



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 = 1.79

MPI2007 license: 021

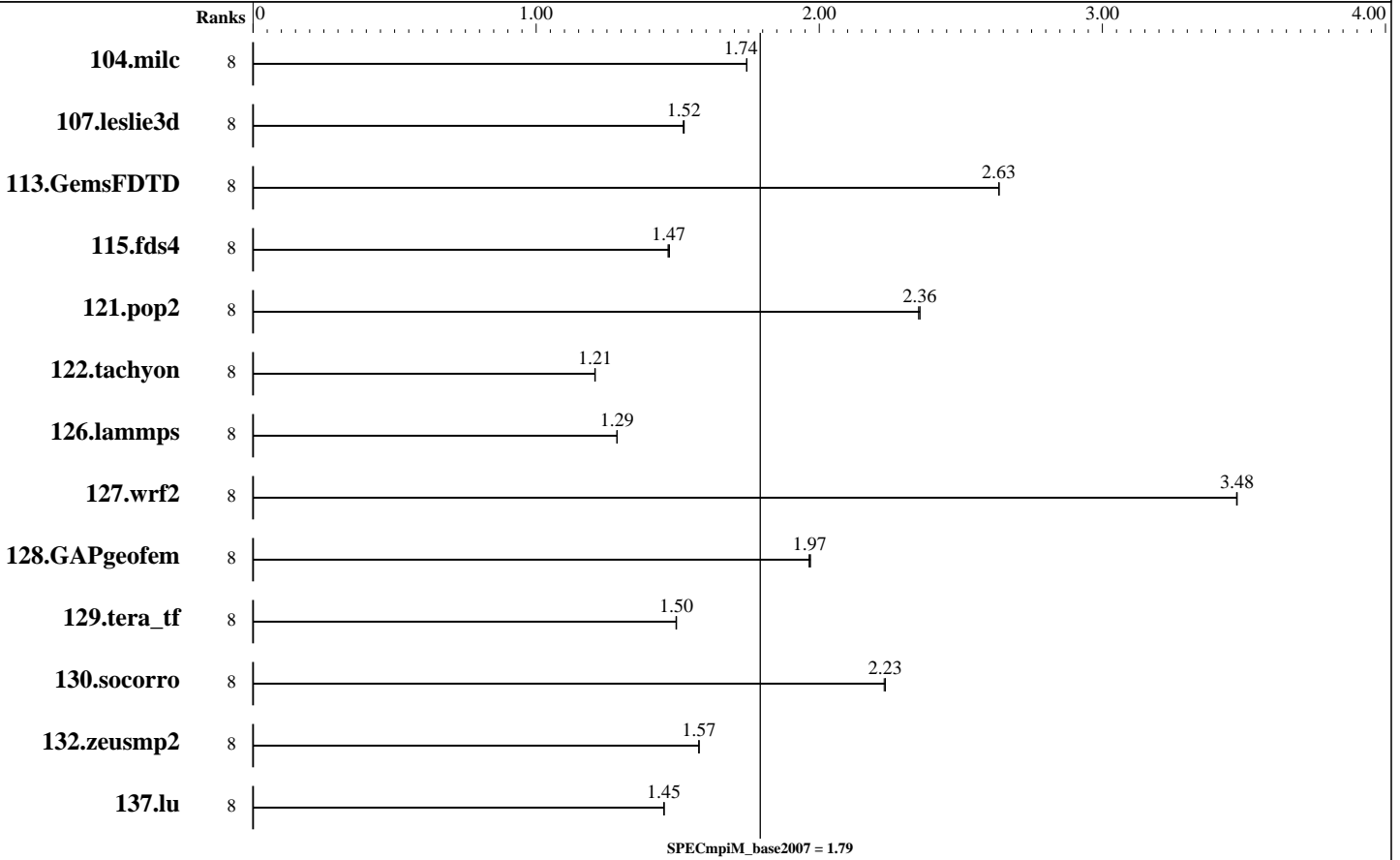
Test sponsor: Platform Computing Inc.

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	8	898	1.74	897	1.74	897	1.74							
107.leslie3d	8	3431	1.52	3428	1.52	3435	1.52							
113.GemsFDTD	8	2395	2.63	2395	2.63	2393	2.64							
115.fds4	8	1326	1.47	1331	1.47	1329	1.47							
121.pop2	8	1752	2.36	1753	2.36	1756	2.35							
122.tachyon	8	2315	1.21	2315	1.21	2317	1.21							
126.lammps	8	2267	1.29	2267	1.29	2268	1.29							
127.wrf2	8	2244	3.47	2243	3.48	2243	3.48							
128.GAPgeofem	8	1051	1.96	1050	1.97	1049	1.97							
129.tera_tf	8	1853	1.49	1850	1.50	1851	1.50							

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	8	1712	2.23	<u>1709</u>	<u>2.23</u>	1709	2.23							
132.zeusmp2	8	<u>1970</u>	<u>1.57</u>	1971	1.57	1969	1.58							
137.lu	8	2533	1.45	2531	1.45	<u>2533</u>	<u>1.45</u>							

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: 1
 Total Chips: 2
 Total Cores: 8
 Total Threads: 16
 Total Memory: 48 GB
 Base Ranks Run: 8
 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: 1
 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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