Advanced Deployment with Red Hat OpenShift - Homework

- **Version of RHOCP supported by the inventory file**: 3.11.51
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- **Class Location** : Bangalore - Capgemini 172, EPIP Zone Whitefield Rd, Phase 2, Brookefield, Bengaluru, Karnataka 560066, India
- **Class date** : 25 March 2019 to 29 March 2019

Ansible Inventory File

```
#
# ansible inventory for OpenShift Container Platform  3.11.51
# AgnosticD ansible-config: ocp-ha-lab

[OSEv3:vars]

###########################################################################
### Ansible Vars
###########################################################################
timeout=60
ansible_user=ec2-user
ansible_become=yes

###########################################################################
### OpenShift Basic Vars
###########################################################################

openshift_deployment_type=openshift-enterprise

openshift_disable_check="disk_availability,memory_availability,docker_image_availabili
ty"

# OpenShift Version:
# If you modify the openshift_image_tag or the openshift_pkg_version variables after
the cluster is set up, then an upgrade can be triggered, resulting in downtime.
# If openshift_image_tag is set, its value is used for all hosts in system container
environments, even those that have another version installed. If
# Use this variable to specify a container image tag to install or configure.
#openshift_pkg_version is set, its value is used for all hosts in RPM-based
environments, even those that have another version installed.
openshift_image_tag=v3.11.51
# Use this variable to specify an RPM version to install or configure.
openshift_pkg_version=-3.11.51
openshift_release=3.11.51


# Node Groups
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-compute', 'labels': ['node-role.kubernetes.io/compute=true','runtime=docker'],
'edits': [{ 'key': 'kubeletArguments.pods-per-core','value': ['20']}]}]
# Configure node kubelet arguments. pods-per-core is valid in OpenShift Origin 1.3 or
OpenShift Container Platform 3.3 and later. -> These  need to go into the above
# openshift_node_kubelet_args={'pods-per-core': ['10'], 'max-pods': ['250'], 'image-
gc-high-threshold': ['85'], 'image-gc-low-threshold': ['75']}

# Configure logrotate scripts
# See: https://github.com/nickhammond/ansible-logrotate
```

```
logrotate_scripts=[{"name": "syslog", "path":
"/var/log/cron\n/var/log/maillog\n/var/log/messages\n/var/log/secure\n/var/log/spooler
\n", "options": ["daily", "rotate 7","size 500M", "compress", "sharedscripts",
"missingok"], "scripts": {"postrotate": "/bin/kill -HUP `cat /var/run/syslogd.pid 2>
/dev/null` 2> /dev/null || true"}}]

# Deploy Operator Lifecycle Manager Tech Preview
openshift_enable_olm=true

###################################################################################
### OpenShift Registries Locations
###################################################################################

#oreg_url=registry.access.redhat.com/openshift3/ose-${component}:${version}
oreg_url=registry.redhat.io/openshift3/ose-${component}:${version}
oreg_auth_user=10955089|hyd1
oreg_auth_password=eyJhbGciOiJSUzUxMiJ9.eyJzdWIiOiI1YjBhNmYwZjUxZDE0Yjg3YTMwNmU1YjQ4Mj
FiNTE3NSJ9.MqKR21lOx8NpXEETrqtI5bitVU2FmF7sCq7Dshk84eJkjnbYv5Knky13LdS1F5pf2Mi2GD4sNr6
bm0kIhG5cBf6TU_YQGiCApVkH_IJCuK-
aTDJQXc46oBkRu3up0tI_Oblqwm_wP419ls_JFiQ7Q84s9nXWslZq5oDi_spjFqhOfevr6N_Kp4ERHGZ0HB_37
xqL2XRPBp8-
GoLAh3JsTHNqbEErwV2aegKVuux9oE5wSzVUsitiWrs0Oj1i2cGacnkqfjR6KO2V5I4CmatvF6gSM-
T2qUYuYpIfqu3u5MyLedC-ttBJy-Fla-
7TE2zfyFXAKBZb7GZNj4bTDsXKVjZXDRDmWpvjuwJY7wXpO0S469o8MvYd-
t2QHbGu9F4toRpKhtrgjnkOvGfRZCYC0OP4BLlHIA0I2LH6v3AGw-qbxnq59HBXMhXcJ-
UYPh5FV4So8BvxoeOTu6mzBMD9sNxh62bk9s_93Wte-mxCI72lVJtV8oS_smmvoZX8835zUnIvu-IlkTiTH-
SuA7g_mAE56hCzXlGnsjjebrwVGS3frJyF6roM6kMZn32a3UC2qC86RGJtjAKPE43dN37rr6HLyEymxTAtW7pO
TXatxUrUwHYqkV1evwJOWGAbLwvW2ow-khsdOMJj4qvvXghVaTdufu4qIffKPnlrLDtf_8M

# For Operator Framework Images
openshift_additional_registry_credentials=[{'host':'registry.connect.redhat.com','user
':'10955089|hyd1','password':'eyJhbGciOiJSUzUxMiJ9.eyJzdWIiOiI1YjBhNmYwZjUxZDE0Yjg3YTM
wNmU1YjQ4MjFiNTE3NSJ9.MqKR21lOx8NpXEETrqtI5bitVU2FmF7sCq7Dshk84eJkjnbYv5Knky13LdS1F5pf
2Mi2GD4sNr6bm0kIhG5cBf6TU_YQGiCApVkH_IJCuK-
aTDJQXc46oBkRu3up0tI_Oblqwm_wP419ls_JFiQ7Q84s9nXWslZq5oDi_spjFqhOfevr6N_Kp4ERHGZ0HB_37
xqL2XRPBp8-
GoLAh3JsTHNqbEErwV2aegKVuux9oE5wSzVUsitiWrs0Oj1i2cGacnkqfjR6KO2V5I4CmatvF6gSM-
T2qUYuYpIfqu3u5MyLedC-ttBJy-Fla-
7TE2zfyFXAKBZb7GZNj4bTDsXKVjZXDRDmWpvjuwJY7wXpO0S469o8MvYd-
t2QHbGu9F4toRpKhtrgjnkOvGfRZCYC0OP4BLlHIA0I2LH6v3AGw-qbxnq59HBXMhXcJ-
UYPh5FV4So8BvxoeOTu6mzBMD9sNxh62bk9s_93Wte-mxCI72lVJtV8oS_smmvoZX8835zUnIvu-IlkTiTH-
SuA7g_mAE56hCzXlGnsjjebrwVGS3frJyF6roM6kMZn32a3UC2qC86RGJtjAKPE43dN37rr6HLyEymxTAtW7pO
TXatxUrUwHYqkV1evwJOWGAbLwvW2ow-
khsdOMJj4qvvXghVaTdufu4qIffKPnlrLDtf_8M','test_image':'mongodb/enterprise-
operator:0.3.2'}]

openshift_examples_modify_imagestreams=true


# Set this line to enable NFS
openshift_enable_unsupported_configurations=True

###################################################################################
### OpenShift Master Vars
###################################################################################

openshift_master_api_port=443
openshift_master_console_port=443

#Default:  openshift_master_cluster_method=native
openshift_master_cluster_hostname=loadbalancer.dffc.internal
openshift_master_cluster_public_hostname=loadbalancer.dffc.example.opentlc.com
openshift_master_default_subdomain=apps.dffc.example.opentlc.com
#openshift_master_ca_certificate={'certfile': '/root/intermediate_ca.crt', 'keyfile':
'/root/intermediate_ca.key'}
openshift_master_overwrite_named_certificates=True

# Audit log
# openshift_master_audit_config={"enabled": true, "auditFilePath": "/var/log/openpaas-
oscp-audit/openpaas-oscp-audit.log", "maximumFileRetentionDays": 14,
"maximumFileSizeMegabytes": 500, "maximumRetainedFiles": 5}
```

```
# ocp-ha-lab
# AWS Autoscaler
#openshift_master_bootstrap_auto_approve=false
# This variable is a cluster identifier unique to the AWS Availability Zone. Using
this avoids potential issues in Amazon Web Services (AWS) with multiple zones or
multiple clusters.
#openshift_clusterid

#############################################################################
### OpenShift Network Vars
#############################################################################

osm_cluster_network_cidr=10.1.0.0/16
openshift_portal_net=172.30.0.0/16


 os_sdn_network_plugin_name='redhat/openshift-ovs-networkpolicy'

#os_sdn_network_plugin_name='redhat/openshift-ovs-multitenant'
#os_sdn_network_plugin_name='redhat/openshift-ovs-subnet'

#############################################################################
### OpenShift Authentication Vars
#############################################################################


# LDAP AND HTPASSWD Authentication (download ipa-ca.crt first)
# openshift_master_identity_providers=[{'name': 'ldap', 'challenge': 'true', 'login':
'true', 'kind': 'LDAPPasswordIdentityProvider','attributes': {'id': ['dn'], 'email':
['mail'], 'name': ['cn'], 'preferredUsername': ['uid']}, 'bindDN':
'uid=admin,cn=users,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=com',
'bindPassword': 'r3dh4t1!', 'ca': '/etc/origin/master/ipa-ca.crt','insecure': 'false',
'url':
'ldaps://ipa.shared.example.opentlc.com:636/cn=users,cn=accounts,dc=shared,dc=example,
dc=opentlc,dc=com?uid?sub?(memberOf=cn=ocp-
users,cn=groups,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=com)'},{'name':
'htpasswd_auth', 'login': 'true', 'challenge': 'true', 'kind':
'HTPasswdPasswordIdentityProvider'}]

# Just LDAP
openshift_master_identity_providers=[{'name': 'ldap', 'challenge': 'true', 'login':
'true', 'kind': 'LDAPPasswordIdentityProvider','attributes': {'id': ['dn'], 'email':
['mail'], 'name': ['cn'], 'preferredUsername': ['uid']}, 'bindDN':
'uid=admin,cn=users,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=com',
'bindPassword': 'r3dh4t1!', 'ca': '/etc/origin/master/ipa-ca.crt','insecure': 'false',
'url':
'ldaps://ipa.shared.example.opentlc.com:636/cn=users,cn=accounts,dc=shared,dc=example,
dc=opentlc,dc=com?uid?sub?(memberOf=cn=ocp-
users,cn=groups,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=com)'}]

# Just HTPASSWD
# openshift_master_identity_providers=[{'name': 'htpasswd_auth', 'login': 'true',
'challenge': 'true', 'kind': 'HTPasswdPasswordIdentityProvider'}]

# LDAP and HTPASSWD dependencies

openshift_master_htpasswd_file=/root/htpasswd.openshift
openshift_master_ldap_ca_file=/root/ipa-ca.crt


#############################################################################
### OpenShift Metrics and Logging Vars
#############################################################################

#########################
# Prometheus Metrics
#########################

openshift_hosted_prometheus_deploy=true
openshift_prometheus_namespace=openshift-metrics
openshift_prometheus_node_selector={"node-role.kubernetes.io/infra":"true"}
```

```
openshift_cluster_monitoring_operator_install=true


########################
# Cluster Metrics
########################

openshift_metrics_install_metrics=True

openshift_metrics_storage_kind=nfs
openshift_metrics_storage_access_modes=['ReadWriteOnce']
openshift_metrics_storage_nfs_directory=/srv/nfs
openshift_metrics_storage_nfs_options='*(rw,root_squash)'
openshift_metrics_storage_volume_name=metrics
openshift_metrics_storage_volume_size=10Gi
openshift_metrics_storage_labels={'storage': 'metrics'}
openshift_metrics_cassandra_pvc_storage_class_name=''


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"}

# Store Metrics for 2 days
openshift_metrics_duration=2

# Suggested Quotas and limits for Prometheus components:
openshift_prometheus_memory_requests=2Gi
openshift_prometheus_cpu_requests=750m
openshift_prometheus_memory_limit=2Gi
openshift_prometheus_cpu_limit=750m
openshift_prometheus_alertmanager_memory_requests=300Mi
openshift_prometheus_alertmanager_cpu_requests=200m
openshift_prometheus_alertmanager_memory_limit=300Mi
openshift_prometheus_alertmanager_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={"node-role.kubernetes.io/infra":"true"}
openshift_grafana_storage_type=pvc
openshift_grafana_pvc_size=2Gi
openshift_grafana_node_exporter=true

########################
# Cluster Logging
########################

openshift_logging_install_logging=True
openshift_logging_install_eventrouter=True

openshift_logging_storage_kind=nfs
openshift_logging_storage_access_modes=['ReadWriteOnce']
openshift_logging_storage_nfs_directory=/srv/nfs
openshift_logging_storage_nfs_options='*(rw,root_squash)'
openshift_logging_storage_volume_name=logging
openshift_logging_storage_volume_size=10Gi
openshift_logging_storage_labels={'storage': 'logging'}
openshift_logging_es_pvc_storage_class_name=''
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"}

###########################################################################
```

```
### OpenShift Router and Registry Vars
##############################################################################

# default selectors for router and registry services
# openshift_router_selector='node-role.kubernetes.io/infra=true'
# openshift_registry_selector='node-role.kubernetes.io/infra=true'

openshift_hosted_router_replicas=2

# openshift_hosted_router_certificate={"certfile": "/path/to/router.crt", "keyfile":
"/path/to/router.key", "cafile": "/path/to/router-ca.crt"}

openshift_hosted_registry_replicas=1
openshift_hosted_registry_pullthrough=true
openshift_hosted_registry_acceptschema2=true
openshift_hosted_registry_enforcequota=true


openshift_hosted_registry_storage_kind=nfs
openshift_hosted_registry_storage_access_modes=['ReadWriteMany']
openshift_hosted_registry_storage_nfs_directory=/srv/nfs
openshift_hosted_registry_storage_nfs_options='*(rw,root_squash)'
openshift_hosted_registry_storage_volume_name=registry
openshift_hosted_registry_storage_volume_size=20Gi

##############################################################################
### OpenShift Service Catalog Vars
##############################################################################

# default=true
openshift_enable_service_catalog=true

# default=true
template_service_broker_install=true
openshift_template_service_broker_namespaces=['openshift']

# default=true
ansible_service_broker_install=true
ansible_service_broker_local_registry_whitelist=['.*-apb$']

##############################################################################
### OpenShift Hosts
##############################################################################
# openshift_node_labels DEPRECATED
# openshift_node_problem_detector_install

[OSEv3:children]
lb
masters
etcd
nodes
nfs

[lb]
loadbalancer.dffc.internal

[masters]
master1.dffc.internal
master2.dffc.internal
master3.dffc.internal

[etcd]
master1.dffc.internal
master2.dffc.internal
master3.dffc.internal

[nodes]
## These are the masters
master1.dffc.internal openshift_node_group_name='node-config-master'
openshift_node_problem_detector_install=true
master2.dffc.internal openshift_node_group_name='node-config-master'
openshift_node_problem_detector_install=true
```

```
master3.dffc.internal openshift_node_group_name='node-config-master'
openshift_node_problem_detector_install=true

## These are infranodes
infranode1.dffc.internal openshift_node_group_name='node-config-infra'
openshift_node_problem_detector_install=true
infranode2.dffc.internal openshift_node_group_name='node-config-infra'
openshift_node_problem_detector_install=true

## These are regular nodes
node1.dffc.internal openshift_node_group_name='node-config-compute'
openshift_node_problem_detector_install=true
node2.dffc.internal openshift_node_group_name='node-config-compute'
openshift_node_problem_detector_install=true
node3.dffc.internal openshift_node_group_name='node-config-compute'
openshift_node_problem_detector_install=true


[nfs]
support1.dffc.internal
```