



SPEC[®] MPIM2007 Result

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SGI

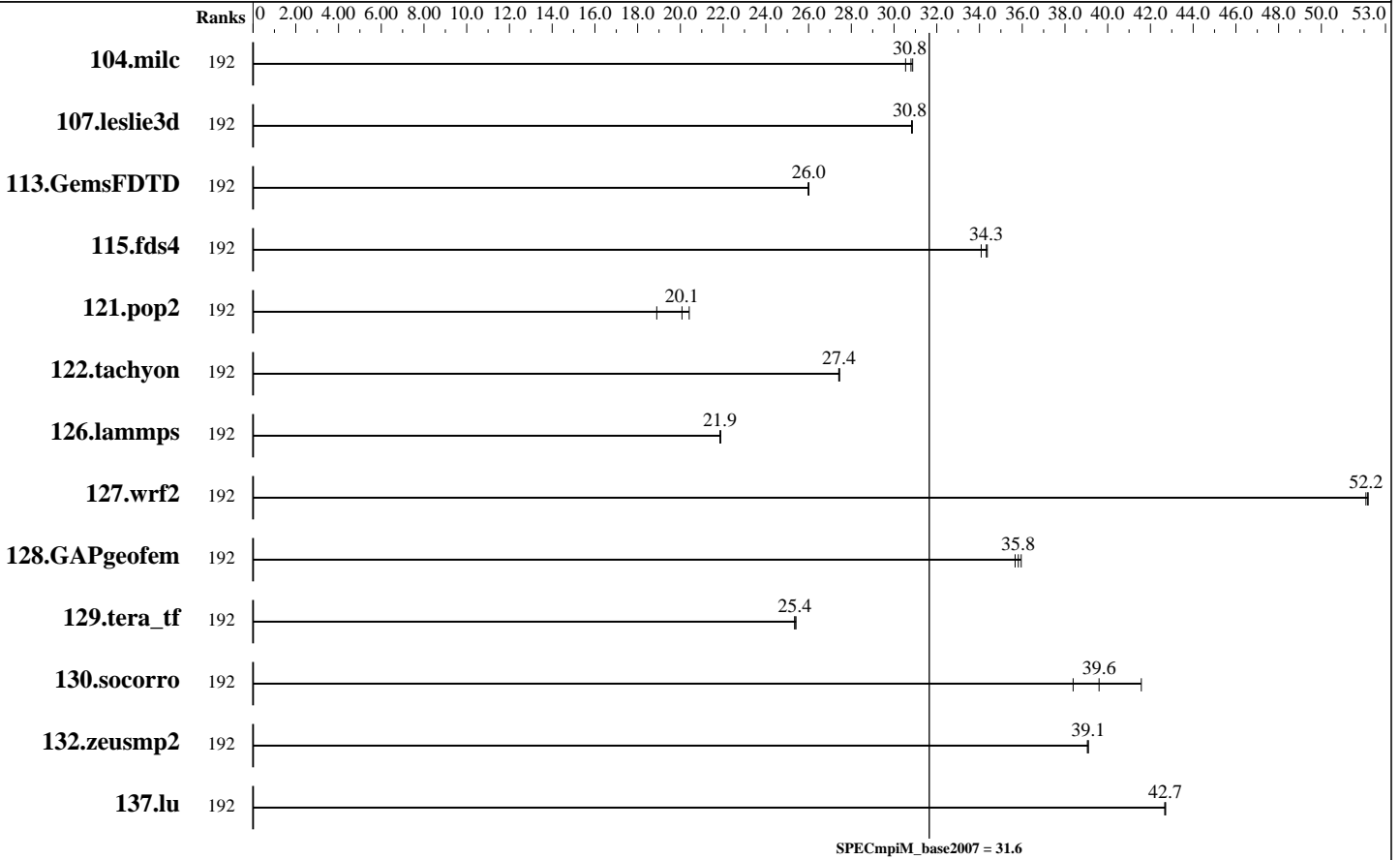
SGI Rackable C2112-4TY14
(Intel Xeon X5675, 3.06GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 31.6

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	192	51.2	30.5	50.7	30.9	<u>50.8</u>	<u>30.8</u>									
107.leslie3d	192	169	30.8	169	30.9	<u>169</u>	<u>30.8</u>									
113.GemsFDTD	192	<u>243</u>	<u>26.0</u>	243	26.0	242	26.0									
115.fds4	192	<u>56.9</u>	<u>34.3</u>	57.2	34.1	56.8	34.4									
121.pop2	192	<u>206</u>	<u>20.1</u>	202	20.4	218	18.9									
122.tachyon	192	<u>102</u>	<u>27.4</u>	102	27.5	102	27.4									
126.lammps	192	133	21.9	<u>133</u>	<u>21.9</u>	133	21.9									
127.wrf2	192	149	52.2	150	52.1	<u>149</u>	<u>52.2</u>									
128.GAPgeofem	192	57.9	35.7	<u>57.7</u>	<u>35.8</u>	57.4	36.0									
129.tera_tf	192	109	25.3	<u>109</u>	<u>25.4</u>	109	25.4									

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	192	91.8	41.6	<u>96.4</u>	<u>39.6</u>	99.4	38.4							
132.zeusmp2	192	<u>79.4</u>	<u>39.1</u>	79.4	39.1	79.5	39.0							
137.lu	192	86.1	42.7	<u>86.1</u>	<u>42.7</u>	86.2	42.7							

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: 16
 Total Chips: 32
 Total Cores: 192
 Total Threads: 384
 Total Memory: 384 GB
 Base Ranks Run: 192
 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: 16
 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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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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