



SPEC® MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Indiana University

SPECmpiL_peak2007 = Not Run

Mason (Intel Xeon L7555, base frequency 1.87 GHz,
PC3-10600R, ECC, running at 1066 MHz and CL9,
Turbo on,
Max Turbo Frequency 2.53 GHz)

SPECmpiL_base2007 = 2.09

MPI2007 license: 3440

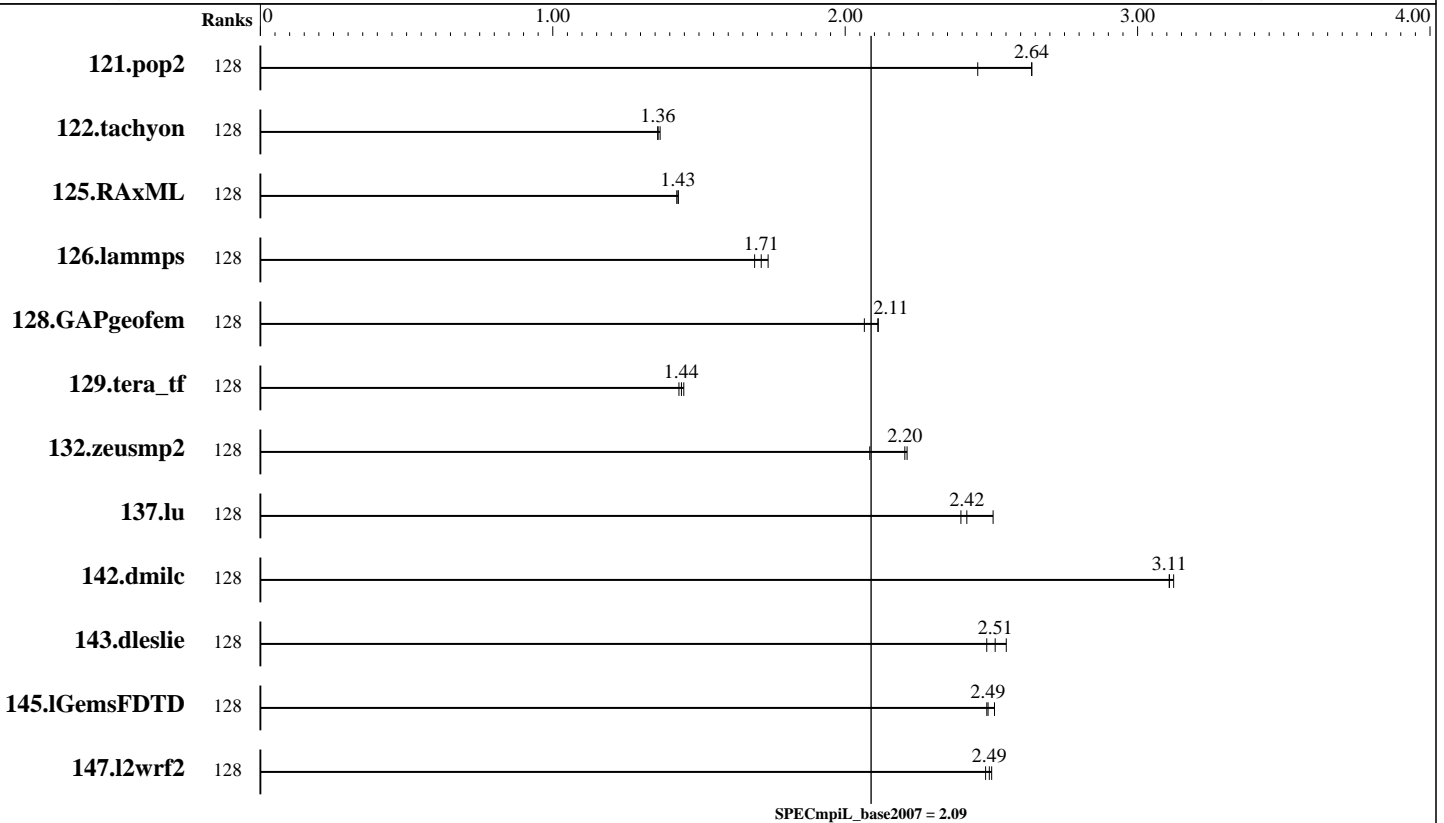
Test date: Dec-2011

Test sponsor: Indiana University

Hardware Availability: Jun-2010

Tested by: Huian Li

Software Availability: Jan-2011



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
121.pop2	128	1586	2.45	1475	2.64	1475	2.64							
122.tachyon	128	1429	1.36	1431	1.36	1422	1.37							
125.RAxML	128	2042	1.43	2050	1.42	2043	1.43							
126.lammps	128	1436	1.71	1455	1.69	1416	1.74							
128.GAPgeofem	128	2808	2.11	2810	2.11	2873	2.07							
129.tera_tf	128	763	1.44	759	1.45	768	1.43							
132.zeusmp2	128	962	2.20	1017	2.08	959	2.21							
137.lu	128	1677	2.51	1754	2.40	1739	2.42							
142.dmilc	128	1185	3.11	1185	3.11	1180	3.12							
143.dleslie	128	1234	2.51	1248	2.48	1215	2.55							
145.lGemsFDTD	128	1776	2.48	1773	2.49	1757	2.51							
147.l2wrf2	128	3308	2.48	3280	2.50	3291	2.49							

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

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Hardware Summary

Type of System: Homogeneous
 Compute Node: Mason Node
 Interconnects: 10Gigabit Ethernet
 Gigabit Ethernet
 File Server Node: HOME
 Total Compute Nodes: 4
 Total Chips: 16
 Total Cores: 128
 Total Threads: 128
 Total Memory: 2 TB
 Base Ranks Run: 128
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Composer XE 2011 for Linux
 Version 12.0, Build 20110112
 C++ Compiler: Intel C++ Composer XE 2011 for Linux
 Version 12.0, Build 20110112
 Fortran Compiler: Intel Fortran Composer XE 2011 for Linux
 Version 12.0, Build 20110112
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: OpenMPI-1.4.3
 Other MPI Info: None
 Pre-processors: No
 Other Software: None

Node Description: Mason Node

Hardware

Number of nodes: 4
 Uses of the node: compute
 Vendor: HP
 Model: Proliant DL580 G7 Server Series
 CPU Name: Intel Xeon L7555
 CPU(s) orderable: 1-4 chips
 Chips enabled: 4
 Cores enabled: 32
 Cores per chip: 8
 Threads per core: 1
 CPU Characteristics: Intel Turbo Boost Technology enabled, 5.86 GT/s QPI
 CPU MHz: 1866
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 24 MB I+D on chip per chip, 24 MB shared / 8 cores
 Other Cache: None
 Memory: 512 GB (64 x 8 GB 2Rx4 PC3-10600R, ECC running at 1066 MHz and CL9)
 Disk Subsystem: Two 500 GB 7200 RPM 2.5" SAS hard drives, in RAID 1 mirror
 Other Hardware: None
 Adapter: HP NC375i 1G w/NC524SFP 10G Module
 Number of Adapters: 1
 Slot Type: PCIe x8 Gen2
 Data Rate: 10Gbps
 Ports Used: 1
 Interconnect Type: 10 Gigabit Ethernet
 Adapter: HP NC375i 1G
 Number of Adapters: 1
 Slot Type: PCIe x8 Gen2
 Data Rate: 1Gbps
 Ports Used: 1
 Interconnect Type: 1 Gigabit Ethernet

Software

Adapter: HP NC375i 1G w/NC524SFP 10G Module
 Adapter Driver: netxen_nic v 4.0.75
 Adapter Firmware: 4.0.544
 Adapter: HP NC375i 1G
 Adapter Driver: netxen_nic v 4.0.75
 Adapter Firmware: 4.0.544
 Operating System: RHEL6.0 (x86_64) 2.6.32-71.14.1.el6
 Kernel 2.6.32-71.14.1.el6
 Local File System: Linux/ext2
 Shared File System: NFS
 System State: Multi-User
 Other Software: TORQUE-2.5.7



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Test date: Dec-2011
Hardware Availability: Jun-2010
Software Availability: Jan-2011

Node Description: HOME

Hardware		Software	
Number of nodes:	1	Adapter:	Intel 82546GB Dual-Port Gigabit Ethernet Controller
Uses of the node:	fileserver	Adapter Driver:	e1000
Vendor:	IBM	Adapter Firmware:	N/A
Model:	IBM N5500 NAS	Operating System:	RedHat EL 4 Update 4
CPU Name:	Intel Xeon CPU	Local File System:	None
CPU(s) orderable:	1-4 chips	Shared File System:	NFS
Chips enabled:	4	System State:	Multi-User
Cores enabled:	32	Other Software:	None
Cores per chip:	8		
Threads per core:	1		
CPU Characteristics:	--		
CPU MHz:	1866		
Primary Cache:	32 KB I + 32 KB D on chip per chip		
Secondary Cache:	256 KB I+D on chip per core		
L3 Cache:	None		
Other Cache:	None		
Memory:	6 GB		
Disk Subsystem:	10 disks, 320GB/disk, 2.6TB total		
Other Hardware:	None		
Adapter:	Intel 82546GB Dual-Port Gigabit Ethernet Controller		
Number of Adapters:	1		
Slot Type:	PCI-Express x8		
Data Rate:	1Gbps Ethernet		
Ports Used:	1		
Interconnect Type:	Ethernet		

Interconnect Description: 10Gigabit Ethernet

Hardware		Software	
Vendor:	HP		
Model:	HP NC375i 1G w/NC524SFP 10G Module		
Switch Model:	Cisco 7018 (Line card module: N7K-M132XP-12)		
Number of Switches:	1		
Number of Ports:	16		
Data Rate:	10 Gbps Ethernet		
Firmware:	EPLD 5.0.2		
Topology:	switched		
Primary Use:	MPI traffic and NFS traffic		



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Software Availability: Jan-2011

Interconnect Description: Gigabit Ethernet

Hardware		Software
Vendor:	HP	
Model:	Cisco SGE2010	
Switch Model:	Cisco SGE2010	
Number of Switches:	1	
Number of Ports:	48	
Data Rate:	1 Gbps Ethernet	
Firmware:	3.0.0.18	
Topology:	switched	
Primary Use:	Network management	

Submit Notes

The config file option 'submit' was used.

General Notes

MPI startup command:

mpirun command was used to start MPI jobs.

eth0 (10 GigE) was specified at the mpirun command line for MPI message passing
eth3 (1 GigE) was specified for non-MPI communication.

BIOS settings:

Intel Turbo Boost Technology (Turbo) : Enabled (the default)

RAM configuration:

Each compute node has 64x8-GB RDIMMs.

Network:

Four compute nodes connect to one Cisco Nexus 7018 switch
via 10 GigE port.

Job placement:

Each MPI job was assigned to a topologically compact set of nodes, i.e.
the minimal needed number of compute nodes was used for each job:
2 compute nodes for 64 ranks, 4 compute nodes for 128 ranks.

PBS Pro was used for job submission. It has no impact on performance.

Can be found at: <http://www.altair.com>

Base Compiler Invocation

C benchmarks:

mpicc

C++ benchmarks:

Continued on next page

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Page 4



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Base Compiler Invocation (Continued)

126.lammps: mpicxx

Fortran benchmarks:
mpif90

Benchmarks using both Fortran and C:
mpicc mpif90

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG
126.lammps: -DMPICH_IGNORE_CXX_SEEK

Base Optimization Flags

C benchmarks:
-O3 -xSSE4.1 -no-prec-div

C++ benchmarks:
126.lammps: -O3 -xSSE4.1 -no-prec-div

Fortran benchmarks:
-O3 -xSSE4.1 -no-prec-div

Benchmarks using both Fortran and C:
-O3 -xSSE4.1 -no-prec-div

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/EM64T_Intel111_flags.20120720.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/EM64T_Intel111_flags.20120720.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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