HPC2002 Result

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Hewlett-Packard Company

HP Cluster Platform 4000 w/XC (DL145 G2)

SPECenvM2002 = 488

SPEC license #: HPG0001	Tested by: Hewlett-Packard Company	Test site: Houston, Texas	Test date: Aug-2005	HW Avail: Jun-2005	SW Avail: Oct-2005

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	177	488

100 200 300 400 500

Hardware

CPU:	AMD Opteron(tm) Processor 252
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	64 cores, 64 chips, 1 core/chip
CPU(s) orderable:	1 to 2 per node
Primary Cache:	64KBI + 64KBD (on chip) per core
Secondary Cache:	1 MB on chip
L3 Cache:	--
Other Cache:	None
Memory:	4 GB DDR PC3200 per node (8x512K)
Disk Subsystem:	1x80GB SATA disk (root)
Other Hardware:	See below for a more complete system descrition

Software

Parallel:	MPI
Processes-Threads:	64
MPI Processes:	64
OpenMP Threads:	--
Operating System:	XC Linux for High Performance Computing v3.0
Compiler:	Pathscale 2.2 Fortran Compiler Pathscale 2.2 C Compiler
File System:	NFS Shared File System
System State:	Multi-user
Other Software:	HP-MPI 2.1.1, LSF 6.1.7, SLURM 0.5.0-10

Notes/Tuning Information

```
Peak Flags:
  mpif90  -Ofast -I. -I${NETCDF}/include
    FPORTABILITY =  -DF2CSTYLE

  mpicc -Ofast -I.  -I${NETCDF}/include
    CPORTABILITY = -DSPEC_HPG_MPI2

  Preprocessing:
    -I. -traditional

  Link Flags EXTRA_LIBS = -L${NETCDF}/lib -lnetcdf

  ENV_SPEC_HPG_PARALLEL=MPI

 Flags file description HP-MPI-Pathscale-20050913.txt

Alternate Source used for Peak:
  hplinux
     fix errno.h include file problem under #ifdef T3D
        Available as SPEC HPC2002 Source:
          env2002-src_hp-errno-fix-20050907.tar.gz

Peak User Environment:
  bsub -n 64 ./runspec -c linux_amd_psc --reportable env_m

  use_submit_for_speed=1
  submit = $MPI_ROOT/bin/mpirun -srun
       taskset 0x3 $command < /dev/null

     -srun launches one process per procesor
        consisting of the command which follows.
       taskset execs its arguments and bind proceses
       to processors according to mask.
        $command is generated by the SPEC tools.

System Description
  HPC Cluster Platform is a Hewlett-Packard preconfigured
  and factory built hardware and software solution scalable
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Notes/Tuning Information (Continued)

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    from 5 to 512 nodes. The product used in these submissions
    is an HP Cluster Platform model 4000.

    For Product Information see www.hp.com and search for
      HPC Clusters Platforms
        http://www.hp.com/techservers/clusters/ucp/index.html
      XC Clusters
        http://www.hp.com/techservers/clusters/xc_clusters.html

    For detailed quick specs, search www.hp.com and search for:
      HP Cluster Platform 3000 and HP Cluster Platform 4000
        http://h18000.www1.hp.com/products/quickspecs/12306_div/12306_div.HTML
      XC System Software V2.1 quickspecs
        http://h18000.www1.hp.com/products/quickspecs/12094_div/12094_div.HTML

  Underlying Cluster compute nodes:
    HP ProLiant DL145 G2 server
    32 compute nodes used for this run.

  Network (for computation)
    Voltaire Infiniband HCA 400Ex
    Voltaire leaf switches - ISR 9024 (1 per 12 nodes)
    Voltaire aggregation switch - ISR 9288 (12 ports per leaf switch)

  Network (for File Server )
    ProCurve 2848 Gb Ethernet Switches (1 per 40 nodes)

  File Server
    HP Proliant DL585
       two AMD Opteron (tm) Processor 850 2400MHz
       8 GB Memory 4 2GB PC2100 Dimms
       146 GB SCSI 10000 Disk

  Additional Linux Software
    Netcdf 3.5.1 source obtained from
      http://www.unidata.ucar.edu/packages/netcdf/
        build with (./configure ; make )
```