



# SPEC® MPIM2007 Result

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## SGI

SGI Altix ICE 8200EX  
(Intel Xeon X5472, 3.00 GHz)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = NC

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: May-2008

Hardware Availability: Mar-2008

Software Availability: Apr-2008

Ranks
104.milc
107.leslie3d
113.GemsFDTD
115.fds4
121.pop2
122.tachyon
126.lammps
127.wrf2
128.GAPgeofem
129.tera_tf
130.socorro
132.zeusmp2
137.lu

## Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	256	NC	NC	NC	NC									
107.leslie3d	256	NC	NC	NC	NC									
113.GemsFDTD	256	NC	NC	NC	NC									
115.fds4	256	NC	NC	NC	NC									
121.pop2	256	NC	NC	NC	NC									
122.tachyon	256	NC	NC	NC	NC									
126.lammps	256	NC	NC	NC	NC									
127.wrf2	256	NC	NC	NC	NC									
128.GAPgeofem	256	NC	NC	NC	NC									

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
129.tera_tf	256	NC	NC	NC	NC									
130.socorro	256	NC	NC	NC	NC									
132.zeusmp2	256	NC	NC	NC	NC									
137.lu	256	NC	NC	NC	NC									

Results appear in the order in which they were run. Bold underlined text indicates 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 NAS/SAN  
 Total Compute Nodes: 32  
 Total Chips: 64  
 Total Cores: 256  
 Total Threads: 256  
 Total Memory: 512 GB  
 Base Ranks Run: 256  
 Minimum Peak Ranks: --  
 Maximum Peak Ranks: --

### Software Summary

Compiler: Intel C Compiler for Linux  
 Version 10.1, Build 20080312  
 C++ Compiler: Intel C++ Compiler for Linux  
 Version 10.1, Build 20080312  
 Fortran Compiler: Intel Fortran Compiler for Linux  
 Version 10.1, Build 20080312  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 MPI Library: Intel MPI 3.1.038  
 Other MPI Info: OFED 1.3  
 Pre-processors: None  
 Other Software: None

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

### Hardware

Number of nodes: 32  
 Uses of the node: compute  
 Vendor: SGI  
 Model: SGI Altix ICE 8200EX (Intel Xeon X5472, 3.00 GHz)  
 CPU Name: Intel Xeon X5472  
 CPU(s) orderable: 1-2 chips  
 Chips enabled: 1  
 Cores enabled: 8  
 Cores per chip: 4  
 Threads per core: 1  
 CPU Characteristics: Quad Core, 3.0GHz  
 CPU MHz: 3000  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (8\*2GB PC2-6400 CL5-5-5 FB-DIMMs)  
 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  
 Adapter Firmware: 2.3.0  
 Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1  
 Kernel 2.6.16.46-0.12-smp  
 Local File System: NFSv3  
 Shared File System: NFSv3 IPoIB  
 System State: Multi-user, run level 3  
 Other Software: SGI ProPack 5 for Linux Service Pack 5

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Tested by: SGI

Test date: May-2008  
Hardware Availability: Mar-2008  
Software Availability: Apr-2008

### 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 Node/SAN

**Hardware**

Number of nodes: 1  
Uses of the node: fileserver  
Vendor: SGI  
Model: SGI Altix 450 Density System (Itanium 2 Processor 9030 1.6GHz/8MB)  
CPU Name: Dual-Core Intel Itanium 2 930  
CPU(s) orderable: 1-38 chips  
Chips enabled: 2  
Cores enabled: 4  
Cores per chip: 2  
Threads per core: 1  
CPU Characteristics: 533 MHz FSB  
CPU MHz: 1594  
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 (6\*4GB DDR2-400 DIMMS)  
Disk Subsystem: 16 TB RAID 5  
32 x 500 GB SATA (Seagate Barracuda 7200 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 Driver: Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s)  
Adapter Firmware: OFED-1.3  
Operating System: 5.2.0  
SUSE Linux Enterprise Server 10 (ia64) SP1  
Kernel 2.6.16.54-0.2.5-default  
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: 32

**Software**

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Software Availability: Apr-2008

### Interconnect Description: InfiniBand (MPI)

Number of Ports: 24  
Data Rate: InfiniBand 4x DDR  
Firmware: 2020001  
Topology: Hypercube  
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: 32	
Number of Ports: 24	
Data Rate: InfiniBand 4x DDR	
Firmware: 2020001	
Topology: Hypercube	
Primary Use: I/O traffic	

### General Notes

Required alternate sources:  
129.tera\_tf: fixbuff

### Base Compiler Invocation

C benchmarks:  
mpicc  
C++ benchmarks:  
mpicpc  
Fortran benchmarks:  
mpiifort  
Benchmarks using both Fortran and C:  
mpicc mpiifort



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## Base Portability Flags

121.pop2: -DSPEC\_MPI\_CASE\_FLAG  
126.lammps: -DMPICH\_IGNORE\_CXX\_SEEK  
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 file that was used to format this result can be browsed at

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.20080618.html](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.html)

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

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.20080618.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](mailto:webmaster@spec.org).

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