MPI server setup and configuration

This doc shows how to setup multiple servers for running MPI program. The running step and configuration setting will also be explored.

**Pre-check**

Before server setup, please check the OS version on multiple servers. Keep them being the same version. When you run your MPI program and getting the following error:

bash: /your/mpi/install/dir/bin/hydra\_pmi\_proxy: /lib/ld-linux.so.2: bad ELF interpreter: No such file or directory

The possible issue is that your OS version is not the same. To check your OS library for MPI, using:

node $ ldd /your/mpi/install/dir/bin/hydra\_pmi\_proxy

check your OS bit version:

node $ file /usr/bin/file

check the Linux arch (should be the same arch):

node $ uname -m

**Setup**

Please follow the doc mount\_setup.docx to share the NFS, after mount the disk, the MPI bin and library can be shared through NFS for multiple servers. Thus, next step is compile and install MPI library.

**Library**

Our implementation is considered to use MPICH library. The MPI library can be downloaded from here: <http://www.mpich.org/downloads/>. Then:

master $ tar xzf mpich.tar.gz

Create directory in mounted directory called: mpich-install. For example: /mnt/nfs/mpich-install . Then:

master $ cd /your/unzipped/mpi\_libraries

master $ ./configure –prefix=/mnt/nfs/mpich-install 2>&1 | tee c.txt

master $ make 2>&1 | tee m.txt –j8

where -jn means make in n parallel threads. Then install it:

master $ make install 2>&1 | tee mi.txt

After installation, you should able to find mpi library under /mnt/nfs/mpich-install

Then, export the MPI bin path to environment variables, using editor to edit file .bash\_profile:

master $ cd ~

master $ gedit .bash\_profile

add the following line:

PATH=/mnt/nfs/mpich-install/bin:$PATH

export PATH

to check the environment variable. Restart the terminal, then type:

master $ which mpicc

master $ which mpiexec

The terminal should display mpich-install path. Until now, the MPI library has been installed successfully.

**Keyless ssh**

Please follow the ssh\_setup.docx to reach slave nodes without password.

**Hydra Process Manger setup**

Your program should be shared through mounted disk. In your project file, a hostfile should be included. The format is: