OneWeb Master Node Replacement – HUB cluster

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# Hub Cluster - Master Replacement

Here is the steps to do the master replacement on the hub cluster. Dont use this steps for NMC/NWC.

## Customer Details

1. This mop is created for oneweb cluster and since nokia automation tool populated incorrect /prefix for master node.
2. for Oneweb london site, hub cluster having two nodes with incorrect /prefix problem.

## Duration

* [It will take 4 hours per node + 1 hour buffer. totall 10 hours for two servers.](#duration)

## Impact

* [CWL cluster LCM operation should not](#impact) be performed
* [CNF installed on the CWL cluster remains undistrubed, because hub quay will be time to time unaccess. So application onboarding process may make hub quay to be stressed.](#impact)

## Highlevel Steps

* [Removing the failed node from the cluster](#X1c584a57fad0269a149bf4fadb5ac8b62ce9fef)
* [Adding back the node control plane node](#adding-back-the-node-control-plane-node)

## Removing the failed node from the cluster

### ETCD backup for master nodes.

1. Start a debug session for a control plane node:

oc debug node/<node\_name>

1. Change your root directory to /host:

chroot /host

1. If the cluster-wide proxy is enabled, be sure that you have exported the NO\_PROXY, HTTP\_PROXY, and HTTPS\_PROXY environment variables. (optional)
2. Run the cluster-backup.sh script and pass in the location to save the backup to.

sh-4.4# /usr/local/bin/cluster-backup.sh /home/core/assets/backup

Example script output

found latest kube-apiserver: /etc/kubernetes/static-pod-resources/kube-apiserver-pod-6  
found latest kube-controller-manager: /etc/kubernetes/static-pod-resources/kube-controller-manager-pod-7  
found latest kube-scheduler: /etc/kubernetes/static-pod-resources/kube-scheduler-pod-6  
found latest etcd: /etc/kubernetes/static-pod-resources/etcd-pod-3  
ede95fe6b88b87ba86a03c15e669fb4aa5bf0991c180d3c6895ce72eaade54a1  
etcdctl version: 3.4.14  
API version: 3.4  
{"level":"info","ts":1624647639.0188997,"caller":"snapshot/v3\_snapshot.go:119","msg":"created temporary db file","path":"/home/core/assets/backup/snapshot\_2021-06-25\_190035.db.part"}  
{"level":"info","ts":"2021-06-25T19:00:39.030Z","caller":"clientv3/maintenance.go:200","msg":"opened snapshot stream; downloading"}  
{"level":"info","ts":1624647639.0301006,"caller":"snapshot/v3\_snapshot.go:127","msg":"fetching snapshot","endpoint":"https://10.0.0.5:2379"}  
{"level":"info","ts":"2021-06-25T19:00:40.215Z","caller":"clientv3/maintenance.go:208","msg":"completed snapshot read; closing"}  
{"level":"info","ts":1624647640.6032252,"caller":"snapshot/v3\_snapshot.go:142","msg":"fetched snapshot","endpoint":"https://10.0.0.5:2379","size":"114 MB","took":1.584090459}  
{"level":"info","ts":1624647640.6047094,"caller":"snapshot/v3\_snapshot.go:152","msg":"saved","path":"/home/core/assets/backup/snapshot\_2021-06-25\_190035.db"}  
Snapshot saved at /home/core/assets/backup/snapshot\_2021-06-25\_190035.db  
{"hash":3866667823,"revision":31407,"totalKey":12828,"totalSize":114446336}  
snapshot db and kube resources are successfully saved to /home/core/assets/backup

Transfer the backup files locally on the infra-manager node.

### Identifying the failed control plane node

1. First identify which node is the failed one, e.g. which is in NotReady state, using the oc get nodes command.

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

Example ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab will use this node for replacement.

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready,SchedulingDisabled control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

1. Drain the node, using oc adm drain command.

[root@dom16hub101-infra-manager ~]# oc adm drain ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab --ignore-daemonsets --delete-emptydir-data --force  
node/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab already cordoned  
Warning: ignoring DaemonSet-managed Pods: open-cluster-management-backup/node-agent-lvlpm, openshift-cluster-node-tuning-operator/tuned-2xqzr, openshift-dns/dns-default-x7x7p, openshift-dns/node-resolver-sd5qh, openshift-image-registry/node-ca-5nkn2, openshift-ingress-canary/ingress-canary-rngvh, openshift-local-storage/diskmaker-discovery-4snb5, openshift-local-storage/diskmaker-manager-vkkxk, openshift-machine-api/ironic-proxy-24kth, openshift-machine-config-operator/machine-config-daemon-9j45d, openshift-machine-config-operator/machine-config-server-ww4tz, openshift-monitoring/node-exporter-9xshs, openshift-multus/multus-additional-cni-plugins-hkcdv, openshift-multus/multus-dt7qt, openshift-multus/network-metrics-daemon-4j5fx, openshift-multus/whereabouts-reconciler-bv24v, openshift-network-diagnostics/network-check-target-btgf8, openshift-network-node-identity/network-node-identity-td874, openshift-network-operator/iptables-alerter-75rfw, openshift-nmstate/nmstate-handler-tngrh, openshift-ovn-kubernetes/ovnkube-node-svz9x, openshift-storage/csi-cephfsplugin-rnkrk, openshift-storage/csi-rbdplugin-zg88h; deleting Pods that declare no controller: openshift-etcd/etcd-guard-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab, openshift-kube-apiserver/kube-apiserver-guard-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab, openshift-kube-controller-manager/kube-controller-manager-guard-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab, openshift-kube-scheduler/openshift-kube-scheduler-guard-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
evicting pod multicluster-engine/clusterclaims-controller-7d56ff6fc9-555pz  
evicting pod ncd-git/ncd-git-gitlab-shell-55ccf645ff-ks77d  
evicting pod multicluster-engine/assisted-image-service-0  
evicting pod multicluster-engine/assisted-service-96cf94d9c-wg9zh  
evicting pod ncd-db/ncd-postgresql-postgresql-ha-sentinel-8556d466c6-kd52n  
evicting pod openshift-logging/logging-loki-gateway-7687c66f64-fxd4d  
evicting pod ncd-db/ncd-postgresql-postgresql-ha-proxy-54c69f6cc-csqbz  
evicting pod open-cluster-management-observability/observability-thanos-rule-1  
evicting pod openshift-machine-api/cluster-baremetal-operator-75fbb58cc5-lpqds  
evicting pod open-cluster-management-hub/cluster-manager-registration-controller-7bcbcd64c5-s5p8l  
evicting pod open-cluster-management-observability/observability-grafana-85c6896fd4-7vxzp  
evicting pod openshift-machine-api/control-plane-machine-set-operator-65fbf4bd7-j2l2r  
\*\* output Omitted \*\*  
pod/console-mce-console-57b6b4968-jfl4x evicted  
pod/logging-loki-query-frontend-55bc666b5c-87hmh evicted  
pod/ncd-postgresql-postgresql-ha-keeper-2 evicted  
pod/apiserver-776b5f87d7-6t6vz evicted  
node/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab drained  
[root@dom16hub101-infra-manager ~]#

1. Once drain complete, shutdown the node. (power off)

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready,SchedulingDisabled control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387

1. Post power off, node will become not ready.

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab NotReady,SchedulingDisabled control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

### Removing the node from the etcd cluster

1. First fetch the pods from the openshift-etcd namespace which have the label k8s-app=etcd.

[root@dom16hub101-infra-manager ~]# oc -n openshift-etcd get pods -l k8s-app=etcd -o wide  
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES  
etcd-ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab 4/4 Running 12 74d 10.145.151.92 ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab <none> <none>  
etcd-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab 0/0 not running 12 74d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
etcd-ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab 4/4 Running 8 74d 10.145.151.94 ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]#

1. Start a remote shall to one of the pods which shall be running, and not scheduled on the failed node.

[root@dom16hub101-infra-manager ~]# oc rsh -n openshift-etcd etcd-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
sh-5.1# etcdctl endpoint health  
{"level":"warn","ts":"2025-05-27T17:09:44.374886Z","logger":"client","caller":"v3@v3.5.14/retry\_interceptor.go:63","msg":"retrying of unary invoker failed","target":"etcd-endpoints://0xc00027a000/10.145.151.93:2379","attempt":0,"error":"rpc error: code = DeadlineExceeded desc = context deadline exceeded"}  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 7.162307ms  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 7.213802ms  
https://10.145.151.93:2379 is unhealthy: failed to commit proposal: context deadline exceeded  
Error: unhealthy cluster  
sh-5.1#

1. check the status of the etdctl memebers. and removed the scale-in commpute.

sh-5.1# etcdctl member list -w table  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| ID | STATUS | NAME | PEER ADDRS | CLIENT ADDRS | IS LEARNER |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| 44ad9888985e068c | started | ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab | https://10.145.151.92:2380 | https://10.145.151.92:2379 | false |  
| f26d12a58d17e571 | started | ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab | https://10.145.151.94:2380 | https://10.145.151.94:2379 | false |  
| fc4de79a3d723a5c | Not running | ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab | https://10.145.151.93:2380 | https://10.145.151.93:2379 | false |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
sh-5.1# etcdctl member remove fc4de79a3d723a5c  
Member fc4de79a3d723a5c removed from cluster 136d42915c2b0516  
sh-5.1# etcdctl member list -w table  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| ID | STATUS | NAME | PEER ADDRS | CLIENT ADDRS | IS LEARNER |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| 44ad9888985e068c | started | ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab | https://10.145.151.92:2380 | https://10.145.151.92:2379 | false |  
| f26d12a58d17e571 | started | ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab | https://10.145.151.94:2380 | https://10.145.151.94:2379 | false |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
sh-5.1#

1. check the etcd health now.

sh-5.1# etcdctl endpoint health  
{"level":"warn","ts":"2025-05-27T17:10:43.025287Z","logger":"client","caller":"v3@v3.5.14/retry\_interceptor.go:63","msg":"retrying of unary invoker failed","target":"etcd-endpoints://0xc000020000/10.145.151.93:2379","attempt":0,"error":"rpc error: code = DeadlineExceeded desc = context deadline exceeded"}  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 6.399106ms  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 6.344247ms  
https://10.145.151.93:2379 is unhealthy: failed to commit proposal: context deadline exceeded  
Error: unhealthy cluster  
sh-5.1#  
exit  
command terminated with exit code 1  
[root@dom16hub101-infra-manager ~]#

1. run the following command to Turn off the quorum guard:

[root@dom16hub101-infra-manager ~]# oc patch etcd/cluster --type=merge -p '{"spec":{"unsupportedConfigOverrides":{"useUnsupportedUnsafeNonHANonProductionUnstableEtcd": true}}}'  
etcd.operator.openshift.io/cluster patched  
[root@dom16hub101-infra-manager ~]#

1. Remove the old secrets for the unhealthy etcd member that was removed by running the following commands.

[root@dom16hub101-infra-manager ~]# oc get secrets -n openshift-etcd | grep master-102  
etcd-peer-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 74d  
etcd-serving-metrics-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 74d  
etcd-serving-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 74d  
[root@dom16hub101-infra-manager ~]# #for i in `oc get secrets -n openshift-etcd | grep master-2 | awk  
'{print $1}'`; do oc delete secrets -n openshift-etcd $i; done  
[root@dom16hub101-infra-manager ~]# for i in `oc get secrets -n openshift-etcd | grep master-102 | awk '{print $1}'`; do oc delete secrets -n openshift-etcd $i; done  
secret "etcd-peer-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab" deleted  
secret "etcd-serving-metrics-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab" deleted  
secret "etcd-serving-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab" deleted  
[root@dom16hub101-infra-manager ~]# oc get secrets -n openshift-etcd | grep master-102 etcd-peer-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 3s  
etcd-serving-metrics-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 2s  
etcd-serving-ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab kubernetes.io/tls 2 3s  
[root@dom16hub101-infra-manager ~]#  
[root@dom16hub101-infra-manager ~]#

### Fetch the output of the failed node’s machine CR

It is needed to fetch the output of the failed node’s machine CR as it contains labels related to the cluster. Then it shall be m odified, e.g. status part shall be removed, annotation of last applied configuration, machine.openshift.op/instance-state: provisioned shall be removed, creation timestamp, finalizer, generation, resource version, uid, from spec, the providerID shall be also removed.

1. Get the list of node and find the node you want to remove from machines.

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab NotReady,SchedulingDisabled control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

1. using the follow command to ge the node need to removed. using -o wide

[root@dom16hub101-infra-manager ~]# oc get machines.machine -A  
NAMESPACE NAME PHASE TYPE REGION ZONE AGE  
openshift-machine-api ncpvblvhub-b6cjs-master-0 Running 74d  
openshift-machine-api ncpvblvhub-b6cjs-master-1 Running 74d  
openshift-machine-api ncpvblvhub-b6cjs-master-2 Running 74d  
openshift-machine-api ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
openshift-machine-api ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]# oc get machines.machine -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-1 Running 74d  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]#

1. take a backup of these nodes from file.

[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api -o yaml `oc get machines.machine.openshift.io -n openshift-machine-api -o wide |grep ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab|awk {'print $1'}` > backup\_machinemaster-102.yaml

1. just collecting all those outputs here.

just refer to productline guide for reference sample tempalte



alt text

[root@dom16hub101-infra-manager ~]# cat backup\_machinemaster-102.yaml  
apiVersion: machine.openshift.io/v1beta1  
kind: Machine  
metadata:  
 annotations:  
 machine.openshift.io/instance-state: unmanaged  
 metal3.io/BareMetalHost: openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
 creationTimestamp: "2025-03-13T23:51:45Z"  
 finalizers:  
 - machine.machine.openshift.io  
 generation: 3  
 labels:  
 machine.openshift.io/cluster-api-cluster: ncpvblvhub-b6cjs  
 machine.openshift.io/cluster-api-machine-role: master  
 machine.openshift.io/cluster-api-machine-type: master  
 name: ncpvblvhub-b6cjs-master-1  
 namespace: openshift-machine-api  
 resourceVersion: "140998860"  
 uid: a53b879c-a886-4381-a1bb-9322333fa76e  
spec:  
 lifecycleHooks:  
 preDrain:  
 - name: EtcdQuorumOperator  
 owner: clusteroperator/etcd  
 metadata: {}  
 providerID: baremetalhost:///openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab/346b01e0-6bb8-40bd-8db3-d3eabf4d44f1  
 providerSpec:  
 value:  
 apiVersion: baremetal.cluster.k8s.io/v1alpha1  
 customDeploy:  
 method: install\_coreos  
 hostSelector: {}  
 image:  
 checksum: ""  
 url: ""  
 kind: BareMetalMachineProviderSpec  
 metadata:  
 creationTimestamp: null  
 userData:  
 name: master-user-data-managed  
status:  
 addresses:  
 - address: fde1:53ba:e9a0:de11:912f:2112:633a:4b75  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 - address: 10.145.151.93  
 type: InternalIP  
 - address: ""  
 type: InternalIP  
 conditions:  
 - lastTransitionTime: "2025-03-14T00:04:57Z"  
 message: 'Drain operation currently blocked by: [{Name:EtcdQuorumOperator Owner:clusteroperator/etcd}]'  
 reason: HookPresent  
 severity: Warning  
 status: "False"  
 type: Drainable  
 - lastTransitionTime: "2025-03-14T00:03:59Z"  
 status: "True"  
 type: InstanceExists  
 - lastTransitionTime: "2025-03-13T23:58:56Z"  
 status: "True"  
 type: Terminable  
 lastUpdated: "2025-05-27T17:08:29Z"  
 nodeRef:  
 kind: Node  
 name: ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
 uid: cdc0d098-638f-4c2d-b4ba-4c2c1ebc1c10  
 phase: Running  
[root@dom16hub101-infra-manager ~]# cat backup\_machinemaster-102\_editted.yaml  
apiVersion: machine.openshift.io/v1beta1  
kind: Machine  
metadata:  
 annotations:  
 machine.openshift.io/instance-state: unmanaged  
 metal3.io/BareMetalHost: openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
 finalizers:  
 - machine.machine.openshift.io  
 generation: 3  
 labels:  
 machine.openshift.io/cluster-api-cluster: ncpvblvhub-b6cjs  
 machine.openshift.io/cluster-api-machine-role: master  
 machine.openshift.io/cluster-api-machine-type: master  
 name: ncpvblvhub-b6cjs-master-1  
 namespace: openshift-machine-api  
spec:  
 lifecycleHooks:  
 preDrain:  
 - name: EtcdQuorumOperator  
 owner: clusteroperator/etcd  
 metadata: {}  
 providerID: baremetalhost:///openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab/346b01e0-6bb8-40bd-8db3-d3eabf4d44f1  
 providerSpec:  
 value:  
 apiVersion: baremetal.cluster.k8s.io/v1alpha1  
 customDeploy:  
 method: install\_coreos  
 hostSelector: {}  
 image:  
 checksum: ""  
 url: ""  
 kind: BareMetalMachineProviderSpec  
 metadata:  
 creationTimestamp: null  
 userData:  
 name: master-user-data-managed  
  
[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab NotReady,SchedulingDisabled control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387

### Removing failed node’s OSDs from ODF

1. Get the list of pods from openshift-storage namespace here.

[root@dom16hub101-infra-manager ~]# oc get pods -n openshift-storage -o wide | grep -i ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
csi-cephfsplugin-rnkrk 2/2 Running 6 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-provisioner-646d95bdd9-496ng 6/6 Running 0 15d 172.21.1.43 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-zg88h 3/3 Running 9 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-crashcollector-11cef195e99cf42211bc5b21918ec486-b8jpz 1/1 Running 0 26d 172.21.0.19 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-exporter-11cef195e99cf42211bc5b21918ec486-6f8c85r84bf 1/1 Running 0 26d 172.21.0.20 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-mon-a-66bcddd94-wbfs4 2/2 Running 0 26d 172.21.0.9 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-osd-0-54d5b7dd6b-vjf4f 2/2 Running 0 27d 172.21.0.11 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-osd-5-79fb5f7965-wpgpq 2/2 Running 0 27d 172.21.0.17 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]#

1. remove the mon and osd pods running on the master2 nodes. then check the status of the pod’s to make sure, it’s terminated.

[root@dom16hub101-infra-manager ~]# oc scale deployment rook-ceph-mon-a --replicas=0 -n openshift-storage  
deployment.apps/rook-ceph-mon-a scaled  
[root@dom16hub101-infra-manager ~]# oc scale deployment rook-ceph-osd-0 --replicas=0 -n openshift-storage  
deployment.apps/rook-ceph-osd-0 scaled  
[root@dom16hub101-infra-manager ~]#  
[root@dom16hub101-infra-manager ~]# oc scale deployment rook-ceph-osd-5 --replicas=0 -n openshift-storage  
deployment.apps/rook-ceph-osd-5 scaled  
[root@dom16hub101-infra-manager ~]# oc get pods -n openshift-storage -o wide | grep -i ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
csi-cephfsplugin-rnkrk 2/2 Running 6 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-provisioner-646d95bdd9-496ng 6/6 Running 0 15d 172.21.1.43 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-zg88h 3/3 Running 9 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
rook-ceph-exporter-11cef195e99cf42211bc5b21918ec486-6f8c85r84bf 0/1 Terminating 0 26d 172.21.0.20 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]# oc scale deployment --selector=app=rook-ceph-crashcollector,node\_name=ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab --replicas=0 -n openshift-storage  
error: no objects passed to scale  
[root@dom16hub101-infra-manager ~]# oc get pods -n openshift-storage -o wide | grep -i ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab csi-cephfsplugin-rnkrk 2/2 Running 6 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-provisioner-646d95bdd9-496ng 6/6 Running 0 15d 172.21.1.43 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
csi-rbdplugin-zg88h 3/3 Running 9 71d 10.145.151.93 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]#

2.1) remove the label from the node.

[root@dom16hub101-infra-manager ~]# oc label node ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab cluster.ocs.openshift.io/openshift-storage-  
node/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab unlabeled  
[root@dom16hub101-infra-manager ~]#

1. Now run the OSD removal script to delete the OSD completely from the cluster.

[root@dom16hub101-infra-manager ~]# oc process -n openshift-storage ocs-osd-removal -p FAILED\_OSD\_IDS=0,5 FORCE\_OSD\_REMOVAL=true | oc create -n openshift-storage -f -  
Error from server (AlreadyExists): error when creating "STDIN": jobs.batch "ocs-osd-removal-job" already exists  
[root@dom16hub101-infra-manager ~]# oc get jobs -n openshift-storage | gre removal  
bash: gre: command not found...  
[root@dom16hub101-infra-manager ~]# oc get jobs -n openshift-storage | grep removal  
ocs-osd-removal-job 1/1 14m 33d  
[root@dom16hub101-infra-manager ~]# oc delete jobs -n openshift-storage ocs-osd-removal-job  
job.batch "ocs-osd-removal-job" deleted  
[root@dom16hub101-infra-manager ~]# oc process -n openshift-storage ocs-osd-removal -p FAILED\_OSD\_IDS=0,5 FORCE\_OSD\_REMOVAL=true | oc create -n openshift-storage -f -  
job.batch/ocs-osd-removal-job created  
[root@dom16hub101-infra-manager ~]# oc get jobs -n openshift-storage | grep removal ocs-osd-removal-job 0/1 5s 5s  
[root@dom16hub101-infra-manager ~]# oc get jobs -n openshift-storage | grep removal  
ocs-osd-removal-job 1/1 13s 14s  
[root@dom16hub101-infra-manager ~]# oc delete jobs -n openshift-storage ocs-osd-removal-job job.batch "ocs-osd-removal-job" deleted  
[root@dom16hub101-infra-manager ~]#

1. At last remove the pv as well. post check that ceph cluster.

[root@dom16hub101-infra-manager ~]#oc get pv | grep local | grep -i released  
local-pv-4fcd3797 3576Gi RWO Delete Released openshift-storage/ocs-deviceset-localblockstorage-0-data-0ll69z localblockstorage <unset> 71d  
local-pv-cb7421c8 3576Gi RWO Delete Released openshift-storage/ocs-deviceset-localblockstorage-2-data-1w8q46 localblockstorage <unset> 33d  
[root@dom16hub101-infra-manager ~]# oc delete pv local-pv-4fcd3797 local-pv-cb7421c8  
persistentvolume "local-pv-4fcd3797" deleted  
persistentvolume "local-pv-cb7421c8" deleted  
[root@dom16hub101-infra-manager ~]#  
  
[root@dom16hub101-infra-manager ~]# oc get clusteroperator baremetal  
NAME VERSION AVAILABLE PROGRESSING DEGRADED SINCE MESSAGE  
baremetal 4.16.24 True False False 74d

### Removing the node from the cluster

1. Get the node status of master-102. from bmh, machine etc.

[root@dom16hub101-infra-manager ~]# oc get bmh -n openshift-machine-api  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-0 true 74d  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-1 true 74d  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-2 true 74d  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-mlq8w true 74d  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-x5dc5 true 74d  
[root@dom16hub101-infra-manager ~]# oc delete bmh -n openshift-machine-api ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
baremetalhost.metal3.io "ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab" deleted  
  
[root@dom16hub101-infra-manager ~]# oc get bmh -n openshift-machine-api  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-0 true 74d  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-2 true 74d  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-mlq8w true 74d  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-x5dc5 true 74d  
[root@dom16hub101-infra-manager ~]#

1. Check the machines.machine api and delete it.

[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-1 Failed 74d  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]# #oc delete machines.machine.openshift.io -n openshift-machine-api ncpvblvhub-b6cjs-master-1  
[root@dom16hub101-infra-manager ~]# oc describe machines.machine.openshift.io -n openshift-machine-api ncpvblvhub-b6cjs-master-1 | grep -i master-102  
 metal3.io/BareMetalHost: openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
 Provider ID: baremetalhost:///openshift-machine-api/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab/346b01e0-6bb8-40bd-8db3-d3eabf4d44f1  
 Name: ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
[root@dom16hub101-infra-manager ~]#  
[root@dom16hub101-infra-manager ~]# oc delete machines.machine.openshift.io -n openshift-machine-api ncpvblvhub-b6cjs-master-1  
machine.machine.openshift.io "ncpvblvhub-b6cjs-master-1" deleted  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]#  
  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]#

1. Now check the status of bmh, machines and nodes, to make sure master-2 is completly removed.

[root@dom16hub101-infra-manager ~]#oc get bmh -n openshift-machine-api  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-0 true 74d  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-2 true 74d  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-mlq8w true 74d  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-x5dc5 true 74d  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

After this step, the node or failed parts of it can be safely replaced.

## Adding back the node control plane node

### Create BMH and Machine CRs

1. Check the list of nodes in cluster now.

[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

1. In the openshift-machine-api namespace two secrets shall be created. One is for the BMC access and the other one stores the networking configuration.

2.0) The data of secret for BMC access is simply base64 encoded.

[root@dom16hub101-infra-manager ~]# cat bmc-credential-hub.yaml  
---  
apiVersion: v1  
kind: Secret  
metadata:  
 name: control-plane-3-bmc-secret  
 namespace: openshift-machine-api  
data:  
 username: "cm9vdA=="  
 password: "Y2Fsdmlu"  
type: opaque  
[root@dom16hub101-infra-manager ~]#

2.1) Then the networking configuration shall be created as a secret. It is needed as the default setting is DHCP for the nodes. These information can be simply copied from the agent-config.yaml which was used for the deployment of the HUB cluster. If node replacement was done (including NIC) make sure to update the MAC addresses!

[root@dom16hub101-infra-manager ~]# cat master-102\_network\_config.yaml  
apiVersion: v1  
kind: Secret  
metadata:  
 name: openshift-master-102-network-config-secret  
 namespace: openshift-machine-api  
type: Opaque  
stringData:  
 nmstate: |  
 interfaces:  
 - name: infra-1  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:F9:7F:48  
 - name: infra-2  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:F9:7F:49  
 - name: tenant-1-1  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:4A:90:8A  
 - name: tenant-1-2  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:4A:90:8B  
 - name: tenant-2-1  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:4A:90:8E  
 - name: tenant-2-2  
 type: ethernet  
 state: up  
 identifier: mac-address  
 mtu: 9126  
 mac-address: C4:70:BD:4A:90:8F  
 - name: infra-bond  
 type: bond  
 state: up  
 link-aggregation:  
 mode: active-backup  
 options:  
 miimon: "100"  
 port:  
 - infra-1  
 - infra-2  
 mtu: 9126  
 - name: tenant-bond-1  
 link-aggregation:  
 mode: active-backup  
 options:  
 miimon: "100"  
 port:  
 - tenant-1-1  
 - tenant-1-2  
 mtu: 9126  
 state: up  
 type: bond  
 - name: tenant-bond-2  
 link-aggregation:  
 mode: active-backup  
 options:  
 miimon: "100"  
 port:  
 - tenant-2-1  
 - tenant-2-2  
 mtu: 9126  
 state: up  
 type: bond  
 - name: infra-bond.200  
 type: vlan  
 state: up  
 mtu: 9126  
 ipv4:  
 enabled: true  
 dhcp: false  
 address:  
 - ip: 10.145.151.93  
 prefix-length: 26  
 ipv6:  
 enabled: false  
 dhcp: false  
 vlan:  
 base-iface: infra-bond  
 id: 200  
 routes:  
 config:  
 - destination: 0.0.0.0/0  
 next-hop-address: 10.145.151.65  
 next-hop-interface: infra-bond.200  
 table-id: 254  
 dns-resolver:  
 config:  
 search:  
 - t-mobile.lab  
 server:  
 - 5.232.32.63  
 - 10.169.69.10  
  
[root@dom16hub101-infra-manager ~]#

1. create the BMH resource using baremetalhost file.

[root@dom16hub101-infra-manager ~]# cat master-102\_bmh\_wih\_secret.yaml  
apiVersion: metal3.io/v1alpha1  
kind: BareMetalHost  
metadata:  
 name: ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
 namespace: openshift-machine-api  
spec:  
 automatedCleaningMode: disabled  
 bmc:  
 address: idrac-virtualmedia://10.145.151.15/redfish/v1/Systems/System.Embedded.1 #this is for dell server , for HP or other vendor check virtual media path  
 credentialsName: control-plane-3-bmc-secret  
 disableCertificateVerification: True  
 bootMACAddress: c4:70:bd:f9:7f:48  
 bootMode: UEFISecureBoot  
 externallyProvisioned: false  
 hardwareProfile: unknown  
 online: true  
 rootDeviceHints:  
 deviceName: /dev/disk/by-path/pci-0000:4a:00.0-scsi-0:2:0:0  
 userData:  
 name: master-user-data-managed  
 namespace: openshift-machine-api  
 preprovisioningNetworkDataName: openshift-master-102-network-config-secret  
[root@dom16hub101-infra-manager ~]#

3.1) After creating this resource, the node will be inspected, and after a few minutes it shall be in available state.

[root@dom16hub101-infra-manager ~]# oc apply -f master\_102\_bmh.yaml  
Warning: metadata.finalizers: "baremetalhost.metal3.io": prefer a domain-qualified finalizer name to avoid accidental conflicts with other finalizer writers  
baremetalhost.metal3.io/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab created

3.2) the node status should change from registering -> inspecting -> available.

[root@dom16hub101-infra-manager ~]# oc get bmh -n openshift-machine-api ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab available ncpvblvhub-b6cjs-master-1 true 31m  
[root@dom16hub101-infra-manager ~]#

Once the BMH is in available state, the machine CR can be created. The same shall be created which was done in chapter 1.3.

1. create and apply the machines.yaml

[root@dom16hub101-infra-manager ~]# cat backup\_machinemaster-102\_editted.yaml  
apiVersion: machine.openshift.io/v1beta1  
kind: Machine  
metadata:  
 labels:  
 machine.openshift.io/cluster-api-cluster: ncpvblvhub-b6cjs  
 machine.openshift.io/cluster-api-machine-role: master  
 machine.openshift.io/cluster-api-machine-type: master  
 name: ncpvblvhub-b6cjs-master-1  
 namespace: openshift-machine-api  
spec:  
 lifecycleHooks:  
 preDrain:  
 - name: EtcdQuorumOperator  
 owner: clusteroperator/etcd  
 metadata: {}  
 providerSpec:  
 value:  
 apiVersion: baremetal.cluster.k8s.io/v1alpha1  
 customDeploy:  
 method: install\_coreos  
 hostSelector: {}  
 image:  
 checksum: ""  
 url: ""  
 kind: BareMetalMachineProviderSpec  
 metadata:  
 creationTimestamp: null  
 userData:  
 name: master-user-data-managed  
[root@dom16hub101-infra-manager ~]#  
  
[root@dom16hub101-infra-manager ~]# oc apply -f backup\_machinemaster-102\_editted.yaml  
Warning: metadata.finalizers: "machine.machine.openshift.io": prefer a domain-qualified finalizer name to avoid accidental conflicts with other finalizer writers  
machine.machine.openshift.io/ncpvblvhub-b6cjs-master-1 created  
[root@dom16hub101-infra-manager ~]#  
  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-1 Provisioning 4m17s  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]#

1. Monitor the status of bmh, will change to provisioning

[root@dom16hub101-infra-manager ~]# oc get bmh -n openshift-machine-api  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-0 true 74d  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab provisioning ncpvblvhub-b6cjs-master-1 true 31m  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-master-2 true 74d  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-mlq8w true 74d  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab unmanaged ncpvblvhub-b6cjs-worker-0-x5dc5 true 74d  
[root@dom16hub101-infra-manager ~]#  
  
#nodes will be added to the cluster   
  
[root@dom16hub101-infra-manager ~]# oc get nodes  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 80s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#  
  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-1 Running 15m  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]# oc get bmh -n openshift-machine-api ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
NAME STATE CONSUMER ONLINE ERROR AGE  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab provisioned ncpvblvhub-b6cjs-master-1 true 44m  
[root@dom16hub101-infra-manager ~]#

1. At last node successfully added back to the cluster here.

[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 54s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-apioc get machines.machine.openshift.io -n openshift-machine-api^C  
[root@dom16hub101-infra-manager ~]# oc get machines.machine.openshift.io -n openshift-machine-api  
NAME PHASE TYPE REGION ZONE AGE  
ncpvblvhub-b6cjs-master-0 Running 74d  
ncpvblvhub-b6cjs-master-1 Running 15m  
ncpvblvhub-b6cjs-master-2 Running 74d  
ncpvblvhub-b6cjs-worker-0-mlq8w Running 74d  
ncpvblvhub-b6cjs-worker-0-x5dc5 Running 74d  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 110s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]#

### Verifying etcd

1. Verify the etcd-guard- and etcd- pods are started and all containers of it are in running state in the openshift-etcd namespace.

[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 110s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# master=ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 7.570208ms  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 7.468077ms  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl member list -w table  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| ID | STATUS | NAME | PEER ADDRS | CLIENT ADDRS | IS LEARNER |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
| 44ad9888985e068c | started | ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab | https://10.145.151.92:2380 | https://10.145.151.92:2379 | false |  
| 55fcb74f654c5538 | started | ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab | https://10.145.151.93:2380 | https://10.145.151.93:2379 | false |  
| f26d12a58d17e571 | started | ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab | https://10.145.151.94:2380 | https://10.145.151.94:2379 | false |  
+------------------+---------+--------------------------------------------------+----------------------------+----------------------------+------------+  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 6.734404ms  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 7.079121ms  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 3m55s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc get mcp  
NAME CONFIG UPDATED UPDATING DEGRADED MACHINECOUNT READYMACHINECOUNT UPDATEDMACHINECOUNT DEGRADEDMACHINECOUNT AGE  
master rendered-master-d234bb112f0765116acd91ac75545416 True False False 3 3 3 0 74d  
worker rendered-worker-3e1f74a73d4a683cfbf22ced0aa2792a False True True 2 1 1 1 74d  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 6.241732ms  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 6.383176ms  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
error: unable to upgrade connection: container not found ("etcd")  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
error: unable to upgrade connection: container not found ("etcd")  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 5m51s v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
  
{"level":"warn","ts":"2025-05-27T21:24:52.680683Z","logger":"client","caller":"v3@v3.5.14/retry\_interceptor.go:63","msg":"retrying of unary invoker failed","target":"etcd-endpoints://0xc00022e000/10.145.151.92:2379","attempt":0,"error":"rpc error: code = DeadlineExceeded desc = latest balancer error: last connection error: connection error: desc = \"transport: Error while dialing: dial tcp 10.145.151.92:2379: connect: connection refused\""}  
https://10.145.151.93:2379 is healthy: successfully committed proposal: took = 6.311573ms  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 8.305729ms  
https://10.145.151.92:2379 is unhealthy: failed to commit proposal: context deadline exceeded  
Error: unhealthy cluster  
command terminated with exit code 1  
[root@dom16hub101-infra-manager ~]# oc get co  
NAME VERSION AVAILABLE PROGRESSING DEGRADED SINCE MESSAGE  
authentication 4.16.24 True False False 3h48m  
baremetal 4.16.24 True False False 74d  
cloud-controller-manager 4.16.24 True False False 74d  
cloud-credential 4.16.24 True False False 74d  
cluster-autoscaler 4.16.24 True False False 74d  
config-operator 4.16.24 True False False 74d  
console 4.16.24 True False False 74d  
control-plane-machine-set 4.16.24 True False False 74d  
csi-snapshot-controller 4.16.24 True False False 74d  
dns 4.16.24 True False False 74d  
etcd 4.16.24 True True False 74d NodeInstallerProgressing: 1 node is at revision 15; 2 nodes are at revision 17  
image-registry 4.16.24 True False False 74d  
ingress 4.16.24 True False False 74d  
insights 4.16.24 True False False 74d  
kube-apiserver 4.16.24 True True False 74d NodeInstallerProgressing: 2 nodes are at revision 60; 1 node is at revision 61  
kube-controller-manager 4.16.24 True False False 74d  
kube-scheduler 4.16.24 True False False 74d  
kube-storage-version-migrator 4.16.24 True False False 13d  
machine-api 4.16.24 True False False 74d  
machine-approver 4.16.24 True False False 74d  
machine-config 4.16.24 True False True 74d Failed to resync 4.16.24 because: error during syncRequiredMachineConfigPools: [context deadline exceeded, failed to update clusteroperator: [client rate limiter Wait returned an error: context deadline exceeded, error MachineConfigPool worker is not ready, retrying. Status: (pool degraded: true total: 2, ready 1, updated: 1, unavailable: 1)]]  
marketplace 4.16.24 True False False 74d  
monitoring 4.16.24 Unknown True Unknown 35m Rolling out the stack.  
network 4.16.24 True False False 74d  
node-tuning 4.16.24 True False False 6m20s  
openshift-apiserver 4.16.24 True False False 4h17m  
openshift-controller-manager 4.16.24 True False False 74d  
openshift-samples 4.16.24 True False False 74d  
operator-lifecycle-manager 4.16.24 True False False 74d  
operator-lifecycle-manager-catalog 4.16.24 True False False 74d  
operator-lifecycle-manager-packageserver 4.16.24 True False False 74d  
service-ca 4.16.24 True False False 74d  
storage 4.16.24 True False False 74d  
  
[root@dom16hub101-infra-manager ~]# watch -n 5 oc get co  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc -n openshift-etcd get pods -l k8s-app=etcd -o wide --no-headers |grep -v $master|head -n 1|awk {'print $1'}) -n openshift-etcd -- etcdctl endpoint health  
https://10.145.151.93:2379 is healthy: successfully committed proposal: took = 6.998079ms  
https://10.145.151.92:2379 is healthy: successfully committed proposal: took = 7.999787ms  
https://10.145.151.94:2379 is healthy: successfully committed proposal: took = 7.997677ms  
[root@dom16hub101-infra-manager ~]# oc patch etcd/cluster --type=merge -p '{"spec": {"unsupportedConfigOverrides": null}}'  
etcd.operator.openshift.io/cluster patched  
[root@dom16hub101-infra-manager ~]#

### Adding back the OSDs

1. The OSDs are automatically added, after the PVs are created by the Local Storage Operator.
2. After adding the labels back to the node (which was applied initially during the deployment) including the cluster.ocs.openshift.io/openshift-storage, the Local Storage Operator’s two daemonsets pods will be scheduled on this node as well, namely the diskmaker discovery and the diskmaker manager.
3. The discovery will inspect the node for available disks while the manager will create the PVs which will be used by ODF.

oc get pods -n openshift-local-storage -o wide

1. After the new PVs are created the new OSDs deployments will be recreated and OSD pods and mon pod will start automatically.
2. If those would not start automatically for some reason, the rook-ceph-operator pod shall be restarted.

[root@dom16hub101-infra-manager ~]#oc get pods -n openshift-local-storage -o wide  
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES  
diskmaker-discovery-6mcrl 2/2 Running 4 71d 172.20.0.163 ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-discovery-9htrb 2/2 Running 6 71d 172.20.2.141 ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-manager-fbzkp 2/2 Running 4 71d 172.20.0.164 ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-manager-h6r2t 2/2 Running 6 71d 172.20.2.142 ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab <none> <none>  
local-storage-operator-6d968c9989-w4vp4 1/1 Running 2 (3h42m ago) 56d 172.23.0.66 ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]# oc get no -l cluster.ocs.openshift.io/openshift-storage  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 13m v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc label node ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab cluster.ocs.openshift.io/openshift-storage=  
node/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab labeled  
[root@dom16hub101-infra-manager ~]# oc get no -l cluster.ocs.openshift.io/openshift-storage  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 15m v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387

After the new PVs are created the new OSDs deployments will be recreated and OSD pods and mon pod will start automatically. If those would not start automatically for some reason, the rook-ceph-operator pod shall be restarted.

[root@dom16hub101-infra-manager ~]# oc get pods -n openshift-local-storage -o wide  
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES  
diskmaker-discovery-6mcrl 2/2 Running 4 71d 172.20.0.163 ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-discovery-9htrb 2/2 Running 6 71d 172.20.2.141 ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-discovery-b6bxh 2/2 Running 0 26s 172.21.0.33 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-manager-8kpkt 2/2 Running 0 26s 172.21.0.31 ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-manager-fbzkp 2/2 Running 4 71d 172.20.0.164 ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab <none> <none>  
diskmaker-manager-h6r2t 2/2 Running 6 71d 172.20.2.142 ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab <none> <none>  
local-storage-operator-6d968c9989-w4vp4 1/1 Running 2 (3h46m ago) 57d 172.23.0.66 ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab <none> <none>  
[root@dom16hub101-infra-manager ~]# oc get co  
NAME VERSION AVAILABLE PROGRESSING DEGRADED SINCE MESSAGE  
authentication 4.16.24 True False False 3h57m  
baremetal 4.16.24 True False False 74d  
cloud-controller-manager 4.16.24 True False False 74d  
cloud-credential 4.16.24 True False False 74d  
cluster-autoscaler 4.16.24 True False False 74d  
config-operator 4.16.24 True False False 74d  
console 4.16.24 True False False 74d  
control-plane-machine-set 4.16.24 True False False 74d  
csi-snapshot-controller 4.16.24 True False False 74d  
dns 4.16.24 True False False 74d  
etcd 4.16.24 True False False 74d  
image-registry 4.16.24 True False False 74d  
ingress 4.16.24 True False False 74d  
insights 4.16.24 True False False 74d  
kube-apiserver 4.16.24 True False False 74d  
kube-controller-manager 4.16.24 True False False 74d  
kube-scheduler 4.16.24 True False False 74d  
kube-storage-version-migrator 4.16.24 True False False 13d  
machine-api 4.16.24 True False False 74d  
machine-approver 4.16.24 True False False 74d  
machine-config 4.16.24 True False True 74d Failed to resync 4.16.24 because: error during syncRequiredMachineConfigPools: [context deadline exceeded, failed to update clusteroperator: [client rate limiter Wait returned an error: context deadline exceeded, error MachineConfigPool worker is not ready, retrying. Status: (pool degraded: true total: 2, ready 1, updated: 1, unavailable: 1)]]  
marketplace 4.16.24 True False False 74d  
monitoring 4.16.24 Unknown True Unknown 45m Rolling out the stack.  
network 4.16.24 True False False 74d  
node-tuning 4.16.24 True False False 15m  
openshift-apiserver 4.16.24 True False False 4h26m  
openshift-controller-manager 4.16.24 True False False 74d  
openshift-samples 4.16.24 True False False 74d  
operator-lifecycle-manager 4.16.24 True False False 74d  
operator-lifecycle-manager-catalog 4.16.24 True False False 74d  
operator-lifecycle-manager-packageserver 4.16.24 True False False 74d  
service-ca 4.16.24 True False False 74d  
storage 4.16.24 True False False 74d  
  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc get pod -n openshift-storage -l app=rook-ceph-operator -o name) -n openshift-storage -- ceph status -c /var/lib/rook/openshift-storage/openshift-storage.config  
 cluster:  
 id: 27b507a3-b496-4549-9271-a3bc0705dd13  
 health: HEALTH\_WARN  
 Degraded data redundancy: 87816/433023 objects degraded (20.280%), 68 pgs degraded, 74 pgs undersized  
  
 services:  
 mon: 3 daemons, quorum a,b,e (age 3m)  
 mgr: b(active, since 3h), standbys: a  
 mds: 1/1 daemons up, 1 hot standby  
 osd: 6 osds: 6 up (since 112s), 6 in (since 2m); 109 remapped pgs  
 rgw: 1 daemon active (1 hosts, 1 zones)  
  
 data:  
 volumes: 1/1 healthy  
 pools: 12 pools, 201 pgs  
 objects: 144.34k objects, 541 GiB  
 usage: 1.2 TiB used, 20 TiB / 21 TiB avail  
 pgs: 0.498% pgs not active  
 87816/433023 objects degraded (20.280%)  
 55928/433023 objects misplaced (12.916%)  
 91 active+clean  
 68 active+undersized+degraded+remapped+backfill\_wait  
 35 active+remapped+backfill\_wait  
 6 active+undersized+remapped+backfill\_wait  
 1 peering  
  
 io:  
 client: 6.1 MiB/s rd, 475 KiB/s wr, 7 op/s rd, 39 op/s wr  
 recovery: 386 MiB/s, 0 keys/s, 101 objects/s  
  
  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,worker 19m v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
[root@dom16hub101-infra-manager ~]# oc edit no ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab  
Edit cancelled, no changes made.  
[root@dom16hub101-infra-manager ~]# oc get no --show-labels ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab  
NAME STATUS ROLES AGE VERSION LABELS  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387 beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,cluster.ocs.openshift.io/openshift-storage=,kubernetes.io/arch=amd64,kubernetes.io/hostname=ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab,kubernetes.io/os=linux,node-role.kubernetes.io/control-plane=,node-role.kubernetes.io/master=,node-role.kubernetes.io/monitor=,node-role.kubernetes.io/worker=,node.openshift.io/os\_id=rhcos  
[root@dom16hub101-infra-manager ~]# oc label node ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab node-role.kubernetes.io/monitor=  
node/ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab labeled  
[root@dom16hub101-infra-manager ~]# oc get no  
NAME STATUS ROLES AGE VERSION  
ncpvblvhub-hubmaster-101.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubmaster-102.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 20m v1.29.10+67d3387  
ncpvblvhub-hubmaster-103.ncpvblvhub.t-mobile.lab Ready control-plane,master,monitor,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-101.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
ncpvblvhub-hubworker-102.ncpvblvhub.t-mobile.lab Ready gateway,worker 74d v1.29.10+67d3387  
  
  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc get pod -n openshift-storage -l app=rook-ceph-operator -o name) -n openshift-storage -- ceph status -c /var/lib/rook/openshift-storage/openshift-storage.config  
 cluster:  
 id: 27b507a3-b496-4549-9271-a3bc0705dd13  
 health: HEALTH\_WARN  
 Degraded data redundancy: 44107/433023 objects degraded (10.186%), 39 pgs degraded, 43 pgs undersized  
  
 services:  
 mon: 3 daemons, quorum a,b,e (age 9m)  
 mgr: b(active, since 3h), standbys: a  
 mds: 1/1 daemons up, 1 hot standby  
 osd: 6 osds: 6 up (since 8m), 6 in (since 8m); 77 remapped pgs  
 rgw: 1 daemon active (1 hosts, 1 zones)  
  
 data:  
 volumes: 1/1 healthy  
 pools: 12 pools, 201 pgs  
 objects: 144.34k objects, 541 GiB  
 usage: 1.4 TiB used, 20 TiB / 21 TiB avail  
 pgs: 44107/433023 objects degraded (10.186%)  
 55928/433023 objects misplaced (12.916%)  
 123 active+clean  
 37 active+undersized+degraded+remapped+backfill\_wait  
 35 active+remapped+backfill\_wait  
 4 active+undersized+remapped+backfill\_wait  
 2 active+undersized+degraded+remapped+backfilling  
  
 io:  
 client: 7.9 MiB/s rd, 355 KiB/s wr, 8 op/s rd, 27 op/s wr  
 recovery: 550 MiB/s, 1 keys/s, 145 objects/s  
  
  
[root@dom16hub101-infra-manager ~]# oc exec -it $(oc get pod -n openshift-storage -l app=rook-ceph-operator -o name) -n openshift-storage -- ceph status -c /var/lib/rook/openshift-storage/openshift-storage.config  
 cluster:  
 id: 27b507a3-b496-4549-9271-a3bc0705dd13  
 health: HEALTH\_OK  
  
 services:  
 mon: 3 daemons, quorum a,b,e (age 18m)  
 mgr: b(active, since 3h), standbys: a  
 mds: 1/1 daemons up, 1 hot standby  
 osd: 6 osds: 6 up (since 16m), 6 in (since 17m); 30 remapped pgs  
 rgw: 1 daemon active (1 hosts, 1 zones)  
  
 data:  
 volumes: 1/1 healthy  
 pools: 12 pools, 201 pgs  
 objects: 144.51k objects, 542 GiB  
 usage: 1.6 TiB used, 19 TiB / 21 TiB avail  
 pgs: 46224/433527 objects misplaced (10.662%)  
 171 active+clean  
 28 active+remapped+backfill\_wait  
 2 active+remapped+backfilling  
  
 io:  
 client: 5.7 MiB/s rd, 396 KiB/s wr, 8 op/s rd, 37 op/s wr  
 recovery: 155 MiB/s, 41 objects/s  
  
[root@dom16hub101-infra-manager ~]#

Continue the same steps for master1 and master3 as well, if you want to replace all three master nodes.