SPEC® MPIM2007 Result

Dell Inc.

PowerEdge M605,
Gigabit Ethernet,
HP-MPI 2.2.7,
Intel 10.1 compilers

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 4.04

MPI2007 license: 021

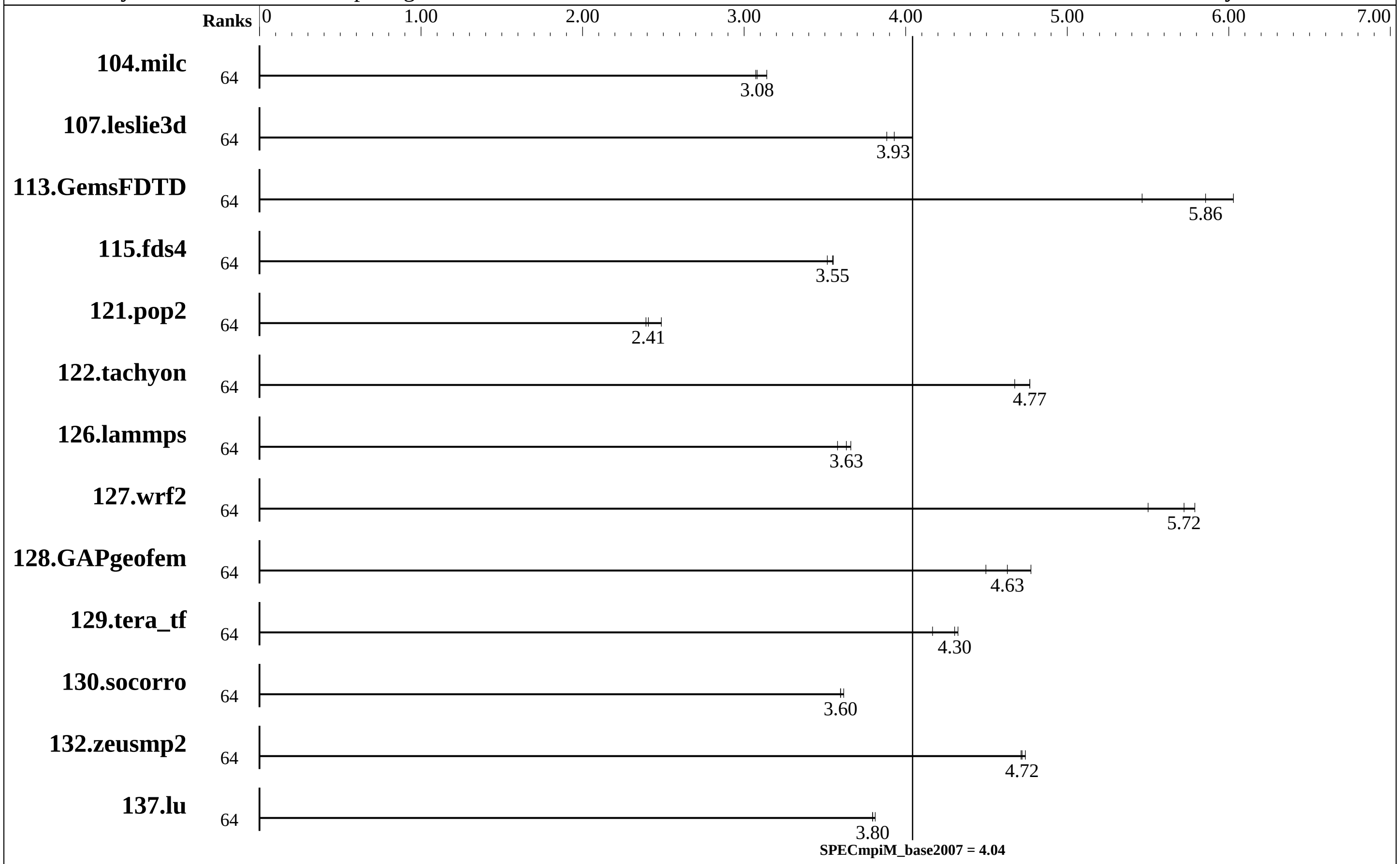
Test sponsor: Platform Computing Inc.

Tested by: Platform Computing Inc.

Test date: Nov-2008

Hardware Availability: Jan-2008

Software Availability: Jul-2008



Results Table

	Base							Peak						
Benchmark	**Ranks**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Ranks**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
104.milc	64	509	3.07	**508**	**3.08**	498	3.14							
107.leslie3d	64	**1328**	**3.93**	1344	3.88	1291	4.04							
113.GemsFDTD	64	**1077**	**5.86**	1155	5.46	1046	6.03							
115.fds4	64	549	3.55	**550**	**3.55**	555	3.51							
121.pop2	64	1725	2.39	1659	2.49	**1715**	**2.41**							
122.tachyon	64	587	4.77	598	4.67	**587**	**4.77**							
126.lammps	64	**802**	**3.63**	815	3.58	796	3.66							
127.wrf2	64	**1362**	**5.72**	1417	5.50	1346	5.79							
128.GAPgeofem	64	459	4.50	**446**	**4.63**	432	4.78							
129.tera_tf	64	664	4.17	**643**	**4.30**	640	4.32							

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	1061	3.60	1055	3.62	**1061**	**3.60**							
132.zeusmp2	64	654	4.74	**657**	**4.72**	658	4.71							
137.lu	64	964	3.81	**968**	**3.80**	969	3.80							

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:	HP MPI 02.02.07.00 [6934]
Other MPI Info:	None
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

Continued on next page

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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MPI2007 license:	021	**Test date:**	Nov-2008
Test sponsor:	Platform Computing Inc.	**Hardware Availability:**	Jan-2008
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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:
                                         Flow Link           Back    Mdix
   Port     Type         Duplex  Speed Neg      ctrl State          Pressure 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 -mpicc icc`

C++ benchmarks:

126.lammps: `mpiCC -mpicxx icpc`

Fortran benchmarks:
`mpif90 -mpif90 ifort`

Benchmarks using both Fortran and C:
`mpicc -mpicc icc mpif90 -mpif90 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 file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.00.xml

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

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