Troubleshooting

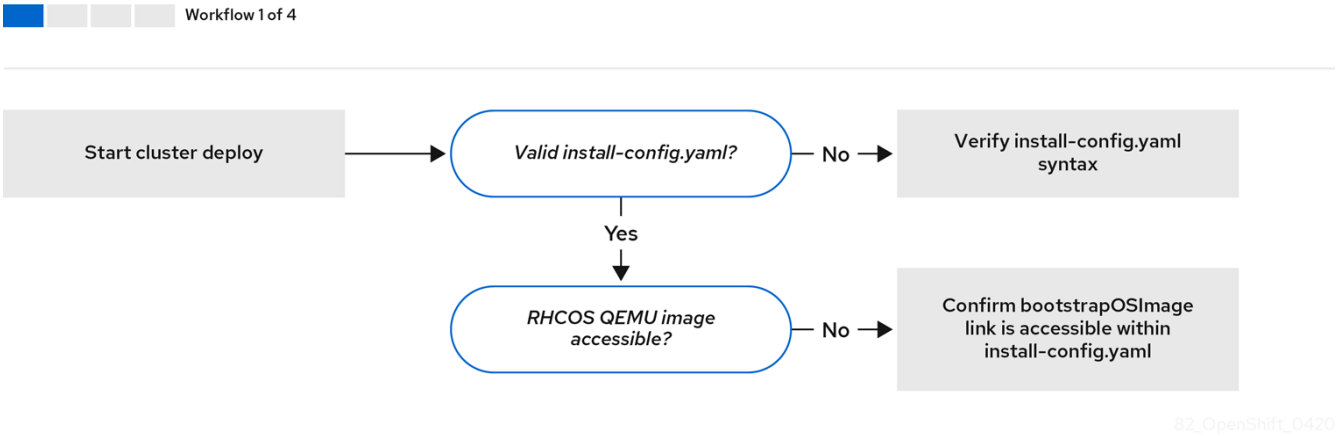
Deployment Integration Team

Download the PDF version of this document or visit https://openshift-kni.github.io/baremetal-deploy/

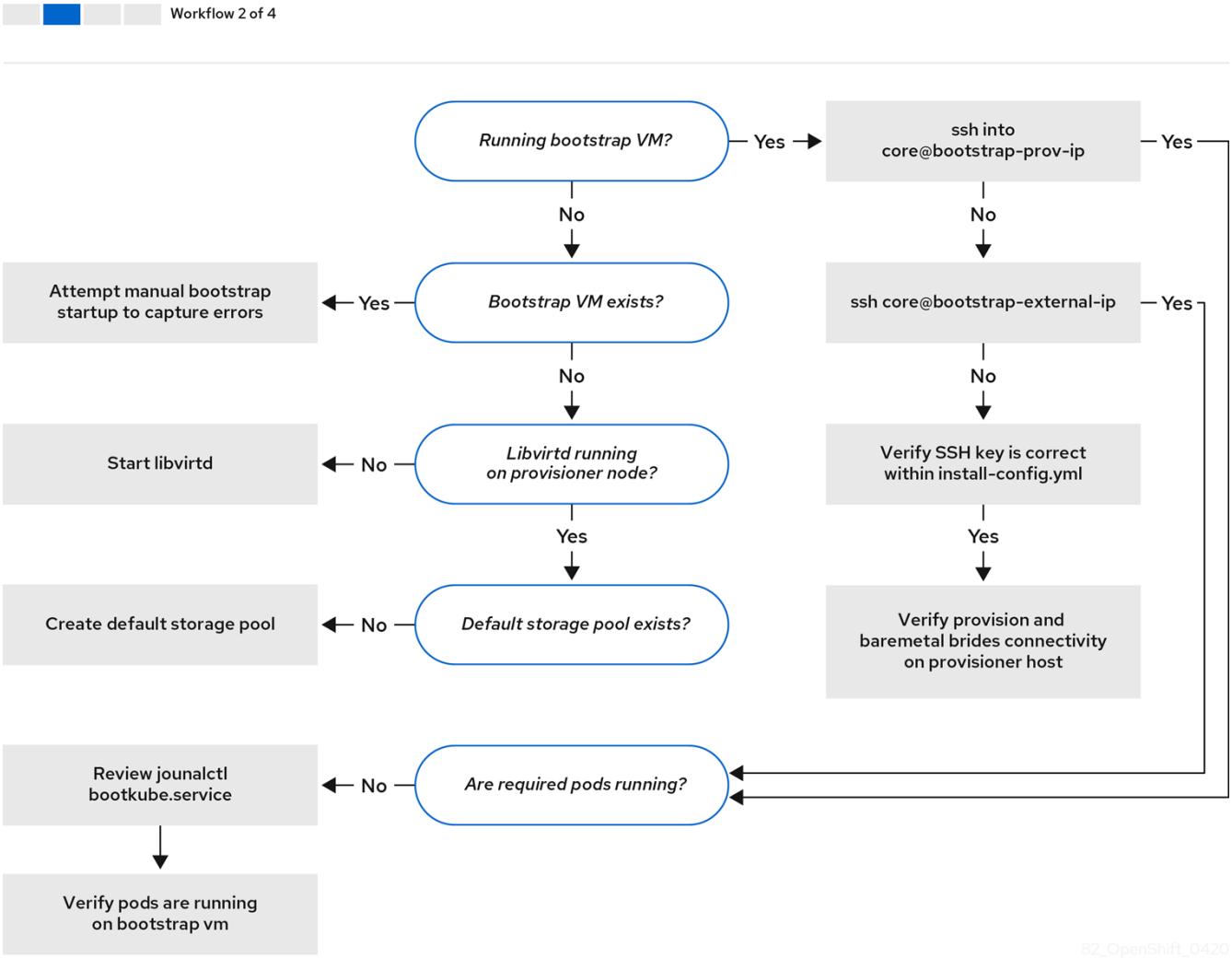
While attempting to deploy Installer Provisioned Infrastructure (IPI) of OpenShift on Bare Metal (BM), you may run into a situation where you need to troubleshoot your environment. This document provides troubleshooting guidance and tips in solving common issues that may arise.

Chapter 1. Troubleshooting Flow

Prior to troubleshooting your environment, it is critical to understand the overall flow of the IPI on BM installation. The diagrams below provide a troubleshooting flow providing a step-by-step breakdown of where to start debugging your environment.

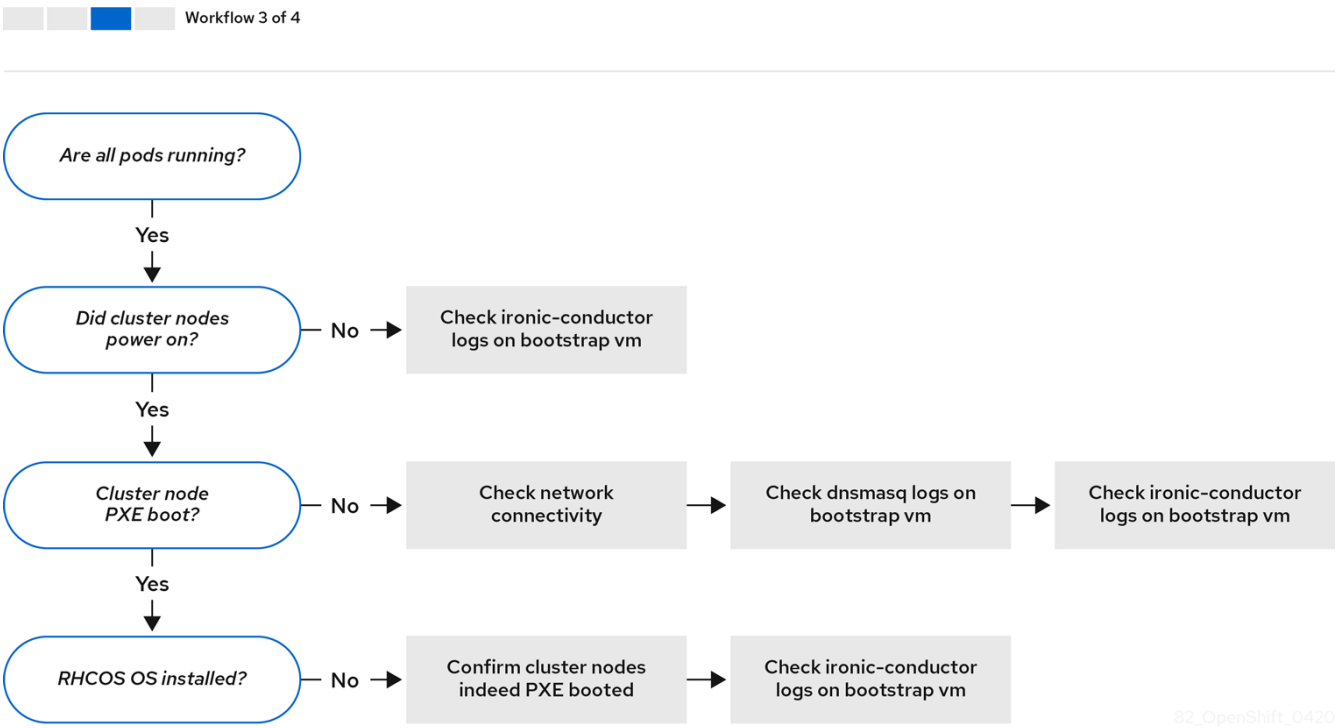


Flow-Diagram-1 relates with issues that relate to your install-config.yaml file. Troubleshooting suggestions can be found at install-config.yaml



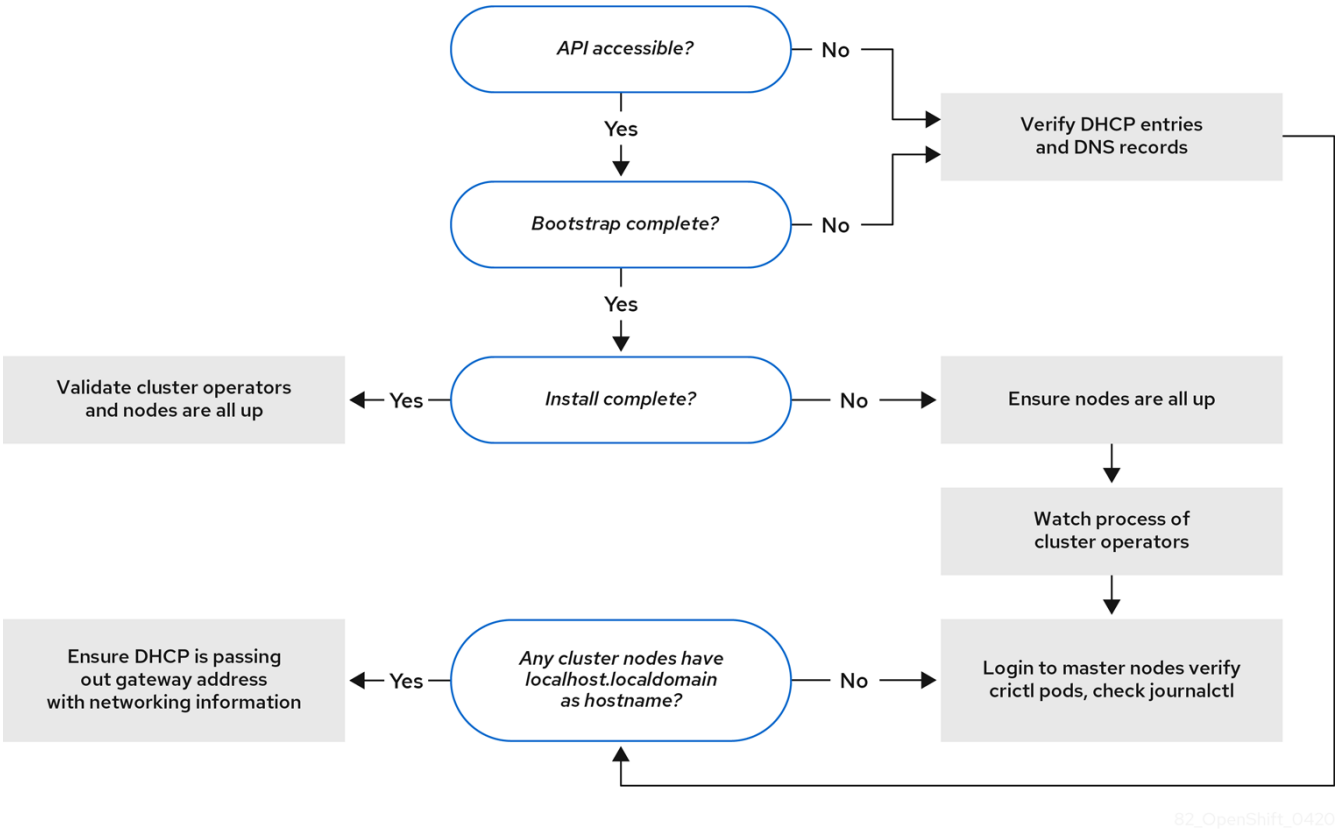
Flow-Diagram-2 relates with issues that relate to your

- Bootstrap VM
- Cluster nodes that won't PXE



Flow-Diagram-3 relates with issues that relate to your

- Cluster nodes that won't PXE



Flow-Diagram-4 relates with issues that relate to your

- API accessibility
- reviewing installation

Chapter 2. Install-config.yaml

The `install-config.yaml` represents all the nodes that will be part of your OpenShift cluster and the necessary options consisting of but not limited to `apiVersion`, `baseDomain`, `networking`, `VIPS`, `imageContentSources` etc.

During the deployment of your OpenShift cluster, if errors occur early on due to the `install-config.yaml`, confirm the following

- Use the guidelines as mentioned in the YAML-tips
- Verifying syntax is correct within your YAML using syntax-check
- Verify the RHCOS QEMU images are properly defined and accessible via the URL provided in the `install-config.yaml` via a command such as:

```
curl -s -o /dev/null -I -w "%{http_code}\n"
http://webserver.example.com:8080/rhcos-44.81.202004250133-0-
qemu.x86_64.qcow2.gz?sha256=7d884b46ee54fe87bbc3893bf2aa99af3b2d31f2e19ab5529c60636
fbd0f1ce7

200
```

  The output of 200 ensures that we are geting a valid response from our webserver that is indeed storing our bootstrap VM image in the above example.

Chapter 3. Bootstrap VM issues

The bootstrap node is a virtual machine that is triggered by the OpenShift installer that handles the provisioning of the nodes that will be part of the OpenShift cluster.

Once the deployment is triggered (may take 10 to 15 minutes) we can see if the Bootstrap VM is operational. We can verify the bootstrap VM is operational via the `virsh` command.

```
[kni@provisioner ~]$ sudo virsh list
 Id    Name                           State
----------------------------------------------------
 12    kni7-xf6fq-bootstrap           running
```

The name of the bootstrap VM is always the clustername, followed by random set of characters and ending in the word bootstrap.

If no bootstrap VM is running after waiting 10-15 minutes, it is important to troubleshoot as to why it was not created. Possible issues to verify are:

- Verify `libvirtd` is running on the system

```
[kni@provisioner ~]$ systemctl status libvirtd
● libvirtd.service - Virtualization daemon
   Loaded: loaded (/usr/lib/systemd/system/libvirtd.service; enabled; vendor preset:
enabled)
   Active: active (running) since Tue 2020-03-03 21:21:07 UTC; 3 weeks 5 days ago
     Docs: man:libvirtd(8)
           https://libvirt.org
 Main PID: 9850 (libvirtd)
    Tasks: 20 (limit: 32768)
   Memory: 74.8M
   CGroup: /system.slice/libvirtd.service
           ├─ 9850 /usr/sbin/libvirtd
```

If the bootstrap VM is indeed operational, we want to verify if we can log into it.

We can find the IP address of the bootstrap VM using the `virsh console` command as shown.

```
[kni@provisioner ~]$ sudo virsh console kni7-4q49b-bootstrap
Connected to domain kni7-4q49b-bootstrap
Escape character is ^]

Red Hat Enterprise Linux CoreOS 43.81.202001142154.0 (Ootpa) 4.3
SSH host key: SHA256:BRWJktXZgQQRY5zjuAV0IKZ4WM7i4TiUyMVanqu9Pqg (ED25519)
SSH host key: SHA256:7+iKGA7VtG5szmk2jB5gl/5EZ+SNcJ3a2g23o0lnIio (ECDSA)
SSH host key: SHA256:DH5VWhvhvagOTaLsYiVNse9ca+ZSW/30OOMed8rIGOc (RSA)
ens3:  fd35:919d:4042:2:c7ed:9a9f:a9ec:7
ens4: 172.22.0.2 fe80::1d05:e52e:be5d:263f
localhost login:
```

- Once the IP address has been obtained, we can attempt to login to the bootstrap VM using the `ssh` command.

In the console output above, the IPv6 IP provided by `ens3` or the IPv4 IP provided by `ens4` can be used.

```
[kni@provisioner ~]$ ssh core@172.22.0.2
```

If attempting to log into the bootstrap VM and you are not successful, you've likely reached one of the following scenarios:

- Cannot reach the `172.22.0.0/24` network. This means you should verify your connectivity on the provisioning host specifically around the provisioning network bridge
- Cannot reach the bootstrap VM via the public network. When attempting to SSH via baremetal network you should verify your connectivity on the provisioning host specifically around the baremetal network bridge.
- `Permission denied (publickey,password,keyboard-interactive)`. When attempting to access the bootstrap VM an error of Permission denied might occur, verify that your SSH key for the user attempting to log into the VM is set within your `install-config.yaml` file.

3.1. Bootstrap VM cannot boot up my cluster nodes

During the deployment, it is possible for the bootstrap VM to not boot up the OpenShift cluster nodes in order to provision them with their respective RHCOS OS image. This issue can arise due to:

- Problem with the `install-config.yaml` file
- Issues with Out of band network access from the baremetal network

To verify the issue, there are 3 basic containers related to `ironic`

```
* Ironic-api
* Ironic-conductor
* Ironic-inspector
```

The `ironic-conductor` pod includes the most details regarding the attempted boot up of your OpenShift cluster nodes as it attempts to perform the login and execute the action over IPMI, you can check the logs as per the below syntax

```
# podman logs -f ironic-conductor
```

If you encounter an issue where the master nodes are not booting up via PXE, check the `ironic-conductor` pod

Potential reason

They might be in `ON` state when deployment started.

Solution

Make sure to power off the OpenShift nodes before you begin the installation via iDRAC/iLO.

```
ipmitool -I lanplus -U root -P <Password> -H <Out-of-band-ip> power off
```

3.2. Inspecting Logs

- bootstrap VM cannot download RHCOS image

When experiencing issues downloading or access the RHCOS images, verify the following two containers are up and running:

```
ipa-downloader
coreos-downloader
```

These containers download resources from a provided webserver or the external quay.io registry (which ever is provided in the install-config.yaml).

Example of internal webserver hosting RHCOS images

```
bootstrapOSImage: http://<ip:port>/rhcos-43.81.202001142154.0-
qemu.x86_64.qcow2.gz?sha256=9d999f55ff1d44f7ed7c106508e5deecd04dc3c06095d34d36bf1cd127
837e0c
clusterOSImage: http://<ip:port>/rhcos-43.81.202001142154.0-
openstack.x86_64.qcow2.gz?sha256=a1bda656fa0892f7b936fdc6b6a6086bddaed5dafacedcd7a1e81
1abb78fe3b0
```

Check the status of these containers using

```
[core@localhost ~]$ podman logs -f ipa-downloader

[core@localhost ~]$ podman logs -f coreos-downloader
```

- There can be scenarios where there is a problem in the `baremetal` network that uses external registry (https://quay.io) to download the images, make use of `curl` command to confirm that you can reach the registry.
- If using a caching webserver to host the images, bootstrap VM cannot access the URL and verify it is correct.

With the ability to login to the bootstrap VM

```
[kni@provisioner ~]$ ssh core@172.22.0.2
```

Issue the following `journalctl` commands to inspect the `bootkube` logs that shows all the containers launched during the deployment phase.

Within the bootstrap VM,

```
[core@localhost ~]$ journalctl -xe
[core@localhost ~]$ journalctl -b -f -u bootkube.service
```

Verify all the pods(`dnsmasq`, `mariadb`, `httpd`, `ironic` pods etc) are in running state using `sudo podman ps` command (displays the containers).

If there are issues with the pods, check the logs of all the containers with issues. Use the below command for an example on how to check the log of the `ironic-apis`:

Example one

```
[core@localhost ~]$ sudo podman logs <container-id>
```

Chapter 4. Cluster nodes won't PXE

When dealing with issues of OpenShift cluster nodes not PXE booting the following issues should be further verified:

- Check the network connectivity to your `Provisioning` Network
- Make sure to have PXE enabled on the provisioning NIC and PXE disabled for all other NICs.
- Verify you have the proper boot MAC address(provisioning NIC MAC address) and hardware profiles in `install-config.yaml` file.

Master node settings

```
bootMACAddress: 24:6E:96:1B:96:90 # MAC of bootable provisioning NIC
hardwareProfile: default          #master node settings
```

Worker node settings

```
bootMACAddress: 24:6E:96:1B:96:90 # MAC of bootable provisioning NIC
hardwareProfile: unknown          #worker node settings
```

Chapter 5. API not accessible

When the API is not accessible these issues often arise when the following is not properly addressed.

- Incorrect name resolutions are set in the DNS server, make use of `dig` and `nslookup` commands.
- `SSH` into the OpenShift cluster and make sure they are getting the FQDN and not just `localhost.localdomain`.

For example, if we wanted to verify the API VIP was properly set via `dig`, we could:

```
dig api.<cluster-name>.example.com
; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el8 <<>> api.<cluster-name>.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 37551
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 2

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
; COOKIE: 866929d2f8e8563582af23f05ec44203d313e50948d43f60 (good)
;; QUESTION SECTION:
;api.<cluster-name>.example.com. IN A

;; ANSWER SECTION:
api.<cluster-name>.example.com. 10800 IN    A 10.19.13.86

;; AUTHORITY SECTION:
<cluster-name>.example.com. 10800 IN NS <cluster-name>.example.com.

;; ADDITIONAL SECTION:
<cluster-name>.example.com. 10800 IN A  10.19.14.247

;; Query time: 0 msec
;; SERVER: 10.19.14.247#53(10.19.14.247)
;; WHEN: Tue May 19 20:30:59 UTC 2020
;; MSG SIZE  rcvd: 140
```

This concludes that the appropriate IP for the api.<cluster-name>.example.com VIP was `10.19.13.86`. This IP address should reside on the `baremetal` network.

Chapter 6. Review Install

When the OpenShift cluster nodes are installed appropriately, the following `Ready` state is seen within the `STATUS` column.

```
[kni@provisioner ~]$ oc get nodes
NAME                   STATUS   ROLES           AGE  VERSION
master-0.example.com   Ready    master,worker   4h   v1.16.2
master-1.example.com   Ready    master,worker   4h   v1.16.2
master-2.example.com   Ready    master,worker   4h   v1.16.2
```

Confirm all pods are successfully deployed. The following command removes any pods that are still running or have completed as part of the output.

```
[kni@provisioner ~]$ oc get pods --all-namespaces | grep -iv running | grep -iv
complete
```

Chapter 7. Following the Installation

During the deployment process, we can check its overall status by issuing the `tail` command to the log file `.openshift_install.log` which will be under the install directory folder.

```
tail -f /path/to/install-dir/.openshift_install.log
```

Chapter 8. Post install pod errors

The following section describes how to handle metal3 pod errors during deployment. (only applies for 4.3)

```
[kni@provisioner ~]$ oc get all -n openshift-machine-api
NAME                                          READY   STATUS
RESTARTS   AGE
pod/metal3-6c6cc7c56c-lj4lr                   0/8     Init:CreateContainerConfigError
0          <invalid>
```

This happens due to the missing `ConfigMap`

```
  Warning  Failed     <invalid> (x7 over 32s)  kubelet, master-1.<cluster-
name>.example.com  Error: configmap "metal3-config" not found
```

Make sure to add the ConfigMap before starting the deployment as shown below to solve the above problem

Create your `metal3-config.yaml` file as shown below:

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: metal3-config
  namespace: openshift-machine-api
data:
  cache_url: rhcos-43.81.202001142154.0-qemu.x86_64.qcow2.gz
  deploy_kernel_url: http://172.22.0.1:6180/images/ironic-python-agent.kernel
  deploy_ramdisk_url: http://172.22.0.1:6180/images/ironic-python-agent.initramfs
  dhcp_range: 172.22.0.10,172.22.0.100
  http_port: "6180"
  ironic_endpoint: http://172.22.0.1:6385/v1/
  ironic_inspector_endpoint: http://172.22.0.3:5050/v1/
  provisioning_interface: eno1
  provisioning_ip: 172.22.0.1/24
  rhcos_image_url: <URL-which-has-qcow-image>
```

Note: Change your `rhcos_image_url` to the appropriate URL for your deployment.

Place this file in `<Install-Dir>`

```
[kni@provisioner ~]$ cp metal3-config.yaml ocp/openshift/99_metal3-config.yaml
```

and then re-run the installation to fix the metal³ pod issue.

After the installation is complete copy the config file to the `.kube/config` directory to interact with the cluster.

```
[kni@provisioner ~]$ export KUBECONFIG=/install-dir/ocp/auth/kubeconfig
```

Verify if all the OpenShift nodes are up and running

```
[kni@provisioner ~]$ oc get nodes
NAME                                   STATUS   ROLES           AGE    VERSION
master-0.cloud.lab.eng.bos.redhat.com   Ready    master,worker   4h   v1.16.2
master-1.cloud.lab.eng.bos.redhat.com   Ready    master,worker   4h   v1.16.2
master-2.cloud.lab.eng.bos.redhat.com   Ready    master,worker   4h   v1.16.2
```

If the installation fails:

- Please check for logs `.openshift-install.log` .
- Master Node in `NotReady` state.

If any of the OpenShift nodes are in `NotReady` state, make sure the kubelet services are enabled.

```
[kni@provisioner~]$ oc get nodes
NAME                         STATUS     ROLES    AGE   VERSION
master-0.cloud.example.com   NotReady   master   67m   v1.16.2
master-1.cloud.example.com   Ready      master   67m   v1.16.2
master-2.cloud.example.com   Ready      master   67m   v1.16.2
```

Verify kubelet on each master node, example of logging in to `master-0` below

```
[kni@provisioner~]$ ssh core@master-0

[core@master-0 ~]$ sudo systemctl status kubelet
● kubelet.service - Kubernetes Kubelet
   Loaded: loaded (/etc/systemd/system/kubelet.service; enabled; vendor preset:
enabled)
  Drop-In: /etc/systemd/system/kubelet.service.d
           └─10-default-env.conf, 20-nodenet.conf
   Active: inactive (dead) since Tue 2020-03-10 16:05:14 UTC; 33s ago
 Main PID: 2358 (code=exited, status=0/SUCCESS)
      CPU: 3min 34.752s
```

Start the kubelet services and check back the status of the node.

```
[core@master-0 ~]$ sudo systemctl start kubelet
[core@master-0 ~]$ sudo systemctl status kubelet
● kubelet.service - Kubernetes Kubelet
   Loaded: loaded (/etc/systemd/system/kubelet.service; enabled; vendor preset:
enabled)
  Drop-In: /etc/systemd/system/kubelet.service.d
           └─10-default-env.conf, 20-nodenet.conf
   Active: active (running) since Tue 2020-03-10 16:07:27 UTC; 4s ago

[kni@provisioner~]$ oc get nodes
NAME                          STATUS   ROLES    AGE   VERSION
master-0.cloud.example.com   Ready    master   80m   v1.16.2
master-1.cloud.example.com   Ready    master   80m   v1.16.2
master-2.cloud.example.com   Ready    master   80m   v1.16.2
```

Chapter 9. NTP out of sync

The deployment of OpenShift clusters depends on having synced time. Without synced time, the deployment may fail due to the time inaccuracies if larger than two seconds. For example, notice the AGE of the nodes below.

```
[kni@provisioner ~]$ oc get nodes
NAME                          STATUS   ROLES    AGE   VERSION
master-0.cloud.example.com    Ready    master   145m   v1.16.2
master-1.cloud.example.com    Ready    master   135m   v1.16.2
master-2.cloud.example.com    Ready    master   145m   v1.16.2
worker-2.cloud.example.com    Ready    worker   100m  v1.16.2
```

This leads to inconsistent timing delays as shown below

```
[kni@provisioner ~]$ oc get bmh -n openshift-machine-api
master-1   error    registering              kni7-master-1         ipmi://<out-of-
band-ip>

#sudo timedatectl
               Local time: Tue 2020-03-10 18:20:02 UTC
           Universal time: Tue 2020-03-10 18:20:02 UTC
                 RTC time: Tue 2020-03-10 18:36:53
                Time zone: UTC (UTC, +0000)
System clock synchronized: no
              NTP service: active
          RTC in local TZ: no
```

In an already existing cluster, this can be fixed by following the below steps.

- Add `chrony.conf` file and encode it as `base64`, for example:

```
cat << EOF | base 64
server <NTP-server> iburst
stratumweight 0
driftfile /var/lib/chrony/drift
rtcsync
makestep 10 3
bindcmdaddress 127.0.0.1
bindcmdaddress ::1
keyfile /etc/chrony.keys
commandkey 1
generatecommandkey
noclientlog
logchange 0.5
logdir /var/log/chrony
EOF
[text-in-base-64]
```

- Create the `MachineConfig` file, replacing the `base64` string with the one you just created yourself. This example adds the file to master nodes. You can change it to worker or make an additional `MachineConfig` for the worker role:

```
[kni@provisioner ~]$ cat << EOF > ./99_masters-chrony-configuration.yaml
apiVersion: machineconfiguration.openshift.io/v1
kind: MachineConfig
metadata:
  creationTimestamp: null
  labels:
    machineconfiguration.openshift.io/role: master
  name: 99-master-etc-chrony-conf
spec:
  config:
    ignition:
      config: {}
      security:
        tls: {}
      timeouts: {}
      version: 2.2.0
    networkd: {}
    passwd: {}
    storage:
      files:
      - contents:
          source: data:text/plain;charset=utf-8;base64,[text-in-base-64]
          verification: {}
        filesystem: root
        group:
          name: root
        mode: 420
        path: /etc/chrony.conf
        user:
          name: root
    systemd: {}
  osImageURL: ""
```

Make a backup copy of the configuration file.

Since, the cluster is already running, apply the file as follows:

```
[kni@provisioner ~]$ oc apply -f ./masters-chrony-configuration.yaml
sudo timedatectl
               Local time: Tue 2020-03-10 19:10:02 UTC
           Universal time: Tue 2020-03-10 19:10:02 UTC
                 RTC time: Tue 2020-03-10 19:36:53
                Time zone: UTC (UTC, +0000)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
```

When wanting to setup time sync prior to deployment, generate manifest files, add this file to the `openshift` directory, then continue to create the cluster.

```
[kni@provisioner ~]$ cp chrony-masters.yaml <Install-Dir>/ocp/openshift/99_masters-
chrony-configuration.yaml
```

Chapter 10. Cleaning up previous installations

If re-running the deployment, delete all the older bootstrap VMs including its volume as shown below. Failure to do so may cause over consumption of resources on the provisioner host.

Clean up the older VMs and their volumes with the help of below script.

```
BOOTSTRAP=$(virsh list --all | grep "$CLUSTER.*bootstrap" | tail -1 | awk '{print
$2}')
virsh destroy $BOOTSTRAP
virsh undefine $BOOTSTRAP
virsh vol-delete $BOOTSTRAP default
virsh vol-delete $BOOTSTRAP.ign default
```

Chapter 11. Registry Issues

At times, there may be a need to create a disconnected registry due to limited connectivity to an environment or creating a central location to host images locally. Details can be found in Creating a disconnected registry

When attempting to mirror the registry and if you receive a 'User Not Authorized' error, this is due to not appending the new authentication to your already existing pull-secret.txt file.

```
[kni@registry ~]$ oc adm -a ${LOCAL_SECRET_JSON} release mirror \
     --from=${PRODUCT_REPO}/${PROJECT}/${RELEASE_NAME}:${OCP_RELEASE} \
     --to=${LOCAL_REGISTRY}/${LOCAL_REPOSITORY} \
     --to-release-image=${LOCAL_REGISTRY}/${LOCAL_REPOSITORY}:${OCP_RELEASE}

User Not Authorized
```

After the registry is mirrored, confirm that you can access this in your disconnected environment

```
[kni@provisioner ~]$ curl -k -u <user>:<password>
https://registry.example.com:<registry-port>/v2/_catalog
{"repositories":["<Repo-Name>"]}
```

Chapter 12. Miscellaneous Issues

12.1. runtime network not ready

After the deployment of a cluster if you receive such an error `runtime network not ready: NetworkReady=false reason:NetworkPluginNotReady message:Network plugin returns error: Missing CNI default network` we need to inspect the pods in `openshift-network-operator` namespace.

```
[kni@provisioner ~]$ oc get all -n openshift-network-operator
NAME                                   READY   STATUS              RESTARTS   AGE
pod/network-operator-69dfd7b577-bg89v   0/1     ContainerCreating   0          149m
```

The cluster network operator is responsible for deploying the networking components. It does this in response to a special object created by the installer.

It runs very early in the installation process, after the master nodes have come up but before the bootstrap control plane has been torn down. It can be indicative of more subtle installer issues, such as long delays in bringing up master nodes or issues with `apiserver` communication.

First, determine that the network configuration exists, from `provisioner` node:

```
[kni@provisioner ~]$ kubectl get network.config.openshift.io cluster -oyaml
apiVersion: config.openshift.io/v1
kind: Network
metadata:
  name: cluster
spec:
  serviceNetwork:
  - 172.30.0.0/16
  clusterNetwork:
  - cidr: 10.128.0.0/14
    hostPrefix: 23
  networkType: OpenShiftSDN
```

If it doesn't exist, the installer didn't create it. You'll have to run `openshift-install create manifests` to determine why.

Next, check that the network-operator is running, from `provisioner` node issue:

```
[kni@provisioner ~]$ kubectl -n openshift-network-operator get pods
```

and retrieve the logs. Note that, on multi-master systems, the operator will perform leader election and all other operators will sleep:

```
[kni@provisioner ~]$ kubectl -n openshift-network-operator logs -l "name=network-
operator"
```

Note: For more details please refer Troubleshooting

12.2. Servers not getting the correct IPv6 over DHCP

1. The reserved IPv6 addresses should be outside your DHCP Range
2. In the reservation make sure you're using the correct MAC Address and Client ID (if supported), example below:

```
# This is a dnsmasq dhcp reservation, 'id:00:03:00:01' is the client id and
'18:db:f2:8c:d5:9f' is the MAC Address for the NIC
id:00:03:00:01:18:db:f2:8c:d5:9f,openshift-master-1,[2620:52:0:1302::6]
```

3. Make sure Route Announcements are working and that DHCP server is listening on the required interfaces serving the required ranges

12.3. Servers not getting the correct hostname over DHCP

During the IPv6 deployment you need your servers to get their hostname over DHCP and at times the hostname is not assigned by NetworkManager right away.

If you login in the master nodes and you find something like this:

```
Failed Units: 2
  NetworkManager-wait-online.service
  nodeip-configuration.service
```

The node likely booted up without hostname, which cause `kubelet` to boot with `localhost.localdomain` hostname. The following steps can be taken to attempt to remedy.

1. Force the hostname renewal

```
# Check hostname, if it's localhost run below steps.
hostname
# Wired Connection 5 corresponds to the connection which is assigned to the NIC
connected to the baremetal network, it may be different in your env
# This will force the host to renew the dhcp lease
[core@master-X ~]$ sudo nmcli con up "Wired connection 5"
# Check hostname again
[core@master-X ~]$ hostname
# If the hostname is still localhost.localdomain restart NetworkManager
[core@master-X ~]$ sudo systemctl restart NetworkManager
# If the hostname is still localhost.localdomain wait a few seconds/minutes and
check again, if same, repeat previous steps
```

2. Restart `nodeip-configuration` service

```
# This service will reconfigure Kubelet service with the correct hostname
references
[core@master-X ~]$ sudo systemctl restart nodeip-configuration.service
```

3. Restart `kubelet` service

```
# We need to reload the unit files definition since kubelet one was changed by
previous step
sudo systemctl daemon-reload
# Restart kubelet
[core@master-X ~]$ sudo systemctl restart kubelet.service
```

4. Ensure `kubelet` booted with correct hostname

```
# Tail the journal and find the hostname
[core@master-X ~]$ sudo journalctl -fu kubelet.service
```

where `X` is the master node number.

If you already had this cluster running when the node booted up with the wrong hostname you will have pending `csrs` on the cluster, you **MUST NOT** approve them, therewise you will face even more issues.

```
# Get CSR on the cluster
[kni@provisioner ~]$ oc get csr
# If you see Pending csr ensure they are good ones
[kni@provisioner ~]$ oc get csr <pending_csr> -o jsonpath='{.spec.request}' | base64
-d | openssl req -noout -text
# If you see Subject Name: localhost.localdomain remove the csr
[kni@provisioner ~]$ oc delete csr <wrong_csr>
```