SPEC® MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

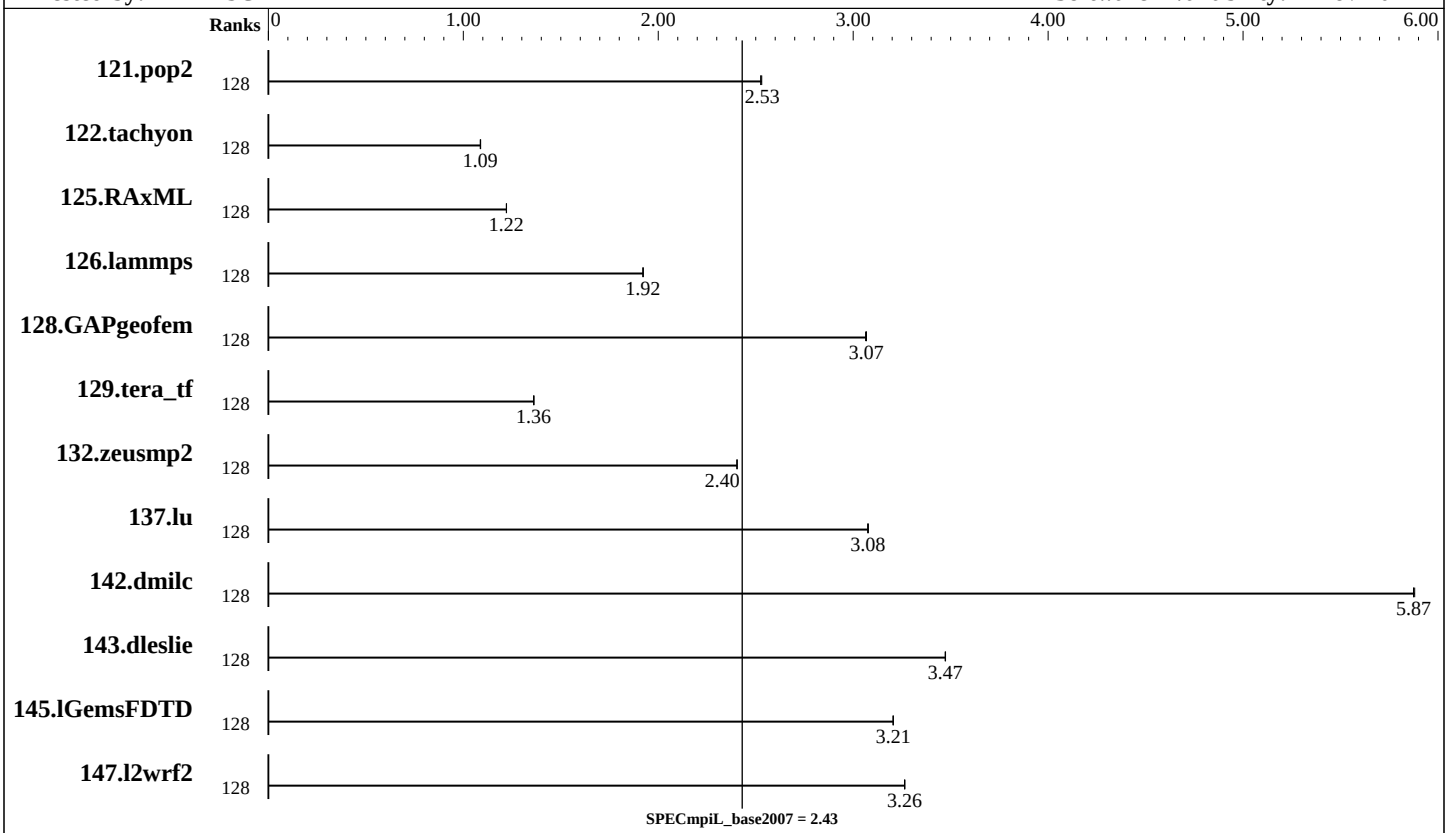
SGI Altix ICE 8400EX
(AMD Opteron 6282 SE, 2.6GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 2.43

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

Test date: Jan-2012
Hardware Availability: Nov-2011
Software Availability: Nov-2011



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
121.pop2	128	1537	2.53	1540	2.53	**1540**	**2.53**							
122.tachyon	128	1789	1.09	**1787**	**1.09**	1785	1.09							
125.RAxML	128	**2390**	**1.22**	2389	1.22	2391	1.22							
126.lammps	128	**1279**	**1.92**	1279	1.92	1280	1.92							
128.GAPgeofem	128	**1934**	**3.07**	1934	3.07	1937	3.06							
129.tera_tf	128	808	1.36	807	1.36	**807**	**1.36**							
132.zeusmp2	128	882	2.40	**882**	**2.40**	882	2.40							
137.lu	128	1367	3.07	1365	3.08	**1366**	**3.08**							
142.dmilc	128	626	5.88	627	5.87	**627**	**5.87**							
143.dleslie	128	892	3.47	**893**	**3.47**	893	3.47							
145.lGemsFDTD	128	1376	3.21	**1376**	**3.21**	1376	3.21							
147.l2wrf2	128	**2513**	**3.26**	2514	3.26	2513	3.27							

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 Altix ICE 8400EX
(AMD Opteron 6282 SE, 2.6GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 2.43

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

Test date: Jan-2012
Hardware Availability: Nov-2011
Software Availability: Nov-2011

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:	4
Total Chips:	8
Total Cores:	128
Total Threads:	128
Total Memory:	512 GB
Base Ranks Run:	128
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Composer XE 2011 for Linux, Version 12.1.1.256 Build 20111011
C++ Compiler:	Intel C++ Composer XE 2011 for Linux, Version 12.1.1.256 Build 20111011
Fortran Compiler:	Intel Fortran Composer XE 2011 for Linux, Version 12.1.1.256 Build 20111011
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	SGI MPT 2.05
Other MPI Info:	OFED 1.5.2
Pre-processors:	None
Other Software:	None

Node Description: SGI Altix ICE 8400EX Compute Node

Hardware

Number of nodes:	4
Uses of the node:	compute
Vendor:	SGI
Model:	SGI Altix ICE 8400EX (AMD Opteron 6282 SE, 2.6GHz)
CPU Name:	AMD Opteron 6282 SE
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	32
Cores per chip:	16
Threads per core:	1
CPU Characteristics:	16 cores/chip, 2.6 GHz AMD Turbo CORE technology up to 3.30 GHz
CPU MHz:	2600
Primary Cache:	512 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache:	16 MB I+D on chip per chip, 2 MB I+D on chip per core
L3 Cache:	16 MB I+D on chip per chip, 8 MB shared / 8 cores
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, 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-1.5.2
Adapter Firmware:	2.7.0
Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64) Kernel 2.6.32.46-0.3-default #1 SMP
Local File System:	NFSv3
Shared File System:	NFSv3 IPoIB
System State:	Run level 3 (Multi-User)
Other Software:	SGI Performance Suite 1.3, Build 705rp8.sles11-1111092106 SGI Tempo Compute Node 2.5, Build 705r10.sles11-1110192111

SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

SGI Altix ICE 8400EX
(AMD Opteron 6282 SE, 2.6GHz)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 2.43

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

Test date: Jan-2012
Hardware Availability: Nov-2011
Software Availability: Nov-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 and SGI
Model:	None
Switch Model:	SGI QDR_1.5_HYPR_2454 with Mellanox Device 48438 (Infiniscale IV)
Number of Switches:	2
Number of Ports:	36
Data Rate:	InfiniBand 4x QDR
Firmware:	5040005
Topology:	Enhanced Hypercube
Primary Use:	MPI and I/O traffic

Software

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 2.0

Job Placement:
  In the base run, each MPI job is assigned to a topologically compact
  set of nodes, i.e. the minimal needed number of switches was
  used for each job: 2 switch for up to 256 ranks, 4 switches
  for 512 ranks, 8 switches for 1024 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.

  SGI manufactures its own switch blades using unmodified Mellanox
  switch ASICs. The test system has SGI QDR_1.5_HYPR_2454 switch
  with Mellanox 36-port QDR Infiniband switch Device 48438
  (InfiniScale IV).
```

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 -ipo -no-prec-div`

C++ benchmarks:

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

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

Benchmarks using both Fortran and C:
`-O3 -xSSE2 -ipo -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 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 13:44:06 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 8 February 2012.