**MitziCom**





Engagement Journal

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# **Purpose**

The purpose of this Engagement Journal is to document the step to properly configure and install Red Hat Openshift

# **Prerequisites**

## Provisioned Environment Hosts

* Bastion host:   
  bastion.$GUID.example.opentlc.com, bastion.$GUID.internal
* Load balancer:   
  loadbalancer.$GUID.example.opentlc.com, loadbalancer1.$GUID.internal
* 3 OpenShift master nodes:   
  master{1,2,3}.$GUID.internal
* 2 OpenShift infrastructure nodes:   
  infranode{1,2}.$GUID.example.opentlc.com, infranode{1,2}.$GUID.internal
* 3 OpenShift worker nodes:  
  node{1,2,3}.$GUID.internal
* IPA Server:  
  ipa.shared.example.opentlc.com
* 3 GlusterFS servers:  
  support{1,2,3}.$GUID.internal
* Download the IPA certificate to bastion  
  As root on bastion host from the /root directory:  
  *wget* [*http://ipa.shared.example.opentlc.com/ipa/config/ca.crt -o /root/ipa-ca.crt*](http://ipa.shared.example.opentlc.com/ipa/config/ca.crt%20-o%20/root/ipa-ca.crt)

## Create Github Repository

1. Go to <https://github.com>
2. Create account
3. Create a project for code repository

# **Provisioning access to the environments**

## Share Public Key with OPENTLC

1. Go to the [OPENTLC Account Management page](https://www.opentlc.com/account/).
2. Click **Update SSH Key** and log in using your OPENTLC credentials.
3. Paste your public key in that location.

## Start environment after shut down

1. Go to the [OPENTLC lab portal](https://labs.opentlc.com/) and use your OPENTLC credentials to log in.
2. Navigate to **Services → My Services** (this should be the screen shown right after logging in).
3. In the list of your services, select your lab environment.
4. Select **App Control → Start** to start your lab environment.
5. Select **Yes** at the **Are you sure?** prompt.
6. On the bottom right, click **Submit**.

## Prepare GUID environment variable across all hosts

To make running commands specific to your environment easier, run the following ansible command to create a GUID environment variables on all hosts in your cluster that are managed by ansible.

* All GUID env variable to $HOME/.bashrc by connecting to the bastion host and executing the ad-hoc ansible command:

*Ansible localhost,all -m shell -a ‘export GUID=`hostname | cut -d”.” -f2`; echo “export GUID=$GUID” >> $HoME/.bashrc’*

# **Configure hosts for Openshift deployment**

## Preparing the ansible inventory file

The **/etc/ansible/hosts** file is Ansible’s inventory file for the playbook used to install OpenShift Container Platform. The inventory file describes the configuration for your OpenShift Container Platform cluster. You must replace the default contents of the file with your desired configuration.

To update /etc/ansible/hosts, please refer to [Appendix A](#AppendixA)

## Verify environment for deployment

Once the inventory file is configured and populated with the hosts in your cluster, verify the following:

1. Verify all hosts are running:  
   *ansible all -m*
2. Verify Docker configuration:  
   *ansible nodes -m shell -a “systemctl status docker | grep Active”*
3. Verify all node have the correct version of docker  
   *ansible nodes -m shell -a “docker version | grep Version”*
4. Verify yum repositories  
   bastion: *yum repolist*All other hosts: *ansible all -m shell -a “yum replolist”*

## Prepare environment for Highly Available

Highly available installations will include three masters, two infranodes, three worker nodes, and the load balancer that will be in front of the API servers.

**Appendix A**

Please refer to the Inventory file documentation for more information.   
<https://docs.openshift.com/container-platform/3.11/install/configuring_inventory_file.html>

Openshift Version Variables:

openshift\_image\_tag=v3.11.16

openshift\_pkg\_version=*-3.11.16*

openshift\_release=*3.11.16*

Node Groups Variables:

openshift\_node\_groups=*[{'name': 'node-config-master', 'labels': ['node-role.kubernetes.io/master=true','runtime=docker']}, {'name': 'node-config-infra', 'labels': ['node-role.kubernetes.io/infra=true','runtime=docker']}, {'name': 'node-config-glusterfs', 'labels': ['runtime=docker']}, {'name': 'node-config-compute', 'labels': ['node-role.kubernetes.io/compute=true','runtime=docker'], 'edits': [{ 'key': 'kubeletArguments.pods-per-core','value': ['20']}]}]*

Deploy Operator Lifecycle Manager Variables:

openshift\_enable\_olm=*true*

Openshift Registry Locations Variables:

oreg\_url=*registry.redhat.io/openshift3/ose-${component}:${version}*

oreg\_auth\_user=

oreg\_auth\_password=

Operator Framework Images Variables:

openshift\_additional\_registry\_credentials= *[{'host':'registry.connect.redhat.com','user':'','password':'','test\_image':'mongodb/enterprise-operator:0.3.2'}]*

openshifty\_examples\_modify\_imagestreams=*true*

Storage Variables - NFS:

#openshift\_enable\_unsupported\_configurations=

Storage Variables - Glusterfs:

openshift\_storage\_glusterfs\_namespace=*openshift-storage*

openshift\_storage\_glusterfs\_storageclass=*true*

openshift\_storage\_glusterfs\_storageclass\_default=*false*

openshift\_storage\_glusterfs\_block\_deploy=*true*

openshift\_storage\_glusterfs\_block\_host\_vol\_create=*true*

openshift\_storage\_glusterfs\_block\_host\_vol\_size=*200*

openshift\_storage\_glusterfs\_block\_storageclass=*true*

openshift\_storage\_glusterfs\_block\_storageclass\_default=*true*

openshift\_storage\_glusterfs\_image=*"registry.access.redhat.com/rhgs3/rhgs-server-rhel7:v3.10"*

openshift\_storage\_glusterfs\_block\_image=*"registry.access.redhat.com/rhgs3/rhgs-gluster-block-prov-rhel7:v3.10"*

openshift\_storage\_glusterfs\_heketi\_image="registry.access.redhat.com/rhgs3/rhgs-volmanager-rhel7:v3.10"

openshift\_storage\_glusterfs\_version=v3.10

openshift\_storage\_glusterfs\_block\_version=v3.10

openshift\_storage\_glusterfs\_s3\_version=v3.10

openshift\_storage\_glusterfs\_heketi\_version=v3.10

# openshift\_storage\_glusterfs\_registry\_version=v3.10

# openshift\_storage\_glusterfs\_registry\_block\_version=v3.10

# openshift\_storage\_glusterfs\_registry\_s3\_version=v3.10

# openshift\_storage\_glusterfs\_registry\_heketi\_version=v3.10

Openshift Master Variables:

Openshift\_master\_api\_port=443

Openshift\_master\_console\_port=443

Openshift master cluster Variables:

openshift\_master\_cluster\_hostname=loadbalancer1.$GUID.internal

openshift\_master\_cluster\_public\_hostname=loadbalancer1.$GUID.example.opentlc.com

openshift\_master\_default\_subdomain=apps.a309.example.opentlc.com

#openshift\_master\_ca\_certificate={'certfile': '/root/intermediate\_ca.crt', 'keyfile': '/root/intermediate\_ca.key'}

openshift\_master\_overwrite\_named\_certificates=true

Openshift Network Variables:

osm\_cluster\_network\_cidr=10.1.0.0/16

openshift\_portal\_net=172.30.0.0/16

Openshift Authentication Variables:

**LDAP only configuration:**  
openshift\_master\_identity\_providers=

**HTPASSWD only configuration:**  
openshift\_master\_identity\_providers=

**HTPASSWD and LDAP configurations:**  
openshift\_master\_identity\_providers=

## 

## Prometheus

openshift \_hosted\_prometheus\_deploy=

openshift\_prometheus\_namespace=

openshift\_prometheus\_node\_selector=

openshift\_cluster\_monitoring\_operator\_install=

Cluster Metric Variables:

<https://access.redhat.com/documentation/en-us/openshift_container_platform/3.7/html/installation_and_configuration/install-config-cluster-metrics>

openshift\_metrics\_cassandra\_storage\_type=dynamic

openshift\_metrics\_cassandra\_pvc\_storage\_class\_name='glusterfs-storage-block'

openshift\_metrics\_hawkular\_nodeselector= {"node-role.kubernetes.io/infra": "true"}

openshift\_metrics\_cassandra\_nodeselector= {"node-role.kubernetes.io/infra": "true"}

openshift\_metrics\_heapster\_nodeselector= {"node-role.kubernetes.io/infra": "true"}

Prometheus Quota and Limits:

openshift\_prometheus\_memory\_requests=2Gi

openshift\_prometheus\_cpu\_requests=750m

openshift\_prometheus\_memory\_limit=2Gi

openshift\_prometheus\_cpu\_limit=750m

openshift\_prometheus\_alartmanager\_memory\_requests=300Mi

openshift\_prometheus\_alartmanager\_cpu\_requests=200m

openshift\_prometheus\_alartmanager\_memory\_limit=300Mi

openshift\_prometheus\_alartmanager\_cpu\_limit=200m

openshift\_prometheus\_alertbuffer\_memory\_requests=300Mi

openshift\_prometheus\_alertbuffer\_cpu\_requests=200m

openshift\_prometheus\_alertbuffer\_memory\_limit=300Mi

openshift\_prometheus\_alertbuffer\_cpu\_limit=200m

## 

## Grafana

openshift\_grafana\_node\_selector=

openshift\_grafana\_storage\_type=pvc

openshift\_grafana\_pcv\_size=2Gi

openshift\_grafana\_node\_exporter=true

openshift\_grafana\_sc\_name=glusterfs-storage

## 

## Cluster Logging

openshift\_logging\_install\_logging=True

openshift\_logging\_install\_eventrouter=True

openshift\_logging\_es\_pvc\_dynamic=true

openshift\_logging\_es\_pvc\_size=20Gi

openshift\_logging\_es\_pvc\_storage\_class\_name='glusterfs-storage-block'

openshift\_logging\_es\_memory\_limit=8Gi

openshift\_logging\_es\_cluster\_size=1

openshift\_logging\_curator\_default\_days=2

openshift\_logging\_kibana\_nodeselector={"node-role.kubernetes.io/infra": "true"}

openshift\_logging\_curator\_nodeselector={"node-role.kubernetes.io/infra": "true"}

openshift\_logging\_es\_nodeselector={"node-role.kubernetes.io/infra": "true"}

openshift\_logging\_eventrouter\_nodeselector={"node-role.kubernetes.io/infra": "true"}