



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 = 7.99

MPI2007 license: 4

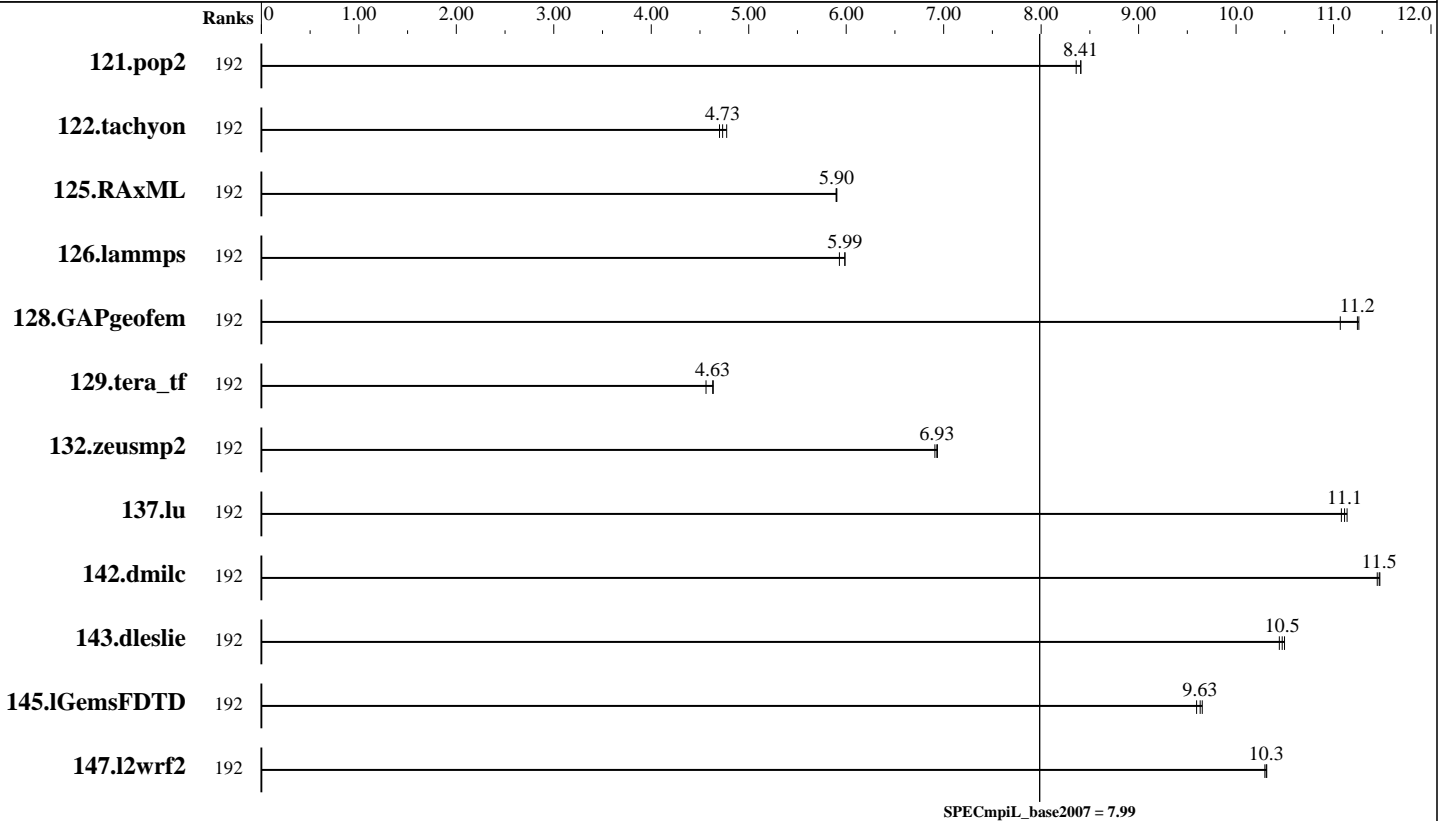
Test sponsor: SGI

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	192	465	8.36	463	8.41	463	8.41							
122.tachyon	192	411	4.73	407	4.77	414	4.70							
125.RAxML	192	495	5.90	494	5.90	495	5.90							
126.lammps	192	411	5.99	411	5.99	415	5.93							
128.GAPgeofem	192	527	11.3	536	11.1	528	11.2							
129.tera_tf	192	237	4.64	241	4.56	237	4.63							
132.zeusmp2	192	307	6.91	306	6.93	306	6.94							
137.lu	192	377	11.1	378	11.1	379	11.1							
142.dmilc	192	321	11.5	322	11.4	321	11.5							
143.dleslie	192	297	10.4	295	10.5	296	10.5							
145.lGemsFDTD	192	458	9.63	460	9.60	457	9.65							
147.l2wrf2	192	795	10.3	796	10.3	797	10.3							

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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http://www.spec.org/



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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: 8
 Total Chips: 16
 Total Cores: 192
 Total Threads: 384
 Total Memory: 1 TB
 Base Ranks Run: 192
 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: 8
 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.

Tested with SPEC MPI2007 v2.0.1.

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