SPEC® MPIL2007 Result

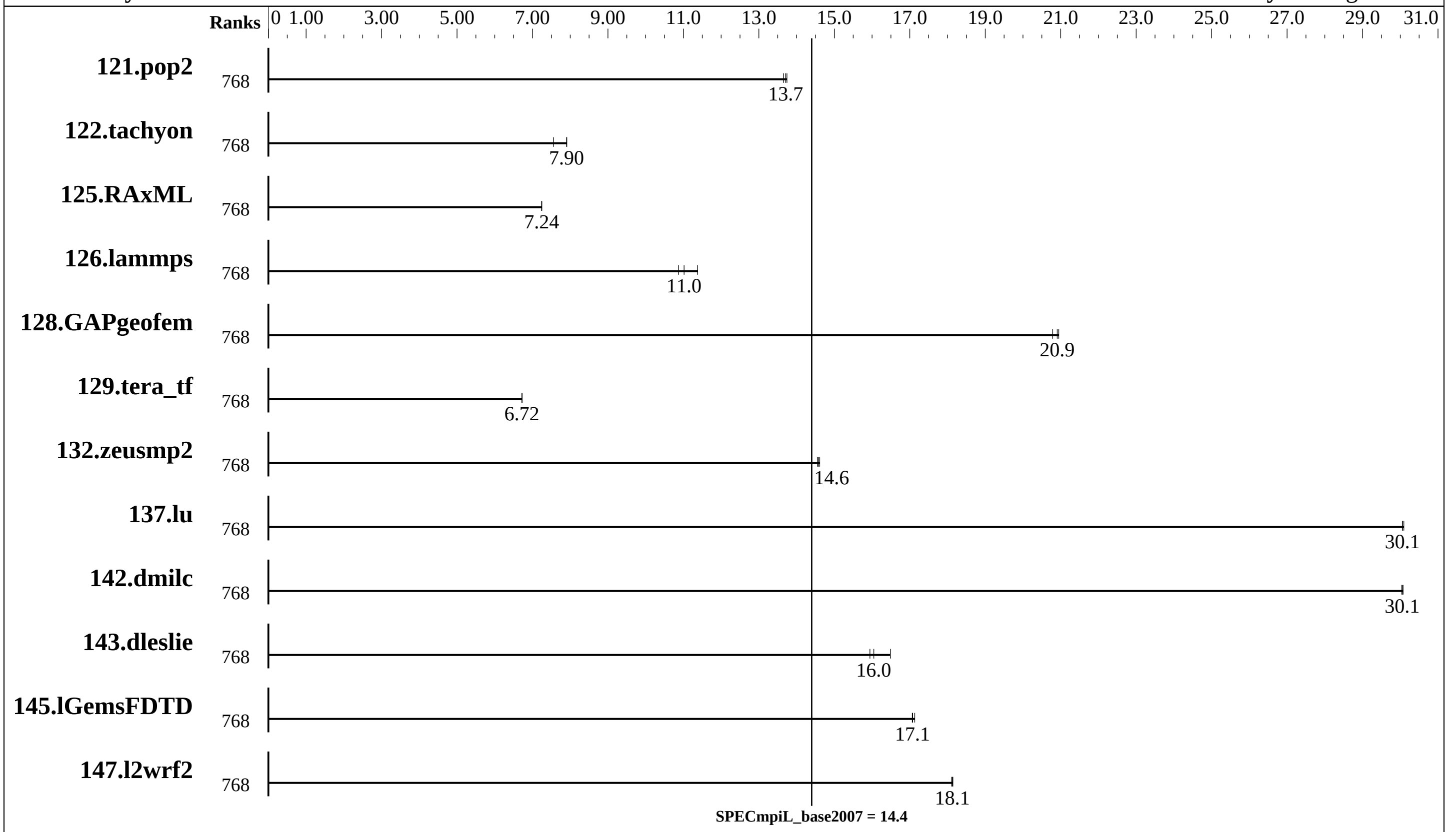
SGI

SGI Altix ICE 8400EX
(AMD Opteron 6180 SE, 2.5GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 14.4

MPI2007 license:	4	**Test date:**	Jun-2011
Test sponsor:	SGI	**Hardware Availability:**	Mar-2011
Tested by:	SGI	**Software Availability:**	Aug-2011



Results Table

Benchmark	Base Ranks	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Ranks	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
121.pop2	768	285	13.7	283	13.7	**284**	**13.7**							
122.tachyon	768	257	7.56	246	7.91	**246**	**7.90**							
125.RAxML	768	403	7.25	403	7.24	**403**	**7.24**							
126.lammps	768	**223**	**11.0**	216	11.4	226	10.9							
128.GAPgeofem	768	283	20.9	285	20.8	**284**	**20.9**							
129.tera_tf	768	**164**	**6.72**	163	6.72	164	6.72							
132.zeusmp2	768	**145**	**14.6**	146	14.6	145	14.6							
137.lu	768	140	30.1	140	30.1	**140**	**30.1**							
142.dmilc	768	**123**	**30.1**	122	30.1	123	30.0							
143.dleslie	768	188	16.5	194	15.9	**193**	**16.0**							
145.lGemsFDTD	768	**258**	**17.1**	258	17.1	257	17.1							
147.l2wrf2	768	453	18.1	**453**	**18.1**	452	18.1							

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

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Hardware Summary

Type of System:	Homogeneous
Compute Node:	SGI Altix ICE 8400EX Compute Node
Interconnect:	InfiniBand (MPI and I/O)
File Server Node:	SGI InfiniteStorage 4000
Total Compute Nodes:	32
Total Chips:	64
Total Cores:	768
Total Threads:	768
Total Memory:	2 TB
Base Ranks Run:	768
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Composer XE 2011 for Linux, Version 12.0.3.174 Build 20110309
C++ Compiler:	Intel C++ Composer XE 2011 for Linux, Version 12.0.3.174 Build 20110309
Fortran Compiler:	Intel Fortran Composer XE 2011 for Linux, Version 12.0.3.174 Build 20110309
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	SGI MPT 2.04 Patch 10789
Other MPI Info:	OFED 1.4.2
Pre-processors:	None
Other Software:	None

Node Description: SGI Altix ICE 8400EX Compute Node

Hardware

Number of nodes:	32
Uses of the node:	compute
Vendor:	SGI
Model:	SGI Altix ICE 8400EX (AMD Opteron 6180 SE, 2.5GHz)
CPU Name:	AMD Opteron 6180 SE
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	24
Cores per chip:	12
Threads per core:	1
CPU Characteristics:	12 Cores/chip, 2.5 GHz
CPU MHz:	2500
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip, 6 MB shared / 6 cores
Other Cache:	None
Memory:	64 GB (16 x 4 GB, 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	None
Other Hardware:	None
Adapter:	Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
Number of Adapters:	1
Slot Type:	PCIe x8 Gen2
Data Rate:	InfiniBand 4x QDR
Ports Used:	2
Interconnect Type:	InfiniBand

Software

Adapter:	Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
Adapter Driver:	OFED-1.4.2
Adapter Firmware:	2.7.0
Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64) Kernel 2.6.32.27-0.2-default
Local File System:	NFSv3
Shared File System:	NFSv3 IPoIB
System State:	Run Level 3 (Multi-User)
Other Software:	SGI Performance Suite 1.0, Build 702r19.sles11-1010072114 SGI Tempo Compute Node 2.2, Build 702r19.sles11-1010072114

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Tested by:	SGI	**Software Availability:**	Aug-2011

Node Description: SGI InfiniteStorage 4000

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	SGI
Model:	SGI Altix 450 (Intel Itanium 2, 1.6GHz)
CPU Name:	Intel Itanium 2 9030
CPU(s) orderable:	2-38 chips
Chips enabled:	2
Cores enabled:	4
Cores per chip:	2
Threads per core:	1
CPU Characteristics:	1.6GHz/8MB, 533MHz FSB
CPU MHz:	1600
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 (12 x 2 GB, 2Rx4 PC2-3200-3, ECC)
Disk Subsystem:	16 TB RAID 5 32 x 500 GB SATA (Seagate Barracuda 7.2K)
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:	Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s)
Adapter Driver:	OFED-1.4.2
Adapter Firmware:	5.3.0
Operating System:	SUSE Linux Enterprise Server 11 SP1 (ia64) Kernel 2.6.32.12-0.7-default
Local File System:	xfs
Shared File System:	--
System State:	Run Level 3 (Multi-User)
Other Software:	SGI ProPack 7SP1 for Linux, Build 701r2.sles11-1005242307

Interconnect Description: InfiniBand (MPI and I/O)

Hardware

Vendor:	Mellanox Technologies
Model:	None
Switch Model:	Mellanox Infiniscale-IV
Number of Switches:	4
Number of Ports:	36
Data Rate:	InfiniBand 4x QDR
Firmware:	5040005
Topology:	Enhanced HyperCube
Primary Use:	MPI and I/O traffic

Software

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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

 BIOS settings:
   AMI BIOS version 1.0a

 Job Placement:
   Each MPI job is assigned toa topologically compact set
   of nodes, i.e. the minimal needed number of switches was
   used for each job: 1 switch for up to 192 ranks, 2 switches
   for 384 ranks, 4 switches for 768 ranks, 8 switches for
   1536 ranks and 16 switches for 3072 ranks.
```

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`

Base Optimization Flags

C benchmarks:
`-O3 -xSSE2 -no-prec-div`

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:

126.lammps: `-O3 -xSSE2 -no-prec-div -ansi-alias`

Fortran benchmarks:
`-O3 -xSSE2 -no-prec-div`

Benchmarks using both Fortran and C:
`-O3 -xSSE2 -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_Intel12_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel12_flags.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC MPI2007 v2.0.
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