



SPEC® MPIM2007 Result

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SGI

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

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 11.1

MPI2007 license: 4

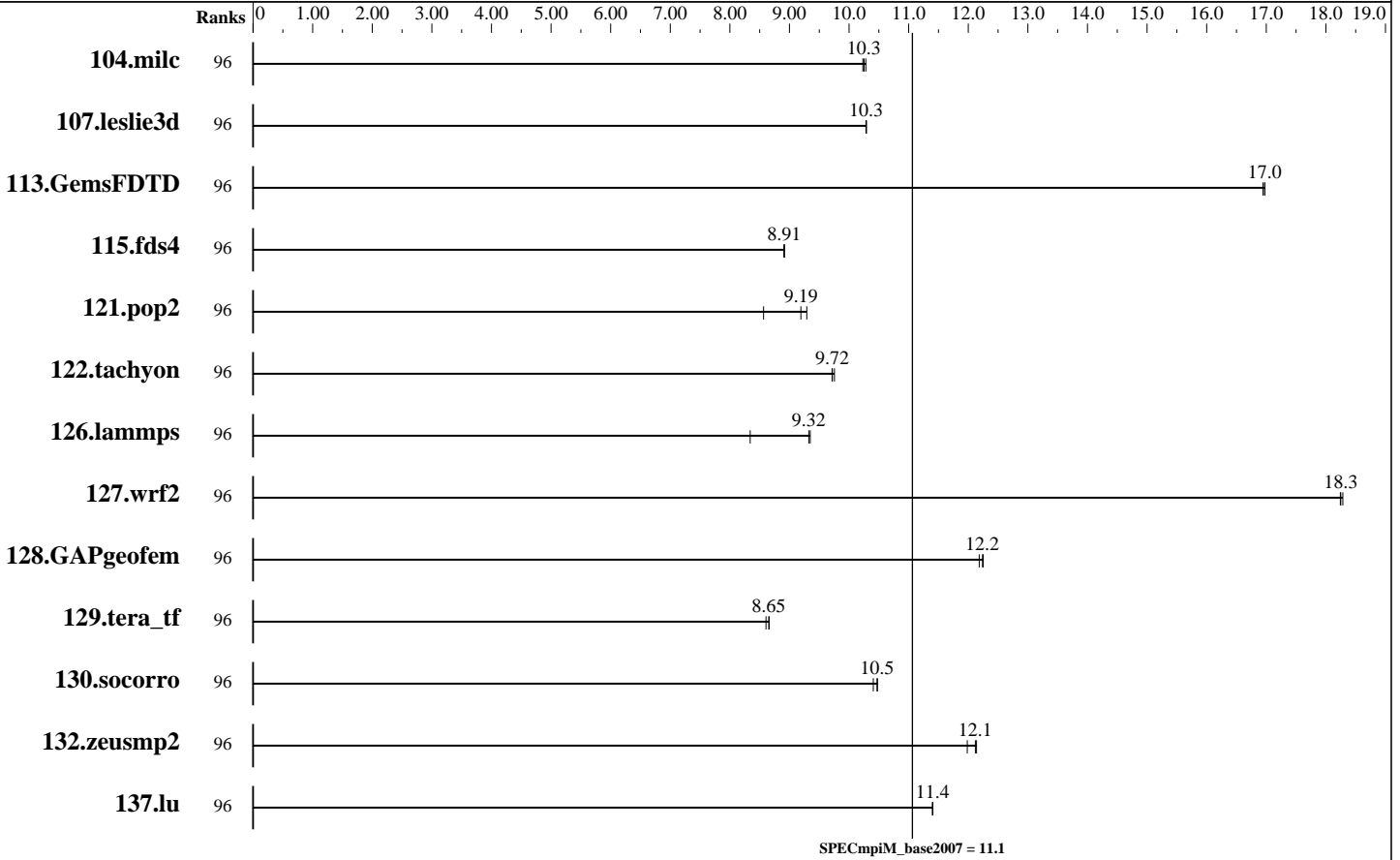
Test sponsor: SGI

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	96	153	10.3	153	10.2	152	10.3							
107.leslie3d	96	507	10.3	508	10.3	507	10.3							
113.GemsFDTD	96	372	17.0	372	16.9	372	17.0							
115.fds4	96	219	8.91	219	8.91	219	8.91							
121.pop2	96	444	9.29	482	8.57	449	9.19							
122.tachyon	96	288	9.72	287	9.75	288	9.71							
126.lammgs	96	349	8.34	313	9.32	312	9.35							
127.wrf2	96	426	18.3	427	18.2	427	18.3							
128.GAPgeofem	96	169	12.2	169	12.3	169	12.2							
129.tera_tf	96	322	8.61	320	8.66	320	8.65							

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



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Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	96	365	10.5	367	10.4	364	10.5							
132.zeusmp2	96	259	12.0	256	12.1	256	12.1							
137.lu	96	322	11.4	322	11.4	323	11.4							

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: 4
 Total Chips: 8
 Total Cores: 96
 Total Threads: 96
 Total Memory: 256 GB
 Base Ranks Run: 96
 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: 4
 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

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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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

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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



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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

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

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