HPC2002 Result

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IBM Corporation
eServer 325 Cluster

SPECchemM2002 = 52.9

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

Benchmark	Reference Time	Runtime	Ratio
371.gamess_m	86400	1634	52.9

Hardware

CPU:	AMD Opteron (246)
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	80
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:	80
MPI Processes:	80
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

Notes/Tuning Information

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Flags:
  Fortran:
    -DSPEC_HPG_MPI_INT4 -DBITS64 -i8
  C:
    -DSPEC_HPG_MPI_INT4 -DBITS64
  Preprocessor:
    -E
Extra Libraries:
  -lmpich -lgm -lpthread

Submit command to run applications:
  cp 371.gamess_m.env ~/.ssh/environment ;
  mpirun.ch_gm -np 80 -machinefile n00x2.mf --gm-recv
    blocking --gm-no-shmem -wd ‘pwd‘ $command ;
  rm ~/.ssh/environment

Cluster Configuration:
  Two CPUs per node, 40 nodes
  371.gamess_m.env contains environment variables
    the benchmark needs for execution in a cluster
  All benchmark files are on a shared file server
  Nodes and file server use NFS shared file system

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

File Server Network:
```

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Notes/Tuning Information (Continued)

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    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
```