SPEC® OMPG2012 Result

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(Test Sponsor: Indiana University)

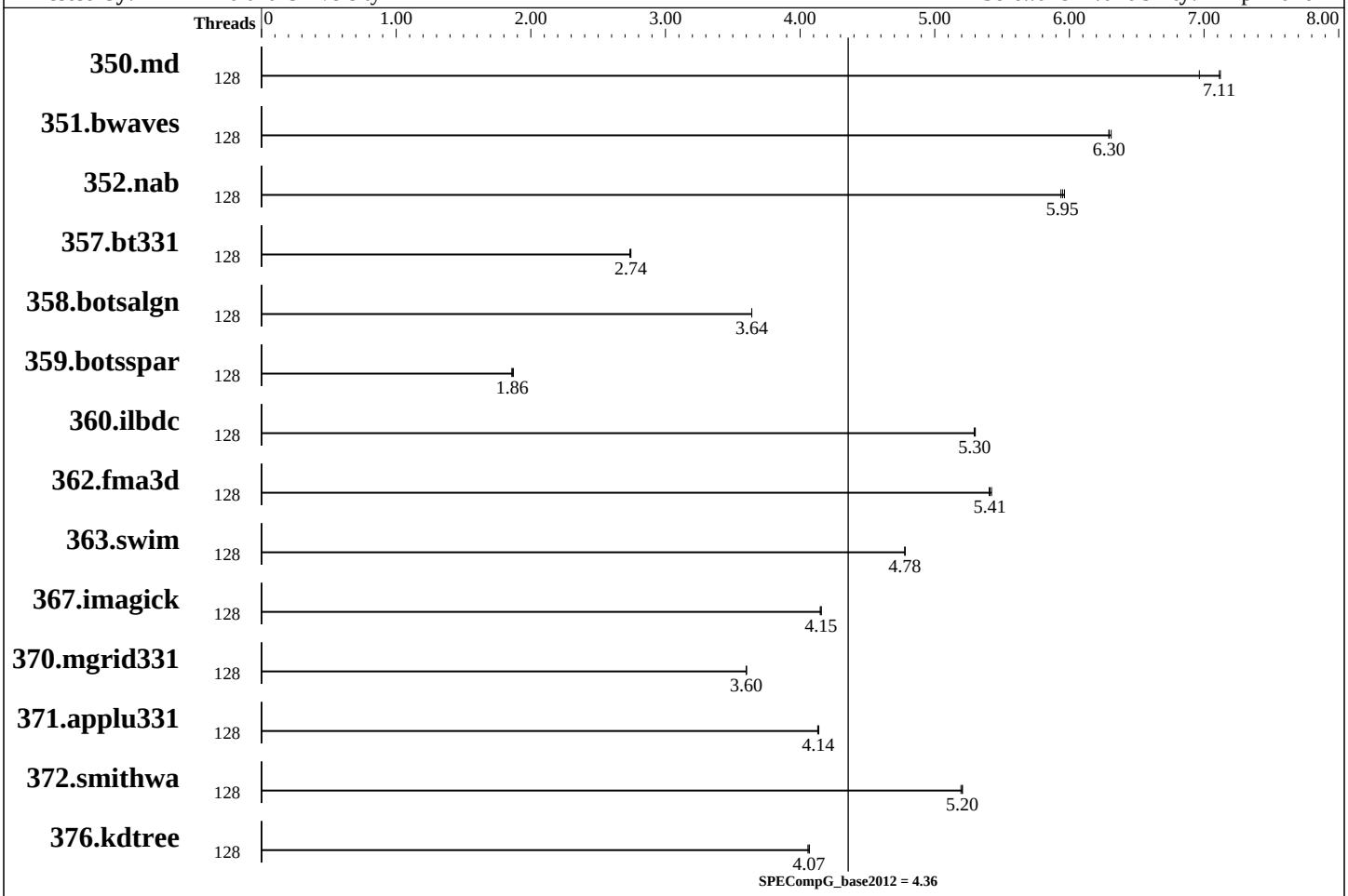
Intel Xeon Phi 7210, 1.30GHz,
SMT on, Turbo off, flat DRAM+MCDRAM

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 4.36

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) 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

Continued on next page

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	665	6.97	**651**	**7.11**	650	7.12							
351.bwaves	128	720	6.29	**720**	**6.30**	718	6.31							
352.nab	128	655	5.94	**654**	**5.95**	652	5.96							
357.bt331	128	1733	2.74	**1729**	**2.74**	1728	2.74							
358.botsalgn	128	1195	3.64	**1195**	**3.64**	1195	3.64							
359.botsspar	128	**2818**	**1.86**	2806	1.87	2824	1.86							
360.ilbdc	128	672	5.30	673	5.29	**672**	**5.30**							
362.fma3d	128	703	5.40	**702**	**5.41**	701	5.42							
363.swim	128	**948**	**4.78**	948	4.78	948	4.78							
367.imagick	128	1694	4.15	**1692**	**4.15**	1691	4.16							
370.mgrid331	128	1227	3.60	**1227**	**3.60**	1228	3.60							
371.applu331	128	1467	4.13	1464	4.14	**1465**	**4.14**							
372.smithwa	128	1032	5.19	**1030**	**5.20**	1030	5.21							
376.kdtree	128	**1107**	**4.07**	1109	4.06	1106	4.07							

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 Tue Aug 30 10:46:57 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
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       115193108 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

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 Aug 3 01:08

SPEC is set to: /home/lijunj/SPEC/omp2012-1.1-run
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      ext4  713G   45G  632G   7% /

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

(End of data from sysinfo program)
```

General Notes

```
Environment:
  KMP_AFFINITY=scatter

BIOS settings:
  Intel Simultaneous Multithreading (SMT): on
  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/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.

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