2014-9-10

Warewulf install walkthrough from red barn HPC

head node is “wwmaster.” eth0 connected to internet, eth1 connected to GigE switch to workers. Eth1 IP is 10.10.10.1/255.255.255.0

Centos install. Accept all defaults, do not do options. But do enable networking!!!

Centos login: user = root; pass =

On head node, eth0 goes to outside world, eth1 goes to other nodes.

Head - 172.20.20.11

workers - 172.20.20.12 – n0000

172.20.20.13 – n0001

172.20.20.14 – n0002

After manually assigning IP to eth1, needed to start it with ifconfig eth1 up

When running wwnodescan, you have to specify the n00[00-02] correctly or it will keep scanning forever. If you create 3 nodes, n0000, n0001, and n0002, then you add a fourth node, then you need to start with n0003.

pdsh installed fine. But, to run, you first type pdsh –w n00[00-02] to prepare the nodes, then it launches pdsh shell, then type a command like uname –r, and it will run that on all nodes.

Ganglia

There is a chroot step, which essentially plops us down into the chroot system as if it is /, then we can run chkconfig for that fake system. Then we exit out of that environment.

After installing ganglia, to see the web frontend, you need to restart apache: restart service httpd

Ganglia only works on the head node. Seems like gmond service can’t run on the workers. Getting error gmond dead but subsys locked.

SLURM install

The RBC WW walkthrough had 2 steps creating a munge password, which I think is wrong. First step was to use pseudorandom number, and the second way was to type a text We went ahead with the pseudorandom code created pass. We did not do the thing where we created a text password. Not renaming file.

ntp sync

On master node, edit /etc/ntp.conf. Uncomment line 18, then enter local subnet IP range for cluster.

ntpdate –u 172.20.20.11

Why is var/log/munge not being created on workers? We had to create the file using pdsh, then restart munge, and everything was just fine. So, it turns out that the permissions are very specific on the munge directories. We

Strange that /var/run/munge is not present in the chroot, but it is present on the head node. The fact that the folder is present on the head node makes me think that the install initially went fine. We might have to re-install munge in the chroot.

chmod –R 700 /var/chroots/centos6/etc/munge

chmod –R 711 /var/chroots/centos6/var/lib/munge

chmod –R 700 /var/chroots/centos6/var/log/munge

chmod –R 755 /var/chroots/centos6/var/run/munge

/var/run/munge is created after munge runs. The folder is not created during the install.

Munge is a nightmare, so we’re quitting this. Instead, we’re going with Torque from adaptive computing.

HPC magazine has a torque install walkthrough, but it was based on an old torque. I’ll check it out for general principles.

pbs\_server and pbs\_sched will be installed on the master node and pbs\_mom will be installed on the compute node(s).

/etc/services. At end of file, we’re creating the torque

/etc/sysconfig/network

HOSTNAME=centos-sfcc

/etc/hosts

127.0.0.1 centos-sfcc.localdomain centos-sfcc

172.20.20.11 centos-sfcc.localdomain centos-sfcc

Step 11: delete the stuff about pbs\_mom.

\* If RHEL distribution, do the following \*

[root]# cp contrib/init.d/pbs\_server /etc/init.d

[root]# chkconfig --add pbs\_server

[root]# service pbs\_server restart

Ran into issues getting pbs\_mom to start

Changed pbs\_mom to not\_pbs\_mom in var/chroots/centos6/etc/sysconfig/pbs\_mom.

I think the log file on the NFS was read-only, so we can change that.

We’re having issues with the pbs\_mom not communicating with pbs\_server.

So, the head node is not being written to /etc/hosts on the workers. We manually added it to n0000, and everything was great, and pbs\_mom.

Getting head node on /etc/hosts/

edit /etc/warewulf/hosts-template to include this in the last line:

172.20.20.11 centos-sfcc centos-sfcc.localdomain

Then send the dynamic\_hosts file to all nodes:

wwsh provision set n[0001-0003] --fileadd dynamic\_hosts

Before you can reboot the compute nodes so they get the new */etc/hosts* file, you need to force Warewulf to rebuild the host name in *dynamic\_hosts* so that it picks up the updated hosts template. This can be done by creating a fictitious node and then deleting it (thanks for bpape on the Warewulf list for this handy command):

echo y | wwsh node new --ipaddr 172.20.20.50 --netmask 255.255.255.0 --netdev=eth0 ntest ; echo y | wwsh node delete ntest

Now we have the head node host name in all computers /etc/hosts file. However,

pbsnodes –a

isn’t working. Workers aren’t connecting with head node.

qmgr -c 'p s'

Solution – simply reboot the head node, then the workers, and everything was great with pbs.

Now we’re trying to install the HPL benchmark, as specified in the Red barn walkthrough.