ASSIGNMENT_01

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sudo nano /etc/hosts

sudo visudo ALL=(ALL:ALL) NOPASSWD ALL

sudo apt-get install ifupdown

sudo nano /etc/network/interfaces

wget https://download.schedmd.com/slurm/slurm-21.08.8.tar.bz2

sudo apt install -y build-essential munge libmunge-dev libmunge2 libmysqlclient-dev libssl-dev libpam0g-dev libnuma-dev perl

tar -xvjf slurm-21.08.8.tar.bz2 slurm-21.08.8

cd slurm-21.08.8/

./configure --prefix=/home/controller1/slurm-21.08.8/

make

make install

sudo create-munge-key

sudo chown munge: /etc/munge/munge.key

sudo chmod 400 /etc/munge/munge.key

sudo scp -r /etc/munge/munge.key controller1@compute1:/tmp (copy munge-key in compute1)

sudo chown -R munge: /etc/munge /var/log/munge

sudo chmod 0700 /etc/munge /var/log/munge

service status munge

sudo systemctl status munge

sudo mkdir /etc/slurm-llnl

controller1@controller:~/slurm-21.08.8/etc$

```
sudo cp /etc/slurm.conf.example /etc/slurm-llnl/slurm.conf

sudo cp slurmctld.service /etc/systemd/system/

sudo cp /etc/slurm-llnl/slurm.conf .

sudo scp /etc/slurm-llnl/slurm.conf controller1@compute1:/tmp

cd etc

sudo cp slurmdbd.conf.example  slurmdbd.conf

sudo nano slurmdbd.conf

sudo apt-get install mailutils

ls /usr/bin

sudo nano Cgroup.conf

sudo apt-get install mariadb-server

sudo mysql -u root -p

sudo cp slurmdbd.service /etc/systemd/system/

 sudo systemctl start slurmdbd.service

 sudo systemctl status slurmdbd.service

sudo cp slurmd.service  /etc/systemd/system

sudo mkdir /var/spool/slurmctld

sudo chmod 777 /var/spool/slurmctld/

sudo chown controller1:controller1 /var/spool/slurmctld/

sudo nano slurmctld.service

sudo chown controller1:controller1 /var/spool/slurmctld/

sudo mkdir /etc/slurm/

sudo cp /etc/slurm-llnl/slurm.conf /etc/slurm/

sudo cp /etc/slurm-llnl/slurm.conf .

sudo nano slurm.conf

sudo cp slurm.conf /etc/slurm/

sudo cp slurm.conf /etc/slurm-llnl/
```

sudo service slurmdbd restart

sudo service slurmdbd status

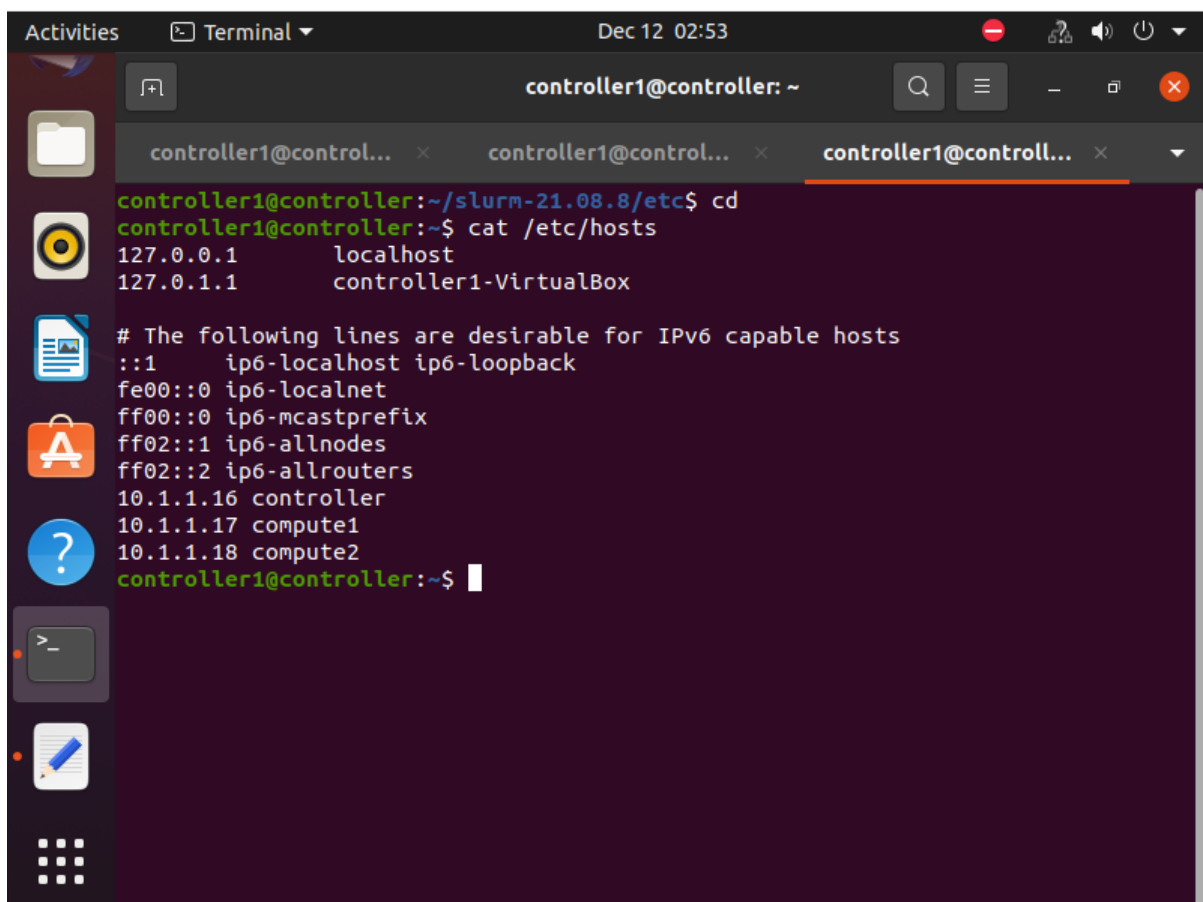sudo service slurmd restart

sudo service slurmd status

sudo service slurmctld restart

sudo service slurmctld status

ON Controller

```
controller1@controller:~$ cat /etc/network/interfaces
# interfaces(5) file used by ifup(8) and ifdown(8)
# Include files from /etc/network/interfaces.d:
source-directory /etc/network/interfaces.d


auto enp0s8
iface enp0s8 inet static
address 10.1.1.16
netmask 255.255.255.0
broadcast 10.1.1.255

controller1@controller:~$
```

Activities   Terminal ▼   Dec 12 03:01

controller1@controller: ~

controller1@control... ×   controller1@control... ×   controller1@controll... ×

```
  GNU nano 4.8                      /etc/sudoers.tmp
#
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults        env_reset
Defaults        mail_badpass
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin>

# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL
controller1 ALL=(ALL:ALL) ALL
# Members of the admin group may gain root privileges
                      [ Read 30 lines ]
^G Get Help   ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify
^X Exit       ^R Read File  ^\ Replace    ^U Paste Text ^T To Spell
```

controller1@controller: /etc/slurm-llnl

controller1@controller: ~/slurm-21.08.8   ✕   controller1@controller: ~/slurm-21.08.8/etc   ✕

```
  GNU nano 4.8                                          slurm.conf

#
# Example slurm.conf file. Please run configurator.html
# (in doc/html) to build a configuration file customized
# for your environment.
#
#
# slurm.conf file generated by configurator.html.
# Put this file on all nodes of your cluster.
# See the slurm.conf man page for more information.
#
ClusterName=cluster
SlurmctldHost=controller
AuthType=auth/munge
#SlurmctldHost=
#
#DisableRootJobs=NO
#EnforcePartLimits=NO
#Epilog=
#EpilogSlurmctld=
#FirstJobId=1
#MaxJobId=67043328
#GresTypes=
#GroupUpdateForce=0
#GroupUpdateTime=600
#JobFileAppend=0
#JobRequeue=1
#JobSubmitPlugins=lua
#KillOnBadExit=0
#LaunchType=launch/slurm
                                                    [ Read 157 lines ]
```

controller1@controller: ~/slurm-21.08.8/etc

```
  GNU nano 4.8                                    slurmdbd.conf
#ArchiveScript=
#JobPurge=12
#StepPurge=1
#
# Authentication info
AuthType=auth/munge
#AuthInfo=/var/run/munge/munge.socket.2
#
# slurmDBD info
DbdAddr=10.1.1.16
DbdHost=controller
#DbdPort=7031
SlurmUser=controller1
#MessageTimeout=300
DebugLevel=verbose
#DefaultQOS=normal,standby
LogFile=/var/log/slurm/slurmdbd.log
PidFile=/var/run/slurmdbd.pid
#PluginDir=/usr/lib/slurm
#PrivateData=accounts,users,usage,jobs
#TrackWCKey=yes
#
# Database info
StorageType=accounting_storage/mysql
#StorageHost=localhost
#StoragePort=1234
StoragePass=dhpcsa
StorageUser=controller1
#StorageLoc=slurm_acct_db
```

```
^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur
^X Exit        ^R Read File   ^\ Replace     ^U Paste Text  ^T To Spell    ^  Go T
```

controller1@controller: ~/slurm-21.08.8/etc

controller1@controller: ~/slurm-21.08.8/etc   ×

```
  GNU nano 4.8                                    Cgroup.conf
CgroupAutomount=yes
ConstrainCores=no
ConstrainRAMSpace=no
```

```
controller1@controller:~/slurm-21.08.8$ sudo mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 38
Server version: 10.3.39-MariaDB-0ubuntu0.20.04.2 Ubuntu 20.04

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> CREATE USER 'controller1'@'controller'identified by 'password';
Query OK, 0 rows affected (0.000 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON *.* TO 'controller1'@'controller';
Query OK, 0 rows affected (0.000 sec)

MariaDB [(none)]>
```

```
controller1@controller:~/slurm-21.08.8/etc$ sudo chown controller1:controller1 /home/controller1/slurm-21.08.8/etc/slurmdbd.conf
controller1@controller:~/slurm-21.08.8/etc$ sudo systemctl start slurmdbd.service
controller1@controller:~/slurm-21.08.8/etc$ sudo systemctl status slurmdbd.service
● slurmdbd.service - Slurm DBD accounting daemon
     Loaded: loaded (/etc/systemd/system/slurmdbd.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2024-12-12 03:54:00 IST; 2s ago
   Main PID: 19808 (slurmdbd)
      Tasks: 1
     Memory: 8.6M
     CGroup: /system.slice/slurmdbd.service
             └─19808 /home/controller1/slurm-21.08.8/sbin/slurmdbd -D -s

Dec 12 03:54:00 controller systemd[1]: Started Slurm DBD accounting daemon.
Dec 12 03:54:00 controller slurmdbd[19808]: (null): _log_init: Unable to open logfile `/var/log/slurm/slurmdbd.log': No such file or directory
Dec 12 03:54:00 controller slurmdbd[19808]: WARNING: MYSQL_OPT_RECONNECT is deprecated and will be removed in a future version.
Dec 12 03:54:00 controller slurmdbd[19808]: slurmdbd: error: mysql_real_connect failed: 1698 Access denied for user 'controller1'@'localhost'
```

```
controller1@controller:~/slurm-21.08.8/etc$ sudo service slurmctld restart
controller1@controller:~/slurm-21.08.8/etc$ sudo service slurmctld status
● slurmctld.service - Slurm controller daemon
     Loaded: loaded (/etc/systemd/system/slurmctld.service; disabled; vendor preset: enabled)
     Active: active (running) since Thu 2024-12-12 04:17:35 IST; 4s ago
   Main PID: 20369 (slurmctld)
      Tasks: 17
     Memory: 2.1M
     CGroup: /system.slice/slurmctld.service
             ├─20369 /home/controller1/slurm-21.08.8/sbin/slurmctld -D -s
             └─20370 slurmctld: slurmscriptd

Dec 12 04:17:35 controller systemd[1]: Started Slurm controller daemon.
Dec 12 04:17:35 controller slurmctld[20369]: slurmctld: accounting_storage/slurmdbd: clusteracct_storage_p_register_ctld: Registeri>
Dec 12 04:17:36 controller slurmctld[20369]: slurmctld: No parameter for mcs plugin, default values set
Dec 12 04:17:36 controller slurmctld[20369]: slurmctld: mcs: MCSParameters = (null). ondemand set.

controller1@controller:~/slurm-21.08.8/etc$
```

```
controller1@controller:~/slurm-21.08.8/etc$ sudo nano slurm.conf
controller1@controller:~/slurm-21.08.8/etc$ sudo service slurmd restart
controller1@controller:~/slurm-21.08.8/etc$ sudo service slurmd status
● slurmd.service - Slurm node daemon
     Loaded: loaded (/etc/systemd/system/slurmd.service; disabled; vendor preset: enabled)
     Active: active (running) since Thu 2024-12-12 04:14:38 IST; 4s ago
   Main PID: 20291 (slurmd)
      Tasks: 2
     Memory: 1.0M
     CGroup: /system.slice/slurmd.service
             └─20291 /home/controller1/slurm-21.08.8/sbin/slurmd -D -s

Dec 12 04:14:38 controller systemd[1]: Started Slurm node daemon.
Dec 12 04:14:38 controller slurmd[20291]: slurmd: error: Node configuration differs from hardware: CPUs=1:2(hw) Boards=1:1(hw) Sock>
Dec 12 04:14:38 controller slurmd[20291]: slurmd: slurmd version 21.08.8 started
Dec 12 04:14:38 controller slurmd[20291]: slurmd: slurmd started on Thu, 12 Dec 2024 04:14:38 +0530
Dec 12 04:14:38 controller slurmd[20291]: slurmd: CPUs=1 Boards=1 Sockets=1 Cores=1 Threads=1 Memory=3912 TmpDisk=19479 Uptime=3490>
```

ON Compute Node

```
controller1@compute1:~$ cd slurm-21.08.8/
controller1@compute1:~/slurm-21.08.8$ ls /tmp
config-err-HWcg2d
munge.key
snap-private-tmp
ssh-XMaTThYOiMii
systemd-private-67798755edf74439a94ebeba5445331e-colord.service-kTlGHh
systemd-private-67798755edf74439a94ebeba5445331e-ModemManager.service-eq2cpj
systemd-private-67798755edf74439a94ebeba5445331e-switcheroo-control.service-ZmSX8i
systemd-private-67798755edf74439a94ebeba5445331e-systemd-logind.service-chxy2i
systemd-private-67798755edf74439a94ebeba5445331e-systemd-resolved.service-FSXtSh
systemd-private-67798755edf74439a94ebeba5445331e-systemd-timesyncd.service-uz2pRe
systemd-private-67798755edf74439a94ebeba5445331e-upower.service-S27mSf
tracker-extract-files.1000
tracker-extract-files.126
VMwareDnD
```

```
controller1@compute1: ~/slurm-21.08.8

config.h.in      COPYING        LICENSE.OpenSSL    sbin
config.log       DISCLAIMER     Makefile           share
config.status    doc            Makefile.am        slurm
controller1@compute1:~/slurm-21.08.8$ ls /tmp
config-err-HWcg2d
munge.key
slurm.conf
snap-private-tmp
ssh-XMaTThYOiMii
systemd-private-67798755edf74439a94ebeba5445331e-colord.service-kTlGHh
systemd-private-67798755edf74439a94ebeba5445331e-fprintd.service-c3y29h
systemd-private-67798755edf74439a94ebeba5445331e-fwupd.service-7ATKDi
systemd-private-67798755edf74439a94ebeba5445331e-ModemManager.service-eq2cpj
systemd-private-67798755edf74439a94ebeba5445331e-switcheroo-control.service-ZmSX
8i
systemd-private-67798755edf74439a94ebeba5445331e-systemd-logind.service-chxy2i
systemd-private-67798755edf74439a94ebeba5445331e-systemd-resolved.service-202k1g
systemd-private-67798755edf74439a94ebeba5445331e-systemd-timesyncd.service-Ymy9C
g
systemd-private-67798755edf74439a94ebeba5445331e-upower.service-S27mSf
tracker-extract-files.1000
tracker-extract-files.126
VMwareDnD
controller1@compute1:~/slurm-21.08.8$
```