SPEC® OMPG2012 Result

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Colfax International

(Test Sponsor: Indiana University)

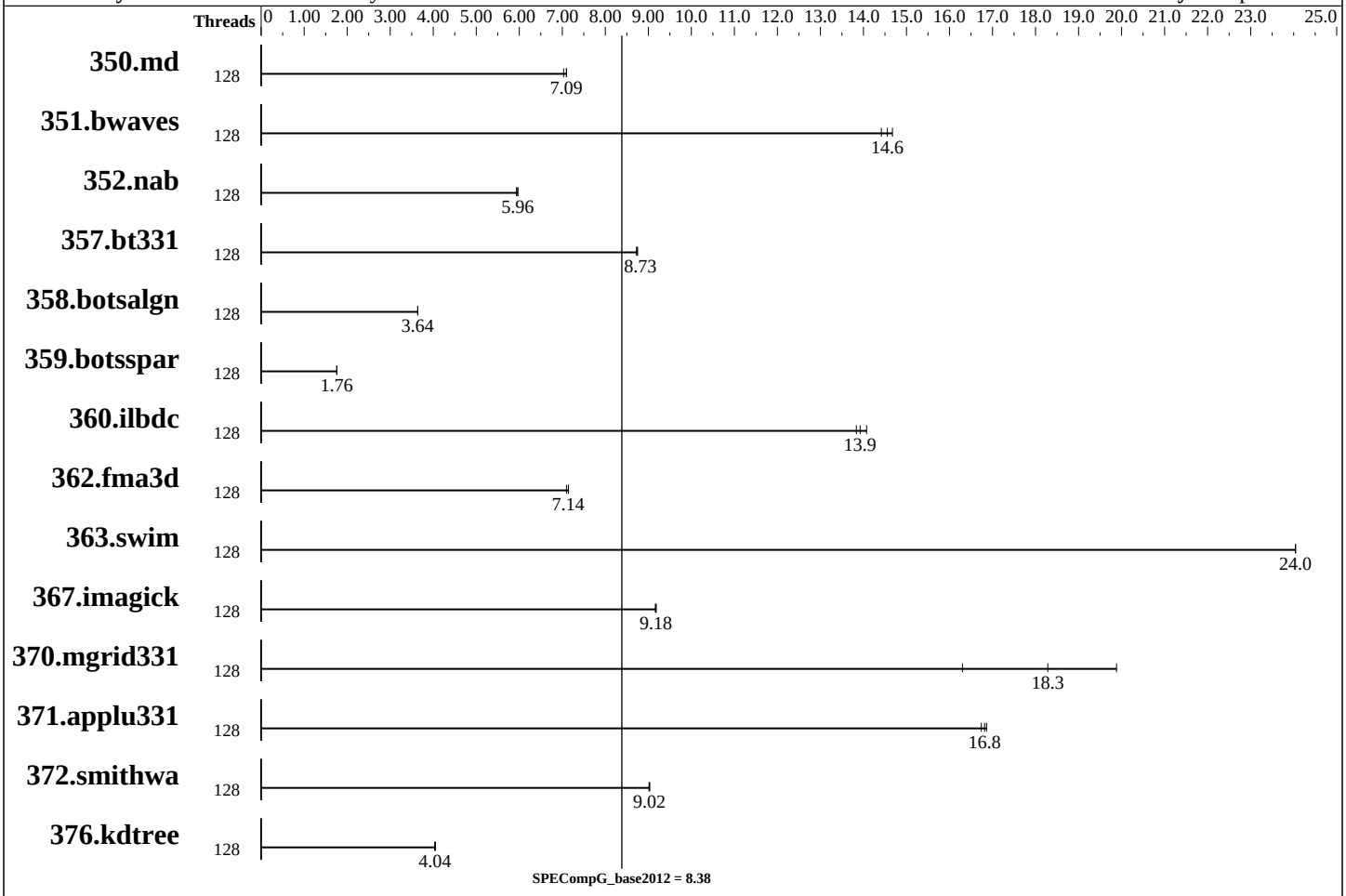
Intel Xeon Phi 7210, 1.30GHz,
SMT on, Turbo off, flat (MCDRAM Preferred)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 8.38

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

Test date: Dec-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 CentOS Linux release 7.2.1511 (Core) 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	658	7.03	**653**	**7.09**	652	7.10							
351.bwaves	128	309	14.7	**311**	**14.6**	314	14.4							
352.nab	128	655	5.94	**652**	**5.96**	652	5.97							
357.bt331	128	543	8.73	**543**	**8.73**	542	8.75							
358.botsalgn	128	1195	3.64	1195	3.64	**1195**	**3.64**							
359.botsspar	128	2987	1.76	2980	1.76	**2983**	**1.76**							
360.ilbdc	128	257	13.8	253	14.1	**256**	**13.9**							
362.fma3d	128	**532**	**7.14**	535	7.10	532	7.14							
363.swim	128	188	24.0	**188**	**24.0**	188	24.0							
367.imagick	128	766	9.18	**766**	**9.18**	767	9.16							
370.mgrid331	128	222	19.9	**242**	**18.3**	271	16.3							
371.applu331	128	362	16.7	**360**	**16.8**	359	16.9							
372.smithwa	128	595	9.02	**594**	**9.02**	593	9.03							
376.kdtree	128	**1113**	**4.04**	1115	4.04	1110	4.05							

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

Submit Notes

```
The config file option 'submit' was used.
submit = numactl -p 1 $command
```

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 Wed Dec 14 06:19:19 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
```

Continued on next page

Platform Notes (Continued)

```
        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

  From /proc/meminfo
     MemTotal:       115193108 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 Dec 13 14:23

  SPEC is set to: /home/lijunj/SPEC/omp2012-1.1-run
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda3      ext4  713G  109G  568G  17% /

  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
```

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General Notes (Continued)

```
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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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