



SPEC® MPIL2007 Result

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SGI

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

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 14.4

MPI2007 license: 4

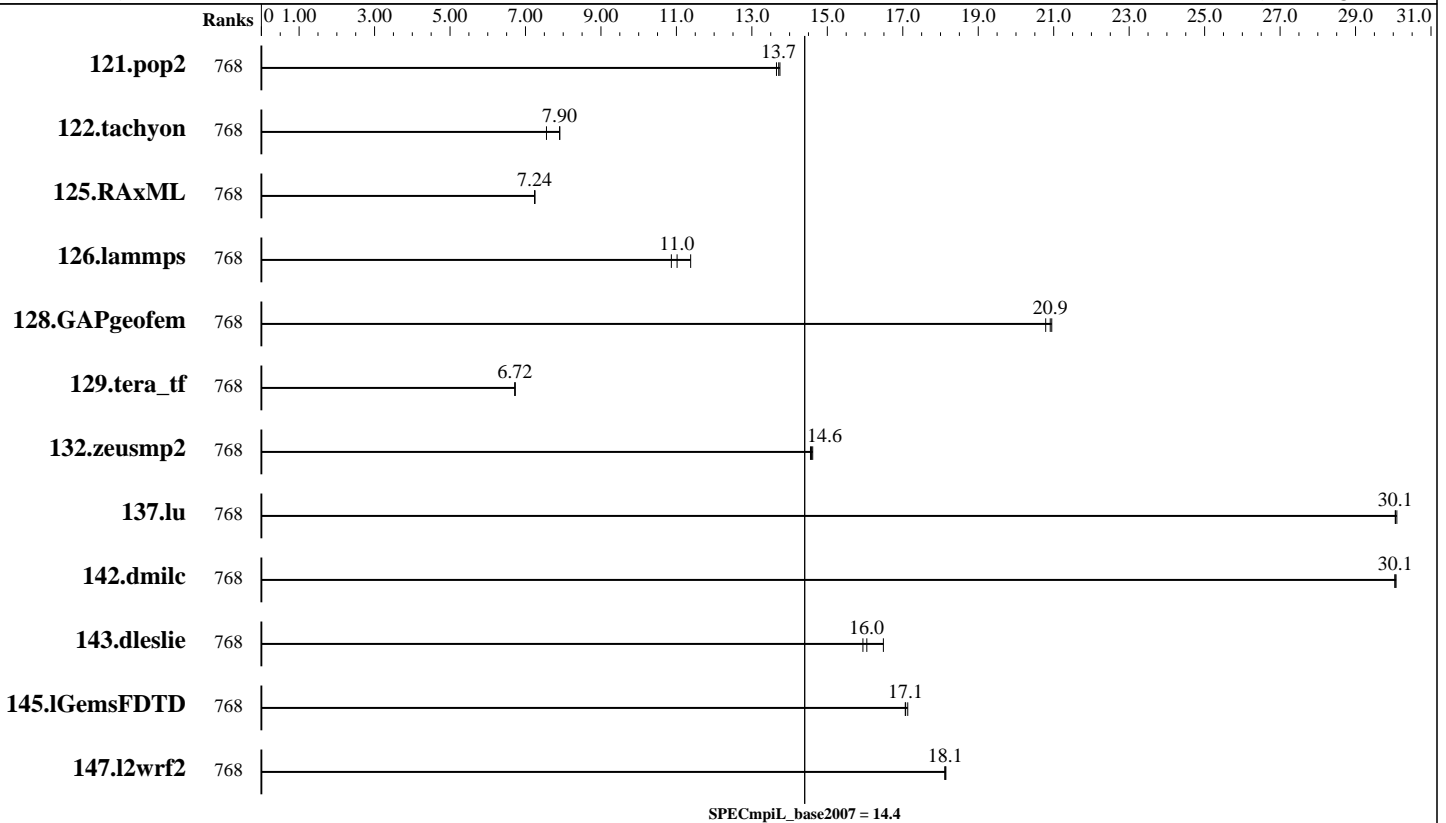
Test sponsor: SGI

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
121.pop2	768	285	13.7	283	13.7	284	13.7							
122.tachyon	768	257	7.56	246	7.91	246	7.90							
125.RAxML	768	403	7.25	403	7.24	403	7.24							
126.lammps	768	223	11.0	216	11.4	226	10.9							
128.GAPgeofem	768	283	20.9	285	20.8	284	20.9							
129.tera_tf	768	164	6.72	163	6.72	164	6.72							
132.zeusmp2	768	145	14.6	146	14.6	145	14.6							
137.lu	768	140	30.1	140	30.1	140	30.1							
142.dmilc	768	123	30.1	122	30.1	123	30.0							
143.dleslie	768	188	16.5	194	15.9	193	16.0							
145.lGemsFDTD	768	258	17.1	258	17.1	257	17.1							
147.l2wrf2	768	453	18.1	453	18.1	452	18.1							

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/



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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 4000
 Total Compute Nodes: 32
 Total Chips: 64
 Total Cores: 768
 Total Threads: 768
 Total Memory: 2 TB
 Base Ranks Run: 768
 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: 32
 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
 Ports Used: 2
 Interconnect Type: InfiniBand

Adapter: Mellanox MT26428 ConnectX IB QDR (PCIe x8 Gen2 5 GT/s)
 Adapter Driver: OFED-1.4.2
 Adapter Firmware: 2.7.0
 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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Software Availability: Aug-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
Model: None
Switch Model: Mellanox 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



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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

Base Optimization Flags

C benchmarks:
-O3 -xSSE2 -no-prec-div

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Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

-O3 -xSSE2 -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xSSE2 -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

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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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