RUNNING A MPI CLUSTER WITHIN A LAN
PART 3. SETTING UP NFS FILE SYSTEM

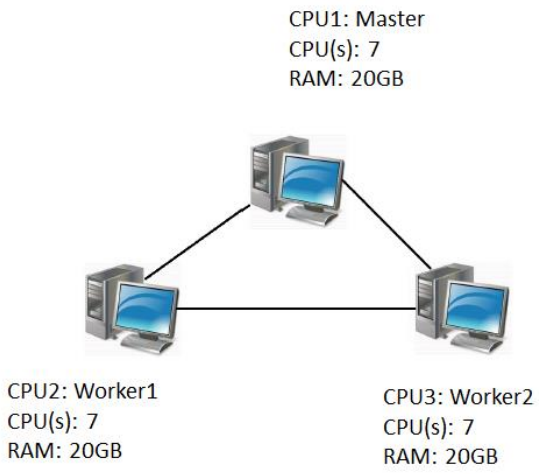

Figure 1. MPI Cluster with 3PCs.

MASTER:

1. Configure NFS-Server.

   a. Install the required packages
      $ sudo apt update
      $ sudo apt-get install nfs-kernel-server

   b. Create a shared folder (cloud)
      $ sudo mkdir /home/mpiuser/cloud

   c. Modify the permissions on the cloud folder
      $ sudo chown -R nobody:nogroup /home/mpiuser/cloud
      $ sudo chmod 777 /home/mpiuser/cloud/

   d. Export the cloud directory
      $ sudo nano /etc/exports

   e. Add the following lines in the end of the file
   /home/mpiuser/cloud/ *(rw,sync,no_root_squash,no_subtree_check)

   f. Restart the export service
      $ sudo exportfs -a
      $ sudo service nfs-kernel-server restart

   g. Disable IP tables
      $ sudo ufw disable

   h. Share a file into the mounted directories. **It requires that the worker had configured the NFS client.**
      $ cd /home/mpiuser/cloud
      $ echo "hello from the master" >> file1.txt

   i. Check the mounted directories. **In the worker type**

```
$ cat /home/mpiuser/cloud/file1.txt
```

Worker:

1. Configure NFS-Client.

   a. Install the required packages
   ```
   $ sudo apt update
   $ sudo apt-get install nfs-common
   ```

   b. Create a directory with the same name (cloud)
   ```
   $ sudo mkdir /home/mpiuser/cloud
   ```

   c. Mount the shared directory
   ```
   $ sudo mount master:/home/mpiuser/cloud /home/mpiuser/cloud
   ```

   d. Share a file into the mounted directories. **It requires that the worker had configured the NFS server.**
   ```
   $ cd /home/mpiuser/cloud
   $ echo "hello from the worker" >> file1.txt
   ```

   e. Check the mounted directories. **In the Master type**
   ```
   $ cat /home/mpiuser/cloud/file1.txt
   ```