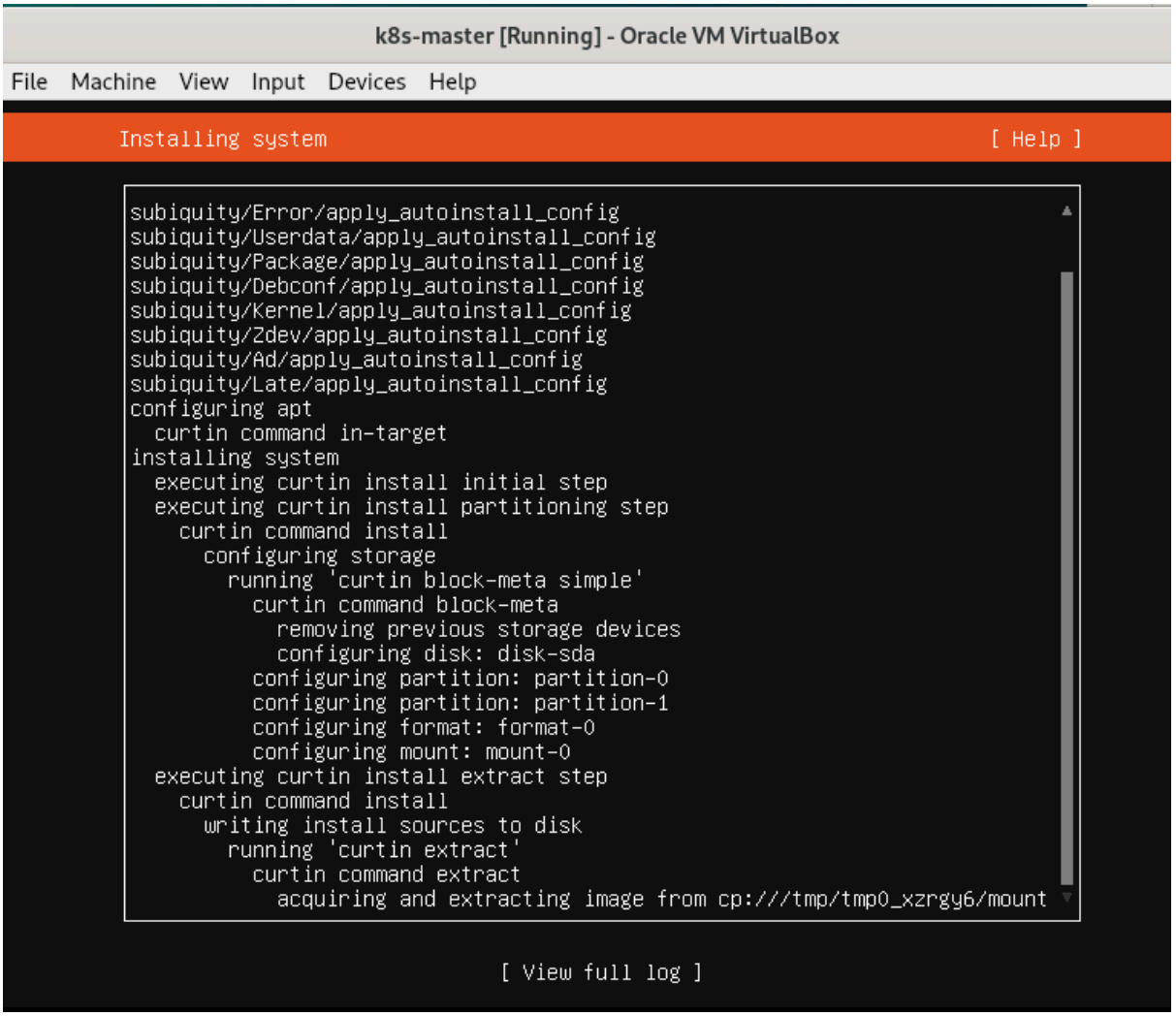
Install OS



Preparing cluster

Install Docker

Please refer to official document to install docker. In this examination i am using APT method to install. If possible use build from source method to ensure flexibility and meets the requirements needs.

```
# Add Docker's official GPG key:
sudo apt-get update
sudo apt-get install ca-certificates curl
sudo install -m 0755 -d /etc/apt/keyrings
sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o
/etc/apt/keyrings/docker.asc
sudo chmod a+r /etc/apt/keyrings/docker.asc
```

```
# Add the repository to Apt sources:
echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc]
https://download.docker.com/linux/ubuntu \
  $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
```

```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin
docker-compose-plugin
```

```
administrator@k8s-master:~$ sudo apt-get install docker-ce docker-ce-cli contain
erd.io docker-buildx-plugin docker-compose-plugin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras libltdl7 libslirp0 pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli
  docker-ce-rootless-extras docker-compose-plugin libltdl7 libslirp0 pigz
  slirp4netns
0 upgraded, 10 newly installed, 0 to remove and 17 not upgraded.
Need to get 120 MB of archives.
After this operation, 430 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1
[63.6 kB]
Get:2 http://id.archive.ubuntu.com/ubuntu jammy/main amd64 libltdl7 amd64 2.4.6-
15build2 [39.6 kB]
```

Install etcd

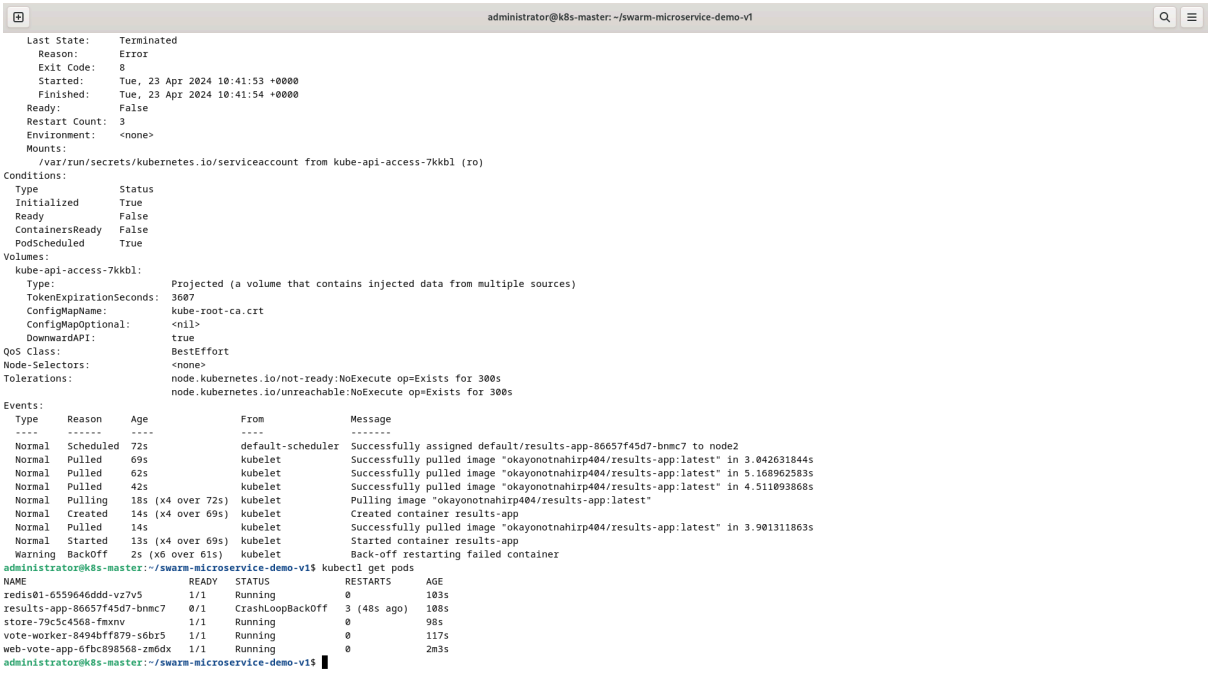
I am using binary release for this purpose and copy binary to /usr/local/bin. Send command etcd –version to check it’s release version.

```
administrator@k8s-master:~$ curl -L -O https://github.com/etcd-io/etcd/releases/
download/v3.5.13/etcd-v3.5.13-linux-amd64.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100 19.1M  100 19.1M    0     0  1001k      0  0:00:19  0:00:19 --:--:-- 1154k
administrator@k8s-master:~$ ls
etcd-v3.5.13-linux-amd64.tar.gz
administrator@k8s-master:~$ ls -l
total 19612
-rw-rw-r-- 1 administrator administrator 20080057 Apr 21 16:47 etcd-v3.5.13-linu
x-amd64.tar.gz
administrator@k8s-master:~$
```

Install kubectl

```
administrator@k8s-master:~$ sudo apt install -y kubectl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  kubectl
0 upgraded, 1 newly installed, 0 to remove and 17 not upgraded.
Need to get 10.8 MB of archives.
After this operation, 51.5 MB of additional disk space will be used.
Get:1 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stabl
e:/v1.30/deb  kubectl 1.30.0-1.1 [10.8 MB]
Fetched 10.8 MB in 11s (1,022 kB/s)
Selecting previously unselected package kubectl.
(Reading database ... 74552 files and directories currently installed.)
Preparing to unpack .../kubectl_1.30.0-1.1_amd64.deb ...
Unpacking kubectl (1.30.0-1.1) ...
Setting up kubectl (1.30.0-1.1) ...
Scanning processes...
Scanning linux images...
```

Please refer to official document to install kubectl. In this examination i am using native package manager method to install.



Successfully deployed but got error at results-app. Problem cause might be a bug.