HPC2002 Result

Copyright ©1999-2002, Standard Performance Evaluation Corporation

IBM Corporation
eServer 325 Cluster

SPECenvM2002 = 310

SPEC license #: HPG0005	Tested by: IBM Corporation	Test site: Research Triangle Park, NC	Test date: Dec-2003	HW Avail: Oct-2003	SW Avail: Feb-2004

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	279	310

100 200 300 400 500

Hardware

CPU:	AMD Opteron (246)
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	70
CPU(s) orderable:	1 or 2 per node
Primary Cache:	64KBI + 64KBD on chip
Secondary Cache:	1024KB(I+D) on chip
L3 Cache:	None
Other Cache:	None
Memory:	6GB DDR333 CL2.5 Registered ECC per node
Disk Subsystem:	1 x 36GB 10K RPM SCSI per node
Other Hardware:	See Notes.

Software

Parallel:	MPI
Processes-Threads:	70
MPI Processes:	70
OpenMP Threads:	N/A
Operating System:	SUSE LINUX 8.0 SLES 64 bit Kernel k_smp-2.4.21-60 (from Service Pack 3)
Compiler:	Fortran: Portland Group 5.1-3 Fortran 90 C: Portland Group 5.1-3 C
File System:	Linux/reiserfs
System State:	Multi-user
Other Software:	MPICH-GM 1.2.5..10 GM 2.0.6_Linux NetCDF 3.5.1

Notes/Tuning Information

```
Flags:
  Fortran:
    -O3 -fast
  C:
    -O3 -fast
  Preprocessor:
    -E -I. -I$(CDFINC) -I$(MPIINC)
  Linker:
    -Bstatic
  Extra Libraries:
    -lnetcdf -lmpich -lgm -lpthread

Submit command to run applications:
  mpirun.ch_gm -np 70 -machinefile n00x2.mf
    --gm-recv blocking --gm-no-shmem -wd ‘pwd‘ $command

Cluster Configuration:
  Two CPUs per node, 35 nodes
  All benchmark files are on a shared file server
  Nodes and file server use NFS shared file system
  $(CDFINC) is the NETCDF include directory
  $(MPIINC) is the MPICH include directory

Computation Network:
  Myrinet M3F-PCIXD-2 Adapters (one per node)
  Myrinet M3-E128 Switch Enclosure
  8 x Myrinet M3-SW16-8F 8-Port Line Card

x345 File Server (2):
  2 x 2.8 GHz Xeon Processors
  4GB DDR266 CL2.5 Registered ECC Memory
  2 x 36GB 10K RPM SCSI Drives
  Software RAID 0
  Red Hat Linux 7.3
  Ext3 Local File System
  NFS Shared File System
```

Copyright ©1999-2002, Standard Performance Evaluation Corporation

Notes/Tuning Information (Continued)

```
File Server Network:
  Cisco 6509 Gigabit Ethernet Switch
     3 x 48-port Copper
  Built-in Gigabit Ethernet Adapters

Set the following BIOS parameters:
  DRAM Interleave = AUTO
  Node Interleave = Disabled
  ACPI SRAT       = Enabled
```