SPEC® MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

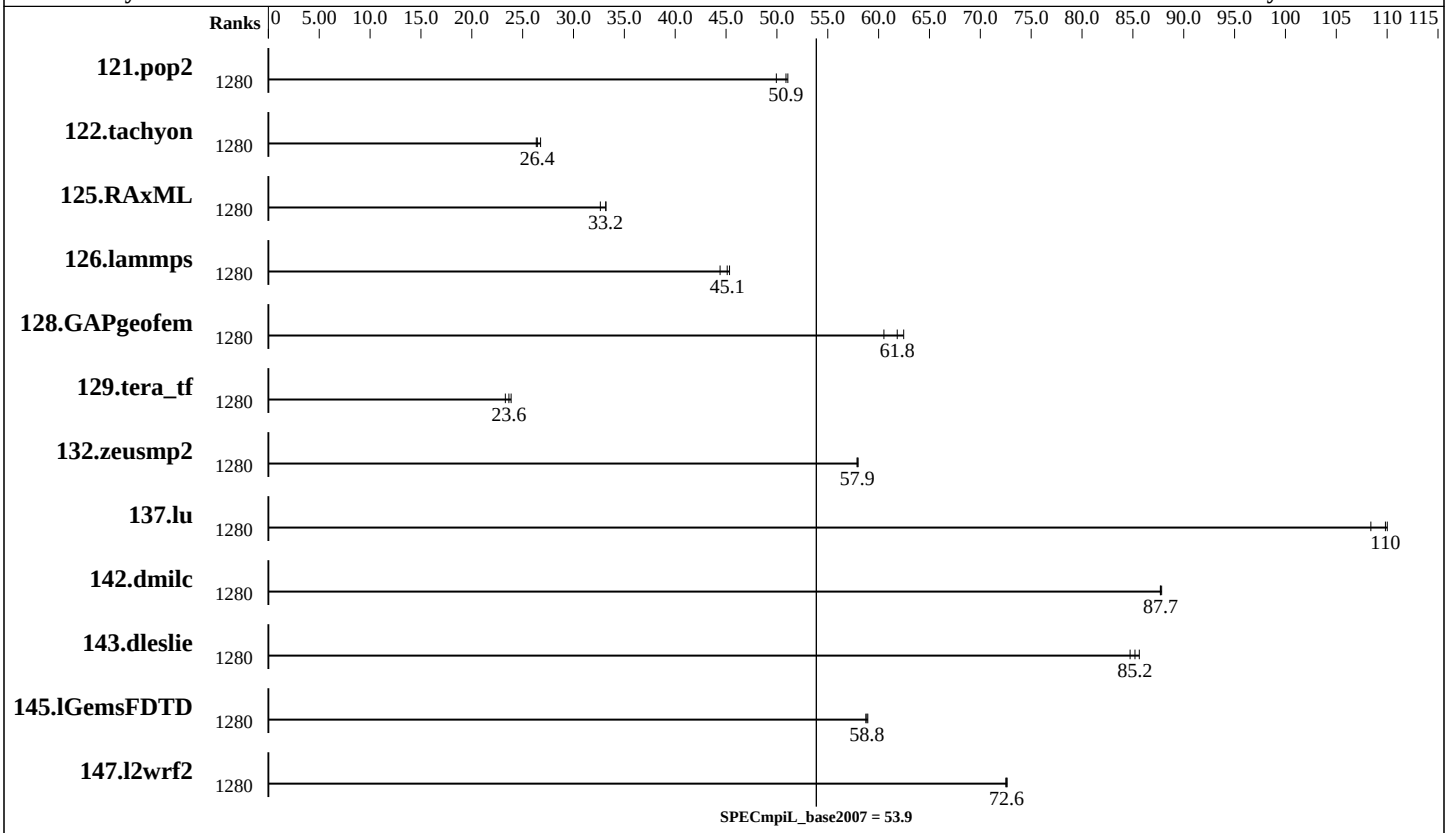
SGI ICE X (Intel Xeon E5-2690 v2, 3.0 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 53.9

MPI2007 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Dec-2013
Hardware Availability: Sep-2013
Software Availability: Nov-2013



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
121.pop2	1280	77.9	49.9	76.2	51.1	**76.5**	**50.9**							
122.tachyon	1280	72.6	26.8	**73.5**	**26.4**	73.8	26.3							
125.RAxML	1280	88.0	33.2	**88.0**	**33.2**	89.4	32.6							
126.lammps	1280	**54.5**	**45.1**	54.2	45.3	55.4	44.4							
128.GAPgeofem	1280	95.0	62.5	**96.0**	**61.8**	98.0	60.5							
129.tera_tf	1280	**46.5**	**23.6**	46.0	23.9	47.2	23.3							
132.zeusmp2	1280	**36.6**	**57.9**	36.6	58.0	36.6	57.9							
137.lu	1280	38.8	108	**38.3**	**110**	38.2	110							
142.dmilc	1280	42.0	87.7	**42.0**	**87.7**	41.9	87.8							
143.dleslie	1280	36.6	84.7	**36.4**	**85.2**	36.2	85.6							
145.lGemsFDTD	1280	74.8	58.9	75.1	58.7	**75.0**	**58.8**							
147.l2wrf2	1280	113	72.6	113	72.5	**113**	**72.6**							

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

SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI ICE X (Intel Xeon E5-2690 v2, 3.0 GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 53.9

MPI2007 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Dec-2013
Hardware Availability: Sep-2013
Software Availability: Nov-2013

Hardware Summary

Type of System:	Homogeneous
Compute Node:	SGI ICE X IP-113 Compute Node
Interconnect:	InfiniBand (MPI and I/O)
File Server Node:	SGI Modular InfiniteStorage Server
Total Compute Nodes:	64
Total Chips:	128
Total Cores:	1280
Total Threads:	2560
Total Memory:	4 TB
Base Ranks Run:	1280
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Composer XE 2011 for Linux, Version 14.0.0.080 Build 20130728
C++ Compiler:	Intel C++ Composer XE 2011 for Linux, Version 14.0.0.080 Build 20130728
Fortran Compiler:	Intel Fortran Composer XE 2011 for Linux, Version 14.0.0.080 Build 20130728
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	SGI MPT 2.09
Other MPI Info:	OFED 1.5.2
Pre-processors:	None
Other Software:	None

Node Description: SGI ICE X IP-113 Compute Node

Hardware

Number of nodes:	64
Uses of the node:	compute
Vendor:	SGI
Model:	SGI ICE X IP-113 (Intel Xeon E5-2690 v2, 3.0 GHz)
CPU Name:	Intel Xeon E5-2690 v2
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	20
Cores per chip:	10
Threads per core:	2
CPU Characteristics:	Ten Core, 3.0 GHz, 8.0 GT/s QPI Intel Turbo Boost Technology up to 3.60 GHz Hyper-Threading Technology enabled
CPU MHz:	3000
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	None
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

Software

Adapter:	Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8 GT/s)
Adapter Driver:	OFED-1.5.2
Adapter Firmware:	2.11.312
Operating System:	SUSE Linux Enterprise Server 11 SP2, Kernel 3.0.80-0.7-default
Local File System:	NFSv3
Shared File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3
Other Software:	SGI Tempo Compute Node 2.7.3, Build 708rp14.sles11sp2-1305311204

Node Description: SGI Modular InfiniteStorage Server

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	SGI
Model:	SGI Modular InfiniteStorage Server
CPU Name:	Intel Xeon E5-2670
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	16
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 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	64.8 TB RAID 6 72 x 900 GB SAS (Western Digital, 10K RPM)
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

Software

Adapter:	Mellanox MT27500 with ConnectX-3 ASIC (PCIe x8 Gen3 8 GT/s)
Adapter Driver:	OFED-1.5.0
Adapter Firmware:	2.11.312
Operating System:	SUSE Linux Enterprise Server 11 SP3 Kernel
Local File System:	xfs
Shared File System:	--
System State:	Multi-user, run level 3
Other Software:	SGI Foundation Software 2.9, Build 700r3.sles11-1004061553

Interconnect Description: InfiniBand (MPI and I/O)

Hardware

Vendor:	Mellanox Technologies and SGI
Model:	None
Switch Model:	SGI FDR Integrated IB Switch Blade 2SW9x27 with Mellanox SwitchX device 51000
Number of Switches:	16
Number of Ports:	36
Data Rate:	InfiniBand 4x FDR
Firmware:	07130007_LLR and 08130007_LLR
Topology:	Enhanced Hypercube
Primary Use:	MPI and I/O traffic

Software

Submit Notes

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

General Notes

```
130.socorro (base): "nullify_ptrs" src.alt was used.

 Software environment:
   export MPI_REQUEST_MAX=65536
   export MPI_TYPE_MAX=32768
   export MPI_BUFS_THRESHOLD=1
   export MPI_IB_RAILS=2
   export MPI_CONNECTIONS_THRESHOLD=0
   ulimit -s unlimited

 BIOS settings:
   AMI BIOS version 3.0
   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 up to 180 ranks,
   4 switches for up to 320 ranks, 8 switches for 640 ranks,
   10 switches for 800 ranks, 16 switches for 1280 ranks,
   22 switches for 1920 ranks, and 30 switches for 2560 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

Continued on next page

Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

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

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 v2.0.1.
Report generated on Tue Jul 22 13:48:04 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 22 January 2014.