



SPEC® MPIM2007 Result

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SGI

SGI Rackable C2005-TY3
(Intel Xeon X5687, 3.60 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 4.41

MPI2007 license: 4

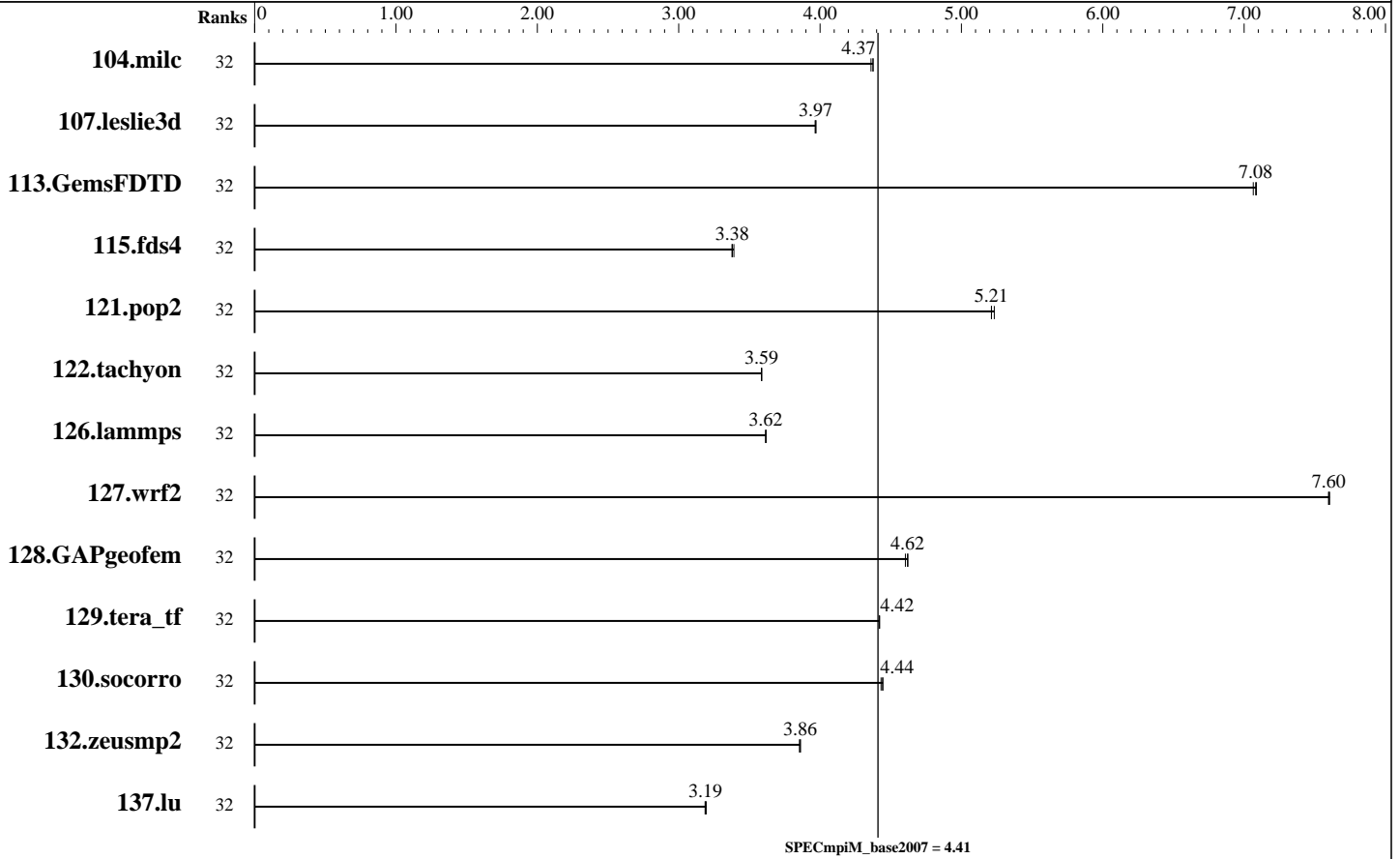
Test sponsor: SGI

Tested by: SGI

Test date: Aug-2011

Hardware Availability: Feb-2011

Software Availability: Jul-2011



Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	32	359	4.36	358	4.37	358	4.38									
107.leslie3d	32	1315	3.97	1316	3.97	1315	3.97									
113.GemsFDTD	32	891	7.08	890	7.09	893	7.06									
115.fds4	32	578	3.38	577	3.38	575	3.39									
121.pop2	32	789	5.23	792	5.21	792	5.21									
122.tachyon	32	780	3.59	780	3.59	780	3.59									
126.lammps	32	806	3.61	806	3.62	806	3.62									
127.wrf2	32	1026	7.60	1025	7.60	1026	7.60									
128.GAPgeofem	32	447	4.62	449	4.60	447	4.62									
129.tera_tf	32	626	4.42	626	4.42	626	4.42									

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	32	859	4.44	861	4.43	859	4.44							
132.zeusmp2	32	804	3.86	804	3.86	805	3.85							
137.lu	32	1154	3.19	1151	3.19	1152	3.19							

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 Rackable C2005-TY3 Compute Node
 Interconnect: InfiniBand (MPI and I/O)
 File Server Node: SGI InfiniteStorage 4500
 Total Compute Nodes: 2
 Total Chips: 4
 Total Cores: 16
 Total Threads: 32
 Total Memory: 96 GB
 Base Ranks Run: 32
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719
 C++ Compiler: Intel C++ Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719
 Fortran Compiler: Intel Fortran Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: SGI MPT 2.04 Patch 10773
 Other MPI Info: OFED 1.4.2
 Pre-processors: None
 Other Software: None

Node Description: SGI Rackable C2005-TY3 Compute Node

Hardware

Number of nodes: 2
 Uses of the node: compute
 Vendor: SGI
 Model: SGI Rackable C2005-TY3 (Intel Xeon X5687, 3.60GHz)
 CPU Name: Intel Xeon X5687
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 8
 Cores per chip: 4
 Threads per core: 2
 CPU Characteristics: Quad Core, 3.60 GHz, 6.4 GT/s QPI
 Intel Turbo Boost Technology up to 3.86 GHz
 Hyper-Threading Technology enabled
 CPU MHz: 3600
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (6 x 8 GB, 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: None
 Other Hardware: None
 Adapter: Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
 Number of Adapters: 1

Software

Adapter: Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
 Adapter Driver: OFED-1.4.2
 Adapter Firmware: 2.7.0
 Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64) Kernel 2.6.32.36-0.5-default
 Local File System: NFSv3
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: SGI Performance Suite 1.2, Build 704r5.sles11-1103212004

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Node Description: SGI Rackable C2005-TY3 Compute Node

Slot Type: PCIe x8 Gen2
Data Rate: InfiniBand 4x QDR
Ports Used: 1
Interconnect Type: InfiniBand

Node Description: SGI InfiniteStorage 4500

Hardware

Number of nodes: 1
Uses of the node: fileserver
Vendor: SGI
Model: SGI Altix 450 (Intel Itanium 2, 1.6 GHz)
CPU Name: Intel Itanium 2 9030
CPU(s) orderable: 2-38 chips
Chips enabled: 4
Cores enabled: 8
Cores per chip: 2
Threads per core: 1
CPU Characteristics: 1.6GHz/8MB, 533MHz FSB
CPU MHz: 1600
Primary Cache: 16 KB I + 16 KB D on chip per core
Secondary Cache: 1 MB I + 256 KB D on chip per core
L3 Cache: 4 MB I+D on chip per core
Other Cache: None
Memory: 48 GB (24 x 2 GB, 2Rx4 PC2-3200-4, ECC)
Disk Subsystem: 5.8 TB RAID 5
20 x 146 GB FC (Seagate Cheetah 15K.4)
40 x 73 GB FC (Seagate Cheetah 15K.4)
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-1.4.2
Adapter Firmware: 4.8.200
Operating System: SUSE Linux Enterprise Server 11 SP1 (ia64)
Kernel 2.6.32.23-0.3-default
Local File System: xfs
Shared File System: --
System State: Multi-user, run level 3
Other Software: SGI InfiniteStorage Software Platform, version
2.2, Build 702r16.sles11-1010082110

Interconnect Description: InfiniBand (MPI and I/O)

Hardware

Vendor: Mellanox Technologies
Model: n/a
Switch Model: Voltaire Grid Director 4200
Number of Switches: 1
Number of Ports: 36
Data Rate: InfiniBand 4x QDR

Software

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Interconnect Description: InfiniBand (MPI and I/O)

Firmware: 3.0.0 BUILD ID 629
Topology: Fat tree
Primary Use: MPI and I/O traffic

Submit Notes

The config file option 'submit' was used.

General Notes

Software environment:

```
export MPI_REQUEST_MAX=65536
export MPI_TYPE_MAX=32768
export MPI_BUFS_THRESHOLD=1
ulimit -s unlimited
```

BIOS settings:

```
AMI BIOS version 2.10
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:

```
icc
```

C++ benchmarks:

```
126.lammps: icpc
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icc ifort
```



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Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

127.wrf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX

Base Optimization Flags

C benchmarks:

-O3 -xSSE4.2 -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xSSE4.2 -no-prec-div -ansi-alias

Fortran benchmarks:

-O3 -xSSE4.2 -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xSSE4.2 -no-prec-div

Base Other Flags

C benchmarks:

-lmpi

C++ benchmarks:

126.lammps: -lmpi

Fortran benchmarks:

-lmpi

Benchmarks using both Fortran and C:

-lmpi

The flags file that was used to format this result can be browsed at

http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel12_flags.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel12_flags.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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