



HPC2002 Result

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DELL
PowerEdge 1750 cluster

SPECseisM2002 = 125

SPEC license #: HPG0007A | Tested by: Purdue University | Test site: Purdue University | Test date: Apr-2005 | HW Avail: Apr-2004 | SW Avail: May-2004

Benchmark	Reference Time	Runtime	Ratio
351.seis_m	86400	689	125

Hardware		Software	
CPU:	Intel Xeon processor	Parallel:	MPI
CPU MHz:	3060	Processes-Threads:	16
FPU:	Integrated	MPI Processes:	16
CPU(s) enabled:	16 cores, 16 chips, 1 core/chip, HT Technology enabled	OpenMP Threads:	-
CPU(s) orderable:	1 or 2 per node	Operating System:	RedHat Enterprise Linux, Advanced Server version 3 (4)
Primary Cache:	12KB (I) micro-ops (trace) + 8KB (D) on chip	Compiler:	Intel C++ Compiler- icc, Version 8.0
Secondary Cache:	512KB on chip		Build 20031016Z for Linux
L3 Cache:	1 MB on chip		Intel Fortran Compiler- ifort, Version 8.0
Other Cache:	N/A		Build 20040122Z for Linux
Memory:	2 GB DDR PC2100 CL2.5 ECC Registered per node	File System:	NFS shared file system
Disk Subsystem:	1x36 GB SCSI per node	System State:	MULTI-user
Other Hardware:	See File server and Network notes	Other Software:	MPICH

Notes/Tuning Information

Tested by PURDUE UNIVERSITY

Approved Alternate Source: approved alternate source, seis2002-src_purdue-20050429.tar.bz2, was used to fix Fortran standard violations

Flags (Fortran & C):

```

CPP Flags: -I. -C -P -traditional -DMPI -DSPEC_HPG_MPI
COPTIMIZE = -O3 -static -xW -axW -tpp7 -march=pentium4 -mcpu=pentium4
            -Dmpi -DSPEC_HPG_MPI -DSPECDONOTNEEDARG -DFORTRAN_UNDESCORE
            -I/opt/mpich-1.2.6/p4-intel/include
FOPTIMIZE = -O3 -mp -static -fp_port -I/opt/mpich-1.2.6/p4-intel/include
LDOPTIONS = -O3 -mp -static -L/opt/intel_cc_80/lib -lcxa

```

Submit command to run MPI application:

```

PBS Version: PBSPro 5.4.1.41640
PBS Command to get resources (for cyclic allocation of processes):
qsub -I -q preemptx -lnodes=8:ppn=2,walltime=1:00:00
use_submit_for_speed=1
submit=mpiexec -n 16 $command

```

Cluster config:

Nodes and file server use NFS shared file system
Two CPUs per node, Hyper-Threading Technology enabled

File server:

```

2 x 3.06 GHz Intel Xeon processors
4 GB DDR PC2100 CL2.5 ECC Registered Memory
5 x 72 GB 10K RPM SCSI Drives
Hardware RAID-5 (Dell PERC/3Di option)

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Debian Linux, 3.1 "sarge"

ext3 local file system

NFS shared file system

Network (for computation and file server):

Cisco 6509 Gigabit Ethernet Switch

Built-in Gigabit Ethernet Adapters

All BIOS parameters left with factory defaults.

For a description of Intel compiler flags, portability flags, and system parameters used to generate this result, please refer to PURDUE-20050329-INTEL-LINUX-XEON.txt in the flags directory