



Center for Turbulence Research  
CTR Summer Program 2010  
Technology Information

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June 28, 2010



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Technology Information



- Create your SUNetID at <http://sunetid.stanford.edu>
- Send hardware address to [ctrsp-2010@lists.stanford.edu](mailto:ctrsp-2010@lists.stanford.edu)
- Large Memory Workstations
  - Dual Quad-Core Intel Westmere-EP Processors
  - 32 GB Memory per workstation
  - 2 TB disk space
  - High Speed Graphics Adapter
  - Located in conference room on mezzanine level in Terman and CFD Lab (Bldg 500)
- Printers located in or near each major work area
- Contact [ctrsp-2010@lists.stanford.edu](mailto:ctrsp-2010@lists.stanford.edu) for all support issues
  - VPN, Printer configuration, Applications, SUNetID
- Drop-in support available at CTR 101
- Web site <http://ctr.stanford.edu> (summer program)



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## Certainty Compute Cluster

- 560 Compute Nodes
- 6-Core Intel Westmere-EP (24core/node)
- 36GB Memory/Node
- QDR Infiniband
- High Speed Parallel File System
- Intel Compilers/OSU MVAPICH





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Connect to Certainty:

\$ ssh sunetid@certainty-a

Interactive Session:

\$ qsub -l

(-lnodes=[n]:ppn=[p])

Submit Job Scripts:

\$ qsub job.pbs

```
smjones@jhf:~/bounce
File Edit View Terminal Tabs Help

[smjones@jhf bounce]$ mpif90 -o bounce bounce.f
bounce.f(80): (col. 7) remark: LOOP WAS VECTORIZED.
[smjones@jhf bounce]$ qsub -I -lnodes=10:ppn=8
qsub: waiting for job 215.jhf.stanford.edu to start
qsub: job 215.jhf.stanford.edu ready

[smjones@compute-2-40 ~]$ /share/apps/mvapich-1.0/intel/bin/mpirun_rsh -np 80 -hostfile $PBS_NODEFILE bounce/bounce
Number of processors = 80
msglen = 0 bytes, elapsed time = 0.0024 msec
msglen = 80 bytes, elapsed time = 0.0205 msec
msglen = 800 bytes, elapsed time = 0.0259 msec
msglen = 8000 bytes, elapsed time = 0.0396 msec
msglen = 80000 bytes, elapsed time = 0.1821 msec
msglen = 800000 bytes, elapsed time = 1.7394 msec
msglen = 8000000 bytes, elapsed time = 24.4642 msec
latency = 2.4 microseconds
bandwidth = 327.008444993092 MBytes/sec
(approximate values for mp_bsend/mp_brecv)
[smjones@compute-2-40 ~]$ exit
logout
```



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Connect to Certainty:

```
$ ssh -X sunetid@certainty-a
```

TotalView Interactive:

```
$ qsub -I -X
```

```
(-lnodes=[n]:ppn=[p])
```

Run TotalView:

```
$ mpirun_rsh -np [n] -tv -hostfile $PBS_NODEFILE [cmd]
```

```
smjones@compute-2-40:~  
File Edit View Terminal Tabs Help  
[root@hacking ~]# ssh -X smjones@jhf  
smjones@jhf's password:  
Last login: Mon Jul 7 12:04:22 2008 from hacking.stanford.edu  
Rocks+ from Clustercorp.com  
Rocks 5.0 (V)  
--**-- --**-- --**-- --**-- --**-- --**-- --**-- --**--  
Cluster Info: http://hpcc.stanford.edu/clusters/jhf.html  
Cluster or node issues? email stevejones@stanford.edu  
--**-- --**-- --**-- --**-- --**-- --**-- --**-- --**--  
[smjones@jhf ~]$ qsub -I -X -lnodes=1:ppn=8  
qsub: waiting for job 220.jhf.stanford.edu to start  
qsub: job 220.jhf.stanford.edu ready  
[smjones@compute-2-40 ~]$ /share/apps/mvapich-1.0/intel/bin/mpirun_rsh -np 8 -tv -hostfile $PBS_NODEFILE bounce/bounce  
debug enabled !  
[]
```



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Main Page - HPCC Wiki

https://www.stanford.edu/group/hpcc/cgi-bin/mediawiki/index.php/Main\_Page

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### GENERAL INFORMATION [\[EDIT\]](#)

### APPLICATIONS / COMPILERS / LIBRARIES / LICENSES [\[EDIT\]](#)

- [Fluent on Clusters](#)
- [Modules](#)
- [\(Open\) M\(P,PI,VAPICH,VAPICH2\)](#)
- [VASP](#)
- [License Files](#)
- [PSAAP Codes](#)

### USING THE RESOURCE MANAGERS [\[EDIT\]](#)

- [How to create a PBS Job Script](#)
- [How to submit a job using PBS](#)
- [How to manage a job](#)
- [Troubleshooting](#)
- [TotalView and PBS](#)

### TRAINING, CONFERENCES AND OUTREACH [\[EDIT\]](#)

- [ME325 - Introduction to High Performance Computing](#)
- [Stanford HPC Seminar Series](#)
- [Stanford High Performance Computing Conference](#)

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## Questions?

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