



SPEC® MPIM2007 Result

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SGI

SGI Rackable C2112-4TY14
(Intel Xeon X5675, 3.06GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 50.1

MPI2007 license: 4

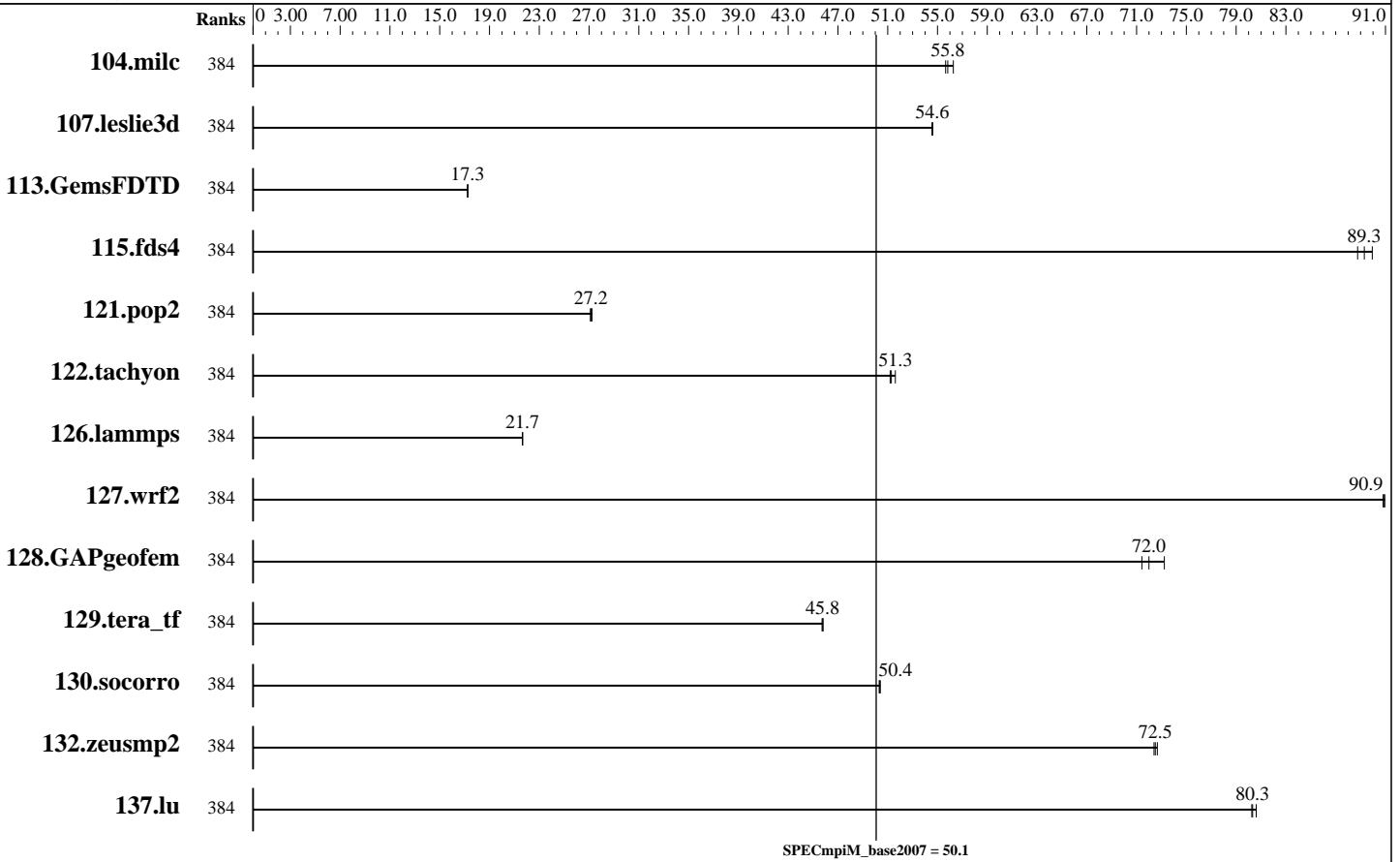
Test sponsor: SGI

Tested by: SGI

Test date: Mar-2011

Hardware Availability: Feb-2011

Software Availability: Feb-2011



Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	384	27.8	56.3	28.1	55.7	28.0	55.8									
107.leslie3d	384	95.6	54.6	95.7	54.6	95.6	54.6									
113.GemsFDTD	384	366	17.3	366	17.3	366	17.2									
115.fds4	384	21.8	89.3	21.7	89.9	22.0	88.8									
121.pop2	384	152	27.1	152	27.2	152	27.2									
122.tachyon	384	54.5	51.3	54.6	51.2	54.2	51.6									
126.lammps	384	135	21.7	135	21.7	135	21.7									
127.wrf2	384	85.7	90.9	85.8	90.9	85.8	90.8									
128.GAPgeofem	384	28.9	71.4	28.2	73.2	28.7	72.0									
129.tera_tf	384	60.5	45.8	60.5	45.7	60.4	45.8									

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	384	75.9	50.3	<u>75.8</u>	<u>50.4</u>	75.7	50.4							
132.zeusmp2	384	<u>42.8</u>	<u>72.5</u>	42.7	72.7	42.9	72.4							
137.lu	384	<u>45.8</u>	<u>80.3</u>	45.6	80.6	45.8	80.3							

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 Rackable C2112-4TY14 Compute Node
 Interconnect: InfiniBand (MPI and I/O)
 File Server Node: SGI Altix 450 with TP9700
 Total Compute Nodes: 32
 Total Chips: 64
 Total Cores: 384
 Total Threads: 768
 Total Memory: 768 GB
 Base Ranks Run: 384
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Compiler for Linux
 Version 11.1, Build 20100806
 C++ Compiler: Intel C++ Compiler for Linux
 Version 11.1, Build 20100806
 Fortran Compiler: Intel Fortran Compiler for Linux
 Version 11.1, Build 20100806
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: SGI MPT 2.03
 Other MPI Info: OFED 1.4.2
 Pre-processors: None
 Other Software: None

Node Description: SGI Rackable C2112-4TY14 Compute Node

Hardware

Number of nodes: 32
 Uses of the node: compute
 Vendor: SGI
 Model: SGI Rackable C2112-4TY14 (Intel Xeon X5675, 3.06GHz)
 CPU Name: Intel Xeon X5675
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 12
 Cores per chip: 6
 Threads per core: 2
 CPU Characteristics: Six Core, 3.06 GHz, 6.4 GT/s QPI
 Intel Turbo Boost Technology up to 3.46 GHz
 Hyper-Threading Technology enabled
 CPU MHz: 3067
 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: 24 GB (6 x 4 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
 Kernel 2.6.32.27-0.2-default
 Local File System: NFSv3
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: SGI Performance Suite 1.0, Build
 702r19.sles11-1010072114

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Hardware Availability: Feb-2011

Software Availability: Feb-2011

Node Description: SGI Rackable C2112-4TY14 Compute Node

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

Node Description: SGI Altix 450 with TP9700

Hardware

Number of nodes: 1
Uses of the node: fileserver
Vendor: SGI
Model: SGI Altix 450 (Intel Itanium 2, 1.6GHz)
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: 24 GB (12 x 2 GB, 2Rx4 PC2-3200-4, ECC)
Disk Subsystem: 8.2 TB RAID 5
60 x 146 GB FC (Seagate Cheetah 15K.5)
Other Hardware: None
Adapter: MT25208 InfiniHost III Ex
(PCIe x8 Gen1 2.5 GT/s)
Number of Adapters: 1
Slot Type: PCIe x8 Gen1
Data Rate: InfiniBand 4x DDR
Ports Used: 2
Interconnect Type: InfiniBand

Software

Adapter: MT25208 InfiniHost III Ex
(PCIe x8 Gen1 2.5 GT/s)
Adapter Driver: OFED-1.4.1
Adapter Firmware: 5.3.0
Operating System: SUSE Linux Enterprise Server 10 SP3 (ia64)
Kernel 2.6.16.60-0.68.1-default
Local File System: xfs
Shared File System: --
System State: Multi-user, run level 3
Other Software: SGI ProPack 6SP6 for Linux, Build
606rp75.sles10-1009032310

Interconnect Description: InfiniBand (MPI and I/O)

Hardware

Vendor: Mellanox Technologies
Model: None
Switch Model: Voltaire Grid Director 4036
Number of Switches: 1
Number of Ports: 36
Data Rate: InfiniBand 4x QDR
Firmware: 2.0.1 BUILD ID 22

Software

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Interconnect Description: InfiniBand (MPI and I/O)

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 080016
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

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

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Base Portability Flags (Continued)

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_Intel111_flags.20100202.html

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

http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel111_flags.20100202.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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