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

Bugs inside the following sections are fixed in the given ansible inventory for openshift container platform.

1. OpenShift Registries Locations
2. For Operator Framework Images
3. OpenShift Master Vars
4. OpenShift Network Vars
5. OpenShift Authentication Vars
6. OpenShift Router and Registry Vars
7. OpenShift Service Catalog Vars
8. OpenShift Hosts

Modified inventory file deploy the openshift cluster successfully and OpenShift Container Platform cluster have the following characteristics defined in the inventory file.

- Load balancer
- 3 openshift master nodes
- 2 openshift infrastructure nodes
- 3 openshift worker nodes
- NFS server
- An integrated registry pod backed by persistent volume (PV) storage
- Router pods deployed, configured, and running on each infrastructure node in the cluster
- Aggregated logging configured and working
- Metrics collection configured and working
- All hosted components (router, registry, Prometheus, logging, metrics, service brokers) running on infrastructure nodes

Following are the screenshots of modifications.

```
##############################################################################
### 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.eyJzdWIiOiI1YjBhNmYwZjUxZDE0Yjg3YTMwNmU1YjQ4
MjFiNTE3NSJ9.MqKR21lOx8NpXEETrqtI5bitVU2FmF7sCq7Dshk84eJkjnbYv5Knky13LdS1F5pf2Mi2GD4
sNr6bmOkIhG5cBf6TU_YQGiCApVkH_IJCuK-aTDJQXc46oBkRu3up0tI_Oblqwm_wP419ls_JFiQ7Q84s9nX
WslZq5oDi_spjFqhOfevr6N_Kp4ERHGZOHB_37xqL2XRPBp8-GoLAh3JsTHNqbEErwV2aegKVuux9oE5wSzV
UsitiWrsOOj1i2cGacnkqfjR6KO2V5I4CmatvF6gSM-T2qUYuYpIfqu3u5MyLedC-ttBJy-Fla-7TE2zfyFX
AKBZb7GZNj4bTDsXKVjZXDRDmWpvjuwJY7wXpOOS469o8MvYd-t2QHbGu9F4toRpKhtrgjnkOvGfRZCYCOOP
4BLlHIAOI2LH6v3AGw-qbxnq59HBXMhXcJ-UYPh5FV4So8BvxoeOTu6mzBMD9sNxh62bk9s_93Wte-mxCI72
lVJtV8oS_smmvoZX8835zUnIvu-IlkTiTH-SuA7g_mAE56hCzXlGnsjjebrwVGS3frJyF6roM6kMZn32a3UC
2qC86RGJtjAKPE43dN37rr6HLyEymxTAtW7pOTXatxUrUwHYqkV1evwJOWGAbLwvW2ow-khsdOMJj4qvvXgh
VaTdufu4qIffKPnlrLDtf_8M
```

```
# For Operator Framework Images
openshift_additional_registry_credentials=[{'host':'registry.connect.redhat.com','us
er':'10955089|hyd1','password':'eyJhbGciOiJSUzUxMiJ9.eyJzdWIiOiI1YjBhNmYwZjUxZDE0Yjg
3YTMwNmU1YjQ4MjFiNTE3NSJ9.MqKR21lOx8NpXEETrqtI5bitVU2FmF7sCq7Dshk84eJkjnbYv5Knky13Ld
S1F5pf2Mi2GD4sNr6bmOkIhG5cBf6TU_YQGiCApVkH_IJCuK-aTDJQXc46oBkRu3up0tI_Oblqwm_wP419ls
_JFiQ7Q84s9nXWslZq5oDi_spjFqhOfevr6N_Kp4ERHGZOHB_37xqL2XRPBp8-GoLAh3JsTHNqbEErwV2aeg
KVuux9oE5wSzVUsitiWrsOOj1i2cGacnkqfjR6KO2V5I4CmatvF6gSM-T2qUYuYpIfqu3u5MyLedC-ttBJy-
Fla-7TE2zfyFXAKBZb7GZNj4bTDsXKVjZXDRDmWpvjuwJY7wXpOOS469o8MvYd-t2QHbGu9F4toRpKhtrgjn
kOvGfRZCYCOOP4BLlHIAOI2LH6v3AGw-qbxnq59HBXMhXcJ-UYPh5FV4So8BvxoeOTu6mzBMD9sNxh62bk9s
_93Wte-mxCI72lVJtV8oS_smmvoZX8835zUnIvu-IlkTiTH-SuA7g_mAE56hCzXlGnsjjebrwVGS3frJyF6r
oM6kMZn32a3UC2qC86RGJtjAKPE43dN37rr6HLyEymxTAtW7pOTXatxUrUwHYqkV1evwJOWGAbLwvW2ow-kh
sdOMJj4qvvXghVaTdufu4qIffKPnlrLDtf_8M','test_image':'mongodb/enterprise-operator:0.3
.2'}]
```

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

```
#############################################################################
### 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-multitenant'
 os_sdn_network_plugin_name='redhat/openshift-ovs-networkpolicy'
```

```
#############################################################################
### 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.sh
ared.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=op
entlc,dc=com)'},{'name': 'htpasswd_auth', 'login': 'true', 'challenge': 'true', 'kin
d': '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=us
ers,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=com', 'bindPassword': 'r3dh4t1!',
 'ca': '/etc/origin/master/ipa-ca.crt','insecure': 'false', 'url': 'ldaps://ipa.shar
ed.example.opentlc.com:636/cn=users,cn=accounts,dc=shared,dc=example,dc=opentlc,dc=c
om?uid?sub?(memberOf=cn=ocp-users,cn=groups,cn=accounts,dc=shared,dc=example,dc=open
tlc,dc=com)'}]

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

# LDAP and HTPASSWD dependencies

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

```
#####################################################################################
### 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_volume_size=20Gi
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_selector="node-role.kubernetes.io/infra=true"
```

```
#####################################################################################
### 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$']
```

```
[nodes]
## These are the masters
master1.dffc.internal openshift_node_group_name='node-config-master' openshift_node_p
roblem_detector_install=true
master2.dffc.internal openshift_node_group_name='node-config-master' openshift_node_p
roblem_detector_install=true
master3.dffc.internal openshift_node_group_name='node-config-master' openshift_node_p
roblem_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_pr
oblem_detector_install=true
node2.dffc.internal openshift_node_group_name='node-config-compute' openshift_node_pr
oblem_detector_install=true
node3.dffc.internal openshift_node_group_name='node-config-compute' openshift_node_pr
oblem_detector_install=true
```

```
^C[root@bastion ~]# ansible masters --list-hosts
  hosts (3):
    master1.dffc.internal
    master2.dffc.internal
    master3.dffc.internal
```

```
[root@bastion ~]# ansible nodes --list-hosts
  hosts (8):
    master1.dffc.internal
    master2.dffc.internal
    master3.dffc.internal
    infranode1.dffc.internal
    infranode2.dffc.internal
    node1.dffc.internal
    node2.dffc.internal
    node3.dffc.internal
```

```
[root@bastion ~]# ansible all --list-hosts
  hosts (10):
    master1.dffc.internal
    master2.dffc.internal
    master3.dffc.internal
    loadbalancer.dffc.internal
    infranode1.dffc.internal
    infranode2.dffc.internal
    node1.dffc.internal
    node2.dffc.internal
    node3.dffc.internal
    support1.dffc.internal
```

```
[root@bastion ~]# ansible all -m ping
master1.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
master3.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
master2.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
infranode2.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
node3.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
loadbalancer.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
node2.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
node1.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
infranode1.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
support1.dffc.internal | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
```

```
[root@bastion ~]# GUID=dffc
[root@bastion ~]# ssh master1.${GUID}.internal
Last login: Sat Mar 30 08:21:05 2019 from ip-192-168-0-55.ec2.internal
[ec2-user@master1 ~]$ oc get nodes --show-labels
NAME                       STATUS    ROLES     AGE       VERSION           LABELS
infranode1.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kube
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docke
infranode2.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kube
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docke
master1.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kube
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master2.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kube
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master3.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kube
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
node1.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kube
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node2.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kube
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node3.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kube
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
[ec2-user@master1 ~]$
```

```
Connection to support1.dffc.internal closed.
[root@bastion ~]# oc get pod --all-namespaces -o wide
NAMESPACE                              NAME                                                RE
ADY     STATUS      RESTARTS   AGE       IP              NODE
NOMINATED NODE
default                                docker-registry-1-bb4v6                             1/
1       Running     8          23h       10.1.10.30      infranode1.dffc.internal
<none>
default                                logging-eventrouter-1-2spg5                         1/
1       Running     2          23h       10.1.10.33      infranode1.dffc.internal
<none>
default                                registry-console-1-4vjpw                            1/
1       Running     7          23h       10.1.2.55       master1.dffc.internal
<none>
default                                router-1-jzd5m                                      1/
1       Running     1          23h       192.168.0.185   infranode2.dffc.internal
<none>
default                                router-1-lrhz8                                      1/
1       Running     1          23h       192.168.0.161   infranode1.dffc.internal
<none>
kube-service-catalog                   apiserver-56chr                                     1/
1       Running     8          23h       10.1.2.53       master1.dffc.internal
<none>
kube-service-catalog                   apiserver-fsd62                                     1/
1       Running     8          23h       10.1.0.24       master2.dffc.internal
<none>
kube-service-catalog                   apiserver-nl646                                     1/
1       Running     8          23h       10.1.4.49       master3.dffc.internal
<none>
kube-service-catalog                   controller-manager-gpzq6                            1/
1       Running     13         23h       10.1.2.54       master1.dffc.internal
<none>
kube-service-catalog                   controller-manager-km5g8                            1/
1       Running     14         23h       10.1.4.44       master3.dffc.internal
<none>
kube-service-catalog                   controller-manager-ldg4d                            1/
1       Running     9          23h       10.1.0.22       master2.dffc.internal
<none>
kube-system                            master-api-master1.dffc.internal                    1/
1       Running     2          23h       192.168.0.142   master1.dffc.internal
<none>
kube-system                            master-api-master2.dffc.internal                    1/
1       Running     2          23h       192.168.0.50    master2.dffc.internal
<none>
kube-system                            master-api-master3.dffc.internal                    1/
1       Running     2          23h       192.168.0.43    master3.dffc.internal
<none>
```

```
[root@bastion ~]# oc get pvc -n default
NAME             STATUS    VOLUME            CAPACITY   ACCESS MODES   STORAGECLASS
  AGE
registry-claim   Bound     registry-volume   20Gi       RWX
  23h
[root@bastion ~]#
```

```
Connection to master1.dffc.internal closed.
[root@bastion ~]# oc get pvc -n default
NAME             STATUS    VOLUME            CAPACITY   ACCESS MODES   STORAGECLASS
  AGE
registry-claim   Bound     registry-volume   20Gi       RWX
  23h
[root@bastion ~]# oc get po -n default -o wide
NAME                              READY     STATUS    RESTARTS   AGE       IP
   NODE                           NOMINATED NODE
docker-registry-1-bb4v6           1/1       Running   8          23h       10.1.10.30
   infranode1.dffc.internal       <none>
logging-eventrouter-1-2spg5       1/1       Running   2          23h       10.1.10.33
   infranode1.dffc.internal       <none>
registry-console-1-4vjpw          1/1       Running   7          23h       10.1.2.55
   master1.dffc.internal          <none>
router-1-jzd5m                    1/1       Running   1          23h       192.168.0.185
   infranode2.dffc.internal       <none>
router-1-lrhz8                    1/1       Running   1          23h       192.168.0.161
   infranode1.dffc.internal       <none>
[root@bastion ~]#
```

```
[root@bastion ~]# oc get nodes --show-labels
NAME                STATUS    ROLES     AGE       VERSION           LABELS
infranode1.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=infranode1.dffc.
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docker
infranode2.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=infranode2.dffc.
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docker
master1.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master1.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master2.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master2.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master3.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master3.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
node1.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node1.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node2.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node2.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node3.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node3.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
[root@bastion ~]# oc get nodes --show-labels
NAME                STATUS    ROLES     AGE       VERSION           LABELS
infranode1.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=infranode1.dffc.
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docker
infranode2.dffc.internal   Ready     infra     23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=infranode2.dffc.
internal,logging-infra-fluentd=true,node-role.kubernetes.io/infra=true,runtime=docker
master1.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master1.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master2.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master2.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
master3.dffc.internal      Ready     master    23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=master3.dffc.int
ernal,logging-infra-fluentd=true,node-role.kubernetes.io/master=true,runtime=docker
node1.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node1.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node2.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node2.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
node3.dffc.internal        Ready     compute   23h       v1.11.0+d4cacc0   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/hostname=node3.dffc.inter
nal,logging-infra-fluentd=true,node-role.kubernetes.io/compute=true,runtime=docker
[root@bastion ~]#
```

```
[root@bastion ~]# ssh master1.$GUID.internal
Last login: Sat Mar 30 05:44:22 2019 from ip-192-168-0-55.ec2.internal
[ec2-user@master1 ~]$
```

```
[root@bastion ~]# oc get clusternetwork
NAME      CLUSTER NETWORKS   SERVICE NETWORK   PLUGIN NAME
default   10.1.0.0/16:9      172.30.0.0/16     redhat/openshift-ovs-networkpolicy
```

```
[root@bastion ~]# oc new-project lab-test
Now using project "lab-test" on server "https://loadbalancer.dffc.internal:443".
```

```
[root@bastion ~]# oc new-app nodejs-mongo-persistent
--> Deploying template "openshift/nodejs-mongo-persistent" to project lab-test

     Node.js + MongoDB
     ---------
     An example Node.js application with a MongoDB database. For more information ab
rg/nodejs-ex/blob/master/README.md.

     The following service(s) have been created in your project: nodejs-mongo-persis

     For more information about using this template, including OpenShift considerati

     * With parameters:
        * Name=nodejs-mongo-persistent
        * Namespace=openshift
        * Version of NodeJS Image=8
        * Version of MongoDB Image=3.4
        * Memory Limit=512Mi
        * Memory Limit (MongoDB)=512Mi
        * Volume Capacity=1Gi
        * Git Repository URL=https://github.com/sclorg/nodejs-ex.git
        * Git Reference=
        * Context Directory=
        * Application Hostname=
        * GitHub Webhook Secret=OJPyQf1s27NE1MIP5fA5Gn63NCBvOKu7aIw68FxP # generated
        * Generic Webhook Secret=fWBmbaGvPfcC443E6lwTbfv0J8WmigID1DqenC7i # generate
        * Database Service Name=mongodb
        * MongoDB Username=userIB4 # generated
        * MongoDB Password=0kbDpGcuo38bioeG # generated
        * Database Name=sampledb
        * Database Administrator Password=LQnF1bmwAPSUwyUw # generated
        * Custom NPM Mirror URL=

--> Creating resources ...
    secret "nodejs-mongo-persistent" created
    service "nodejs-mongo-persistent" created
    route.route.openshift.io "nodejs-mongo-persistent" created
    imagestream.image.openshift.io "nodejs-mongo-persistent" created
    buildconfig.build.openshift.io "nodejs-mongo-persistent" created
    deploymentconfig.apps.openshift.io "nodejs-mongo-persistent" created
    persistentvolumeclaim "mongodb" created
    service "mongodb" created
    deploymentconfig.apps.openshift.io "mongodb" created
--> Success
    Access your application via route 'nodejs-mongo-persistent-lab-test.apps.dffc.ex
    Build scheduled, use 'oc logs -f bc/nodejs-mongo-persistent' to track its progre
    Run 'oc status' to view your app.
```

```
    Run 'oc status' to view your app.
[root@bastion ~]# oc status
In project lab-test on server https://loadbalancer.dffc.internal:443

svc/mongodb - 172.30.128.251:27017
  dc/mongodb deploys openshift/mongodb:3.4
    deployment #1 running for 19 seconds - 0/1 pods

http://nodejs-mongo-persistent-lab-test.apps.dffc.example.opentlc.com (svc/nodejs-mo
  dc/nodejs-mongo-persistent deploys istag/nodejs-mongo-persistent:latest <-
    bc/nodejs-mongo-persistent source builds https://github.com/sclorg/nodejs-ex.git
      build #1 running for 20 seconds - e59fe75: Merge pull request #206 from liangx
    deployment #1 waiting on image or update


1 info identified, use 'oc status --suggest' to see details.
```

```
[root@bastion ~]# oc get pods -w
NAME                            READY     STATUS      RESTARTS   AGE
mongodb-1-bgv72                 0/1       Pending     0          1m
mongodb-1-deploy                1/1       Running     0          1m
nodejs-mongo-persistent-1-bkz45 1/1       Running     0          1m
nodejs-mongo-persistent-1-build 0/1       Completed   0          1m
```

```
[root@bastion ~]# oc get projects
NAME                                DISPLAY NAME   STATUS
default                                            Active
kube-public                                        Active
kube-service-catalog                               Active
kube-system                                        Active
lab-test                                           Active
management-infra                                   Active
openshift                                          Active
openshift-ansible-service-broker                   Active
openshift-console                                  Active
openshift-infra                                    Active
openshift-logging                                  Active
openshift-metrics-server                           Active
openshift-monitoring                               Active
openshift-node                                     Active
openshift-node-problem-detector                    Active
openshift-sdn                                      Active
openshift-template-service-broker                  Active
openshift-web-console                              Active
operator-lifecycle-manager                         Active
[root@bastion ~]#
```

```
[root@bastion ~]# oc get route
NAME                    HOST/PORT
      PATH      SERVICES                 PORT      TERMINATION   WILDCARD
nodejs-mongo-persistent   nodejs-mongo-persistent-lab-test.apps.dffc.example.opentlc
.com            nodejs-mongo-persistent   <all>                   None
[root@bastion ~]#
```