# SPEC® OMPG2012 Result

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## Colfax International

(Test Sponsor: Indiana University)

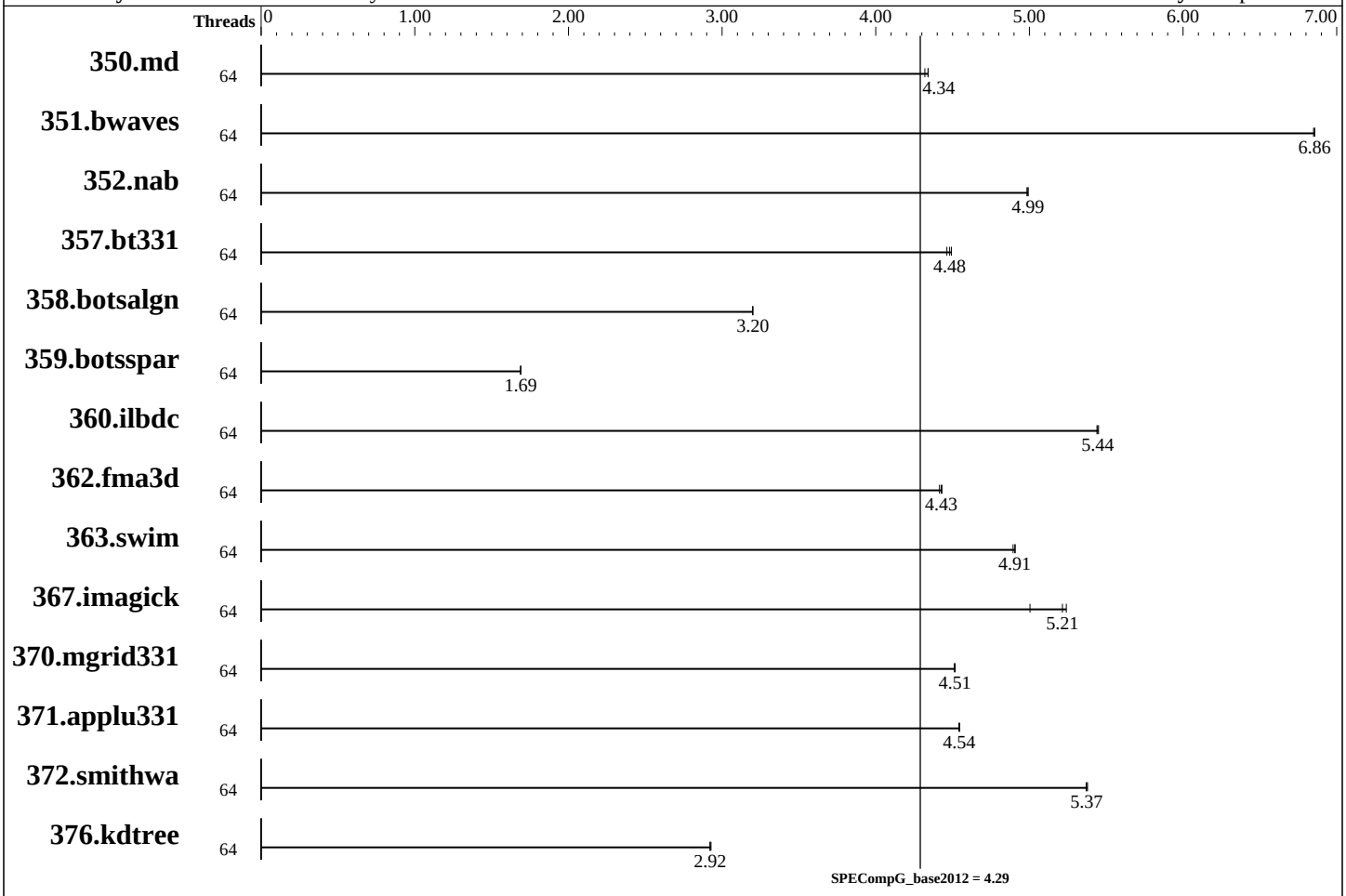
Intel Xeon Phi 7210, 1.30GHz,
SMT off, Turbo off, flat DRAM+MCDRAM

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 4.29

**OMP2012 license:** 3440A
**Test sponsor:** Indiana University
**Tested by:** Indiana University

**Test date:** Aug-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) off |
| 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: | 64 |

**Continued on next page**

## Software

| | |
|---|---|
| Operating System: | CentOS Linux release 7.2.1511<br>CentOS Linux release 7.2.1511 (Core)<br>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 | 64 | 1072 | 4.32 | **1067** | **4.34** | 1067 | 4.34 | | | | | | | |
| 351.bwaves | 64 | 661 | 6.86 | **661** | **6.86** | 661 | 6.85 | | | | | | | |
| 352.nab | 64 | **779** | **4.99** | 781 | 4.98 | 779 | 4.99 | | | | | | | |
| 357.bt331 | 64 | 1062 | 4.46 | **1058** | **4.48** | 1055 | 4.49 | | | | | | | |
| 358.botsalgn | 64 | **1359** | **3.20** | 1360 | 3.20 | 1359 | 3.20 | | | | | | | |
| 359.botsspar | 64 | 3105 | 1.69 | 3110 | 1.69 | **3107** | **1.69** | | | | | | | |
| 360.ilbdc | 64 | 654 | 5.44 | **654** | **5.44** | 653 | 5.45 | | | | | | | |
| 362.fma3d | 64 | 858 | 4.43 | 861 | 4.41 | **859** | **4.43** | | | | | | | |
| 363.swim | 64 | 923 | 4.91 | **923** | **4.91** | 926 | 4.89 | | | | | | | |
| 367.imagick | 64 | 1405 | 5.00 | **1348** | **5.21** | 1341 | 5.24 | | | | | | | |
| 370.mgrid331 | 64 | 979 | 4.52 | 980 | 4.51 | **979** | **4.51** | | | | | | | |
| 371.applu331 | 64 | **1334** | **4.54** | 1333 | 4.55 | 1334 | 4.54 | | | | | | | |
| 372.smithwa | 64 | **998** | **5.37** | 997 | 5.38 | 998 | 5.37 | | | | | | | |
| 376.kdtree | 64 | **1540** | **2.92** | 1541 | 2.92 | 1537 | 2.93 | | | | | | | |

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 Fri Oct 14 02:47:30 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)
      64 "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  : 64
      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
```

Continued on next page

## Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       115216920 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

run-level 3 Oct 13 14:15

SPEC is set to: /home/lijunj/SPEC/omp2012-1.1-run
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      ext4  713G   78G  599G  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): off
  Intel Turbo Boost Technology (Turbo): off
  Cluster Mode: quadrant
  Memory Mode: flat
```

## 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/colfax-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/colfax-knl.xml

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For other inquiries, please contact webmaster@spec.org.

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