



SPEC® MPIL2007 Result

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SGI

SGI Rackable C2112-4RP4
(Intel Xeon E5-2697 v2, 2.70 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 16.4

MPI2007 license: 4

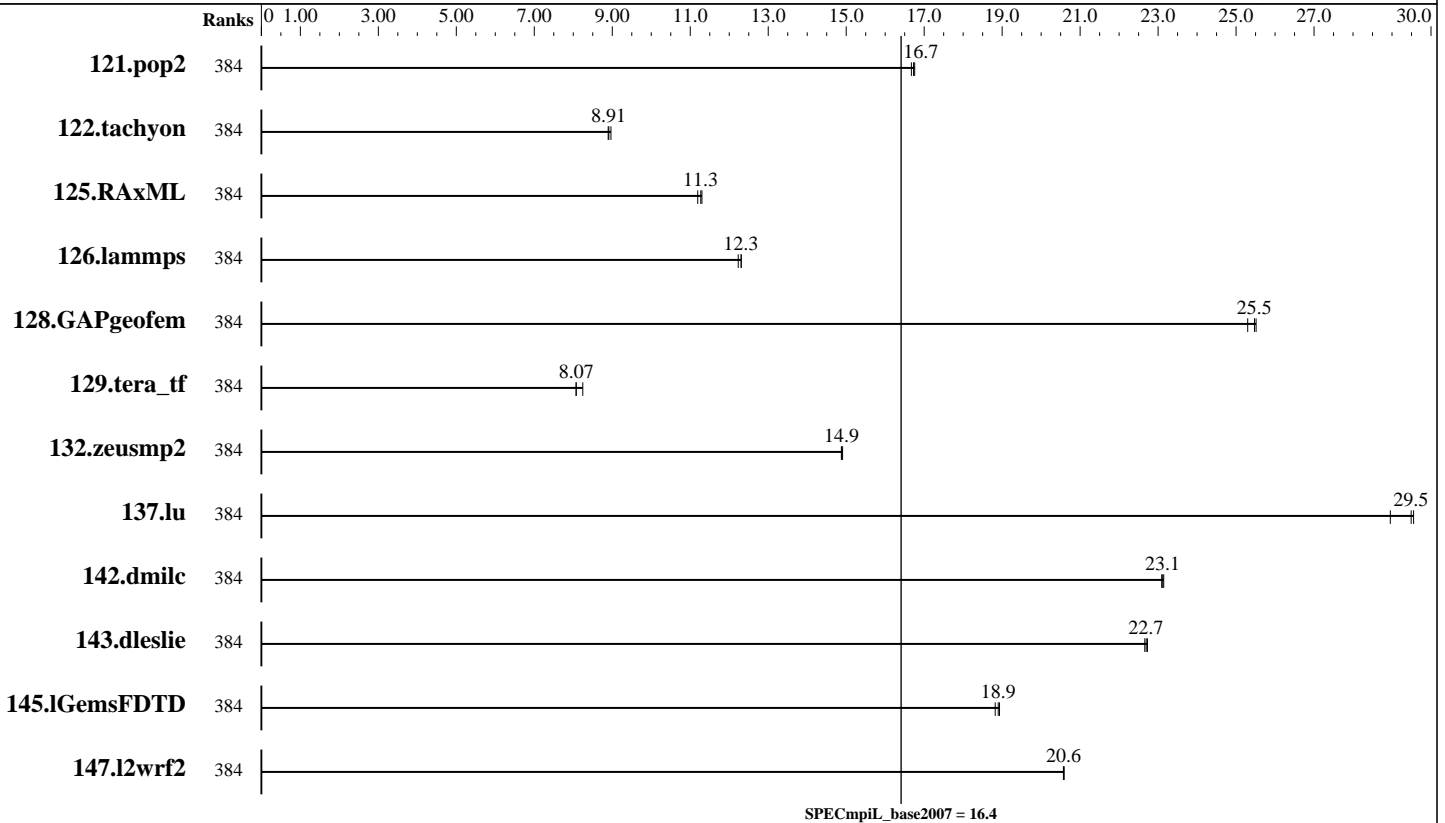
Test sponsor: SGI

Tested by: SGI

Test date: Aug-2013

Hardware Availability: Sep-2013

Software Availability: Jun-2013



Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
121.pop2	384	233	16.7	<u>233</u>	<u>16.7</u>	232	16.8									
122.tachyon	384	217	8.97	<u>218</u>	<u>8.91</u>	219	8.90									
125.RAxML	384	<u>259</u>	<u>11.3</u>	258	11.3	261	11.2									
126.lammps	384	200	12.3	<u>200</u>	<u>12.3</u>	201	12.2									
128.GAPgeofem	384	235	25.3	<u>233</u>	<u>25.5</u>	233	25.5									
129.tera_tf	384	133	8.24	136	8.07	<u>136</u>	<u>8.07</u>									
132.zeusmp2	384	142	14.9	143	14.9	<u>142</u>	<u>14.9</u>									
137.lu	384	142	29.6	145	29.0	<u>142</u>	<u>29.5</u>									
142.dmilc	384	160	23.1	<u>159</u>	<u>23.1</u>	159	23.1									
143.dleslie	384	136	22.7	<u>137</u>	<u>22.7</u>	137	22.7									
145.lGemsFDTD	384	233	18.9	<u>233</u>	<u>18.9</u>	234	18.8									
147.l2wrf2	384	399	20.6	398	20.6	<u>399</u>	<u>20.6</u>									

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Standard Performance Evaluation Corporation

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Hardware Summary

Software Summary

Type of System: Homogeneous
 Compute Node: SGI Rackable C2112-4RP4 Compute Node
 Interconnect: InfiniBand (MPI and I/O)
 File Server Node: SGI MIS Server
 Total Compute Nodes: 16
 Total Chips: 32
 Total Cores: 384
 Total Threads: 768
 Total Memory: 2 TB
 Base Ranks Run: 384
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

C Compiler: Intel C++ Composer XE 2013 for Linux, Version 14.0.0.051 Build 20130529
 C++ Compiler: Intel C++ Composer XE 2013 for Linux, Version 14.0.0.051 Build 20130529
 Fortran Compiler: Intel Fortran Composer XE 2013 for Linux, Version 14.0.0.051 Build 20130529
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: SGI MPT 2.08 Patch 11012
 Other MPI Info: OFED 1.5.2
 Pre-processors: None
 Other Software: None

Node Description: SGI Rackable C2112-4RP4 Compute Node

Hardware

Software

Number of nodes: 16
 Uses of the node: compute
 Vendor: SGI
 Model: SGI Rackable C2112-4RP4 (Intel Xeon E5-2697 v2, 2.70GHz)
 CPU Name: Intel Xeon E5-2697 v2
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 24
 Cores per chip: 12
 Threads per core: 2
 CPU Characteristics: Twelve Core, 2.7 GHz, 8.0 GT/s QPI
 Intel Turbo Boost Technology up to 3.5 GHz
 Hyper-Threading Technology enabled
 CPU MHz: 2700
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 30 MB I+D on chip per chip, 30 MB shared / 12 cores
 Other Cache: None
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
 Disk Subsystem: None
 Other Hardware: None
 Adapter: Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8.0 GT/s)
 Number of Adapters: 2
 Slot Type: PCIe x8 Gen3
 Data Rate: InfiniBand 4x FDR
 Ports Used: 1
 Interconnect Type: InfiniBand

Adapter: Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8.0 GT/s)
 Adapter Driver: OFED-1.5.2
 Adapter Firmware: 2.10.2370
 Operating System: SUSE Linux Enterprise Server 11 SP2, Kernel 3.0.74-0.6.6-default
 Local File System: xfs
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: SGI Accelerate 1.6, Build 708r14.sles11sp2-1304102205



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Software Availability: Jun-2013

Node Description: SGI MIS Server

Hardware		Software	
Number of nodes:	1	Adapter:	Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8 GT/s)
Uses of the node:	fileserver	Adapter Driver:	OFED-1.5.2
Vendor:	SGI	Adapter Firmware:	2.11.500
Model:	SGI MIS Server (Intel Xeon X2670, 2.60 GHz)	Operating System:	SUSE Linux Enterprise Server 11 SP2 (x86_64) Kernel 3.0.74-0.6.6-default
CPU Name:	Intel Xeon E5-2670	Local File System:	xfs
CPU(s) orderable:	1-2 chips	Shared File System:	--
Chips enabled:	2	System State:	Multi-user, run level 3
Cores enabled:	16	Other Software:	SGI Foundation Software 2.8, Build 708r14.sles11sp2-1304102205
Cores per chip:	8		
Threads per core:	2		
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz Hyper-Threading Technology enabled		
CPU MHz:	2600		
Primary Cache:	32 KB I + 32 KB D on chip per core		
Secondary Cache:	256 KB I+D on chip per chip		
L3 Cache:	20 MB I+D on chip per chip		
Other Cache:	None		
Memory:	128 GB (8*16 GB 12800R-11, ECC)		
Disk Subsystem:	57.6 TB RAID6 64 x 900 GB SAS (Western Digital WD9001BKHG 10K)		
Other Hardware:	None		
Adapter:	Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8 GT/s)		
Number of Adapters:	2		
Slot Type:	PCIe x8 Gen3		
Data Rate:	InfiniBand 4x FDR		
Ports Used:	2		
Interconnect Type:	InfiniBand		

Interconnect Description: InfiniBand (MPI and I/O)

Hardware		Software	
Vendor:	Mellanox Technologies		
Model:	None		
Switch Model:	Mellanox SX6025 InfiniBand Switch		
Number of Switches:	4		
Number of Ports:	36		
Data Rate:	InfiniBand 4x FDR		
Firmware:	9.1.7000		
Switch Model:	Mellanox SX6036 InfiniBand Switch		
Number of Switches:	2		
Number of Ports:	36		
Data Rate:	InfiniBand 4x FDR		
Firmware:	9.1.6500		
Topology:	Fat Tree		
Primary Use:	MPI and I/O traffic		



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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
```

Transparent Hugepage : disabled

Transparent Hugepage is disabled by

```
echo never > /sys/kernel/mm/transparent_hugepage/enabled
```

BIOS settings:

```
Intel BIOS version SE5C600.86B.99.99.x067.060720130951
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 Optimization Flags

C benchmarks:
-O3 -xAVX -no-prec-div

C++ benchmarks:
126.lammps: -O3 -xAVX -no-prec-div -ansi-alias

Fortran benchmarks:
-O3 -xAVX -no-prec-div

Benchmarks using both Fortran and C:
-O3 -xAVX -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_Intel14_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel14_flags.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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