



SPEC® MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

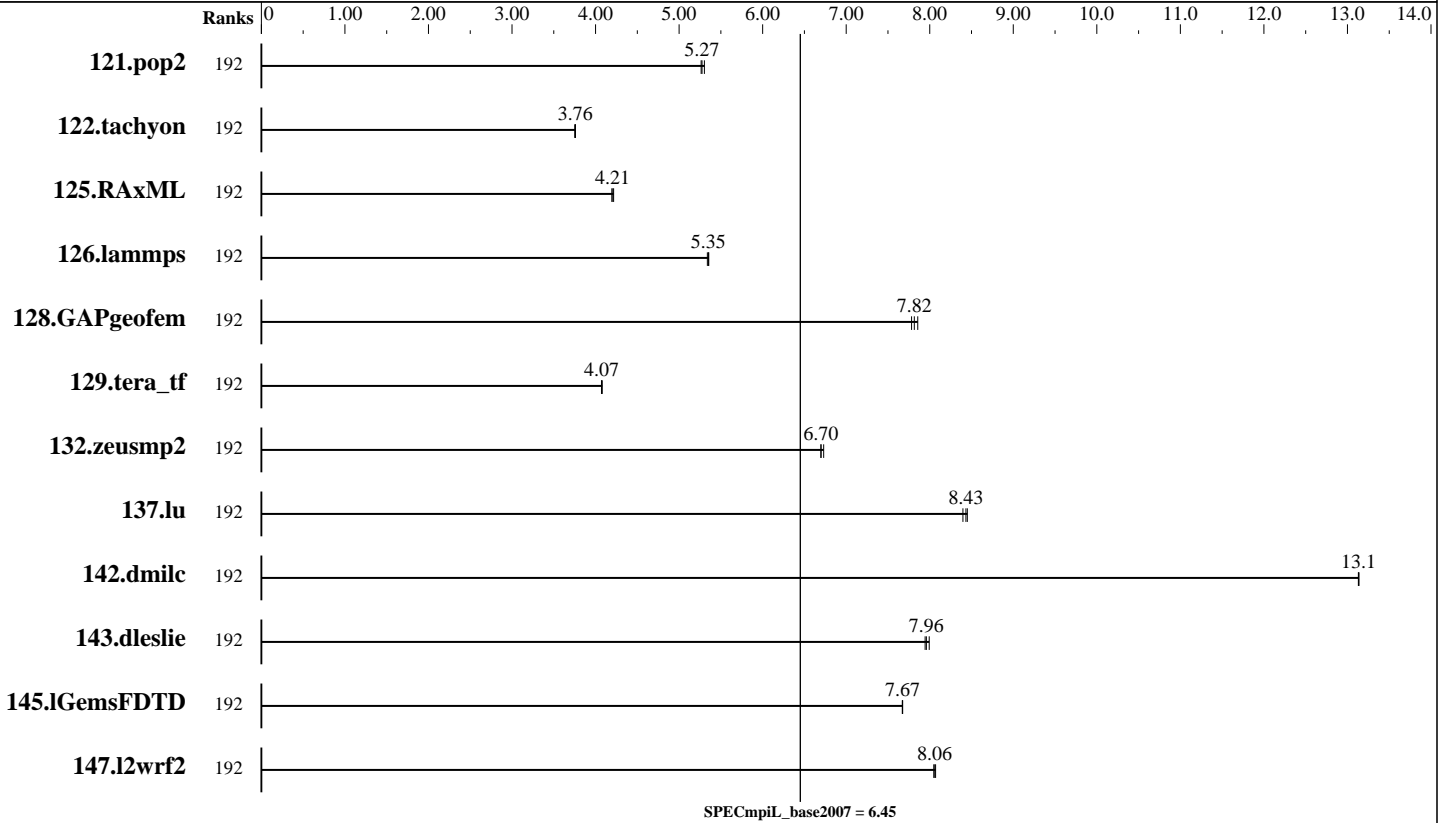
Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
121.pop2	192	739	5.26	738	5.27	734	5.30							
122.tachyon	192	517	3.76	518	3.75	517	3.76							
125.RAxML	192	696	4.19	692	4.22	694	4.21							
126.lammps	192	461	5.34	460	5.35	459	5.36							
128.GAPgeofem	192	762	7.78	755	7.86	759	7.82							
129.tera_tf	192	269	4.08	270	4.07	270	4.07							
132.zeusmp2	192	317	6.70	315	6.73	316	6.70							
137.lu	192	498	8.43	497	8.45	500	8.40							
142.dmilc	192	280	13.1	281	13.1	280	13.1							
143.dleslie	192	390	7.94	389	7.96	388	7.99							
145.lGemsFDTD	192	575	7.68	575	7.67	575	7.67							
147.l2wrf2	192	1019	8.05	1018	8.06	1017	8.07							

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

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SPECmpiL_peak2007 = Not Run

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011

Hardware Summary

Software Summary

Type of System: Homogeneous
 Compute Node: SGI Altix ICE 8400EX Compute Node
 Interconnect: InfiniBand (MPI and I/O)
 File Server Node: SGI InfiniteStorage Nexis 2000 NAS
 Total Compute Nodes: 16
 Total Chips: 32
 Total Cores: 192
 Total Threads: 384
 Total Memory: 384 GB
 Base Ranks Run: 192
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

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

Software

Number of nodes: 16
 Uses of the node: compute
 Vendor: SGI
 Model: SGI Altix ICE 8400EX (Intel Xeon X5690, 3.46 GHz)
 CPU Name: Intel Xeon X5690
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 12
 Cores per chip: 6
 Threads per core: 2
 CPU Characteristics: Six Core, 3.46 GHz, 6.4 GT/s QPI
 Intel Turbo Boost Technology up to 3.73 GHz
 Hyper-Threading Technology enabled
 CPU MHz: 3467
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB (6 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: 2
 Slot Type: PCIe x8 Gen2
 Data Rate: InfiniBand 4x QDR
 Ports Used: 1
 Interconnect Type: InfiniBand

Adapter: Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
 Adapter Driver: OFED-1.4.2
 Adapter Firmware: 2.7.8200
 Operating System: SUSE Linux Enterprise Server 11 SP1, Kernel 2.6.32.13-0.4-default
 Local File System: NFSv3
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: SGI ProPack 7SP1 for Linux, Build 701r3.sles11-1005252113
 SGI Tempo Compute Node 2.1, Build 701r3.sles11-1005252113



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011

Node Description: SGI InfiniteStorage Nexis 2000 NAS

Hardware

Number of nodes: 1
 Uses of the node: fileserver
 Vendor: SGI
 Model: SGI Altix XE 270 (Intel Xeon X5670, 2.93 GHz)
 CPU Name: Intel Xeon X5670
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 12
 Cores per chip: 6
 Threads per core: 2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 Hyper-Threading Technology enabled
 CPU MHz: 2933
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per chip
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 96 GB (12*8 GB DDR3-1333 CL9 DIMMs)
 Disk Subsystem: 8.8 TB RAID 5
 60 x 146 GB SAS (Seagate Cheetah 15K.5)
 Other Hardware: None
 Adapter: Mellanox MT26428 ConnectX IB QDR
 (PCIe x8 Gen2 5 GT/s)
 Number of Adapters: 2
 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-1.4.0
 Adapter Firmware: 2.7.0
 Operating System: SUSE Linux Enterprise Server 11 (x86_64)
 Kernel 2.6.27.19-5-default
 Local File System: xfs
 Shared File System: --
 System State: Multi-user, run level 3
 Other Software: SGI Foundation Software 2, Build
 700r3.sles11-1004061553

Interconnect Description: InfiniBand (MPI and I/O)

Hardware

Vendor: Mellanox Technologies and SGI
 Model: None
 Switch Model: SGI QDR_1.5_HYPR_2454 with Mellanox Device 48438
 (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



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011

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
export MPI_IB_RAILS=2
ulimit -s unlimited
```

BIOS settings:

```
AMI BIOS version 080016
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
```

Job Placement:

Each MPI job was assigned to a topologically compact set of nodes, i.e. the minimal needed number of switches was used for each job: 2 switches for 96 ranks, 4 switches for 192 ranks, 8 switches for 384 ranks, 16 switches for 768 ranks, 32 switches for 1536 ranks.

Additional notes regarding interconnect:

The Infiniband network consists of two independent planes, with half the switches in the system allocated to each plane. I/O traffic is restricted to one plane, while MPI traffic can use both planes.

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

126.lammps: icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

Base Optimization Flags

C benchmarks:

-O3 -xSSE4.2 -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xSSE4.2 -no-prec-div -ansi-alias

Fortran benchmarks:

-O3 -xSSE4.2 -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xSSE4.2 -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



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(Intel Xeon X5690, 3.46 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 6.45

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Aug-2011

SPEC and SPEC MPI are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC MPI2007 v2.0.
Report generated on Tue Jul 22 13:42:49 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 14 July 2011.