Prepare three VMs for K8S cluster

In this guide, we will clone 3 VMs from basenode to create a Kubernetes Cluster. One VM for master node, the other two VMs for worker nodes.
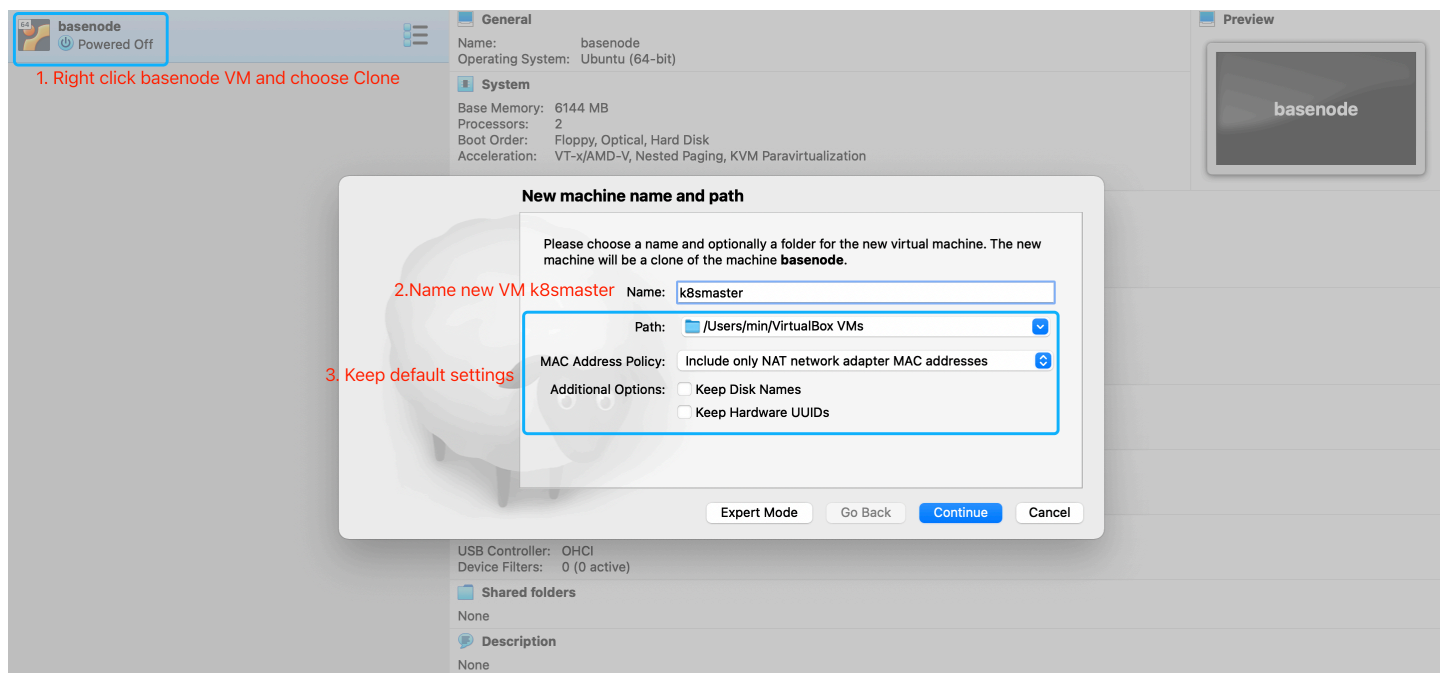
1. Clone the master node

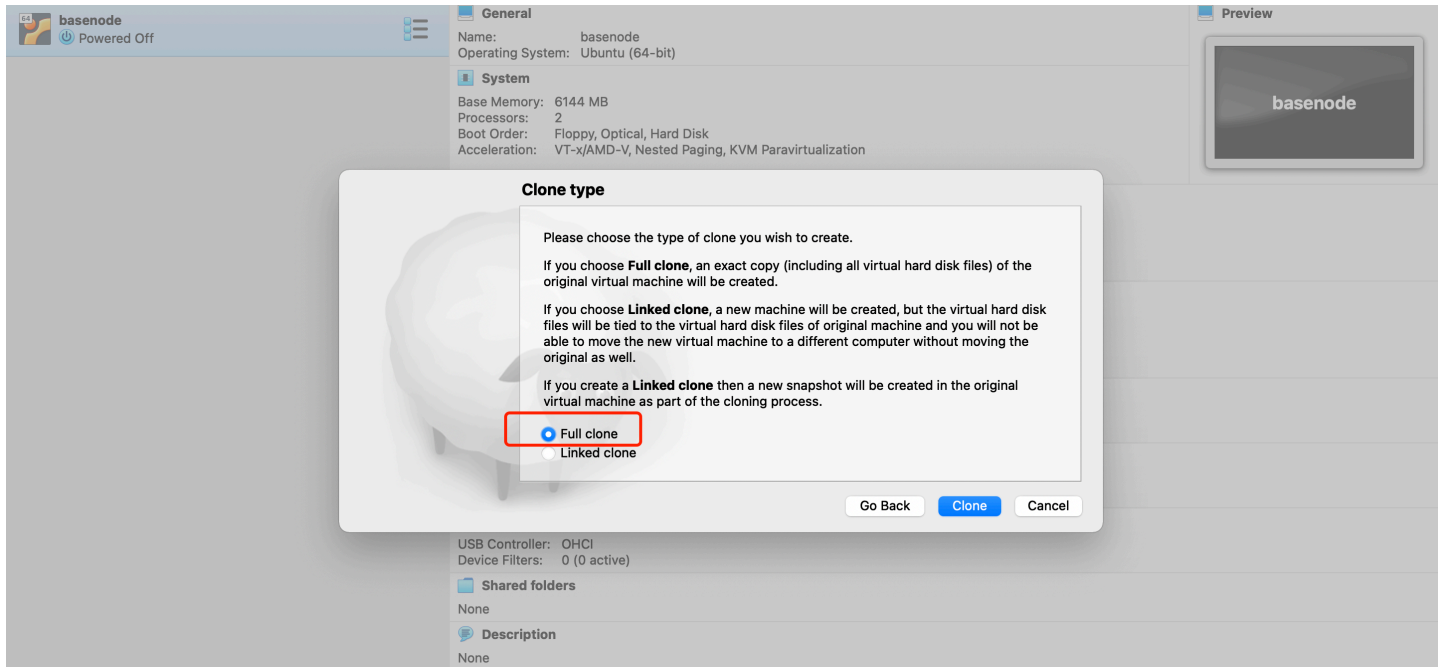Before cloning from `basenode` VM, make sure it's powered off.

1.1 Clone master node from basenode VM and choose full clone

1.2 Update master hostname

- Power on `k8smaster` VM and login to the system using credentials. Username is `sadmin` by default, password is `sadmin` by default.

```
Ubuntu 20.04.3 LTS basenode tty1

basenode login: sadmin
Password:
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-92-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon 20 Dec 2021 12:56:58 AM UTC

  System load:  1.46                Users logged in:       0
  Usage of /:   37.1% of 19.56GB    IPv4 address for docker0: 172.17.0.1
  Memory usage: 4%                  IPv4 address for enp0s3:  10.0.2.15
  Swap usage:   0%                  IPv4 address for enp0s8:  192.168.56.2
  Processes:    120


0 updates can be applied immediately.


Last login: Sun Dec 19 14:01:42 UTC 2021 from 192.168.56.1 on pts/0
sadmin@basenode:~$
```

- Make sure you have the `root` user priviledge to do the change.

  ```
  sudo -i
  ```

- Check the hostname, it should print `basenode` at this time.

  ```
  hostnamectl
  ```

- Then update the hostname to `k8smaster` and check the updated hostname

  ```
  # update hostname
  hostnamectl set-hostname k8smaster

  # check updated hostname
  hostnamectl
  ```

```
sadmin@basenode:~$ sudo -i
[sudo] password for sadmin:
root@basenode:~# hostnamectl
   Static hostname: basenode
         Icon name: computer-vm
           Chassis: vm
        Machine ID: e81c1b04f79f43c1b565b721dced7cb8
           Boot ID: c27fd4fde99d4ac7ac8331fa991b6f56
    Virtualization: oracle
  Operating System: Ubuntu 20.04.3 LTS
            Kernel: Linux 5.4.0-92-generic
      Architecture: x86-64
root@basenode:~#
root@basenode:~# hostnamectl set-hostname k8smaster
root@basenode:~#
root@basenode:~# hostnamectl
   Static hostname: k8smaster
         Icon name: computer-vm
           Chassis: vm
        Machine ID: e81c1b04f79f43c1b565b721dced7cb8
           Boot ID: c27fd4fde99d4ac7ac8331fa991b6f56
    Virtualization: oracle
  Operating System: Ubuntu 20.04.3 LTS
            Kernel: Linux 5.4.0-92-generic
      Architecture: x86-64
root@basenode:~# _
```

1.3 Update host-only network IP

We need to change the IP of host-only network adapter as well. For master node, we set it to `192.168.56.10`

- Update the netplan config file

```
vi /etc/netplan/00-installer-config.yaml
```

- Update the addresses of `enp0s8` to `192.168.56.10`

```yaml
network:
  ethernets:
    enp0s3:
      dhcp4: true
    enp0s8:
      dhcp4: no
      addresses:
        - 192.168.56.10/24
  version: 2
```

- Apply the changes

```
netplan apply
```

Now we should be able to ssh from the host to the VM using `ssh sadmin@192.168.56.10`

2. Clone worker node k8sworker1

2.1 Clone worker node 1 from basenode VM and choose full clone

Follow the same steps in 1.1 to clone the worker node and name it `k8sworker1`.

2.2 Update worker 1 hostname

Follow the same steps in 1.2 to update the hostname to `k8sworker1`

```
sudo -i
hostnamectl set-hostname k8sworker1
```

2.3 Update host-only network IP

Follow the same steps in 1.3 to update the IP of host-only network adapter to `192.168.56.11`

```
# 1. open netplan config
vi /etc/netplan/00-installer-config.yaml

# 2. Update content
network:
  ethernets:
    enp0s3:
      dhcp4: true
    enp0s8:
      dhcp4: no
      addresses:
```

```
      - 192.168.56.11/24
  version: 2


# 3. Apply changes
netplan apply
```

3. Clone worker node k8sworker2

3.1 Clone worker node 2 from basenode VM and choose full clone

Follow the same steps in 1.1 to clone the worker node and name it `k8sworker2` .

3.2 Update worker 2 hostname

Follow the same steps in 1.2 to update the hostname to `k8sworker2`

```
sudo -i
hostnamectl set-hostname k8sworker2
```

3.3 Update host-only network IP

Follow the same steps in 1.3 to update the IP of host-only network adapter to `192.168.56.12`

```
# 1. open netplan config
vi /etc/netplan/00-installer-config.yaml

# 2. Update content
network:
  ethernets:
    enp0s3:
      dhcp4: true
    enp0s8:
      dhcp4: no
      addresses:
        - 192.168.56.12/24
  version: 2

# 3. Apply changes
netplan apply
```

4. Update `/etc/hosts` of all VMs

- In all three VMs, open `/etc/hosts` file

```
vi /etc/hosts
```

- Update the file with below content

```
# IPv4 hosts
::1         localhost
127.0.0.1   localhost
127.0.0.1   k8smaster
192.168.56.10 k8smaster.k8s.io k8smaster
192.168.56.11 k8sworker1.k8s.io k8sworker1
192.168.56.12 k8sworker2.k8s.io k8sworker2
```

At this time, all three VMs can resolve the hostname with each other.

👉 Tips: If you run into the SSH Error in the host `REMOTE HOST IDENTIFICATION HAS CHANGED!`, try below command:

```
ssh-keygen -R your-ip

# delete previously stored public key of VMs from host
ssh-keygen -R 192.168.56.11
ssh-keygen -R 192.168.56.12
```