SPEC® MPIM2007 Result

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SGI

SGI Altix ICE 8200EX
(Intel Xeon X5570, 2.93 GHz, PMPI 5.6.6)

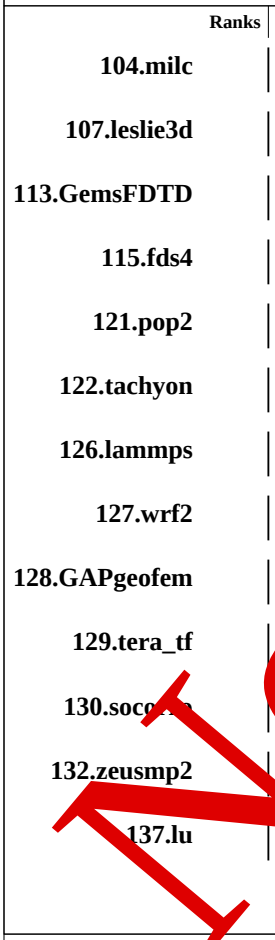
SPECmpiM_peak2007 = Not Run

SPECmpiM_base200[illegible] = NC

MPI2007 license: 021
Test sponsor: Platform Computing Inc.
Tested by: Platform Computing Inc.

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Feb-2009

Non-Compliant



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	16	NC	NC	NC	NC	NC	NC							
107.leslie3d	16	NC	NC	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
113.GemsFDTD	16	NC	NC	NC	NC	NC	NC							
115.fds4	16	NC	NC	NC	NC	NC	NC							
121.pop2	16	NC	NC	NC	NC	NC	NC							
122.tachyon	16	NC	NC	NC	NC	NC	NC							
126.lammps	16	NC	NC	NC	NC	NC	NC							
127.wrf2	16	NC	NC	NC	NC	NC	NC							
128.GAPgeofem	16	NC	NC	NC	NC	NC	NC							
129.tera_tf	16	NC	NC	NC	NC	NC	NC							
130.socorro	16	NC	NC	NC	NC	NC	NC							
132.zeusmp2	16	NC	NC	NC	NC	NC	NC							
137.lu	16	NC	NC	NC	NC	NC	NC							

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
Interconnect: InfiniBand (MPI)
InfiniBand (I/O)
File Server Node: SGI InfiniteStorage Nexis 2000 NAS
Total Compute Nodes: 2
Total Chips: 4
Total Cores: 16
Total Threads: 32
Total Memory: 96 GB
Base Ranks Run: 16
Minimum Peak Ranks: --
Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Compiler for Linux
Version 10.1, Build 20080801
C++ Compiler: Intel C++ Compiler for Linux
Version 10.1, Build 20080801
Fortran Compiler: Intel Fortran Compiler for Linux
Version 10.1, Build 20080801
Base Pointers: 64-bit
Peak Pointers: 64-bit
MPI Library: Platform MPI 5.6.6-59413
Other MPI Info: OFED 1.3.1
Platform Computing Inc has acquired Scali MPI Connect, hence Platform MPI and Scali MPI Connect are used synonymously.
Pre-processors: None
Other Software: None

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Node Description: SGI Altix ICE 8200EX Compute Node

Hardware

Number of nodes:	2
Uses of the node:	compute
Vendor:	SGI
Model:	SGI Altix ICE 8200EX (Intel Xeon X5570, 2.93 GHz)
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:	48 GB (6*4GB DDR3-1066 CL7 RDIMMs)
Disk Subsystem:	None
Other Hardware:	None
Adapter:	Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)
Number of Adapters:	1
Slot Type:	PCIe x8 Gen2
Data Rate:	InfiniBand 4x DDR
Ports Used:	2
Interconnect:	InfiniBand

Software

Adapter:	Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)
Adapter Driver:	OFED-1.3.1
Adapter Firmware:	2.5.0
Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 Kernel 2.6.16.60-0.30-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 2

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)

Software

Adapter:	Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s)
Adapter Driver:	OFED-1.3
Adapter Firmware:	5.3.0

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Node Description: SGI InfiniteStorage Nexis 2000 NAS

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 [illegible] DIMMS)
Disk Subsystem:	7 TB RAID 5 48 x 147 GB SAS (Seagate Cheetah 15000 rpm)
Other Hardware:	None
Adapter:	Mellanox MT2526[illegible] InfiniHost III Ex (PCIe x8 Gen[illegible] 5 GT/s)
Number of Adapters:	2
Slot Type:	PCIe x[illegible] Gen1
Data Rate:	InfiniBand[illegible] DDR
Ports Used:	[illegible]
Interconnect Type:	InfiniB[illegible]d

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:	8
Number of Ports:	24
Data Rate:	InfiniBand 4x DDR
Firmware:	2020001
Topology:	Bristle hypercube with express links
Primary Use:	MPI traffic

Software

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Test sponsor: Platform Computing Inc.
Tested by: Platform Computing Inc.

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Feb-2009

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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:
   limit stacksize unlimited
     Removes limits on the maximum size of the automatically-
     extended stack region of the current process and each
     process it creates.
 PBS Pro batch scheduler (www.altair.com) is used with
   prologue/epilogue scripts to ensure each MPI job is assigned to
   a topologically compact set of nodes
 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
```

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Base Compiler Invocation

C benchmarks:
```
mpicc  -ccl icc
```

C++ benchmarks:

126.lammps: `mpicc  -ccl icpc`

Fortran benchmarks:
```
mpif77 -ccl ifort
```

Benchmarks using both Fortran and C:
```
mpicc  -ccl icc mpif77 -c[illegible] ifort
```

Base Portability Flags

121.pop2: `-DSPE[illegible]_MPI_C[illegible]E_FLAG`
127.wrf2: `-DSPEC[illegible]MPI_CA[illegible]E_FLAG -DSPEC_MPI_LINUX`

Base Optimization Flags

C benchmarks:
```
-O3 -ip[illegible] -xT -no-prec-div
```

C++ benchmarks:

12[illegible].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
```

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The flags files that were used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.html
http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.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.

Tested with SPEC MPI2007 v1.1.
Report generated on Tue Jul 22 13:37:07 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 14 April 2009.