



# SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4

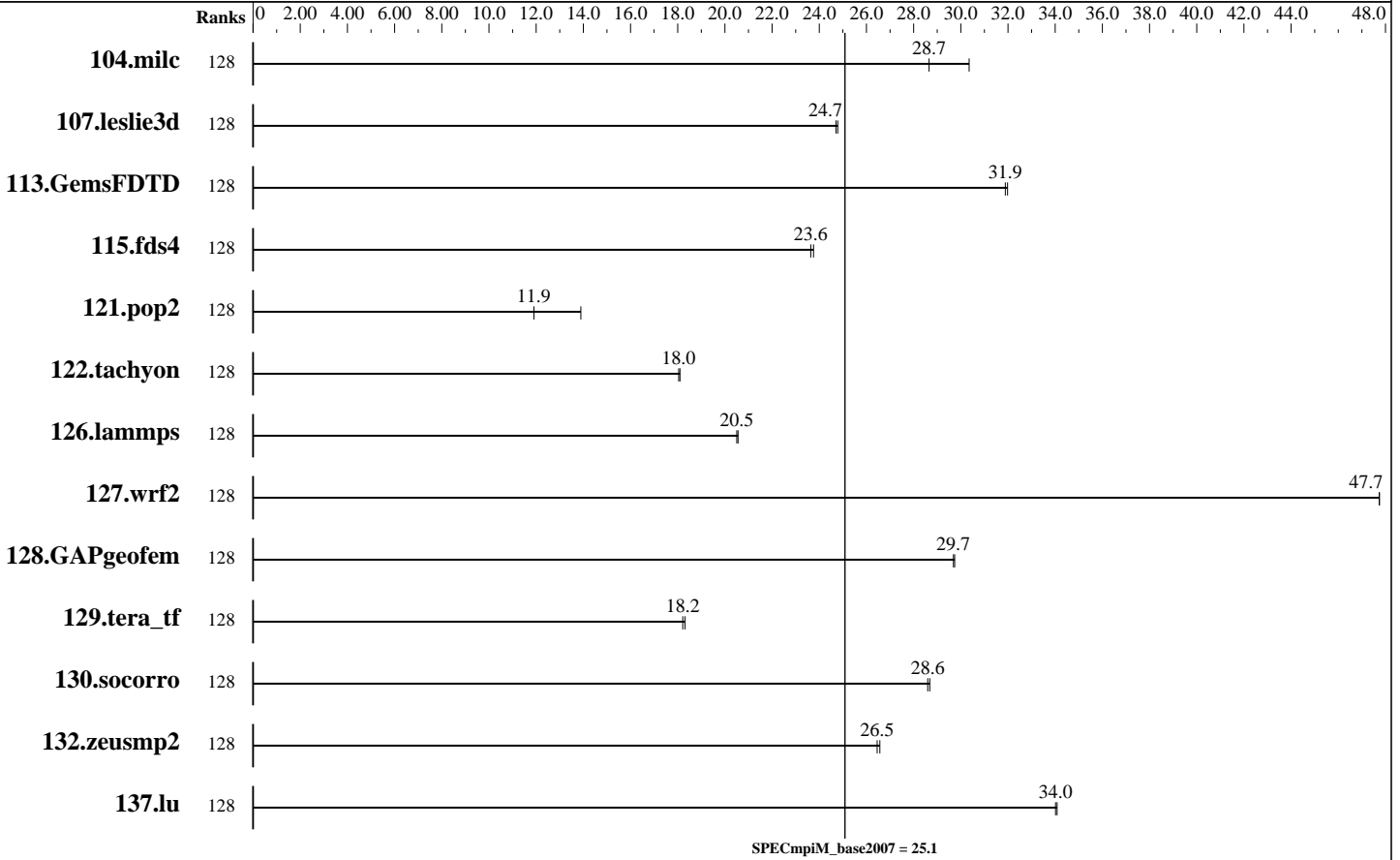
Test sponsor: SGI

Tested by: SGI

Test date: Sep-2009

Hardware Availability: Mar-2009

Software Availability: Aug-2009



## Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	128	<u>54.6</u>	<u>28.7</u>	51.6	30.4											
107.leslie3d	128	<u>211</u>	<u>24.7</u>	211	24.8											
113.GemsFDTD	128	197	32.0	<u>198</u>	<u>31.9</u>											
115.fds4	128	<u>82.5</u>	<u>23.6</u>	82.1	23.8											
121.pop2	128	<u>347</u>	<u>11.9</u>	297	13.9											
122.tachyon	128	155	18.1	<u>155</u>	<u>18.0</u>											
126.lammps	128	<u>142</u>	<u>20.5</u>	142	20.6											
127.wrf2	128	<u>163</u>	<u>47.7</u>	163	47.7											
128.GAPgeofem	128	<u>69.6</u>	<u>29.7</u>	69.4	29.7											
129.tera_tf	128	151	18.3	<u>152</u>	<u>18.2</u>											

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4  
Test sponsor: SGI  
Tested by: SGI

Test date: Sep-2009  
Hardware Availability: Mar-2009  
Software Availability: Aug-2009

### Results Table (Continued)

Benchmark	Base						Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	128	<u>133</u>	<u>28.6</u>	133	28.7									
132.zeusmp2	128	<u>117</u>	<u>26.5</u>	117	26.6									
137.lu	128	108	34.1	<u>108</u>	<u>34.0</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: 16  
 Total Chips: 32  
 Total Cores: 128  
 Total Threads: 256  
 Total Memory: 384 GB  
 Base Ranks Run: 128  
 Minimum Peak Ranks: --  
 Maximum Peak Ranks: --

#### Software Summary

C Compiler: Intel C Compiler for Linux  
 Version 11.1, Build 20090630  
 C++ Compiler: Intel C++ Compiler for Linux  
 Version 11.1, Build 20090630  
 Fortran Compiler: Intel Fortran Compiler for Linux  
 Version 11.1, Build 20090630  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 MPI Library: SGI MPT 1.24  
 Other MPI Info: OFED 1.4  
 Pre-processors: None  
 Other Software: None

### Node Description: SGI Altix ICE 8200EX Compute Node

#### Hardware

Number of nodes: 16  
 Uses of the node: compute  
 Vendor: SGI  
 Model: SGI Altix ICE 8200EX (Intel Xeon X5570, 2.93 GHz, DDR3-1333)  
 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: 24 GB (6\*4GB DDR3-1333 CL9 RDIMMs)  
 Disk Subsystem: None  
 Other Hardware: None  
 Adapter: Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)  
 Number of Adapters: 1

#### Software

Adapter: Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)  
 Adapter Driver: OFED-1.4  
 Adapter Firmware: 2.6.0  
 Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2  
 Kernel 2.6.16.60-0.34-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 3, SGI Tempo V 1.7

Continued on next page



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2009

Hardware Availability: Mar-2009

Software Availability: Aug-2009

### Node Description: SGI Altix ICE 8200EX Compute Node

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: 16  
Number of Ports: 24  
Data Rate: InfiniBand 4x DDR  
Firmware: 2020001

#### Software

Continued on next page



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4  
Test sponsor: SGI  
Tested by: SGI

Test date: Sep-2009  
Hardware Availability: Mar-2009  
Software Availability: Aug-2009

### Interconnect Description: InfiniBand (MPI)

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:
export MPI_REQUEST_MAX=65536
export MPI_TYPE_MAX=32768
export MPI_BUFS_THRESHOLD=1
export MPI_DSM_DISTRIBUTE=yes
export MPI_IB_RAILS=2
ulimit -s unlimited
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
Job Placement:
Each MPI job was assigned to a topologically compact set
of nodes, i.e. the minimal needed number of switches was
used for each job: 2 switches for 16/32/64 ranks, 4 switches
for 128 ranks, 8 switches for 256 ranks and 16 switches for
512 ranks.

```



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

**SGI**

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4  
Test sponsor: SGI  
Tested by: SGI

Test date: Sep-2009  
Hardware Availability: Mar-2009  
Software Availability: Aug-2009

## 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  
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

## Base Other Flags

C benchmarks:  
-lmpi

C++ benchmarks:  
126.lammps: -lmpi

Fortran benchmarks:  
-lmpi

Continued on next page



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5570, 2.93 GHz, DDR3-1333)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 25.1

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2009

Hardware Availability: Mar-2009

Software Availability: Aug-2009

## Base Other Flags (Continued)

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.html](http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel111_flags.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.xml](http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel111_flags.xml)

SPEC and SPEC MPI are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC MPI2007 v1.1.  
Report generated on Tue Jul 22 13:38:55 2014 by SPEC MPI2007 PS/PDF formatter v1463.  
Originally published on 8 October 2009.