



SPEC® MPIM2007 Result

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Colfax International

Intel Xeon Phi 7210, 1.30 GHz,
SMT on, Turbo off, MCDRAM Cache

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 7.28

MPI2007 license: 3440

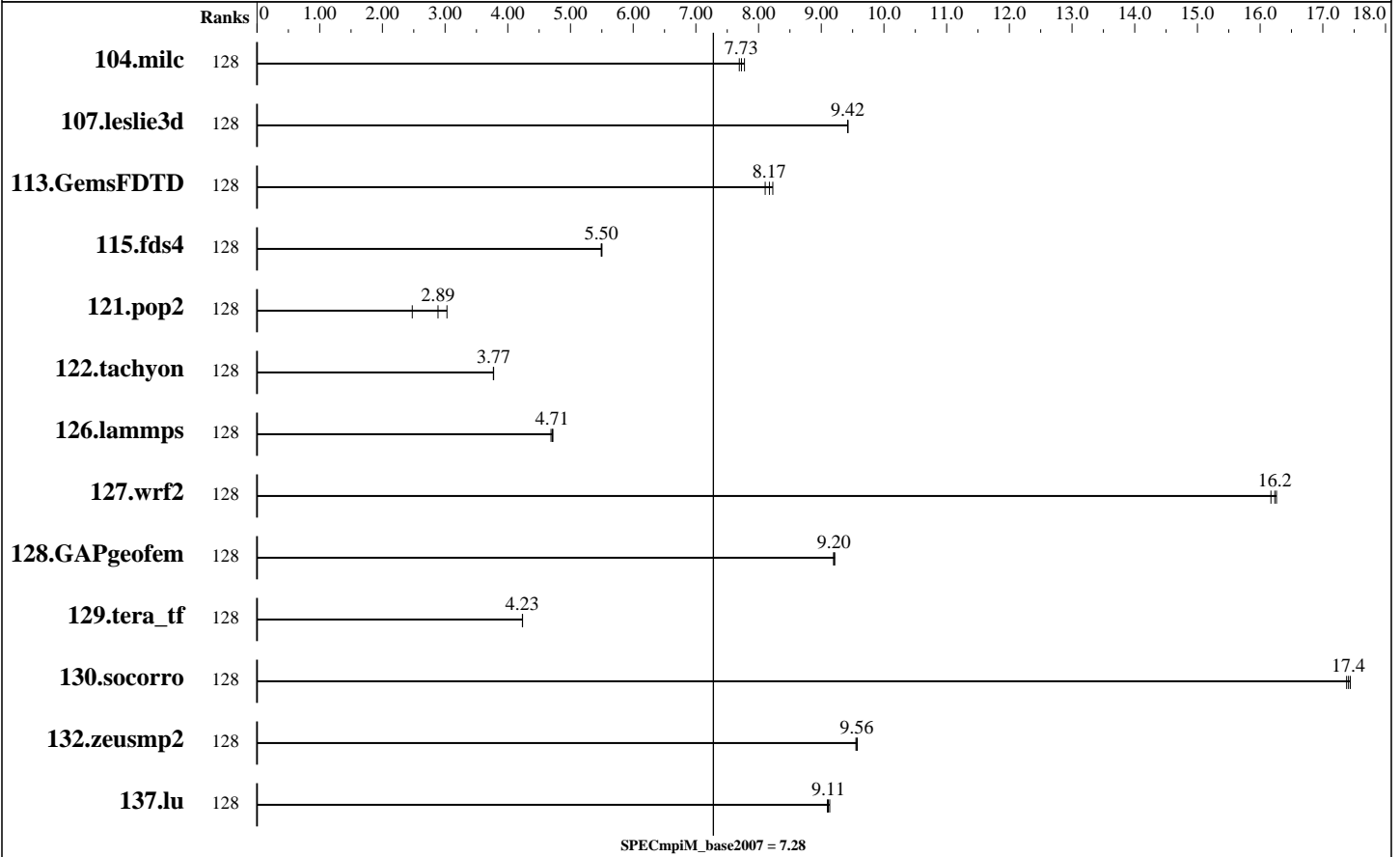
Test sponsor: Indiana University

Tested by: Junjie Li

Test date: Sep-2016

Hardware Availability: Aug-2016

Software Availability: Apr-2016



Results Table

Benchmark	Base								Peak					
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	128	201	7.78	<u>203</u>	<u>7.73</u>	203	7.69							
107.leslie3d	128	554	9.43	<u>554</u>	<u>9.42</u>	554	9.42							
113.GemsFDTD	128	778	8.11	767	8.23	<u>772</u>	<u>8.17</u>							
115.fds4	128	355	5.49	<u>355</u>	<u>5.50</u>	355	5.50							
121.pop2	128	<u>1430</u>	<u>2.89</u>	1362	3.03	1667	2.48							
122.tachyon	128	742	3.77	741	3.77	<u>741</u>	<u>3.77</u>							
126.lammps	128	<u>619</u>	<u>4.71</u>	622	4.69	618	4.72							
127.wrf2	128	482	16.2	<u>480</u>	<u>16.2</u>	479	16.3							
128.GAPgeofem	128	<u>224</u>	<u>9.20</u>	225	9.20	224	9.22							
129.tera_tf	128	653	4.24	<u>654</u>	<u>4.23</u>	654	4.23							

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	128	219	17.4	<u>219</u>	<u>17.4</u>	220	17.4							
132.zeusmp2	128	325	9.55	324	9.57	<u>324</u>	<u>9.56</u>							
137.lu	128	<u>403</u>	<u>9.11</u>	402	9.13	404	9.10							

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: KNL
 File Server Node: KNL
 Head Node: KNL
 Total Compute Nodes: 1
 Total Chips: 1
 Total Cores: 64
 Total Threads: 256
 Total Memory: 96 GB
 Base Ranks Run: 128
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Composer XE 2016 for Linux, Version 16.0.3.210 Build 20160415
 C++ Compiler: Intel C++ Composer XE 2016 for Linux, Version 16.0.3.210 Build 20160415
 Fortran Compiler: Intel Fortran Composer XE 2016 for Linux, Version 16.0.3.210 Build 20160415
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: Intel MPI Library for Linux 5.1.3 Build 20160120
 Other MPI Info: None
 Pre-processors: No
 Other Software: None

Node Description: KNL

Hardware

Number of nodes: 1
 Uses of the node: head, compute, fileserver
 Vendor: Colfax International
 Model: None
 CPU Name: Intel Xeon Phi 7210
 CPU(s) orderable: 1 chip
 Chips enabled: 1
 Cores enabled: 64
 Cores per chip: 64
 Threads per core: 4
 CPU Characteristics: Intel Turbo Boost Technology off, Simultaneous Multithreading (SMT) on
 CPU MHz: 1300
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per two cores
 L3 Cache: None
 Other Cache: None
 Memory: 96 GB (6 x 16 GB 2Rx8 PC4-2400T-REB-11, ECC)
 Disk Subsystem: Intel S3510 SSD 800GB, SATA3
 Other Hardware: None
 Adapter: 0
 Number of Adapters: 0
 Slot Type: 0
 Data Rate: 0

Software

Adapter: 0
 Adapter Driver: 0
 Adapter Firmware: --
 Operating System: CentOS Linux Release 7.2.1511
 Local File System: Linux/ext4
 Shared File System: None
 System State: Multi-User
 Other Software: None

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Node Description: KNL

Ports Used: 0
Interconnect Type: 0

Submit Notes

The config file option 'submit' was used.

General Notes

130.socorro (base): "nullify_ptrs" src.alt was used.

MPI startup command:
mpirun command was used to start MPI jobs.

BIOS settings:
Intel Simultaneous Multithreading (SMT): on
Intel Turbo Boost Technology (Turbo) : off
Cluster Mode: quadrant
Memory Mode: cache

Submitted_by: "Li, Junjie" <lijunj@iu.edu>
Submitted: Thu Oct 20 18:09:55 EDT 2016
Submission: mpi2007-20161014-00527.sub

Base Compiler Invocation

C benchmarks:
mpiicc

C++ benchmarks:

126.lammps: mpiicpc

Fortran benchmarks:
mpiifort

Benchmarks using both Fortran and C:
mpiicc mpiifort

Base Portability Flags

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

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Base Portability Flags (Continued)

127.wrf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX
130.socorro: -assume nostd_intent_in

Base Optimization Flags

C benchmarks:

-O3 -xMIC-AVX512 -no-prec-div -fp-model fast=2 -ipo -fma

C++ benchmarks:

126.lammps: -O3 -xMIC-AVX512 -no-prec-div -fp-model fast=2 -ipo -fma

Fortran benchmarks:

-O3 -xMIC-AVX512 -no-prec-div -fp-model fast=2 -ipo -fma

Benchmarks using both Fortran and C:

-O3 -xMIC-AVX512 -no-prec-div -fp-model fast=2 -ipo -fma

The flags files that were used to format this result can be browsed at

<http://www.spec.org/mpi2007/flags/colfax-kenl.20170127.html>

http://www.spec.org/mpi2007/flags/EM64T_Intel140_flags.20161026.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/mpi2007/flags/colfax-kenl.20170127.xml>

http://www.spec.org/mpi2007/flags/EM64T_Intel140_flags.20161026.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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