



SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge M605,
Gigabit Ethernet,
Platform MPI 5.6.4,
Intel 10.1 compilers

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 4.71

MPI2007 license: 021

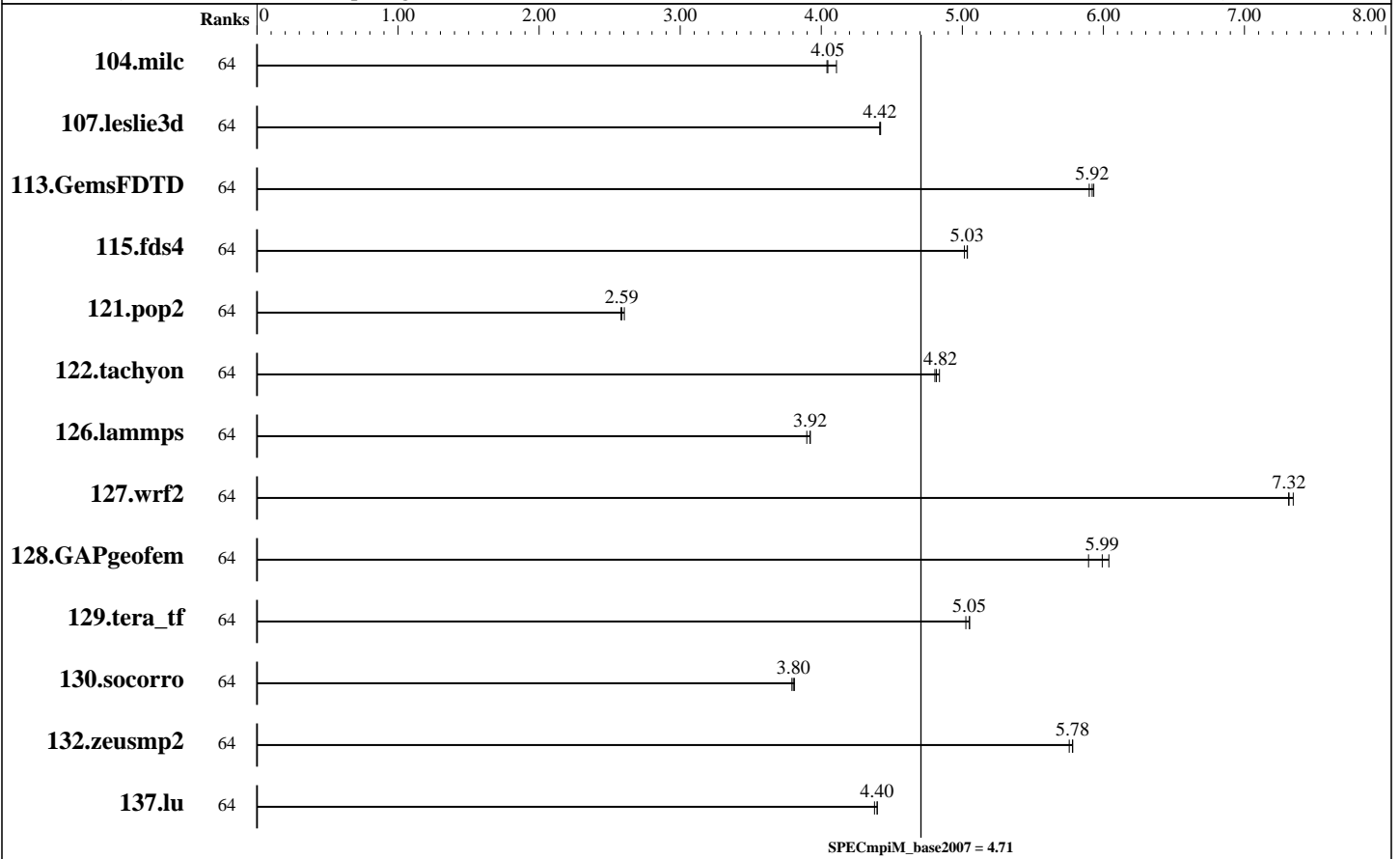
Test sponsor: Platform Computing Inc.

Tested by: Platform Computing Inc.

Test date: Nov-2008

Hardware Availability: Jan-2008

Software Availability: Jul-2008



Results Table

Benchmark	Base								Peak					
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	64	387	4.04	381	4.11	387	4.05							
107.leslie3d	64	1182	4.42	1181	4.42	1182	4.42							
113.GemsFDTD	64	1063	5.93	1065	5.92	1069	5.90							
115.fds4	64	387	5.04	388	5.03	389	5.01							
121.pop2	64	1585	2.60	1596	2.59	1600	2.58							
122.tachyon	64	578	4.84	582	4.81	581	4.82							
126.lammps	64	743	3.92	748	3.90	744	3.92							
127.wrf2	64	1066	7.31	1061	7.35	1066	7.32							
128.GAPgeofem	64	345	5.99	342	6.04	350	5.89							
129.tera_tf	64	548	5.05	551	5.02	548	5.05							

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



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Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	64	1007	3.79	1002	3.81	1004	3.80							
132.zeusmp2	64	<u>537</u>	<u>5.78</u>	539	5.76	537	5.78							
137.lu	64	836	4.40	840	4.38	836	4.40							

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Hardware Summary

Type of System: Homogenous
 Compute Node: PowerEdge M605
 Interconnect: Gigabit Ethernet
 File Server Node: PowerEdge M605
 Head Node: PowerEdge M605
 Total Compute Nodes: 8
 Total Chips: 16
 Total Cores: 64
 Total Threads: 64
 Total Memory: 128 GB
 Base Ranks Run: 64
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Compiler 10.1 for Linux (10.1.018)
 C++ Compiler: Intel C++ Compiler 10.1 for Linux (10.1.018)
 Fortran Compiler: Intel Fortran Compiler 10.1 for Linux (10.1.018)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: Scali MPI Connect 5.6.4-59151
 Other MPI Info: Platform Computing Inc has acquired Scali MPI Connect, hence Platform MPI and Scali MPI Connect are used synonymously.
 Pre-processors: None
 Other Software: None

Node Description: PowerEdge M605

Hardware

Number of nodes: 8
 Uses of the node: compute, head, fileserver
 Vendor: Dell Inc.
 Model: M605
 CPU Name: AMD Opteron CPU 2350
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 8
 Cores per chip: 4
 Threads per core: 1
 CPU Characteristics: Quad-Core AMD Opteron Processor 2350 (Barcelona)
 CPU MHz: 2000
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 2 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (4 x 4 GB DIMMs, 667 MHz)
 Disk Subsystem: 10K RPM Serial-Attach SCSI 3Gbps 2.5-in HotPlug Hard Drive
 Other Hardware: None
 Adapter: Broadcom Corporation NetXtreme II BCM5708S Gigabit Ethernet (rev 12)
 Number of Adapters: 1
 Slot Type: PCIe x8

Software

Adapter: Broadcom Corporation NetXtreme II BCM5708S Gigabit Ethernet (rev 12)
 Adapter Driver: OS default (bnx2, v1.5.11)
 Adapter Firmware: 4.4.1
 Operating System: RHEL 5.1 (x86_64) Kernel 2.6.18-53.el5
 Local File System: ext3
 Shared File System: NFSv3
 System State: multi-user
 Other Software: None

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Node Description: PowerEdge M605

Data Rate: 1 Gbps
Ports Used: 1
Interconnect Type: Gigabit Ethernet

Interconnect Description: Gigabit Ethernet

Hardware

Vendor: Dell Inc.
Model: 24 port Gigabit Ethernet switch
Switch Model: PowerConnect 5324
Number of Switches: 1
Number of Ports: 24
Data Rate: 1 Gbps Ethernet
Firmware: sw: v2.0.0.39, boot: v1.0.2.02, hw: 00.00.02
Topology: Single Switch
Primary Use: MPI and file system traffic

Software

Submit Notes

The config file option 'submit' was used.

General Notes

Dell PowerConnect 5324 configuration details:

Ports 9-16 were used and configured the following way:

Port	Type	Duplex	Speed	Neg	Flow ctrl	Link State	Back Pressure	Mdix Mode
g9	1G-Copper	Full	1000	Enabled	On	Up	Disabled	Off

Broadcom NetXtreme II BCM5708S Coalesce Settings:

The following coalesce settings were applied on all nodes:

```
ethtool -C eth0 rx-usecs 7 rx-frames 2 rx-usecs-irq 14 rx-frames-irq 4 tx-usecs 20 tx-frames 5 tx -usecs-irq 40 tx-frames-irq 10
```

NFS server usage:

The first node was used as NFS server. The other 7 nodes mounted the working directory from the first node.



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Base Compiler Invocation

C benchmarks:

mpicc -ccl icc

C++ benchmarks:

126.lammps: mpicc -ccl icpc

Fortran benchmarks:

mpif77 -ccl ifort

Benchmarks using both Fortran and C:

mpicc -ccl icc mpif77 -ccl ifort

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

127.wrf2: -DSPEC_MPI_LINUX -DSPEC_MPI_CASE_FLAG

Base Optimization Flags

C benchmarks:

-O3 -ipo -no-prec-div -axS

C++ benchmarks:

126.lammps: -O3 -ipo -no-prec-div -axS

Fortran benchmarks:

-O3 -ipo -no-prec-div -axS

Benchmarks using both Fortran and C:

-O3 -ipo -no-prec-div -axS

The flags files that were used to format this result can be browsed at

http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.html

http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20081204.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.xml

http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20081204.xml



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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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