Cluster on CentOS 7

* Type: su
* Type: yum update
* Type: yum install wget - This should already be installed
* Type: yum install net-tools - This should already be installed
* Type: yum install gcc-c++ kernel-devel make
* Type: yum groupinstall “Development Tools”
* Type: yum install gcc-gfortran - This should already be installed
* Type: yum -y install openssh-server - This should already be installed
* Type: chkconfig sshd on
* Type: service sshd start
* Type: yum install nfs-utils nfs-utils-lib - This should already be installed
* Type: yum install portmap - This should already be installed
* Type: cd /home/”username”/
* Type: mkdir mpich
* Type: cd /home/”username”/mpich
* Type: wget <http://www.mpich.org/static/downloads/3.2/mpich-3.2.tar.gz>
* Type: tar xfz mpich-3.2.tar.gz
* Type: cd mpich-3.2
* Type: ./configure --prefix=/usr/local
* Type: sudo make; sudo make install
* Type: reboot
* Type: su
* Type: sudo visudo
  + Under Root Privileges add mpiuser (tab) ALL=(ALL) (tab) ALL
* Type: sudo adduser mpiuser
* Type: passwd mpiuser
* Type: su - mpiuser
* Type: chkconfig nfs on
* Type: service rpcbind start
* Type: service nfs start
* Type: exit

Master

* Type: firewall-cmd --zone=public --add-port=111/tcp --permanent
* Type: firewall-cmd --zone=public --add-port=111/udp --permanent
* Type: firewall-cmd --zone=public --add-port=2049/tcp --permanent
* Type: firewall-cmd --zone=public --add-port=2049/udp --permanent
* Type: firewall-cmd --zone=public --add-port=20048/tcp --permanent
* Type: firewall-cmd --zone=public --add-port=20048/udp --permanent
* Type: firewall-cmd –reload
* Type: sudo nano /etc/sysconfig/network-scripts/ifcfg-enp0s8
  + Make sure the ONBOOT is yes, and then change the BOOTPROTO from dhcp to static. Finally add IPADDR=(some ip address ex. 192.168.38.202), and add the NETMAS=(some netmask ex. 255.255.255.0) underneath the IPADDR.
* Type: hostnamectl set-hostname node#
* Type: sudo nano /etc/exports
  + /home/mpiuser/cloud \*(rw,sync,no\_root\_squash,no\_subtree\_check)
* Type: sudo exportfs –a

Clients

* Type: hostnamectl set-hostname node#
* Type: sudo nano /etc/sysconfig/network-scripts/ifcfg-enp0s8
  + Make sure the ONBOOT is yes, and then change the BOOTPROTO from dhcp to static. Finally add IPADDR=(some ip address ex. 192.168.38.202), and add the NETMAS=(some netmask ex. 255.255.255.0) underneath the IPADDR.
* Type sudo mount –v (server enp0s8 IP):/home/mpiuser/cloud ~/cloud
* Type: sudo nano /etc/fstab
  + (server enp0s8 IP):/home/mpiuser/cloud /home/mpiuser/cloud nfs

SSH

Master

* The mpiuser on the master needs to ssh into each mpiuser and node on each client.
* Make sure to save the id\_rsa.pub keys to a file named authorized\_keys. Then remove the public key from the system that it was generated from.

Client

* The mpiuser on the client needs to ssh into the mpiuser and node on the master.
* Make sure to save the id\_rsa.pub keys to a file named authorized\_keys. Then remove the public key from the system that it was generated from.