



# SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Colfax International

SPECmpiM\_peak2007 = Not Run

Intel Xeon Phi 7210, 1.30 GHz,  
SMT on, Turbo off, flat DRAM+MCDRAM

SPECmpiM\_base2007 = 3.86

MPI2007 license: 3440

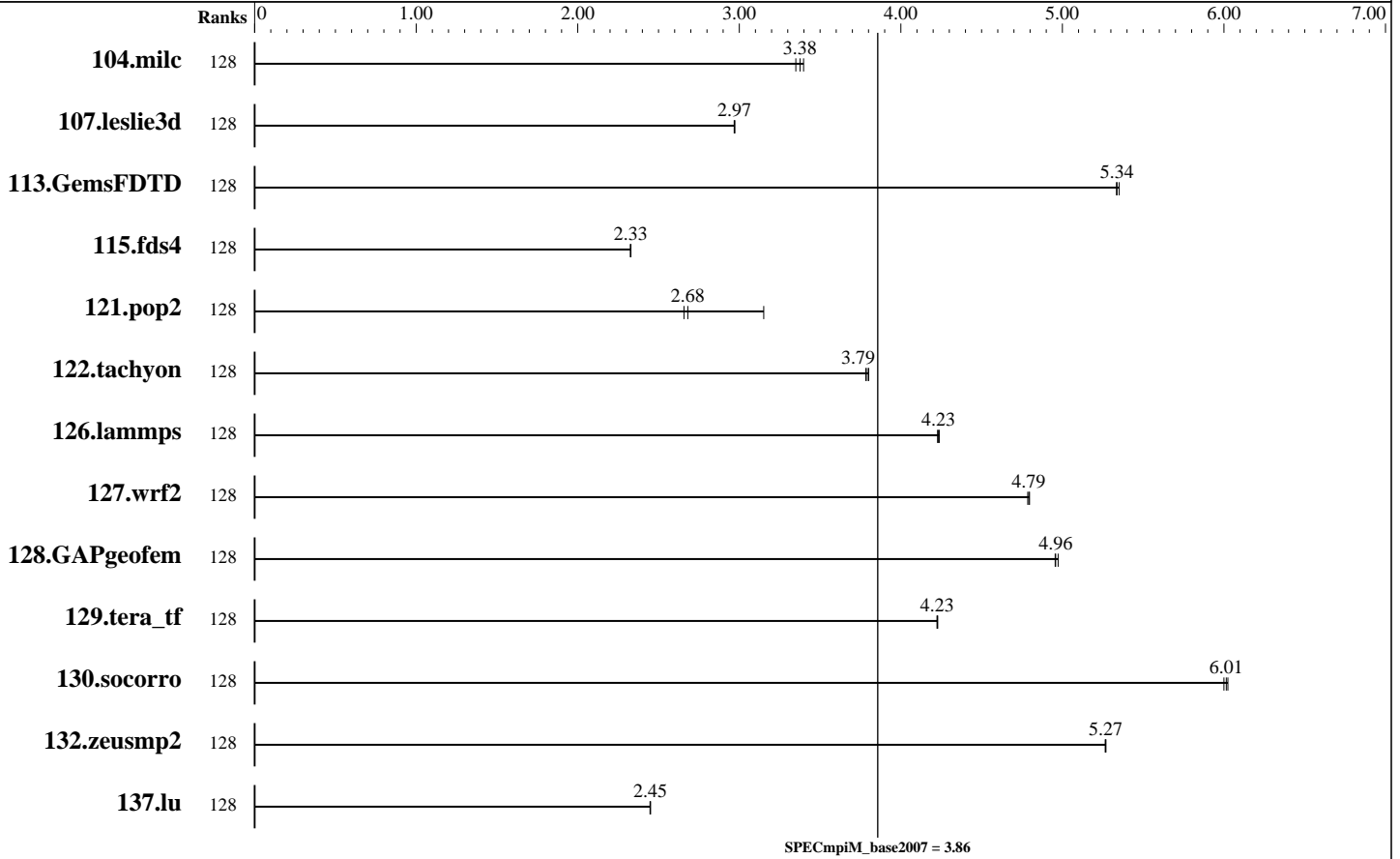
Test date: Sep-2016

Test sponsor: Indiana University

Hardware Availability: Aug-2016

Tested by: Junjie Li

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	461	3.40	<b>464</b>	<b>3.38</b>	467	3.35									
107.leslie3d	128	1759	2.97	<b>1757</b>	<b>2.97</b>	1757	2.97									
113.GemsFDTD	128	<b>1182</b>	<b>5.34</b>	1182	5.33	1179	5.35									
115.fds4	128	<b>838</b>	<b>2.33</b>	839	2.33	838	2.33									
121.pop2	128	1310	3.15	<b>1540</b>	<b>2.68</b>	1553	2.66									
122.tachyon	128	736	3.80	<b>738</b>	<b>3.79</b>	739	3.78									
126.lammps	128	688	4.24	690	4.23	<b>689</b>	<b>4.23</b>									
127.wrf2	128	1625	4.80	<b>1627</b>	<b>4.79</b>	1629	4.79									
128.GAPgeofem	128	<b>416</b>	<b>4.96</b>	415	4.97	417	4.96									
129.tera_tf	128	655	4.22	<b>655</b>	<b>4.23</b>	655	4.23									

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

## Colfax International

SPECmpiM\_peak2007 = Not Run

Intel Xeon Phi 7210, 1.30 GHz,  
SMT on, Turbo off, flat DRAM+MCDRAM

SPECmpiM\_base2007 = 3.86

MPI2007 license: 3440

Test date: Sep-2016

Test sponsor: Indiana University

Hardware Availability: Aug-2016

Tested by: Junjie Li

Software Availability: Apr-2016

### Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	128	<b>635</b>	<b>6.01</b>	636	6.00	634	6.02							
132.zeusmp2	128	<b>589</b>	<b>5.27</b>	589	5.27	589	5.26							
137.lu	128	1500	2.45	<b>1501</b>	<b>2.45</b>	1502	2.45							

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

Continued on next page



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Colfax International

SPECmpiM\_peak2007 = Not Run

Intel Xeon Phi 7210, 1.30 GHz,  
SMT on, Turbo off, flat DRAM+MCDRAM

SPECmpiM\_base2007 = 3.86

MPI2007 license: 3440

Test date: Sep-2016

Test sponsor: Indiana University

Hardware Availability: Aug-2016

Tested by: Junjie Li

Software Availability: Apr-2016

### 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: flat

Submitted\_by: "Li, Junjie" <lijunj@iu.edu>  
Submitted: Thu Oct 20 18:03:23 EDT 2016  
Submission: mpi2007-20161006-00525.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

Continued on next page



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Colfax International

SPECmpiM\_peak2007 = Not Run

Intel Xeon Phi 7210, 1.30 GHz,  
SMT on, Turbo off, flat DRAM+MCDRAM

SPECmpiM\_base2007 = 3.86

MPI2007 license: 3440

Test date: Sep-2016

Test sponsor: Indiana University

Hardware Availability: Aug-2016

Tested by: Junjie Li

Software Availability: Apr-2016

## 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-knl.20170127.html>

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel140\\_flags.20161026.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-knl.20170127.xml>

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel140\\_flags.20161026.xml](http://www.spec.org/mpi2007/flags/EM64T_Intel140_flags.20161026.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](mailto:webmaster@spec.org).

Tested with SPEC MPI2007 v2.0.1.

Report generated on Fri Jan 27 16:56:10 2017 by SPEC MPI2007 PS/PDF formatter v1463.

Originally published on 26 October 2016.