# SPEC® OMPG2012 Result

**Colfax International**  
(Test Sponsor: Indiana University)  
Intel Xeon Phi 7210, 1.30GHz,  
SMT on, Turbo off, MCDRAM Cache

| SPECCompG_peak2012 | Not Run |  
| SPECCompG_base2012 | 8.25 |

**OMPI2012 license:** 3440A  
**Test date:** Oct-2016  
**Test sponsor:** Indiana University  
**Tested by:** Indiana University  
**Hardware Availability:** Aug-2016  
**Software Availability:** Apr-2016

| Threads | 0 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 16.00 | 17.00 | 18.00 | 19.00 | 20.00 | 21.00 | 22.00 | 23.00 |
|---------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 350.md  | 128 | 7.10 | | | | | | | | | | | | | | | | | | | | | | | | |
| 351.bwaves | 128 | 16.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| 352.nab  | 128 | 5.94 | | | | | | | | | | | | | | | | | | | | | | | | |
| 357.bt331 | 128 | 8.57 | | | | | | | | | | | | | | | | | | | | | | | | |
| 358.botsalgn | 128 | 3.64 | | | | | | | | | | | | | | | | | | | | | | | | |
| 359.botsspar | 128 | 1.76 | | | | | | | | | | | | | | | | | | | | | | | | |
| 360.ilbdc | 128 | 12.2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 362.fma3d | 128 | 7.05 | | | | | | | | | | | | | | | | | | | | | | | | |
| 363.swim | 128 | 21.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| 367.imagick | 128 | 9.17 | | | | | | | | | | | | | | | | | | | | | | | | |
| 370.mgrid331 | 128 | 17.2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 371.applu331 | 128 | 16.2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 372.smithwa | 128 | 8.93 | | | | | | | | | | | | | | | | | | | | | | | | |
| 376.kdtree | 128 | 4.03 | | | | | | | | | | | | | | | | | | | | | | | | |

**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

**Software**

- **Operating System:** CentOS Linux release 7.2.1511  
- **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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Continued on next page
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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
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</table>

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 (09729538c6073d8c3b03fa376740a5)  
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 54 55 57 58 59 60 61 62 63 64 65 68 69 70 71 72 73
cache size : 1024 KB
```
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 knl1.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

rn-level 3 Oct 5 12:52

SPEC is set to: /home/lijunj/SPEC/omp2012-1.1-run
/proc/meminfo
MemTotal: 98679320 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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: -mcmodel=medium
363.swim: -mcmodel=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
http://www.spec.org/omp2012/flags/knl.xml
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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC OMP2012 v1.1.
Originally published on 26 October 2016.