ASC14 Student Supercomputer Challenge

Remote Test Platform Manual

I. Brief introduction to the platform

1.1 Hardware configuration of the remote test platform

All nodes of the remote test platform are INSPUR NF5280M3 servers. The platform consists of login/compiling nodes and cluster nodes. The detailed configuration are as follows:

- 10 login/compiling nodes for login, compiling, doing single-node tests, and submitting multi-node jobs to the cluster nodes. These nodes will be accessed through the same IP address, but the users will be automatically distributed into different nodes;
- 4 cluster nodes that form a small-scale CPU+MIC hybrid cluster. Muli-node tests on this small-scale cluster can only be carried out by submitting jobs to the cluster.

Item	Name	Configuration
Server	INSPUR NF5280M3 x 14	CPU: Intel Xeon E5-2692v2 x 2, 2.2Ghz, 24 cores
		Memory: 16G x8，DDR3，1600Mhz
		Hard disk: 300G SAS x 1
		Accelerator card: Intel XEON PHI-7110P (61 cores, 1.1GHz, 1073.6GFlops, 8GB GDDR5 Memory)

1.2 Software configuration of the remote test platform

Item	Description	Installation path	Version
OS	GNU/Linux		RH6.4
Compiler	Intel Composer XE Suites	/home/opt/intel/composer_xe_2013_sp1.1.106/bin/intel64/	l_ccompxe_2013_sp1.1.106 l_fcompxe_2013_sp1.1.106
MKL	Intel MKL	/home/opt/intel/mkl/lib/intel64	
MPI	Intel MPI	/home/opt/intel/impi/4.1.2.040/bin64	l_mpi_p_4.1.2.040

II. Login account

Platform login IP address: 123.127.250.114。

The login account and password for users to log in INSPUR ASC14 platform shall be allocated and set by system administrator and will be notified to users through E-mail. Users shall change the password after first login. The login account will become automatically invalid after the contest is finished. The same account allows at most 2 users to log in at the

same time.

Tips: User could use remote login tool such as Xshell, SecureCRT and SSH Secure Shell Client.

III. Basic operation

User can login to the system by using Xshell4. The whole process will be described below with Xshell4 as the example.

3.1Login

After login the system, you will enter to your home directory such as /home/username. Each user will have 20GB storage space by default. Users shall make their own data backup and timely clear the disk space. In case the user needs to use a larger disk space, please contact the ASC administrator directly through techsupport@asc-events.org. In order to ensure enough storage space and the data security and privacy, please download or delete the relevant data before log out. The platform will not be responsible for long-term preservation of user data.

After login, users can do their compiling work. If user wants to conduct cluster computing, user needs to submit job to the cluster. Please refer to the introduction in next section for job submission.

3.2 Job management

1) Common job management commands

- qsub # submit a script to create a job

  Command format: qsub [pbs file]

  Parameter specification: Generally, job submission information is written in job submission script. User could refer to the pbs script introduction below.

- qstat # Check job status, R means running, Q means queuing and C means complete

  Command format: qstat [-f job id][-a]

  Parameter specification:

  -f job id: list the information of assignment

  -a : list all jobs in the system

- qdel

  Command format: qdel [job id]

  Parameter specification: Delete the job that has been submitted, i.e. qdel 156

2) Job script introduction

###Stated job name is myjob, it could be modified in accordance with the demand.

#PBS -N myjob

Requested resource is 2 nodes and 4 cpu cores per node, it could be modified in

accordance with demand.

```
#PBS -l nodes=2:ppn=4
###Set the environment variables needed in computing
source    /home/opt/intel/bin/compilervars.sh intel64
###Set the applied cpu core number
NP=`cat $PBS_NODEFILE | wc -l`
### Run the program: cpi-mpich is the compiled executable file name and needs to be modified.
/home/opt/intel/impi/4.1.2.040/intel64/bin/mpirun -np $NP -machinefile $PBS_O_WORKDIR/hosts cpi-mpich
```

Note: All comment lines start with ###.

Please refer to the Serial.pbs template for serial computing and Parallel.pbs template for parallel computing.

Any problem encountered by users in using INSPUR ACS14 remote test platform could be sent to e-mail techsupport@asc-events.org, and system administrator will give the answer as soon as possible.

IV. Notes

Notes of INSPUR ASC14 Remote Test Platform**:**

1) The same account allows at most 2 users to log in at the same time.
2) It is suggested user shall immediately modify the password after first log in. Password shall be randomly combined by figures and letters and shall not exceed 8 characters. Password and account name shall be different. In case user forgets the password, please contact with us for resetting. The contact e-mail is techsupport@ asc-events.org.
3) User shall keep their own account and password, and do not disclose or lend its own account and password to others.
4) Timely make data backup to avoid data loss.
5) In order to ensure the reasonable using of resource, user shall log out after using. Besides, do nothing irrelevant to the contest.
6) It is strictly prohibited to user scan, monitor or attack the system and interfere the normal work of others.
7) Please do not install or try unknown software, modify system configuration or run rogue program to avoid the system fault. In case user needs to use or install exterior file, please contact with us for examination and approval. The contact e-mail is techsupport@asc-events.org.

8) If there is any good suggestion and scheme for system maintenance, please send it to e-mail techsupport@asc-events.org.