HPC2002 Result

Copyright ©1999-2002, Standard Performance Evaluation Corporation

IBM Corporation
eServer 325 Cluster

SPECchemM2002 = 51.4

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

Benchmark	Reference Time	Runtime	Ratio
371.gamess_m	86400	1680	51.4

Hardware

CPU:	AMD Opteron (246)
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	64
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:	4GB 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:	64
MPI Processes:	64
OpenMP Threads:	N/A
Operating System:	SuSE Linux 8.0 SLES 64 bit Kernel k_smp-2.4.19-249 (from Service Pack 2)
Compiler:	Fortran: Portland Group 5.1-1 Fortran 90 C: Portland Group 5.1-1 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

```
Flags:
  Fortran:
    -DSPEC_HPG_MPI_INT4 -DBITS64 -i8
  C:
    -DSPEC_HPG_MPI_INT4 -DBITS64
  Preprocessor:
    -E

Submit command to run applications:
  cp 371.gamess_m.env ~/.ssh/environment ;
  mpirun.ch_gm -np 64 -machinefile n00x2.mf --gm-recv
    blocking --gm-no-shmem -wd ‘pwd‘ $command ;
  rm ~/.ssh/environment

Cluster Configuration:
  Two CPUs per node, 32 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-E32 Switch Enclosure
  4 x Myrinet M3-SW16-8F 8-Port Line Cards

x345 File Server:
  2 x 2.4 GHz Xeon Processors
  512MB DDR266 CL2.5 Registered ECC Memory
  1 x 36GB 10K RPM Internal SCSI Drives
  ServeRAID 4H SCSI RAID Adapter
  10 x 36GB 10K RPM SCSI Drives
  SuSE 8.0 Pro Kernel 2.4.20-40
  Reiserfs Local File System
  NFS Shared File System

File Server Network:
  Cisco 4003 GbE Copper Switch
```

Copyright ©1999-2002, Standard Performance Evaluation Corporation

Notes/Tuning Information (Continued)

```
    Built-in Gigabit Ethernet Adapters

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