



SPEC® MPIM2007 Result

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SGI

SGI Altix ICE 8200EX
(Intel Xeon X5570, 2.93 GHz, PMPI 5.6.6)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 39.4

MPI2007 license: 021

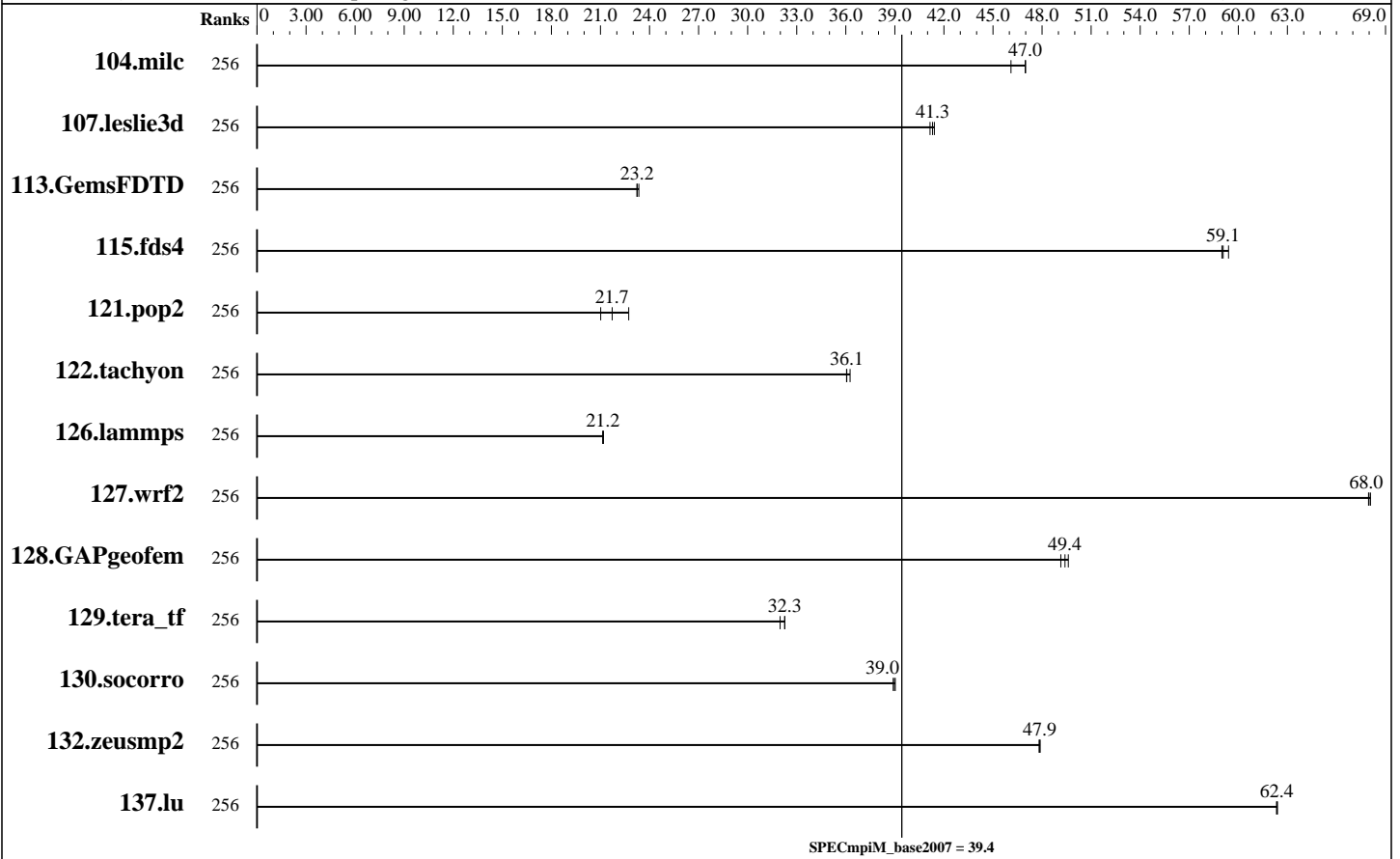
Test sponsor: Platform Computing Inc.

Tested by: Platform Computing Inc.

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	256	33.9	46.1	33.3	47.0	33.3	47.0							
107.leslie3d	256	127	41.2	126	41.4	126	41.3							
113.GemsFDTD	256	270	23.3	271	23.2	271	23.2							
115.fds4	256	33.1	59.0	33.0	59.1	32.8	59.4							
121.pop2	256	190	21.7	182	22.7	196	21.0							
122.tachyon	256	77.6	36.1	77.6	36.0	77.1	36.3							
126.lammps	256	138	21.1	138	21.2	138	21.2							
127.wrf2	256	115	68.0	115	68.1	115	68.0							
128.GAPgeofem	256	41.8	49.4	41.6	49.6	42.0	49.1							
129.tera_tf	256	85.8	32.3	85.8	32.3	86.5	32.0							

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	256	98.1	38.9	<u>97.9</u>	<u>39.0</u>	97.8	39.0							
132.zeusmp2	256	64.9	47.8	64.8	47.9	<u>64.8</u>	<u>47.9</u>							
137.lu	256	<u>59.0</u>	<u>62.4</u>	58.9	62.4	59.0	62.3							

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

Hardware Summary

Type of System: Homogeneous
 Compute Node: SGI Altix ICE 8200EX Compute Node
 Interconnects: InfiniBand (MPI)
 InfiniBand (I/O)
 File Server Node: SGI InfiniteStorage Nexis 2000 NAS
 Total Compute Nodes: 32
 Total Chips: 64
 Total Cores: 256
 Total Threads: 512
 Total Memory: 1536 GB
 Base Ranks Run: 256
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Compiler for Linux
 Version 10.1, Build 20080801
 C++ Compiler: Intel C++ Compiler for Linux
 Version 10.1, Build 20080801
 Fortran Compiler: Intel Fortran Compiler for Linux
 Version 10.1, Build 20080801
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: Platform MPI 5.6.6-59413
 Other MPI Info: OFED 1.3.1
 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: SGI Altix ICE 8200EX Compute Node

Hardware

Number of nodes: 32
 Uses of the node: compute
 Vendor: SGI
 Model: SGI Altix ICE 8200EX (Intel Xeon X5570, 2.93 GHz)
 CPU Name: Intel Xeon X5570
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 8
 Cores per chip: 4
 Threads per core: 2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz,
 6.4 GT/s QPI, Hyper-Threading enabled
 CPU MHz: 2934
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12*4GB DDR3-1066 CL7 RDIMMs)
 Disk Subsystem: None
 Other Hardware: None
 Adapter: Mellanox MT26418 ConnectX IB DDR
 (PCIe x8 Gen2 5 GT/s)

Software

Adapter: Mellanox MT26418 ConnectX IB DDR
 (PCIe x8 Gen2 5 GT/s)
 Adapter Driver: OFED-1.3.1
 Adapter Firmware: 2.5.0
 Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2
 Kernel 2.6.16.60-0.30-smp
 Local File System: NFSv3
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: SGI ProPack 6 for Linux Service Pack 2

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Tested by: Platform Computing Inc.

Software Availability: Feb-2009

Node Description: SGI Altix ICE 8200EX Compute Node

Number of Adapters: 1
Slot Type: PCIe x8 Gen2
Data Rate: InfiniBand 4x DDR
Ports Used: 2
Interconnect Type: InfiniBand

Node Description: SGI InfiniteStorage Nexis 2000 NAS

Hardware

Number of nodes: 1
Uses of the node: fileserver
Vendor: SGI
Model: SGI Altix XE 240 (Intel Xeon 5140, 2.33 GHz)
CPU Name: Intel Xeon 5140
CPU(s) orderable: 1-2 chips
Chips enabled: 2
Cores enabled: 4
Cores per chip: 2
Threads per core: 1
CPU Characteristics: 1333 MHz FSB
CPU MHz: 2328
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 4 MB I+D on chip per chip
L3 Cache: None
Other Cache: None
Memory: 24 GB (6*4GB DDR2-400 DIMMS)
Disk Subsystem: 7 TB RAID 5
48 x 147 GB SAS (Seagate Cheetah 15000 rpm)
Other Hardware: None
Adapter: Mellanox MT25208 InfiniHost III Ex
(PCIe x8 Gen1 2.5 GT/s)
Number of Adapters: 2
Slot Type: PCIe x8 Gen1
Data Rate: InfiniBand 4x DDR
Ports Used: 2
Interconnect Type: InfiniBand

Software

Adapter: Mellanox MT25208 InfiniHost III Ex
(PCIe x8 Gen1 2.5 GT/s)
Adapter Driver: OFED-1.3
Adapter Firmware: 5.3.0
Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1
Kernel 2.6.16.54-0.2.5-smp
Local File System: xfs
Shared File System: --
System State: Multi-user, run level 3
Other Software: SGI ProPack 5 for Linux Service Pack 5

Interconnect Description: InfiniBand (MPI)

Hardware

Vendor: Mellanox Technologies
Model: MT26418 ConnectX
Switch Model: Mellanox MT47396 InfiniScale III
Number of Switches: 8
Number of Ports: 24
Data Rate: InfiniBand 4x DDR

Software

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Interconnect Description: InfiniBand (MPI)

Firmware: 2020001
Topology: Bristle hypercube with express links
Primary Use: MPI traffic

Interconnect Description: InfiniBand (I/O)

	Hardware	Software
Vendor:	Mellanox Technologies	
Model:	MT26418 ConnectX	
Switch Model:	Mellanox MT47396 InfiniScale-III	
Number of Switches:	8	
Number of Ports:	24	
Data Rate:	InfiniBand 4x DDR	
Firmware:	2020001	
Topology:	Bristle hypercube with express links	
Primary Use:	I/O traffic	

Submit Notes

The config file option 'submit' was used.

General Notes

Software environment:
 limit stacksize unlimited
 Removes limits on the maximum size of the automatically-extended stack region of the current process and each process it creates.

PBS Pro batch scheduler (www.altair.com) is used with placement sets to ensure each MPI job is assigned to a topologically compact set of nodes

BIOS settings:
 AMI BIOS version 8.15
 Hyper-Threading Technology enabled (default)
 Intel Turbo Boost Technology enabled (default)
 Intel Turbo Boost Technology activated in the OS via
 /etc/init.d/acpid start
 /etc/init.d/powersaved start
 powersave -f

Base Compiler Invocation

C benchmarks:
mpicc -ccl icc

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Base Compiler Invocation (Continued)

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_CASE_FLAG -DSPEC_MPI_LINUX
```

Base Optimization Flags

C benchmarks:

```
-O3 -ipo -xT -no-prec-div
```

C++ benchmarks:

```
126.lammps: -O3 -ipo -xT -no-prec-div -ansi-alias
```

Fortran benchmarks:

```
-O3 -ipo -xT -no-prec-div
```

Benchmarks using both Fortran and C:

```
-O3 -ipo -xT -no-prec-div
```

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.20080618.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.20080618.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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