SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

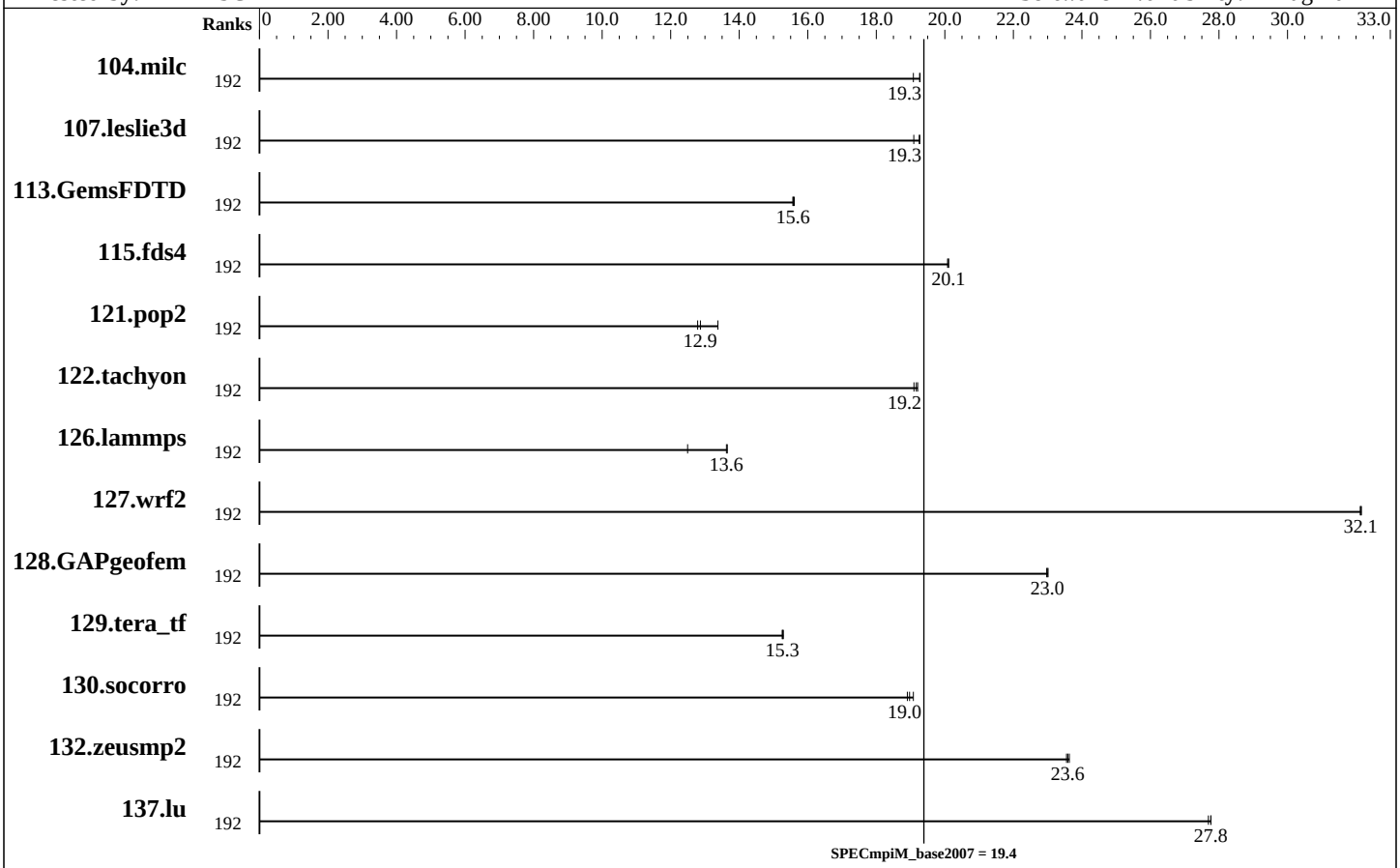
SGI Altix ICE 8400EX
(AMD Opteron 6180 SE, 2.5GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 19.4

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

Test date: Jun-2011
Hardware Availability: Mar-2011
Software Availability: Aug-2011



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	192	82.0	19.1	**81.2**	**19.3**	81.2	19.3							
107.leslie3d	192	**271**	**19.3**	271	19.3	273	19.1							
113.GemsFDTD	192	405	15.6	**405**	**15.6**	404	15.6							
115.fds4	192	97.0	20.1	**97.0**	**20.1**	97.2	20.1							
121.pop2	192	309	13.4	323	12.8	**321**	**12.9**							
122.tachyon	192	**146**	**19.2**	146	19.2	146	19.1							
126.lammps	192	214	13.7	233	12.5	**214**	**13.6**							
127.wrf2	192	**243**	**32.1**	242	32.2	243	32.1							
128.GAPgeofem	192	89.7	23.0	**89.8**	**23.0**	89.9	23.0							
129.tera_tf	192	181	15.3	181	15.3	**181**	**15.3**							

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

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

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 19.4

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

Test date: Jun-2011
Hardware Availability: Mar-2011
Software Availability: Aug-2011

Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	192	200	19.1	202	18.9	**201**	**19.0**							
132.zeusmp2	192	131	23.6	132	23.6	**132**	**23.6**							
137.lu	192	133	27.7	132	27.8	**132**	**27.8**							

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

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:	8
Total Chips:	16
Total Cores:	192
Total Threads:	192
Total Memory:	512 GB
Base Ranks Run:	192
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C Compiler for Linux Version 11.1, Build 20100806
C++ Compiler:	Intel C++ Compiler for Linux Version 11.1, Build 20100806
Fortran Compiler:	Intel Fortran Compiler for Linux Version 11.1, Build 20100806
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:	8
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

Continued on next page

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

SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

SGI

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

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 19.4

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

Test date: Jun-2011
Hardware Availability: Mar-2011
Software Availability: Aug-2011

Node Description: SGI Altix ICE 8400EX Compute Node

Ports Used:	2
Interconnect Type:	InfiniBand

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:	1
Number of Ports:	36
Data Rate:	InfiniBand 4x QDR
Firmware:	5040005
Topology:	Enhanced Hypercube

Software

Continued on next page

Interconnect Description: InfiniBand (MPI and I/O)

Primary Use:	MPI and I/O traffic

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 to a 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`
127.wrf2: `-DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX`

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_Intel111_flags.20120720.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/mpi2007/flags/SGI_x86_64_Intel111_flags.20120720.00.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.
Report generated on Tue Jul 22 13:42:56 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 14 July 2011.