**Required Machines**

**Master : 2GB RAM, 20GB Storage, 2 Core, Network (NAT,HOST)**

**Node1 : 2GB RAM, 20GB Storage, 2 Core, Network (NAT,HOST)**

**Node2 : 2GB RAM, 20GB Storage, 2 Core, Network (NAT,HOST)**

**Master node:-**

1. ifup ens33
2. ip a
3. yum install nfs-utils –y
4. systemctl start nfs-server.service
5. systemctl enable nfs-server.service
6. chmod 777 /home/
7. vim /etc/exports
8. /home 10.10.10.160(re,sync,no\_root\_squash)
9. /home 10.10.10.161(re,sync,no\_root\_squash)
10. :wq!
11. exportfs -avr
12. hostnamectl set-hostname master
13. exec bash
14. systemctl stop firewalld
15. systemctl disable firewalld
16. setenforce 0
17. vi /etc/selinux/config ------> SELINUX=disabled
18. Vim /etc/hosts
    1. 10.10.10.159 master
    2. 10.10.10.160 client1
    3. 10.10.10.161 client2
19. ssh-keygen
20. ssh-copy-id root@node1
21. ssh-copy-id root@node2
22. su – admin

**Now in admin@master user**

1. ssh-keygen
2. ssh-copy-id admin@node1
3. ssh-copy-id admin@node2
4. # su – admin

**client 1&2:-**

1. ifup ens33
2. ip a
3. yum install nfs-utils –y
4. systemctl start nfs-server.service
5. systemctl enable nfs-server.service
6. systemctl stop firewalld
7. systemctl disable firewalld
8. setenforce 0
9. vi /etc/selinux/config ------> SELINUX=disabled
10. hostnamectl set-hostname client2/client1
11. exec bash
12. Vim /etc/hosts
    1. 10.10.10.159 master
    2. 10.10.10.160 client1
    3. 10.10.10.161 client2
13. showmount -e 10.10.10.159

**Master:-**

1. yum install epel-release –y
2. yum install munge munge-lib munge-devel
3. useradd admin
4. # passwd admin ---------> set new password for **admin** user
5. rsync /etc/hosts root@client1:/etc/hosts
6. rsync /etc/hosts root@client2:/etc/hosts

**clients 1&2**

1. yum install epel-release –y
2. yum install munge munge-lib munge-devel
3. useradd admin
4. # passwd admin ---------> set new password for **admin** user

**On Master Node**

1. # /usr/sbin/create-munge-key –r
2. # scp /etc/munge/munge.key node1:/etc/munge/
3. # scp /etc/munge/munge.key node2:/etc/munge/
4. # systemctl start munge.service && systemctl enable munge.service

**On Node1 & Node2**

1. # chown munge:munge /etc/munge/munge.key
2. # systemctl start munge.service && systemctl enable munge.service
3. # mount -t nfs 10.10.10.135:/home/ /home/

Master:-

1. wget https://download.schedmd.com/slurm/slurm-20.11.9.tar.bz2
2. yum install rpm-build
3. yum install python3 readline-devel perl-ExtUtils-MakeMaker pam-devel -y
4. yum install gcc
5. yum install mysql-devel
6. rpmbuild -ta slurm-20.11.9.tar.bz2

**Client 1&2:-**

1. yum install pam-devel python3 redline-devel perl-ExtUtils-MakeMaker mysql-devel -y
2. export SLURMUSER=900
3. groupadd -g $SLURMUSER slurm
4. useradd -m -c "SLURM workload manager" -d /var/lib/slurm -u $SLURMUSER -g slurm -s /bin/bash slurm

**Master:-**

1. export SLURMUSER=900
2. groupadd -g $SLURMUSER slurm
3. useradd -m -c "SLURM workload manager" -d /var/lib/slurm -u $SLURMUSER -g slurm -s /bin/bash slurm
4. ll /root/rpmbuild/RPMS/x86\_64/
5. mkdir /home/rpms
6. cd /root/rpmbuild/RPMS/x86\_64/
7. cp \* /home/rpms/
8. cd /home/rpms/
9. # yum install localinstall \* -y

**Client 1&2:-**

1. cd /home/rpms/
2. yum install localinstall \* -y
3. rpm -e slurm-slurmctld-20.11.9-1.el7.x86\_64
4. rpm -e slurm-slurmdbd-20.11.9-1.el7.x86\_64

#We deleted these packages from node machines because we don’t need it

**On All Machine**

1. # mkdir /var/spool/slurm
2. # chown slurm:slurm /var/spool/slurm
3. # chmod 755 /var/spool/slurm/
4. # mkdir /var/log/slurm/
5. # chown -R slurm . /var/log/slurm

**On Master Node**

1. # touch /var/log/slurm/slurmctld.log
2. # chown slurm:slurm /var/log/slurm/slurmctld.log
3. # touch /var/log/slurm\_jobaact.log
4. # touch /var/log/slurm\_jobcomp.log
5. # chown slurm: /var/log/slurm\_jobaact.log
6. # chown slurm: /var/log/slurm\_jobcomp.log
7. # cp /etc/slurm/slurm.conf.example /etc/slurm/slurm.conf
8. # vi /etc/slurm/slurm.conf

On line 11. clustername=**hpcsa**

On line 12. ControlMachine=**master**

Comment line no. 92

**On Node1 & Node2**

1. # systemctl start slurmd.service && systemctl enable slurmd.service
2. # slurmd -C

**On Master Node**

1. vi /etc/slurm/slurm.conf
2. **line no 93.** PartitionName=**standard** Nodes=ALL Default=YES MaxTime=INFINITE State=UP
3. **line no 94**. NodeName=client1 CPUs=2 Boards=1 SocketsPerBoard=2 CoresPerSocket=1 ThreadsPerCore=1 RealMemory=1819 state=UNKNOWN (slurmd -C outputline of node1)
4. **line no 95.** NodeName=client2 CPUs=2 Boards=1 SocketsPerBoard=2 CoresPerSocket=1 ThreadsPerCore=1 RealMemory=1819 State=UNKNOWN (slurmd -C outputline of node1)
5. **(PartitionName=standard Nodes=ALL Default=YES MaxTime=INFINITE State=UP**
6. **NodeName=client1 CPUs=2 Boards=1 SocketsPerBoard=2 CoresPerSocket=1 ThreadsPerCore=1 RealMemory=1819 state=UNKNOWN**
7. **NodeName=client2 CPUs=2 Boards=1 SocketsPerBoard=2 CoresPerSocket=1 ThreadsPerCore=1 RealMemory=1819 state=UNKNOWN)**
8. # scp /etc/slurm/slurm.conf node1:/etc/slurm/
9. # scp /etc/slurm/slurm.conf node2:/etc/slurm/
10. # systemctl start slurmctld.service && systemctl enable slurmctld.service
11. # sinfo