SPEC® MPIM2007 Result

Colfax International

Intel Xeon Phi 7210, 1.30 GHz,
SMT on, Turbo off, flat (MCDRAM preferred)

$SPECmpiM\_peak2007 =$ Not Run

$SPECmpiM\_base2007 =$ 7.33

SPECmpiM_base2007 = 7.33

Results Table

Benchmark	Ranks	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	128	**190**	**8.25**	188	8.31	193	8.10							
107.leslie3d	128	**532**	**9.80**	534	9.77	532	9.82							
113.GemsFDTD	128	683	9.24	**701**	**9.00**	727	8.68							
115.fds4	128	352	5.54	**352**	**5.54**	352	5.55							
121.pop2	128	1091	3.78	**1140**	**3.62**	1165	3.54							
122.tachyon	128	738	3.79	740	3.78	**740**	**3.78**							
126.lammps	128	610	4.78	**608**	**4.79**	607	4.80							
127.wrf2	128	472	16.5	**472**	**16.5**	471	16.5							
128.GAPgeofem	128	223	9.25	**224**	**9.24**	226	9.15							
129.tera_tf	128	652	4.24	655	4.23	**652**	**4.24**							

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

Intel Xeon Phi 7210, 1.30 GHz,
SMT on, Turbo off, flat (MCDRAM preferred)

$SPECmpiM\_peak2007 =$ Not Run
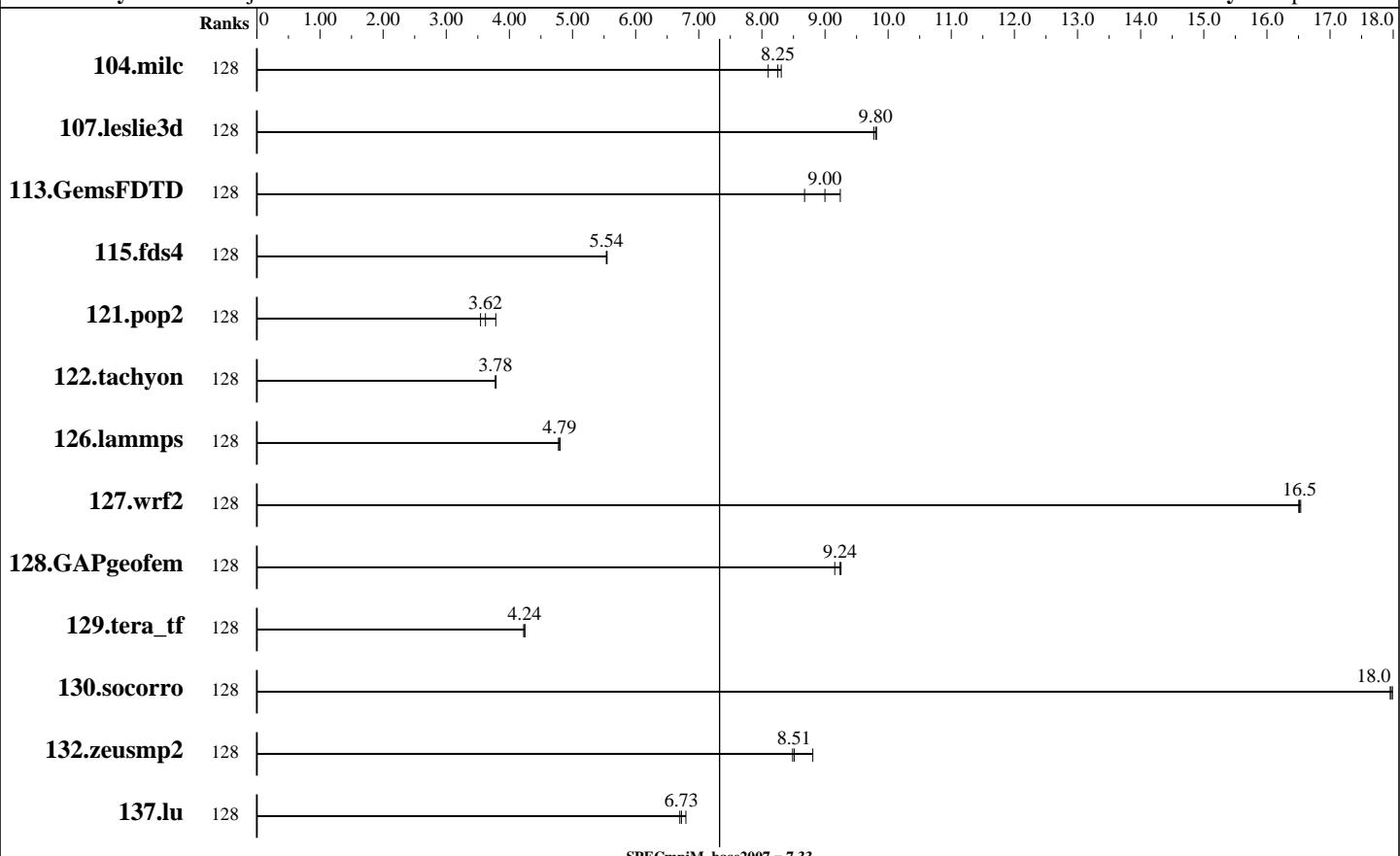
$SPECmpiM\_base2007 =$ 7.33

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 (Continued)

Benchmark	Base Ranks	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Ranks	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
130.socorro	128	213	18.0	**212**	**18.0**	212	18.0							
132.zeusmp2	128	352	8.81	366	8.49	**365**	**8.51**							
137.lu	128	541	6.80	549	6.70	**547**	**6.73**							

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

SPEC MPIM2007 Result
Copyright 2006-2010 Standard Performance Evaluation Corporation

Colfax International

Intel Xeon Phi 7210, 1.30 GHz,
SMT on, Turbo off, flat (MCDRAM preferred)

$SPECmpiM_peak2007 = $ Not Run

$SPECmpiM_base2007 = $ 7.33

MPI2007 license: 3440
Test sponsor: Indiana University
Tested by: Junjie Li

Test date: Sep-2016
Hardware Availability: Aug-2016
Software Availability: Apr-2016

Node Description: KNL

Ports Used: 0
Interconnect Type: 0

Submit Notes

    The config file option 'submit' was used.
    numactl -p 1 mpirun -genv I_MPI_COMPATIBILITY 4 -np $ranks $command

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

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

Colfax International

Intel Xeon Phi 7210, 1.30 GHz,
SMT on, Turbo off, flat (MCDRAM preferred)

$SPECmpiM\_peak2007 =$ Not Run

$SPECmpiM\_base2007 =$ 7.33

MPI2007 license: 3440
Test sponsor: Indiana University
Tested by: Junjie Li

Test date: Sep-2016
Hardware Availability: Aug-2016
Software Availability: Apr-2016

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/EM64T_Intel_flags.html
http://www.spec.org/mpi2007/flags/colfax-knl.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/mpi2007/flags/EM64T_Intel_flags.xml
http://www.spec.org/mpi2007/flags/colfax-knl.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.

Tested with SPEC MPI2007 v2.0.1.
Report generated on Wed Jan 11 12:44:21 2017 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 11 January 2017.