CS596 HW4

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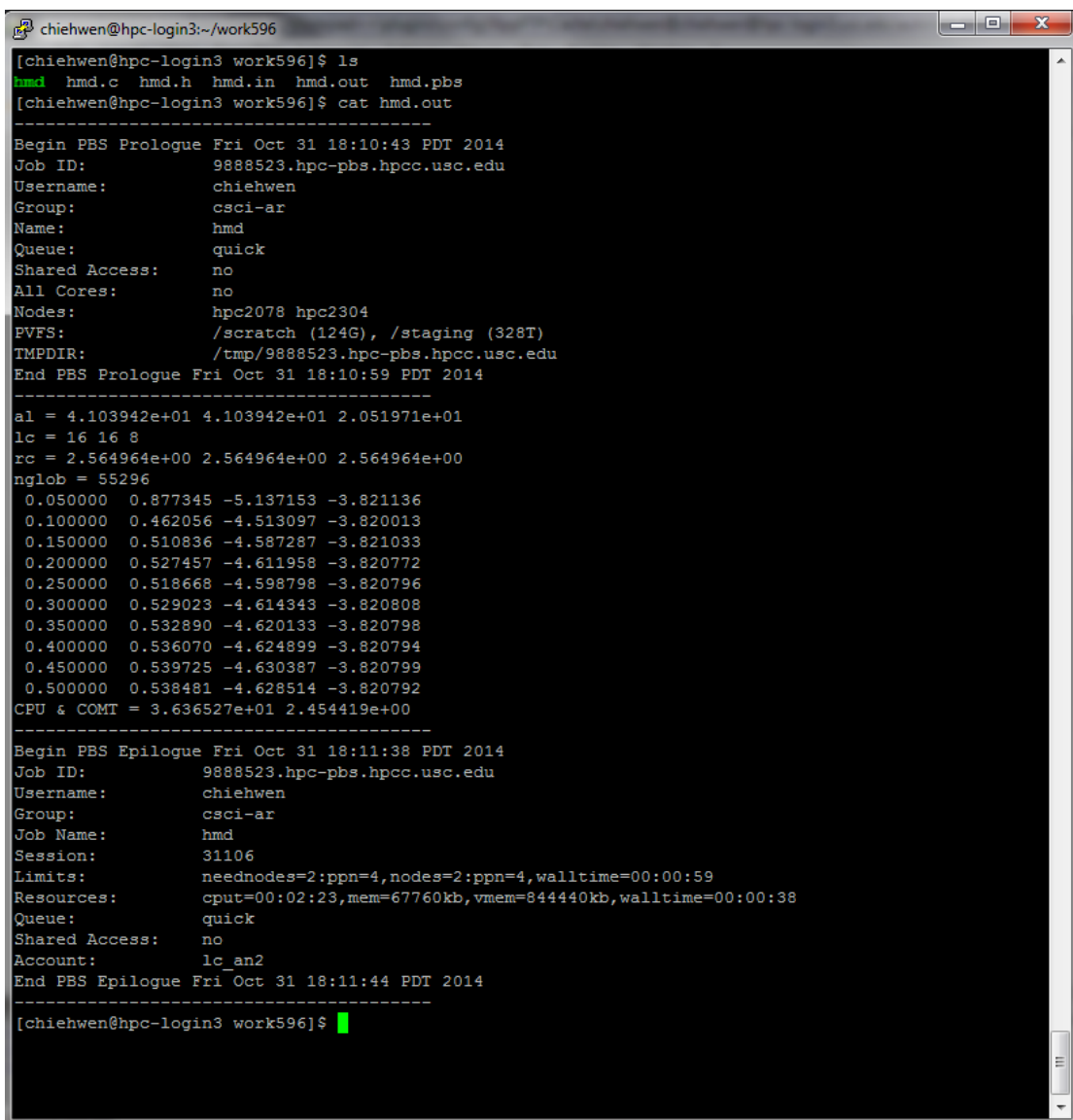
README:

You should generate "hmd1" to "hmd8" for submit pbs. Change code in hmd.c.

REPORT:

1. I use "/////////////////modified/////////////////" to indicate where I modified.

2.

3.
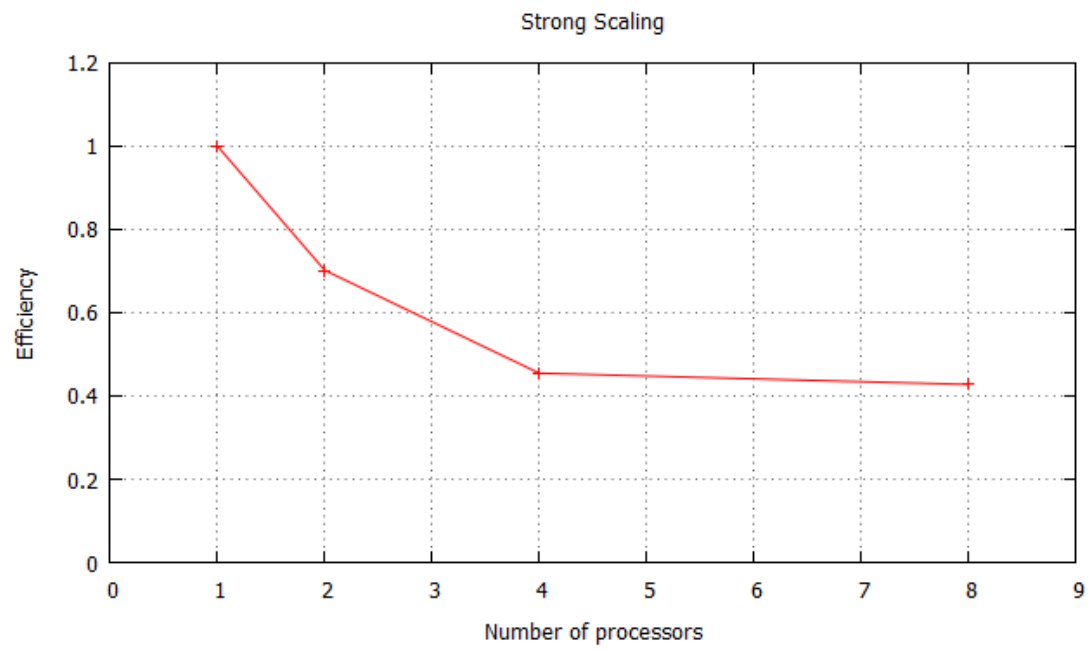
```
chiehwen@hpc-login3:~/work596

Begin PBS Prologue Fri Oct 31 18:55:42 PDT 2014
Job ID:              9888943.hpc-pbs.hpcc.usc.edu
Username:            chiehwen
Group:               csci-ar
Name:                hmd
Queue:               quick
Shared Access:       no
All Cores:           no
Nodes:               hpc2306
TMPDIR:              /tmp/9888943.hpc-pbs.hpcc.usc.edu
End PBS Prologue Fri Oct 31 18:55:42 PDT 2014
----------------------------------------
8 threads
al = 4.103942e+01 4.103942e+01 4.103942e+01
lc = 16 16 16
rc = 2.564964e+00 2.564964e+00 2.564964e+00
nglob = 55296
CPU & COMT = 2.252941e+01 1.540825e-01
4 threads
al = 4.103942e+01 4.103942e+01 4.103942e+01
lc = 16 16 16
rc = 2.564964e+00 2.564964e+00 2.564964e+00
nglob = 55296
CPU & COMT = 4.238237e+01 1.552823e-01
2 threads
al = 4.103942e+01 4.103942e+01 4.103942e+01
lc = 16 16 16
rc = 2.564964e+00 2.564964e+00 2.564964e+00
nglob = 55296
CPU & COMT = 5.490612e+01 1.406898e-01
1 threads
al = 4.103942e+01 4.103942e+01 4.103942e+01
lc = 16 16 16
rc = 2.564964e+00 2.564964e+00 2.564964e+00
nglob = 55296
CPU & COMT = 7.706167e+01 1.108973e-01
----------------------------------------
Begin PBS Epilogue Fri Oct 31 18:59:01 PDT 2014
Job ID:              9888943.hpc-pbs.hpcc.usc.edu
Username:            chiehwen
Group:               csci-ar
Job Name:            hmd
Session:             17820
Limits:              neednodes=1:ppn=8,nodes=1:ppn=8,walltime=00:20:00
Resources:           cput=00:08:19,mem=40564kb,vmem=383728kb,walltime=00:03:20
Queue:               quick
Shared Access:       no
Account:             lc_an2
End PBS Epilogue Fri Oct 31 18:59:01 PDT 2014
----------------------------------------
[chiehwen@hpc-login3 work596]$
```

Strong Scaling

Discussion:

More processors has better performance in Hybrid MPI OpenMP.