



HPC2002 Result

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Dell PowerEdge 1750 cluster

SPECenvM2002 = 146

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

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	591	146

Hardware		Software	
CPU:	Intel Xeon processor	Parallel:	MPI
CPU MHz:	3060	Processes-Threads:	32
FPU:	Integrated	MPI Processes:	32
CPU(s) enabled:	32 cores, 32 chips, 1 core/chip, Hyper-Threading 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 Build 20031016Z for Linux
Secondary Cache:	512KB on chip		Intel Fortran Compiler- ifort, Version 8.0 Build 20040122Z for Linux
L3 Cache:	1 MB on chip	File System:	NFS shared file system
Other Cache:	None	System State:	Multi-user
Memory:	2 GB DDR PC2100 CL2.5 ECC Registered per node	Other Software:	MPICH-1.2.6, NETCDF-3.5.1
Disk Subsystem:	1x36 GB SCSI per node		
Other Hardware:	See File server and Network notes		

Notes/Tuning Information

Flags (Fortran & C):

```

CPP Flags: -I. -C -P -traditional -DSPEC_HPG_MPI
COPTIMIZE = -O2 -march=pentium4 -mcpu=pentium4 -axW -tpp7 -xW
FOPTIMIZE = -O2 -mp -fp_port -axW -tpp7 -xW
EXTRA_LIBS = -L${NETCDF_BASE}/lib -lnetcdf

```

Submit command to run MPI application:

```

use_submit_for_speed=1
MPI_COMM_SIZE 32
submit=mpirun -np "\$MPI_COMM_SIZE" -hostfile "\$PBS_NODEFILE" $command

```

NetCDF 3.5.1 built from source

Hardware notes:

Cluster config:

Nodes and file server use NFS shared file system.

Two CPU's per node, Hyperthreading 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)
Debian Linux, 3.1 "sarge"
ext3 local file system
NFS shared file system

```

Network (for computation and file server):

```

Infiniband: Topspin HBAs, Topspin 120 switches
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.

```