



# SPEC® OMPG2012 Result

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## Colfax International

(Test Sponsor: Indiana University)

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

SPECompG\_peak2012 = Not Run

SPECompG\_base2012 = 8.25

OMP2012 license:3440A

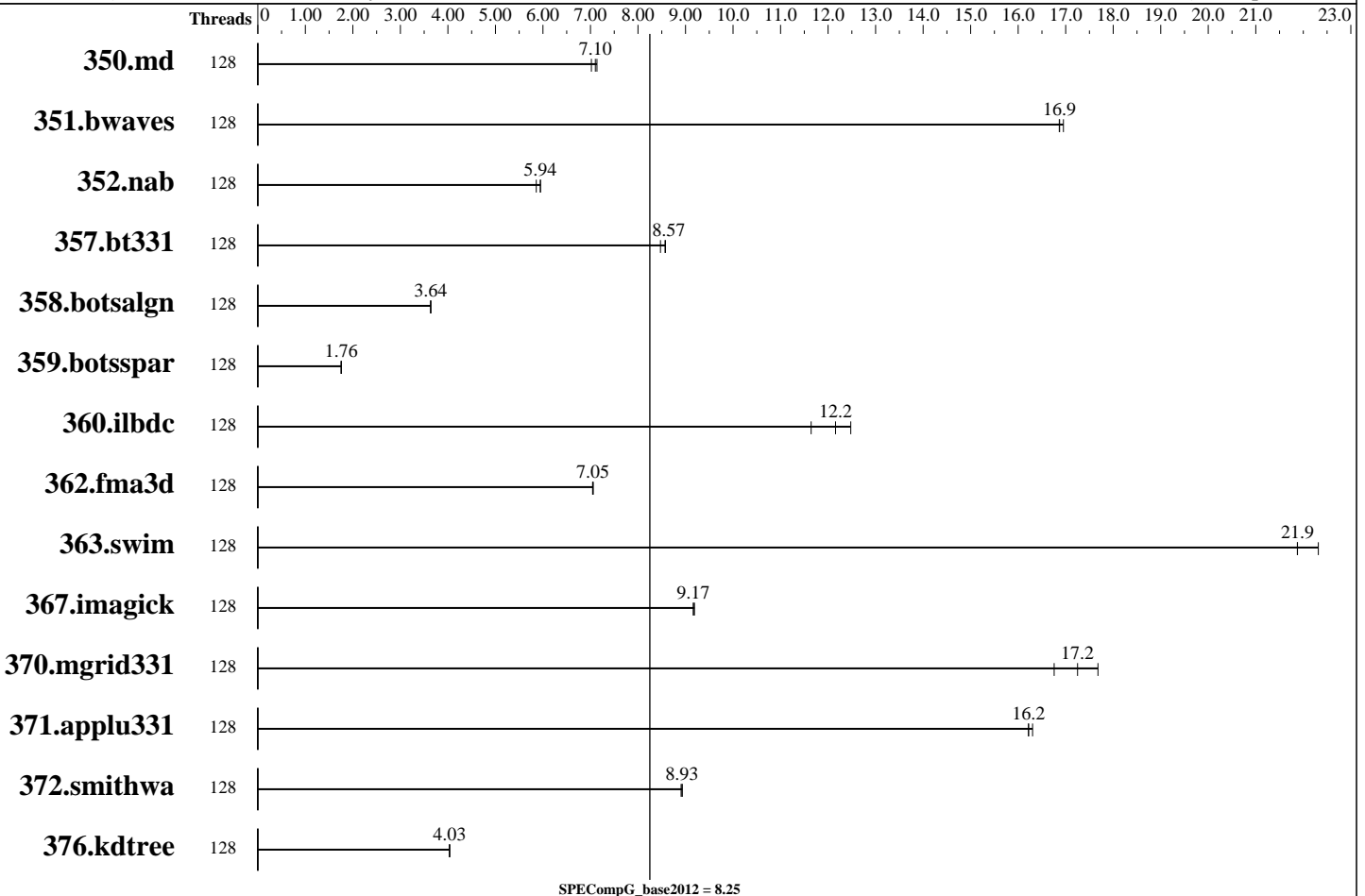
Test sponsor: Indiana University

Tested by: Indiana University

Test date: Oct-2016

Hardware Availability: Aug-2016

Software Availability: Apr-2016



### Hardware

CPU Name: Intel Xeon Phi 7210  
 CPU Characteristics: Intel Turbo Boost Technology off, Simultaneous Multithreading (SMT) on  
 CPU MHz: 1300  
 CPU MHz Maximum: 1500  
 FPU: Integrated  
 CPU(s) enabled: 64 cores, 1 chip, 64 cores/chip, 4 threads/core  
 CPU(s) orderable: 1 chip  
 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  
 Base Threads Run: 128

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### Software

Operating System: CentOS Linux release 7.2.1511  
 3.10.0-327.13.1.el7.xppsl\_1.3.3.151.x86\_64  
 Compiler: C/C++/Fortran: Version 16.0.3.210 of Intel Composer XE 2016 for Linux Build 20160415  
 Auto Parallel: No  
 File System: ext4  
 System State: Runlevel 3 (multi-user with networking)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other Software: None



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Minimum Peak Threads: --

Maximum Peak Threads: --

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	128	660	7.02	649	7.14	<b>652</b>	<b>7.10</b>							
351.bwaves	128	269	16.9	267	17.0	<b>268</b>	<b>16.9</b>							
352.nab	128	664	5.86	654	5.95	<b>654</b>	<b>5.94</b>							
357.bt331	128	559	8.47	553	8.58	<b>553</b>	<b>8.57</b>							
358.botsalgn	128	<b>1196</b>	<b>3.64</b>	1196	3.64	1196	3.64							
359.botsspar	128	2988	1.76	2995	1.75	<b>2989</b>	<b>1.76</b>							
360.ilbdc	128	285	12.5	<b>293</b>	<b>12.2</b>	306	11.6							
362.fma3d	128	539	7.04	538	7.06	<b>539</b>	<b>7.05</b>							
363.swim	128	<b>207</b>	<b>21.9</b>	207	21.9	203	22.3							
367.imagick	128	767	9.17	<b>767</b>	<b>9.17</b>	765	9.19							
370.mgrid331	128	250	17.7	<b>256</b>	<b>17.2</b>	264	16.8							
371.applu331	128	372	16.3	374	16.2	<b>374</b>	<b>16.2</b>							
372.smithwa	128	<b>600</b>	<b>8.93</b>	602	8.91	600	8.93							
376.kdtree	128	1114	4.04	1117	4.03	<b>1115</b>	<b>4.03</b>							

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

## Platform Notes

Sysinfo program /home/lijunj/SPEC/omp2012-1.1-run/Docs/sysinfo  
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)  
running on knl1.uits.indiana.edu Thu Oct 6 00:24:30 2016

This section contains SUT (System Under Test) info as seen by  
some common utilities. To remove or add to this section, see:  
<http://www.spec.org/omp2012/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon Phi(TM) CPU 7210 @ 1.30GHz

1 "physical id"s (chips)

256 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The  
following excerpts from /proc/cpuinfo might not be reliable. Use with  
caution.)

cpu cores : 64

siblings : 256

physical 0: cores 0 1 2 3 6 7 10 11 12 13 14 15 18 19 20 21 22 23 24 25 26

27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

52 53 56 57 58 59 60 61 62 63 64 65 68 69 70 71 72 73

cache size : 1024 KB

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## Platform Notes (Continued)

From /proc/meminfo

```
MemTotal:      98679320 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

/usr/bin/lsb\_release -d

```
CentOS Linux release 7.2.1511 (Core)
```

From /etc/\*release\* /etc/\*version\*

```
centos-release: CentOS Linux release 7.2.1511 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.2 (Source)
os-release:
  NAME="CentOS Linux"
  VERSION="7 (Core)"
  ID="centos"
  ID_LIKE="rhel fedora"
  VERSION_ID="7"
  PRETTY_NAME="CentOS Linux 7 (Core)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:centos:centos:7"
redhat-release: CentOS Linux release 7.2.1511 (Core)
system-release: CentOS Linux release 7.2.1511 (Core)
system-release-cpe: cpe:/o:centos:centos:7
```

uname -a:

```
Linux kn11.uits.indiana.edu 3.10.0-327.13.1.el7.xppsl_1.3.3.151.x86_64 #1 SMP
Fri Jun 10 15:04:35 UTC 2016 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Oct 5 12:52

SPEC is set to: /home/lijunj/SPEC/omp2012-1.1-run

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext4  713G   77G  601G  12% /
```

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

(End of data from sysinfo program)

## General Notes

BIOS settings:

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



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## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

## Base Portability Flags

350.md: -free  
357.bt331: -mcmmodel=medium  
363.swim: -mcmmodel=medium  
367.imagick: -std=c99

## Base Optimization Flags

C benchmarks:

-O3 -ansi-alias -no-prec-div -qopenmp -ipo -xMIC-AVX512  
-fp-model fast=2

C++ benchmarks:

-O3 -ansi-alias -no-prec-div -qopenmp -ipo -xMIC-AVX512  
-fp-model fast=2

Fortran benchmarks:

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

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

<http://www.spec.org/omp2012/flags/Intel-ic16.0-linux64.html>

<http://www.spec.org/omp2012/flags/knl.html>

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

<http://www.spec.org/omp2012/flags/Intel-ic16.0-linux64.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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