SPEC® MPIM2007 Result

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SGI

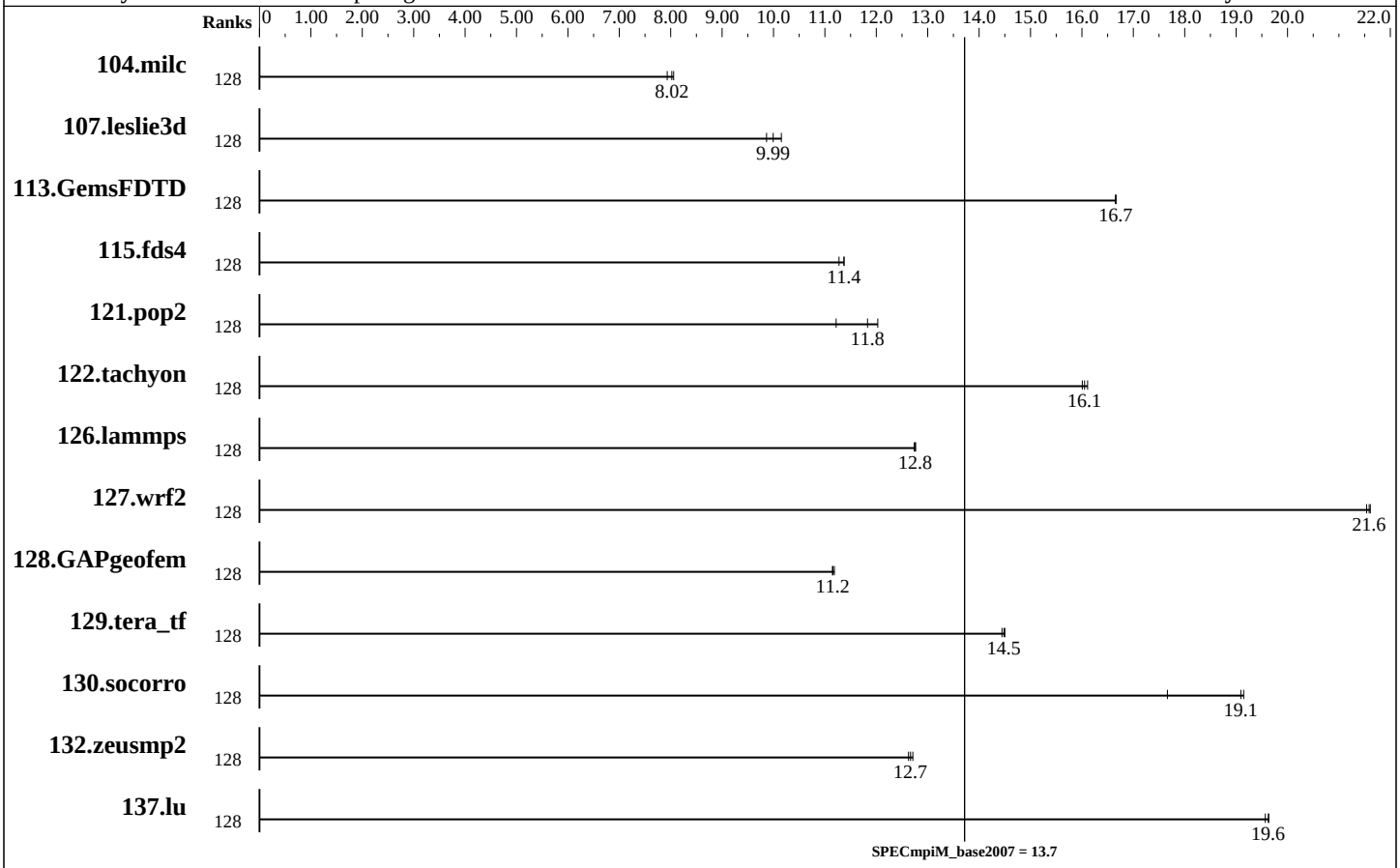
SGI Altix ICE 8200EX
(Intel Xeon E5472, 3.00 GHz)
IB 4x DDR
Platform MPI 5.6.4

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 13.7

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

Test date: Dec-2008
Hardware Availability: Mar-2008
Software Availability: Jan-2009



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	128	197	7.93	194	8.06	**195**	**8.02**							
107.leslie3d	128	529	9.86	**522**	**9.99**	514	10.2							
113.GemsFDTD	128	379	16.7	**379**	**16.7**	379	16.7							
115.fds4	128	173	11.3	**172**	**11.4**	172	11.4							
121.pop2	128	343	12.0	**349**	**11.8**	368	11.2							
122.tachyon	128	174	16.1	175	16.0	**174**	**16.1**							
126.lammps	128	**228**	**12.8**	228	12.8	229	12.7							
127.wrf2	128	362	21.5	**361**	**21.6**	361	21.6							
128.GAPgeofem	128	185	11.1	**185**	**11.2**	185	11.2							
129.tera_tf	128	192	14.4	191	14.5	**191**	**14.5**							

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	128	199	19.1	**200**	**19.1**	216	17.7							
132.zeusmp2	128	244	12.7	246	12.6	**245**	**12.7**							
137.lu	128	**187**	**19.6**	187	19.6	188	19.6							

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 Storage Node
Total Compute Nodes:	16
Total Chips:	32
Total Cores:	128
Total Threads:	128
Total Memory:	256 GB
Base Ranks Run:	128
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C Compiler 10.1 for Linux (10.1.018)
C++ Compiler:	Intel C++ Compiler 10.1 for Linux (10.1.018)
Fortran Compiler:	Intel Fortran Compiler 10.1 for Linux (10.1.018)
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	Platform MPI 5.6.4-59151
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

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 E5472, 3.00 GHz)
CPU Name:	Intel Xeon E5472
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	8
Cores per chip:	4
Threads per core:	1
CPU Characteristics:	Quad-Core Xeon E5472 (Harpertown), 1600MHz FSB
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:	IB adapter port #1 was used for MPI traffic and port #2 was used for I/O

Continued on next page

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 2.6.16.60-0.23.PTF.403865.1-smp
Local File System:	None (diskless)
Shared File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3
Other Software:	SGI ProPack 6 for Linux Service Pack 1

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Test date: Dec-2008
Hardware Availability: Mar-2008
Software Availability: Jan-2009

Node Description: SGI Altix ICE 8200EX Compute Node

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 Type:	InfiniBand

Node Description: SGI Storage Node

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	SGI
Model:	SGI Altix XE 250
CPU Name:	Intel Xeon E5420
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	8
Cores per chip:	4
Threads per core:	1
CPU Characteristics:	Quad-Core Xeon E5420 (Harpertown), 1333MHz FSB
CPU MHz:	2500
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:	24 GB (12*2GB PC2-5300 FB-DIMMs)
Disk Subsystem:	6 TB RAID 5 8 x 750 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:	1
Slot Type:	PCIe x8 Gen1
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

Software

Adapter:	Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s)
Adapter Driver:	OFED-1.3.1
Adapter Firmware:	5.3.0
Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 Kernel 2.6.16.60-0.23.PTF.403865.1-smp
Local File System:	XFS
Shared File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3
Other Software:	SGI ProPack 6 for Linux Service Pack 1

Interconnect Description: InfiniBand (MPI)

Hardware

Vendor:	Mellanox Technologies
Model:	MT26418 ConnectX
Switch Model:	Mellanox MT47396 InfiniScale III

Software

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Interconnect Description: InfiniBand (MPI)

Number of Switches:	2
Number of Ports:	24
Data Rate:	InfiniBand 4x DDR
Firmware:	2020001
Topology:	HyperCube (dim=1) of two 24-port switches connected by eight IB links
Primary Use:	MPI traffic

Interconnect Description: InfiniBand (I/O)

Hardware	
Vendor:	Mellanox Technologies
Model:	MT26418 ConnectX
Switch Model:	Mellanox MT47396 InfiniScale-III
Number of Switches:	2
Number of Ports:	24
Data Rate:	InfiniBand 4x DDR
Firmware:	2020001
Topology:	HyperCube (dim=1) of two 24-port switches connected by eight IB links
Primary Use:	I/O traffic

Software

Submit Notes

```
The config file option 'submit' was used.
```

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 -ccl 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`

Fortran benchmarks:
`-O3 -ipo -xT -no-prec-div`

Benchmarks using both Fortran and C:
`-O3 -ipo -xT -no-prec-div`

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 13:35:48 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 13 January 2009.