4. Create a new application name greeter in project tokyo using
   - docker image registry.lab.example.com/openshift/hello-openshift
   - Application could be accessible at https://greeter.apps.lab.example.com
   - where TLS termination occurs at the router.
   - You may use following file for creating TLS certificates at the router
   - http://classroom.example.com/create-cert.sh

```
[root@master ~]# oc project
Using project "tokyo" on server "https://master.lab.example.com".
[root@master ~]#
[root@master ~]#
[root@master ~]#
[root@master ~]# oc new-app --name=hello
--docker-image=registry.lab.example.com/openshift/hello-openshift
--> Found Docker image 7af3297 (2 years old) from registry.lab.example.com for
"registry.lab.example.com/openshift/hello-openshift"
```

```
    * An image stream will be created as "hello:latest" that will track this image
    * This image will be deployed in deployment config "hello"
    * Ports 8080/tcp, 8888/tcp will be load balanced by service "hello"
      * Other containers can access this service through the hostname "hello"

--> Creating resources ...
    imagestream "hello" created
    deploymentconfig "hello" created
    service "hello" created
--> Success
    Application is not exposed. You can expose services to the outside world by executing one or more of
the commands below:
     'oc expose svc/hello'
    Run 'oc status' to view your app.
[root@master ~]#


[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/create-cert.sh
--2020-09-28 01:11:20--  http://content.example.com/rhexam/do280v3.9/create-cert.sh
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 425 [application/x-sh]
Saving to: ‘create-cert.sh’

100%[=======================================================================================================>
] 425         --.-K/s   in 0s

2020-09-28 01:11:20 (7.61 MB/s) - ‘create-cert.sh’ saved [425/425]

[root@master ~]#

[root@master ~]# chmod +x create-cert.sh
[root@master ~]#
[root@master ~]# ./create-cert.sh hello.apps.lab.example.com
Generating a private key...
Generating RSA private key, 2048 bit long modulus
............+++
.....+++
e is 65537 (0x10001)

Generating a CSR...

Generating a certificate...
Signature ok
subject=/C=US/ST=NC/L=Raleigh/O=RedHat/OU=RHT/CN=hello.apps.lab.example.com
Getting Private key

DONE.

[root@master ~]#
[root@master ~]# ll
-rw-r--r--. 1 root root      1224 Sep 28 01:13 hello.apps.lab.example.com.crt
-rw-r--r--. 1 root root      1017 Sep 28 01:13 hello.apps.lab.example.com.csr
-rw-r--r--. 1 root root      1679 Sep 28 01:13 hello.apps.lab.example.com.key
[root@master ~]#

[root@master ~]# oc get svc
NAME      TYPE        CLUSTER-IP    EXTERNAL-IP   PORT(S)             AGE
hello     ClusterIP   172.30.7.31   <none>        8080/TCP,8888/TCP   5m
[root@master ~]#
[root@master ~]# oc project
Using project "tokyo" on server "https://master.lab.example.com".
[root@master ~]#
[root@master ~]# oc create route edge --service=hello --cert=hello.apps.lab.example.com.crt
--key=hello.apps.lab.example.com.key --hostname=hello.apps.lab.example.com
route "hello" created
[root@master ~]#

[root@master ~]# oc get route
NAME      HOST/PORT                     PATH      SERVICES   PORT       TERMINATION   WILDCARD
hello     hello.apps.lab.example.com              hello      8080-tcp   edge          None
[root@master ~]#
[root@master ~]# curl -k https://hello.apps.lab.example.com
Hello OpenShift!
[root@master ~]#

================================================================================================================
===============

5. Create five replication of hello application  pod created in the tokyo project.

[root@master ~]# oc get pods
NAME            READY     STATUS    RESTARTS   AGE
hello-1-92zld   1/1       Running   0          35m
[root@master ~]#

[root@master ~]# oc project
Using project "tokyo" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# oc get dc
NAME      REVISION   DESIRED   CURRENT   TRIGGERED BY
hello     1          1         1         config,image(hello:latest)
[root@master ~]#

[root@master ~]# oc scale --replicas=5 dc hello
```

```
deploymentconfig "hello" scaled
[root@master ~]#

[root@master ~]# oc get pods
NAME            READY     STATUS    RESTARTS   AGE
hello-1-5hbrk   1/1       Running   0          6s
hello-1-92zld   1/1       Running   0          37m
hello-1-9fbz9   1/1       Running   0          6s
hello-1-m4rlv   1/1       Running   0          6s
hello-1-w8fj4   1/1       Running   0          6s
[root@master ~]#

[root@master ~]# oc edit dc hello
deploymentconfig "hello" edited
[root@master ~]#

[root@master ~]# oc get dc hello
NAME      REVISION   DESIRED   CURRENT   TRIGGERED BY
hello     1          10        10        config,image(hello:latest)
[root@master ~]#

[root@master ~]# oc get dc
NAME      REVISION   DESIRED   CURRENT   TRIGGERED BY
hello     1          10        10        config,image(hello:latest)
[root@master ~]#

[root@master ~]# oc edit dc/hello
deploymentconfig "hello" edited
[root@master ~]#

[root@master ~]# oc get dc
NAME      REVISION   DESIRED   CURRENT   TRIGGERED BY
hello     1          6         6         config,image(hello:latest)
[root@master ~]#

[root@master ~]# oc get dc hello
NAME      REVISION   DESIRED   CURRENT   TRIGGERED BY
hello     1          6         6         config,image(hello:latest)
[root@master ~]#
```

==========

Q6 . GIT

As user greg under "farm" project create an application using a git url "http://services.lab.example.com/mordor" use docker image registry.lab.example.com/rhscl/ruby-20-rhel7 . Make change in git file app.rb to replace "PLACEHOLDER" with the text available at url http://rhelx.....
Application should be accessible with "http://php.apps.lab.example.com".

```
[root@master ~]# oc project farm
Now using project "farm" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# oc new-app --docker-image=registry.lab.example.com/rhscl/php-70-rhel7
http://services.lab.example.com/version
--> Found Docker image c101534 (3 years old) from registry.lab.example.com for
"registry.lab.example.com/rhscl/php-70-rhel7"

    Apache 2.4 with PHP 7.0
    -----------------------
    PHP 7.0 available as docker container is a base platform for building and running various PHP 7.0
applications and frameworks. PHP is an HTML-embedded scripting language. PHP attempts to make it easy
for developers to write dynamically generated web pages. PHP also offers built-in database integration
for several commercial and non-commercial database management systems, so writing a database-enabled
webpage with PHP is fairly simple. The most common use of PHP coding is probably as a replacement for
CGI scripts.

    Tags: builder, php, php70, rh-php70

    * An image stream will be created as "php-70-rhel7:latest" that will track the source image
    * The source repository appears to match: php
    * A source build using source code from http://services.lab.example.com/version will be created
      * The resulting image will be pushed to image stream "version:latest"
      * Every time "php-70-rhel7:latest" changes a new build will be triggered
    * This image will be deployed in deployment config "version"
    * Port 8080/tcp will be load balanced by service "version"
      * Other containers can access this service through the hostname "version"

--> Creating resources ...
    imagestream "php-70-rhel7" created
    imagestream "version" created
    buildconfig "version" created
    deploymentconfig "version" created
    service "version" created
--> Success
    Build scheduled, use 'oc logs -f bc/version' 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 svc/version'
    Run 'oc status' to view your app.
[root@master ~]#

[root@master ~]# oc get pods
NAME              READY     STATUS      RESTARTS   AGE
```

```
version-1-build   0/1       Completed   0          7m
version-1-l6xrl   1/1       Running     0          6m
[root@master ~]#


[root@master ~]# oc get svc
NAME      TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)    AGE
version   ClusterIP   172.30.8.150   <none>        8080/TCP   7m
[root@master ~]#

[root@master ~]# curl -k https://172.30.8.150:8080
curl: (35) SSL received a record that exceeded the maximum permissible length.
[root@master ~]#

[root@master ~]# curl -k http://172.30.8.150:8080
<html>
 <head>
  <title>PHP Test</title>
 </head>
 <body>
 <p>Version v1</p>
 </body>
</html>
[root@master ~]#
[root@master ~]#

[root@master ~]# git clone http://services.lab.example.com/version
Cloning into 'version'...
remote: Counting objects: 3, done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
[root@master ~]#

[root@master ~]# ls version/
index.php
[root@master ~]#

[root@master ~]# cd  version/
[root@master version]#
[root@master version]# ll
total 4
-rw-r--r--. 1 root root 112 Sep 28 02:24 index.php
[root@master version]#

[root@master version]# git add index.php
[root@master version]#
[root@master version]# git commit -m "test"
[master 56526d7] test
 Committer: root <root@master.lab.example.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+), 1 deletion(-)
[root@master version]#
[root@master version]#
[root@master version]# git push
warning: push.default is unset; its implicit value is changing in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the current behavior after the default changes, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 5, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 291 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To http://services.lab.example.com/version
   8fe5c6a..56526d7  master -> master
[root@master version]#

[root@master version]# oc start-build version
build "version-2" started
[root@master version]#

[root@master version]# oc get bc
NAME      TYPE      FROM      LATEST
version   Source    Git       2
[root@master version]#
[root@master version]#
```

```
[root@master version]# oc get pods
NAME              READY     STATUS      RESTARTS   AGE
version-1-build   0/1       Completed   0          28m
version-2-2vl6p   1/1       Running     0          4m
version-2-build   0/1       Completed   0          4m
[root@master version]#

[root@master version]# oc get svc
NAME      TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)    AGE
version   ClusterIP   172.30.8.150   <none>        8080/TCP   29m
[root@master version]#

[root@master version]# oc get route
No resources found.
[root@master version]#

[root@master version]# oc expose svc version --hostname=php.apps.lab.example.com
route "version" exposed
[root@master version]#

[root@master version]# oc get route
NAME      HOST/PORT                  PATH      SERVICES   PORT       TERMINATION   WILDCARD
version   php.apps.lab.example.com             version    8080-tcp                 None
[root@master version]#
[root@master version]#

[root@master version]# curl -k http://php.apps.lab.example.com
<html>
 <head>
  <title>PHP Test</title>
 </head>
 <body>
 <p>Version v2</p>
 </body>
</html>
[root@master version]#
```

==========

7.Resource management:-

Create a resoure quota "ex280-quota" for defining limits for resource access
for projects in lobster project.

i. Total memory amount for max usage is 2Gi
ii. Total CPU unit for max usage is "2" kuex280-quotabernetes units
iii. Total no of pods should be limited to 13
iv. Total no services should not exceed 10
v. Total no of replication contollers should be 3

Create another resource limit file "ex280-quotalimit" for defining range
of resource access based on soft/hard limit.

i. For pods min cpu limit is "5m" and max is "500m"
ii. For containers min cpu limit is "100m" and max is "500m" and default request of "300m"
iii. For pods min memory is "300Mi" and max is "500Mi"
iv. For containers min memory is "200Mi" and max is "600Mi" and default request of "400Mi"

search with limits.cpu string from developer guide ,remove requests.cpu & requests.memory and add
services: "10" replicationcontrollers: "3"

```
[root@master ~]# oc project sydney
Now using project "sydney" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# oc get pods
No resources found.
[root@master ~]#

[root@master ~]# vi ex280-quota.yml
[root@master ~]#

[root@master ~]# cat ex280-quota.yml
apiVersion: v1
kind: ResourceQuota
metadata:
  name: ex280-quota
spec:
  hard:
    pods: "13"
    limits.cpu: "2"
    limits.memory: "2Gi"
    services: "10"
    replicationcontrollers: "3"
[root@master ~]#

[root@master ~]# oc create -f ex280-quota.yml
resourcequota "ex280-quota" created
[root@master ~]#

[root@master ~]# oc get resourcequota
NAME          AGE
ex280-quota   5m
[root@master ~]#
```

```
[root@master ~]# oc describe resourcequota ex280-quota
Name:                   ex280-quota
Namespace:              sydney
Resource                Used  Hard
--------                ----  ----
limits.cpu              0     2
limits.memory           0     2Gi
pods                    0     13
replicationcontrollers  0     3
services                0     10
[root@master ~]#

[root@master ~]# oc delete resourcequota ex280-quota
resourcequota "ex280-quota" deleted
[root@master ~]#

[root@master ~]#
[root@master ~]# oc get resourcequota
No resources found.
[root@master ~]#
```

search with limitrange copy till default request and remove the default options above default request.

```
[root@master ~]# vi ex280-quotalimit.yml

[root@master ~]# cat ex280-quotalimit.yml
apiVersion: "v1"
kind: "LimitRange"
metadata:
  name: "ex280-quotalimit"
spec:
  limits:
    - type: "Pod"
      max:
        cpu: "500m"
        memory: "500Mi"
      min:
        cpu: "5m"
        memory: "300Mi"
    - type: "Container"
      max:
        cpu: "500m"
        memory: "600Mi"
      min:
        cpu: "100m"
        memory: "200Mi"
      defaultRequest:
        cpu: "300m"
        memory: "400Mi"
[root@master ~]#

[root@master ~]# oc create -f ex280-quotalimit.yml
limitrange "ex280-quotalimit" created
[root@master ~]#


[root@master ~]# oc get limitrange
NAME              AGE
ex280-quotalimit   1m
[root@master ~]#

[root@master ~]# oc describe limitrange ex280-quotalimit
Name:       ex280-quotalimit
Namespace:  sydney
Type        Resource  Min    Max    Default Request  Default Limit  Max Limit/Request Ratio
----        --------  ---    ---    ---------------  -------------  -----------------------
Pod         memory    300Mi  500Mi  -                -              -
Pod         cpu       5m     500m   -                -              -
Container   cpu       100m   500m   300m             500m           -
Container   memory    200Mi  600Mi  400Mi            600Mi          -
[root@master ~]#

[root@master ~]# oc delete limitrange ex280-quotalimit
limitrange "ex280-quotalimit" deleted
[root@master ~]#

[root@master ~]# oc get limitrange
No resources found.
[root@master ~]#

[root@master ~]# oc create -f ex280-quotalimit.yml
limitrange "ex280-quotalimit" created
[root@master ~]#

[root@master ~]# oc get limitrange
NAME              AGE
ex280-quotalimit   4s
[root@master ~]#

[root@master ~]# oc describe limitrange ex280-quotalimit
Name:       ex280-quotalimit
Namespace:  sydney
Type        Resource  Min    Max    Default Request  Default Limit  Max Limit/Request Ratio
----        --------  ---    ---    ---------------  -------------  -----------------------
Pod         cpu       5m     500m   -                -              -
Pod         memory    300Mi  500Mi  -                -              -
Container   cpu       100m   500m   300m             500m           -
```

```
Container   memory    200Mi  600Mi  400Mi            600Mi          -
[root@master ~]#
```

==========

8.Configure Openshift Metrics subsystem in terms of (run this one workstation in classromm but in exam you have to run it in master node)
   following requirements
   a) Use the host file /root/host and yml available here

   b) Metrics subsystem data storage should
      /usr/share/ansible/openshift-ansible/playbooks/openshift-metrics/config.yml

      configured as persistent volume in nfs /OCP_metrics
      shared directory
   b) Your metrics subsystem should be created with
      follwing parameters:
      i.   openshift_metrics_image_version=v3.9
      ii. openshift_metrics_heapster_requests_memory=300M
      iii. openshift_metrics_hawkular_requests_memory=750M
      iv. openshift_metrics_cassandra_requests_memory=750M
      v.   openshift_metrics_cassandra_storage_type=pv
      vi. openshift_metrics_cassandra_pvc_prefix=metrics
      vii. openshift_metrics_cassandra_pvc_size=3Gi
      viii.openshift_metrics_install_metrics=True

in lab perform the below in workstation but in exam perform in master only

```
[root@workstation ~]# oc login -u admin -p redhat https://master.lab.example.com
The server uses a certificate signed by an unknown authority.
You can bypass the certificate check, but any data you send to the server could be intercepted by
others.
Use insecure connections? (y/n): y

Login successful.

You have access to the following projects and can switch between them with 'oc project <projectname>':

  * default
    farm
    kube-public
    kube-service-catalog
    kube-system
    logging
    management-infra
    nginix
    openshift
    openshift-ansible-service-broker
    openshift-infra
    openshift-node
    openshift-template-service-broker
    openshift-web-console
    sydney
    tokyo

Using project "default".
Welcome! See 'oc help' to get started.
[root@workstation ~]#


[root@workstation ~]# oc project openshift-infra
Now using project "openshift-infra" on server "https://master.lab.example.com".
[root@workstation ~]#

[root@workstation ~]# oc get pods
No resources found.
[root@workstation ~]#

[root@workstation ~]# cp docker-pv.yml metric-pv.yml
[root@workstation ~]#

[root@workstation ~]# vi metric-pv.yml
[root@workstation ~]#

[root@workstation ~]# cat metric-pv.yml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: cassandra-pv
spec:
  capacity:
    storage: 5Gi
  accessModes:
  - ReadWriteOnce
  nfs:
    path: /OSE_cassandra
    server: workstation.lab.example.com
  persistentVolumeReclaimPolicy: Recycle
[root@workstation ~]#

[root@workstation ~]# oc create -f metric-pv.yml
persistentvolume "cassandra-pv" created
[root@workstation ~]#

[root@workstation ~]# oc get pv
NAME                CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM
```

```
            STORAGECLASS   REASON    AGE
cassandra-pv           5Gi        RWX            Recycle          Available
openshift-infra/cassandra-1                                      12s
etcd-vol2-volume       1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                            3d
exam-registry-volume   5Gi        RWX            Recycle          Bound
default/exam-registry-claim                                      1d
mysql-pv               5Gi        RWX            Recycle          Bound       nginix/claim-mysql
                                                                 1d
registry-volume        40Gi       RWX            Retain           Bound       default/registry-claim
                                                                 3d
wp-pv                  5Gi        RWX            Recycle          Bound       nginix/claim-wp
                                                                 19h
[root@workstation ~]#


[root@workstation ~]# ansible-playbook -i /home/student/do280-ansible/inventory
/usr/share/ansible/openshift-ansible/playbooks/openshift-metrics/config.yml -e
openshift_metrics_image_version=v3.9 -e openshift_metrics_heapster_requests_memory=300M -e
openshift_metrics_hawkular_requests_memory=750M -e openshift_metrics_cassandra_requests_memory=750M -e
openshift_metrics_cassandra_storage_type=pv -e openshift_metrics_cassandra_pvc_prefix=metrics -e
openshift_metrics_cassandra_pvc_size=3Gi -e openshift_metrics_install_metrics=True -e
openshift_metrics_image_prefix=registry.lab.example.com/openshift3/ose-

[root@workstation ~]# oc get pod
NAME                         READY     STATUS              RESTARTS   AGE
hawkular-cassandra-1-2nkzz   0/1       ContainerCreating   0          24s
hawkular-metrics-zzm6f       0/1       ContainerCreating   0          22s
heapster-lsjnn               0/1       Running             0          20s
[root@workstation ~]#

[root@workstation ~]# oc get pod
NAME                         READY     STATUS    RESTARTS   AGE
hawkular-cassandra-1-2nkzz   1/1       Running   0          2m
hawkular-metrics-zzm6f       1/1       Running   0          2m
heapster-lsjnn               1/1       Running   0          2m
[root@workstation ~]#

[root@workstation ~]# oc get route
NAME              HOST/PORT                                PATH      SERVICES           PORT
TERMINATION   WILDCARD
hawkular-metrics   hawkular-metrics.apps.lab.example.com             hawkular-metrics   <all>
reencrypt     None
[root@workstation ~]#

access with : https://hawkular-metrics.apps.lab.example.com

once the site is available the answer completes.

================================================================================================================
==============
9. GOGS

[root@master ~]# oc new-project ditto
Now using project "ditto" on server "https://master.lab.example.com".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app centos/ruby-22-centos7~https://github.com/openshift/ruby-ex.git

to build a new example application in Ruby.
[root@master ~]#
[root@master ~]# oc project ditto
Already on project "ditto" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/gogs/gogs.tar
--2020-09-28 18:56:23--  http://content.example.com/rhexam/do280v3.9/gogs/gogs.tar
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 146151936 (139M) [application/x-tar]
Saving to: ‘gogs.tar’

100%[=========================================================================================================>
] 146,151,936  326MB/s   in 0.4s

2020-09-28 18:56:24 (326 MB/s) - ‘gogs.tar’ saved [146151936/146151936]

[root@master ~]#
[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/gogs/gogs-template.yaml
--2020-09-28 18:56:45--  http://content.example.com/rhexam/do280v3.9/gogs/gogs-template.yaml
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 8443 (8.2K) [text/plain]
Saving to: ‘gogs-template.yaml’

100%[=========================================================================================================>
] 8,443       --.-K/s   in 0s

2020-09-28 18:56:45 (241 MB/s) - ‘gogs-template.yaml’ saved [8443/8443]

[root@master ~]#

[root@master ~]# docker images
REPOSITORY                                                  TAG                 IMAGE ID
CREATED             SIZE
```

```
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago         281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago         1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago         489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago         283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago         209 MB
docker.io/wordpress                                        latest              4ad41adc2794        3
years ago         401 MB
registry.lab.example.com/wordpress                         latest              4ad41adc2794        3
years ago         401 MB
[root@master ~]#

[root@master ~]# docker load -i gogs.tar
16174e87921f: Loading layer [==================================================>] 4.233 MB/4.233 MB
6cc36e13264a: Loading layer [==================================================>] 1.807 MB/1.807 MB
6b6006b26466: Loading layer [==================================================>] 37.48 MB/37.48 MB
87d7296f9fb1: Loading layer [==================================================>]  2.56 kB/2.56 kB
7377f570db42: Loading layer [==================================================>] 4.705 MB/4.705 MB
7ea81c458c3c: Loading layer [==================================================>] 519.2 kB/519.2 kB
07bebd52ca78: Loading layer [==================================================>] 14.42 MB/14.42 MB
d015e682942c: Loading layer [==================================================>]  2.56 kB/2.56 kB
80b8a0812239: Loading layer [==================================================>] 49.96 MB/49.96 MB
4b8f6141cbf9: Loading layer [==================================================>] 32.97 MB/32.97 MB
c33b12996845: Loading layer [==================================================>]  2.56 kB/2.56 kB
Loaded image: gogs/gogs:latest
[root@master ~]#

[root@master ~]# docker images
REPOSITORY                                                 TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago         281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago         1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago         489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago         283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago         209 MB
gogs/gogs                                                  latest              6ab1773c26bc        2
years ago         139 MB
docker.io/wordpress                                        latest              4ad41adc2794        3
years ago         401 MB
registry.lab.example.com/wordpress                         latest              4ad41adc2794        3
years ago         401 MB
[root@master ~]#

[root@master ~]# docker tag 6ab1773c26bc registry.lab.example.com/openshift3/gogs:9.0.7
[root@master ~]#

[root@master ~]# docker images
REPOSITORY                                                 TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago         281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago         1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago         489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago         283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago         209 MB
gogs/gogs                                                  latest              6ab1773c26bc        2
years ago         139 MB
registry.lab.example.com/openshift/gogs                    9.0.7               6ab1773c26bc        2
years ago         139 MB
registry.lab.example.com/wordpress                         latest              4ad41adc2794        3
years ago         401 MB
docker.io/wordpress                                        latest              4ad41adc2794        3
years ago         401 MB
[root@master ~]#

[root@master ~]# docker push registry.lab.example.com/openshift3/gogs
The push refers to a repository [registry.lab.example.com/openshift/gogs]
c33b12996845: Pushed
4b8f6141cbf9: Pushed
80b8a0812239: Pushed
d015e682942c: Pushed
07bebd52ca78: Pushed
7ea81c458c3c: Pushed
7377f570db42: Pushed
87d7296f9fb1: Pushed
6b6006b26466: Pushed
6cc36e13264a: Pushed
16174e87921f: Pushed
9.0.7: digest: sha256:f770a8d3f5f38bd7905ec030f3e66da800c21ce6f9c91c5c48199e6ac31f3010 size: 2626
[root@master ~]#

[root@master ~]#
[root@master ~]# vi gogs-template.yaml
[root@master ~]#
```

```
change line :98 & :234 , below are the default values in lab

[root@master ~]# grep -i 9.5 gogs-template.yaml
          name: postgresql:9.5
[root@master ~]#

[root@master ~]# grep -i gogs: gogs-template.yaml
        name: registry.lab.example.com/openshift3/gogs:${GOGS_VERSION}
[root@master ~]#

only in lab

[root@master ~]# oc adm policy add-scc-to-user anyuid -z gogs
scc "anyuid" added to: ["system:serviceaccount:ditto:gogs"]
[root@master ~]#

[root@master ~]# firewall-cmd --permanent --add-port=3000/tcp
success
[root@master ~]# firewall-cmd --permanent --add-port=5432/tcp
success
[root@master ~]#
[root@master ~]# firewall-cmd --reload
success
[root@master ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: eth0
  sources:
  services: ssh dhcpv6-client
  ports: 2379/tcp 2380/tcp 443/tcp 8444/tcp 8053/tcp 8053/udp 9090/tcp 10250/tcp 80/tcp 4789/udp
3000/tcp 5432/tcp
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@master ~]#

Above only in lab

[root@master ~]# oc new-app --file=gogs-template.yaml --param=HOSTNAME=gogs.apps.lab.example.com
--param=GOGS_VERSION=9.0.7
--> Deploying template "ditto/gogs" for "gogs-template.yaml" to project ditto

     gogs
     ---------
     The Gogs git server (https://gogs.io/)

     * With parameters:
        * APPLICATION_NAME=gogs
        * HOSTNAME=gogs.apps.lab.example.com
        * Database Username=gogs
        * Database Password=gogs
        * Database Name=gogs
        * Database Admin Password=sWUkPM0J # generated
        * Maximum Database Connections=100
        * Shared Buffer Amount=12MB
        * Gogs Version=9.0.7
        * Installation lock=true
        * Skip TLS verification on webhooks=false

--> Creating resources ...
    serviceaccount "gogs" created
    service "gogs-postgresql" created
    deploymentconfig "gogs-postgresql" created
    service "gogs" created
    route "gogs" created
    deploymentconfig "gogs" created
    imagestream "gogs" created
    configmap "gogs-config" created
--> Success
    Access your application via route 'gogs.apps.lab.example.com'
    Run 'oc status' to view your app.
[root@master ~]#
[root@master ~]#

[root@master ~]# oc get pods
NAME                     READY     STATUS    RESTARTS   AGE
gogs-1-6dbtp             1/1       Running   0          37s
gogs-postgresql-1-7f4tv   1/1       Running   0          36s
[root@master ~]#

[root@master ~]# oc get svc
NAME             TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
gogs             ClusterIP   172.30.122.180   <none>        3000/TCP   1m
gogs-postgresql   ClusterIP   172.30.30.1      <none>        5432/TCP   1m
[root@master ~]#

[root@master ~]# oc get route
NAME      HOST/PORT                   PATH      SERVICES   PORT      TERMINATION   WILDCARD
gogs      gogs.apps.lab.example.com             gogs       <all>                   None
[root@master ~]#

from workstation access the above link : gogs.apps.lab.example.com

from graphical install postgresssql and register with user name and clone the url to server.
```

```
[root@master ~]# git clone http://gogs.apps.lab.example.com/joe/EX280
Cloning into 'EX280'...
warning: You appear to have cloned an empty repository.
[root@master ~]#

[root@master ~]# cd EX280/
[root@master EX280]# ll
total 0
[root@master EX280]#
[root@master EX280]# vi README.txt
[root@master EX280]#
[root@master EX280]# git add README.txt
[root@master EX280]#
[root@master EX280]# git commit -m "test"
[master (root-commit) 202f189] test
 Committer: root <root@master.lab.example.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)
 create mode 100644 README.txt
[root@master EX280]#
[root@master EX280]# git push
warning: push.default is unset; its implicit value is changing in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the current behavior after the default changes, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

No refs in common and none specified; doing nothing.
Perhaps you should specify a branch such as 'master'.
Everything up-to-date
[root@master EX280]#
[root@master EX280]# git push origin master
Counting objects: 3, done.
Writing objects: 100% (3/3), 218 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
Username for 'http://gogs.apps.lab.example.com': joe
Password for 'http://joe@gogs.apps.lab.example.com':
To http://gogs.apps.lab.example.com/joe/EX280
 * [new branch]      master -> master
[root@master EX280]#
[root@master EX280]#

[root@master EX280]# cat README.txt
Exam prep
[root@master EX280]#
```

you can see the same from graphical url of gogs

==========

10. Create a worpress site
    Using http://classroom.example.com/wordpress.tar.gz for image.
    Use wordpress-pod.yml and mysql-pod.yml
    Wordpress pod should use /OCP_wordpress for persistent volume
    Mysql pod should use /OCP_mysql for persistent volume
    Wordpress site should use persistent mysql database use OSE_mysql storagea and use
    /OCP_wordpress for hosting.

Wordpress & MYSQl Project

1. Given Files:
        -> pod-mysql.yml
        -> pod-wordpress.yml
        -> wordpress.gz
2. Applications.

   MySql
        -> PV
        -> PVC
        -> POD
        -> SVC

   Wordpress
        -> PV
        -> PVC
        -> POD
        -> SVC

```
        -> Route
        -> scc id


For MySql :
--------------

[root@master ~]# oc project
Using project "nginix" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/pod-mysql.yaml
--2020-09-29 08:30:45--  http://content.example.com/rhexam/do280v3.9/pod-mysql.yaml
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 720
Saving to: ‘pod-mysql.yaml’
100%[==========================================================================================================>
] 720         --.-K/s   in 0s

2020-09-29 08:30:45 (21.1 MB/s) - ‘pod-mysql.yaml’ saved [720/720]
[root@master ~]#

[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/pod-wordpress.yaml
--2020-09-29 08:31:07--  http://content.example.com/rhexam/do280v3.9/pod-wordpress.yaml
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 874 [text/plain]
Saving to: ‘pod-wordpress.yaml’
100%[==========================================================================================================>
] 874         --.-K/s   in 0s
2020-09-29 08:31:07 (177 MB/s) - ‘pod-wordpress.yaml’ saved [874/874]
[root@master ~]#

[root@master ~]# wget http://content.example.com/rhexam/do280v3.9/wordpress.tar.gz
--2020-09-29 08:31:27--  http://content.example.com/rhexam/do280v3.9/wordpress.tar.gz
Resolving content.example.com (content.example.com)... 172.25.254.254
Connecting to content.example.com (content.example.com)|172.25.254.254|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 163288331 (156M) [application/x-gzip]
Saving to: ‘wordpress.tar.gz’
100%[==========================================================================================================>
] 163,288,331  239MB/s   in 0.7s
2020-09-29 08:31:27 (239 MB/s) - ‘wordpress.tar.gz’ saved [163288331/163288331]
[root@master ~]#

[root@master ~]# tail -n1 pod-mysql.yaml
        claimName: claim-mysql
[root@master ~]#

[root@master ~]# tail -n1 pod-wordpress.yaml
       claimName: claim-wp
[root@master ~]#

[root@master ~]# cp docker-pv.yml mysql-pv.yml

[root@master ~]# cat mysql-pv.yml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: mysql-pv
spec:
  capacity:
    storage: 5Gi
  accessModes:
  - ReadWriteOnce
  nfs:
    path: /OSE_mysql
    server: workstation.lab.example.com
  persistentVolumeReclaimPolicy: Recycle
  claimRef:
    name: claim-mysql
    namespace: nginix
[root@master ~]#

[root@master ~]# oc create -f mysql-pv.yml
persistentvolume "mysql-pv" created
[root@master ~]#

[root@master ~]# oc get pv
NAME                    CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM
          STORAGECLASS   REASON    AGE
cassandra-pv            5Gi        RWO            Recycle          Bound       openshift-infra/metrics-1
                                    15h
etcd-vol2-volume        1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                              4d
exam-registry-volume    5Gi        RWX            Recycle          Bound
default/exam-registry-claim                                        2d
mysql-pv                5Gi        RWO            Recycle          Available   nginix/claim-mysql
                                    5s
registry-volume         40Gi       RWX            Retain           Bound       default/registry-claim
                                    4d
[root@master ~]#

[root@master ~]# cat mysql-pvc.yml
```

```
apiVersion: "v1"
kind: "PersistentVolumeClaim"
metadata:
  name: "claim-mysql"
spec:
  accessModes:
    - "ReadWriteOnce"
  resources:
    requests:
      storage: "5Gi"
  volumeName: "mysql-pv"
[root@master ~]#

[root@master ~]# oc get pvc
No resources found.
[root@master ~]#

[root@master ~]# oc create -f mysql-pvc.yml
persistentvolumeclaim "claim-mysql" created
[root@master ~]#

[root@master ~]# oc get pvc
NAME          STATUS    VOLUME     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-mysql   Pending   mysql-pv   0                                        5s
[root@master ~]#

[root@master ~]# oc get pvc
NAME          STATUS    VOLUME     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-mysql   Bound     mysql-pv   5Gi        RWO                           38s
[root@master ~]#

[root@master ~]# oc get pv
NAME                     CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
          STORAGECLASS   REASON    AGE
cassandra-pv             5Gi        RWO            Recycle          Bound     openshift-infra/metrics-1
                                      15h
etcd-vol2-volume         1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                              4d
exam-registry-volume     5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                      2d
mysql-pv                 5Gi        RWO            Recycle          Bound     nginix/claim-mysql
                                      11m
registry-volume          40Gi       RWX            Retain           Bound     default/registry-claim
                                      4d
[root@master ~]#

[root@master ~]# cat pod-mysql.yaml | grep -i image
      image: openshift/mysql-55-centos7
[root@master ~]#

[root@master ~]# oc describe is -n openshift | grep mysql
Name:                   mysql
Docker Pull Spec:       docker-registry.default.svc:5000/openshift/mysql
  tagged from registry.lab.example.com/rhscl/mysql-57-rhel7:latest
  Provides a MySQL 5.7 database on RHEL 7. For more information about using this database image,
including OpenShift considerations, see
https://github.com/sclorg/mysql-container/tree/master/5.7/README.md.
  Tags: mysql
  *
registry.lab.example.com/rhscl/mysql-57-rhel7@sha256:0a8828385c63d6a7cdb1cfcf899303357d5cbe500fa17611142
56d5966aacce3
  tagged from registry.lab.example.com/rhscl/mysql-56-rhel7:latest
  Provides a MySQL 5.6 database on RHEL 7. For more information about using this database image,
including OpenShift considerations, see
https://github.com/sclorg/mysql-container/tree/master/5.6/README.md.
  Tags: mysql
  *
registry.lab.example.com/rhscl/mysql-56-rhel7@sha256:2c5483929f95892100c2f8ff45ee405cea0ca2380ddce2cbf54
09e9c5240204f
  tagged from registry.lab.example.com/openshift3/mysql-55-rhel7:latest
  Provides a MySQL 5.5 database on RHEL 7. For more information about using this database image,
including OpenShift considerations, see
https://github.com/sclorg/mysql-container/tree/master/5.5/README.md.
  Tags: hidden, mysql
  *
registry.lab.example.com/openshift3/mysql-55-rhel7@sha256:f4d408d361fc0a8ef3db16e989fd4a2913ab5d4b722b19
46e353030b4661635c
[root@master ~]#

[root@master ~]# vim pod-mysql.yaml

[root@master ~]# cat pod-mysql.yaml | grep -i image
      image: registry.lab.example.com/rhscl/mysql-57-rhel7
[root@master ~]#

[root@master ~]# oc get pods
No resources found.
[root@master ~]#

[root@master ~]# oc create -f pod-mysql.yaml
pod "mysql" created
[root@master ~]#

[root@master ~]# oc get pods
NAME      READY     STATUS    RESTARTS   AGE
mysql     1/1       Running   0          7s
[root@master ~]#
```

```
[root@master ~]# oc get pod
NAME      READY     STATUS    RESTARTS   AGE
mysql     1/1       Running   0          11s
[root@master ~]#

[root@master ~]# oc get svc -n default
NAME               TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)                   AGE
docker-registry    ClusterIP   172.30.133.204   <none>        5000/TCP                  4d
kubernetes         ClusterIP   172.30.0.1       <none>        443/TCP,53/UDP,53/TCP     4d
registry-console   ClusterIP   172.30.78.241    <none>        9000/TCP                  4d
router             ClusterIP   172.30.116.243   <none>        80/TCP,443/TCP,1936/TCP   4d
[root@master ~]#

[root@master ~]# oc export svc docker-registry -n default > mysql-svc.yml
[root@master ~]#

[root@master ~]# vim mysql-svc.yml

After metadata remove 3 lines 3dd ,and after selector remove 8lines 8dd, under l in selector write name:
mysql.
modify name: mysql and port 3306 .

[root@master ~]# cat mysql-svc.yml
apiVersion: v1
kind: Service
metadata:
  name: mysql
spec:
  ports:
  - name: 3306-tcp
    port: 3306
    protocol: TCP
    targetPort: 3306
  selector:
    name: mysql
[root@master ~]#

[root@master ~]# oc get svc
No resources found.
[root@master ~]#

[root@master ~]# oc create -f mysql-svc.yml
service "mysql" created
[root@master ~]#

[root@master ~]# oc get svc
NAME      TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
mysql     ClusterIP   172.30.116.200   <none>        3306/TCP   7s
[root@master ~]#


[root@master ~]# oc rsh mysql
sh-4.2$
sh-4.2$
sh-4.2$ mysql -uwp_user -pwp_pass -h172.30.116.200
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.16 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| wp_db              |
+--------------------+
2 rows in set (0.00 sec)

mysql> exit
Bye
sh-4.2$
sh-4.2$ mysql -uroot -pyourpassword -h172.30.116.200
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.7.16 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
```

```
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| wp_db              |
+--------------------+
5 rows in set (0.00 sec)

mysql> exit
Bye
sh-4.2$ exit
exit

For Wordpress:
--------------

[root@master ~]# cp mysql-pv.yml wp-pv.yml
[root@master ~]# cp mysql-pvc.yml wp-pvc.yml
[root@master ~]# cp mysql-svc.yml wp-svc.yml
[root@master ~]#

[root@master ~]# tail -n1 pod-wordpress.yaml
       claimName: claim-wp
[root@master ~]#

[root@master ~]# cat wp-pv.yml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: wp-pv
spec:
  capacity:
    storage: 5Gi
  accessModes:
  - ReadWriteMany
  nfs:
    path: /OSE_wordpress
    server: workstation.lab.example.com
  persistentVolumeReclaimPolicy: Recycle
  claimRef:
    name: claim-wp
    namespace: nginix
[root@master ~]#

[root@master ~]# oc create -f wp-pv.yml
persistentvolume "wp-pv" created
[root@master ~]#

[root@master ~]# oc get pv
NAME                    CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM
            STORAGECLASS   REASON    AGE
cassandra-pv            5Gi        RWO            Recycle          Bound       openshift-infra/metrics-1
                                      17h
etcd-vol2-volume        1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                                          4d
exam-registry-volume    5Gi        RWX            Recycle          Bound
default/exam-registry-claim                                                    2d
mysql-pv                5Gi        RWO            Recycle          Bound       nginix/claim-mysql
                                      2h
registry-volume         40Gi       RWX            Retain           Bound       default/registry-claim
                                      4d
wp-pv                   5Gi        RWX            Recycle          Available   nginix/claim-wp
                                      1m
[root@master ~]#

[root@master ~]# cat wp-pvc.yml
apiVersion: "v1"
kind: "PersistentVolumeClaim"
metadata:
  name: "claim-wp"
spec:
  accessModes:
    - "ReadWriteMany"
  resources:
    requests:
      storage: "5Gi"
  volumeName: "wp-pv"
[root@master ~]#

[root@master ~]# oc create -f wp-pvc.yml
persistentvolumeclaim "claim-wp" created
[root@master ~]#

[root@master ~]# oc get pv
NAME                    CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
           STORAGECLASS   REASON    AGE
cassandra-pv            5Gi        RWO            Recycle          Bound     openshift-infra/metrics-1
                                      17h
etcd-vol2-volume        1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                                          4d
exam-registry-volume    5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                      2d
mysql-pv                5Gi        RWO            Recycle          Bound     nginix/claim-mysql
                                      2h
registry-volume         40Gi       RWX            Retain           Bound     default/registry-claim
                                      4d
wp-pv                   5Gi        RWX            Recycle          Bound     nginix/claim-wp
                                      3m
```

```
[root@master ~]#

[root@master ~]# oc get pvc
NAME          STATUS    VOLUME     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-mysql   Bound     mysql-pv   5Gi        RWO                           2h
claim-wp      Bound     wp-pv      5Gi        RWX                           16s
[root@master ~]#

[root@master ~]# docker images
REPOSITORY                                                TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago           281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago           1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago           489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago           283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago           209 MB
gogs/gogs                                                 latest              6ab1773c26bc        2
years ago           139 MB
registry.lab.example.com/openshift3/gogs                   9.0.7               6ab1773c26bc        2
years ago           139 MB
[root@master ~]#

[root@master ~]# docker load -i wordpress.tar.gz
5d6cbe0dbcf9: Loading layer [==================================================>] 129.2 MB/129.2 MB
2b6ca8b57a27: Loading layer [==================================================>] 198.9 MB/198.9 MB
0e985d879eb0: Loading layer [==================================================>] 3.584 kB/3.584 kB
6b42159d1088: Loading layer [==================================================>] 7.903 MB/7.903 MB
882b0937fe95: Loading layer [==================================================>] 10.24 kB/10.24 kB
5e34f9b1cc0a: Loading layer [==================================================>] 9.728 kB/9.728 kB
4b63183c9b32: Loading layer [==================================================>] 4.096 kB/4.096 kB
46af8a5b5036: Loading layer [==================================================>]  7.68 kB/7.68 kB
2fca9bb54085: Loading layer [==================================================>] 13.05 MB/13.05 MB
3ec73a1d44af: Loading layer [==================================================>] 4.096 kB/4.096 kB
f0f6aa2a702a: Loading layer [==================================================>] 34.06 MB/34.06 MB
929cf17e9e21: Loading layer [==================================================>] 11.26 kB/11.26 kB
d32151eaeea9: Loading layer [==================================================>] 4.608 kB/4.608 kB
a6341ce63424: Loading layer [==================================================>] 6.099 MB/6.099 MB
c95852a9eed8: Loading layer [==================================================>] 4.608 kB/4.608 kB
52213fcdf196: Loading layer [==================================================>] 7.168 kB/7.168 kB
31c9297ce6b1: Loading layer [==================================================>] 24.56 MB/24.56 MB
50d55fbb87ba: Loading layer [==================================================>] 10.24 kB/10.24 kB
Loaded image: docker.io/wordpress:latest
[root@master ~]#
[root@master ~]# docker images
REPOSITORY                                                TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago           281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago           1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago           489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago           283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago           209 MB
gogs/gogs                                                 latest              6ab1773c26bc        2
years ago           139 MB
registry.lab.example.com/openshift3/gogs                   9.0.7               6ab1773c26bc        2
years ago           139 MB
docker.io/wordpress                                       latest              4ad41adc2794        3
years ago           401 MB
[root@master ~]#
[root@master ~]# docker tag 4ad41adc2794 registry.lab.example.com/wordpress:latest
[root@master ~]#
[root@master ~]# docker images
REPOSITORY                                                TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago           281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago           1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago           489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago           283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago           209 MB
gogs/gogs                                                 latest              6ab1773c26bc        2
years ago           139 MB
registry.lab.example.com/openshift3/gogs                   9.0.7               6ab1773c26bc        2
years ago           139 MB
registry.lab.example.com/wordpress                        latest              4ad41adc2794        3
years ago           401 MB
docker.io/wordpress                                       latest              4ad41adc2794        3
years ago           401 MB
[root@master ~]#

[root@master ~]# docker push registry.lab.example.com/wordpress
The push refers to a repository [registry.lab.example.com/wordpress]
50d55fbb87ba: Layer already exists
31c9297ce6b1: Layer already exists
52213fcdf196: Layer already exists
```

```
c95852a9eed8: Layer already exists
a6341ce63424: Layer already exists
d32151eaeea9: Layer already exists
929cf17e9e21: Layer already exists
f0f6aa2a702a: Layer already exists
3ec73a1d44af: Layer already exists
2fca9bb54085: Layer already exists
46af8a5b5036: Layer already exists
4b63183c9b32: Layer already exists
5e34f9b1cc0a: Layer already exists
882b0937fe95: Layer already exists
6b42159d1088: Layer already exists
0e985d879eb0: Layer already exists
2b6ca8b57a27: Layer already exists
5d6cbe0dbcf9: Layer already exists
latest: digest: sha256:8dee0eaaeaa0cb978833728a58a58226a28414b7330d54cbede4e0294e30442b size: 4078
[root@master ~]#

[root@master ~]# oc get sa
NAME       SECRETS   AGE
builder    2         2d
default    2         2d
deployer   2         2d
[root@master ~]#

[root@master ~]# oc adm policy add-scc-to-user anyuid -z default -n nginix
scc "anyuid" added to: ["system:serviceaccount:nginix:default"]
[root@master ~]#

[root@master ~]# oc create -f pod-wordpress.yaml
pod "wordpress" created
[root@master ~]#

[root@master ~]# oc get pods
NAME        READY     STATUS    RESTARTS   AGE
mysql       1/1       Running   0          1h
wordpress   1/1       Running   0          6s
[root@master ~]#

[root@master ~]# cat wp-svc.yml
apiVersion: v1
kind: Service
metadata:
  name: wordpress
spec:
  ports:
  - name: 80-tcp
    port: 80
    protocol: TCP
    targetPort: 80
  selector:
    name: wordpress
[root@master ~]#

[root@master ~]# oc create -f wp-svc.yml
service "wordpress" created
[root@master ~]#

[root@master ~]# oc get svc
NAME        TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
mysql       ClusterIP   172.30.116.200   <none>        3306/TCP   1h
wordpress   ClusterIP   172.30.47.212    <none>        80/TCP     37s
[root@master ~]#

[root@master ~]# oc get svc
NAME        TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
mysql       ClusterIP   172.30.116.200   <none>        3306/TCP   1h
wordpress   ClusterIP   172.30.47.212    <none>        80/TCP     37s
[root@master ~]#

[root@master ~]# oc expose svc wordpress --hostname=wp.apps.lab.example.com
route "wordpress" exposed
[root@master ~]#

[root@master ~]# oc get route
NAME        HOST/PORT                 PATH      SERVICES    PORT      TERMINATION   WILDCARD
wordpress   wp.apps.lab.example.com             wordpress   80-tcp                  None
[root@master ~]#

now browse the url from workstation.
http://wp.apps.lab.example.com



Steps to delete , while deleting follow reverse order as below route,svc,pods,pvc,pv and then the
config.yml files related to wordpress and mysql.

[root@master ~]# oc project
Using project "nginix" on server "https://master.lab.example.com".
[root@master ~]#

[root@master ~]# oc get svc
NAME        TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
mysql       ClusterIP   172.30.163.33    <none>        3306/TCP   1d
wordpress   ClusterIP   172.30.164.103   <none>        80/TCP     1d
[root@master ~]#
```

```
[root@master ~]# oc get route
NAME        HOST/PORT                 PATH      SERVICES    PORT      TERMINATION   WILDCARD
wordpress   wp.apps.lab.example.com             wordpress   80-tcp                  None
[root@master ~]#

[root@master ~]# oc delete route wordpress
route "wordpress" deleted
[root@master ~]#

[root@master ~]# oc get route
No resources found.
[root@master ~]#

[root@master ~]# oc get svc
NAME        TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)    AGE
mysql       ClusterIP   172.30.163.33    <none>        3306/TCP   1d
wordpress   ClusterIP   172.30.164.103   <none>        80/TCP     1d
[root@master ~]#

[root@master ~]# oc delete svc wordpress
service "wordpress" deleted
[root@master ~]#

[root@master ~]# oc delete svc mysql
service "mysql" deleted
[root@master ~]#

[root@master ~]# oc get svc
No resources found.
[root@master ~]#

[root@master ~]# oc get pods
NAME        READY     STATUS    RESTARTS   AGE
mysql       1/1       Running   1          1d
wordpress   1/1       Running   3          1d
[root@master ~]#

[root@master ~]# oc delete pod wordpress
pod "wordpress" deleted
[root@master ~]#

[root@master ~]# oc delete pod mysql
pod "mysql" deleted
[root@master ~]#

[root@master ~]# oc get pods
No resources found.
[root@master ~]#


[root@master ~]# oc get pvc
NAME          STATUS    VOLUME     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-mysql   Bound     mysql-pv   5Gi        RWX                           2d
claim-wp      Bound     wp-pv      5Gi        RWX                           1d
[root@master ~]#

[root@master ~]# oc get pv
NAME                  CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
          STORAGECLASS   REASON    AGE
cassandra-pv          5Gi        RWO            Recycle          Bound     openshift-infra/metrics-1
                                    14h
etcd-vol2-volume      1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                                    4d
exam-registry-volume  5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                    2d
mysql-pv              5Gi        RWX            Recycle          Bound     nginix/claim-mysql
                                    2d
registry-volume       40Gi       RWX            Retain           Bound     default/registry-claim
                                    4d
wp-pv                 5Gi        RWX            Recycle          Bound     nginix/claim-wp
                                    1d
[root@master ~]#

[root@master ~]# oc delete pvc claim-wp
persistentvolumeclaim "claim-wp" deleted
[root@master ~]#

[root@master ~]# oc delete pvc claim-mysql
persistentvolumeclaim "claim-mysql" deleted
[root@master ~]#

[root@master ~]# oc get pvc
No resources found.
[root@master ~]#
[root@master ~]#

[root@master ~]# oc delete pv wp-pv
persistentvolume "wp-pv" deleted
[root@master ~]#

[root@master ~]# oc delete pv mysql-pv
persistentvolume "mysql-pv" deleted
[root@master ~]#

[root@master ~]# oc get pv
NAME                  CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS    CLAIM
          STORAGECLASS   REASON    AGE
cassandra-pv          5Gi        RWO            Recycle          Bound     openshift-infra/metrics-1
```

```
                                  14h
etcd-vol2-volume       1G         RWO            Retain           Bound
openshift-ansible-service-broker/etcd                             4d
exam-registry-volume   5Gi        RWX            Recycle          Bound     default/exam-registry-claim
                                  2d
registry-volume        40Gi       RWX            Retain           Bound     default/registry-claim
                                  4d
[root@master ~]#

[root@master ~]# oc get pods
No resources found.
[root@master ~]# oc get svc
No resources found.
[root@master ~]# oc get route
No resources found.
[root@master ~]#

[root@master ~]# rm -rf mysql-*
[root@master ~]# rm -rf wp-*
[root@master ~]# rm -rf wordpress.tar.gz
[root@master ~]# rm -rf pod-mysql.yaml
[root@master ~]# rm -rf pod-wordpress.yaml


[root@master ~]# docker images
REPOSITORY                                                TAG                 IMAGE ID
CREATED             SIZE
registry.lab.example.com/openshift3/ose-metrics-heapster   v3.9                8e0cfccc95ea        2
years ago          281 MB
registry.lab.example.com/openshift3/ose-deployer           v3.9.14             ba9779c50c5b        2
years ago          1.26 GB
registry.lab.example.com/openshift3/ose-web-console        v3.9.14             a0f5a2e23591        2
years ago          489 MB
registry.lab.example.com/openshift3/ose-service-catalog    v3.9.14             6bed82cc1eca        2
years ago          283 MB
registry.lab.example.com/openshift3/ose-pod                v3.9.14             e598d93f5abe        2
years ago          209 MB
registry.lab.example.com/openshift3/gogs                   9.0.7               6ab1773c26bc        2
years ago          139 MB
gogs/gogs                                                  latest              6ab1773c26bc        2
years ago          139 MB
docker.io/wordpress                                        latest              4ad41adc2794        3
years ago          401 MB
registry.lab.example.com/wordpress                         latest              4ad41adc2794        3
years ago          401 MB
[root@master ~]#
[root@master ~]# docker load -i wordpress.tar.gz
Loaded image: docker.io/wordpress:latest
[root@master ~]#
[root@master ~]#
[root@master ~]#
[root@master ~]# docker rmi docker.io/wordpress
Untagged: docker.io/wordpress:latest
[root@master ~]#
[root@master ~]# docker rmi registry.lab.example.com/wordpress
Untagged: registry.lab.example.com/wordpress:latest
Untagged:
registry.lab.example.com/wordpress@sha256:8dee0eaaeaa0cb978833728a58a58226a28414b7330d54cbede4e0294e3044
2b
Deleted: sha256:4ad41adc27941b1d6aa4d0729ff4fc543adec6ee0a6413bbc9f8186721b15d73
Deleted: sha256:7825608ae18a3aef97f681fcbb53b223f35fb7d198a13d8796faea4d68d50fbf
Deleted: sha256:6c4c250c45026f208328aa2a7c695e5c2fa85229e9997274dbf56a5ee0264741
Deleted: sha256:02dab78dffa620ba925a383e686195f1962aa8bcf5c848e43de5f3cc9a980816
Deleted: sha256:f77e2298fea1e0920ee0a6130468c185d9ebbcae5864814fee212f90a3bb1fc3
Deleted: sha256:b41c108d8a432119284a6ab32b8ca55349c0b3a11fcf5622f861c31aa6f7cce3
Deleted: sha256:4d3c1bba537ce0d88cc07347219e813d4c5802b32e829505ea3340abde5d7936
Deleted: sha256:8fe7b60f9978c6ba1657b0a88b33e3a744f5dbbb4ba5afdbdd4b9335733a5a0c
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[root@master ~]#
```