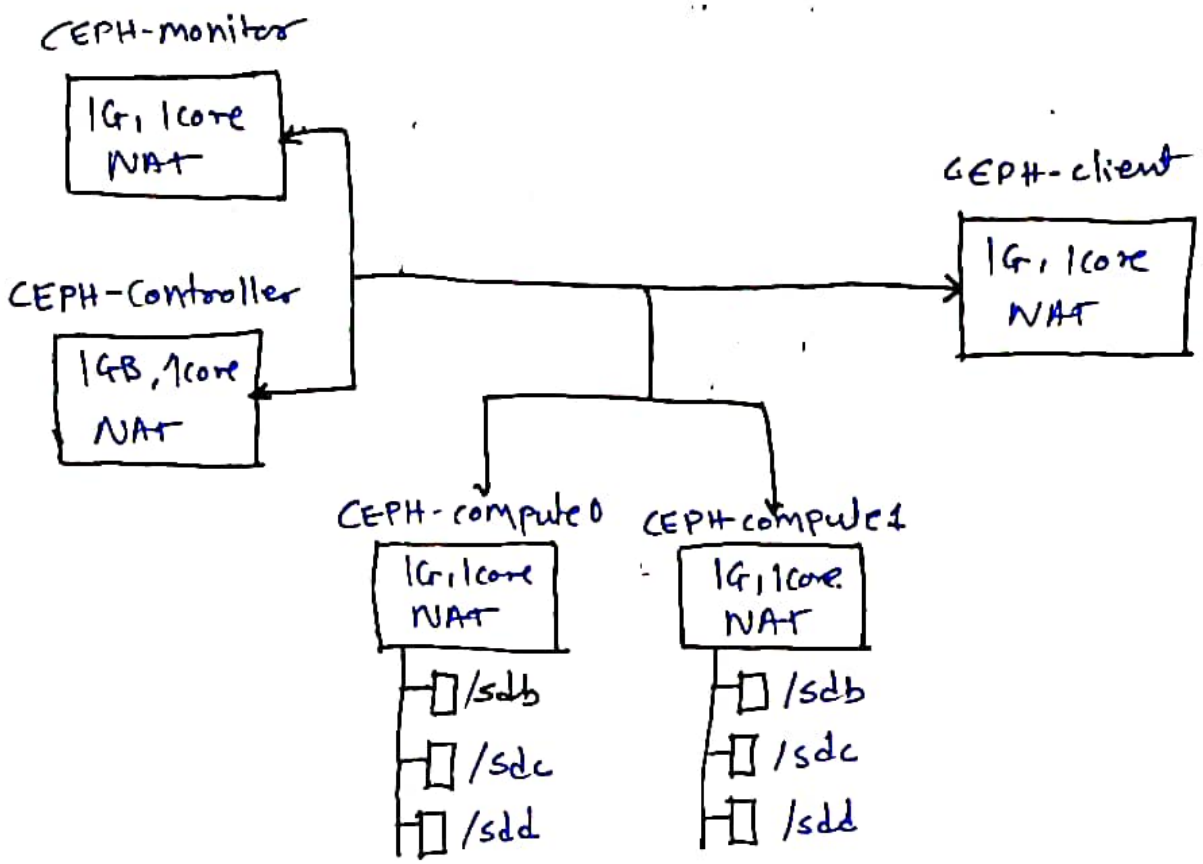
# CEPH Practical




## on all machines

```
# ifup ens33
# yum install rsync -y
# systemctl stop firewalld
# systemctl disable firewalld
# vi /etc/selinux/config  ->SELINUX = disabled
```

## on monitor

```
# vi /etc/hosts
```

| | | |
|---|---|---|
| 192.168.44.136 | CEPH-Monitor | ceph-monitor.hpcsa.cdac.in |
| 192.168.44.137 | ceph-controller | ceph-controller.hpcsa.cdac.in |
| 192.168.44.138 | ceph-compute00 | ceph-compute00.hpcsa.cdac.in |
| 192.168.44.139 | ceph-compute01 | ceph-compute01.hpcsa.cdac.in |
| 192.168.44.140 | ceph-~~compute~~ client | ceph-client.hpcsa.cdac.in |

# rsync /etc/hosts root@192.168.44.137:/etc/hosts
rsync hosts file to all machines & try to ping each machine.

~~on monitor~~

on ~~controller~~ All machine

# ~~useradd~~ yum install chrony -y
# chronyc sourcestats.
# useradd cephadm && echo "cdac" | passwd --stdin cephadm
# echo "cephadm ALL=(root) NOPASSWD:ALL" | sudo tee /etc/sudoers.d/cephadm
# chmod 440 /etc/sudoers.d/cephadm
# yum install -y https://d1.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
# reboot

chrony configuration (run these commands on all nodes except controller)

# vi /etc/~~hos~~ chrony.conf
& comment all server[0-3] lines & add this line
'server ceph-controller'

## On controller

```
# rpm -Uvh https://download.ceph.com/rpm-mimic/el7/noarch/ceph-release-1-1.el7.noarch.rpm

# yum update -y && yum install ceph-deploy python2-pip -y

# su - cephadm

# ssh-keygen

# ssh-copy-id cephadm@ceph-compute01
# ssh-copy-id cephadm@ceph-compute00
# ssh-copy-id cephadm@ceph-monitor
# ssh-copy-id cephadm@ceph-client

# nano ~/.ssh/config
```

↳ Add these lines

```
Host ceph-compute00
    Hostname ceph-compute00
    User cephadm
Host ceph-compute01
    Hostname ceph-compute01
    User cephadm
Host ceph-monitor
    Hostname ceph-monitor
    User cephadm
Host ceph-client
    Hostname ceph-client
    User cephadm
```

# chmod 644 ~/.ssh/config

# mkdir ceph_cluster

# cd ceph_cluster

# ceph-deploy new ceph-monitor.

# vi ceph.conf

↳ Add this line.

public network = 192.168.44.0/24

Network ip

# ceph-deploy install ceph-controller ceph-compute00 ceph-compute01 ceph-monitor. → it installs ceph on all nodes

# ceph-deploy disk list ceph-compute00 ceph-compute01

# ceph-deploy mgr create ceph-compute00 ceph-compute01

# ceph-deploy osd create --data /dev/sdb ceph-compute00

# ceph-deploy osd create --data /dev/sdc ceph-compute00

# ceph-deploy osd create --data /dev/sdd ceph-compute00

# ceph-deploy osd create --data /dev/sdb ceph-compute01

# ceph-deploy osd create --data /dev/sdc ceph-compute01

# ceph-deploy osd create --data /dev/sdd ceph-compute01

Install ceph on client

#ceph-deploy install ceph-client

#ceph-deploy admin ceph-client

Check health

#Ceph health detail

# ceph -s

create a ceph storage pool

sudo

#ceph osd pool create rbd 200 3

Explaination :-

200 is RBD & 3 is replication factor

Formula : $\frac{6 \times 100}{3}$

6 is OSD , 100 is placement group

3 is replication.

On client

# rbd create disk01 --size 4096

# rbd ls -l

# modprobe rbd

# rbd feature disable disk01 exclusive-lock object-map fast-diff deep-flatten.

# rbd map disk01

# rbd showmapped

~~client~~ create file system on new block device

```
# mkfs.xfs /dev/rbd0
# mkdir -p /mnt/mydisk
# mount /dev/rbd0 /mnt/mydisk
# dd if=/dev/rbd0 of=cephfile.txt bs=1024
  count=1000000
```

Now in controller

```
# sudo ceph -s
  ↳ data:
      pools : 1 pools, 200 pgs
      objects: 261 objects, 991 MiB
      usage : 8 GiB, 112 GiB
```