



# SPEC® OMPG2012 Result

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## IBM

(Test Sponsor: Indiana University)

IBM S822LC for HPC  
(Power8 with NVLink, 2.860 GHz)

SPECompG\_peak2012 = Not Run

SPECompG\_base2012 = 4.34

OMP2012 license:3440A

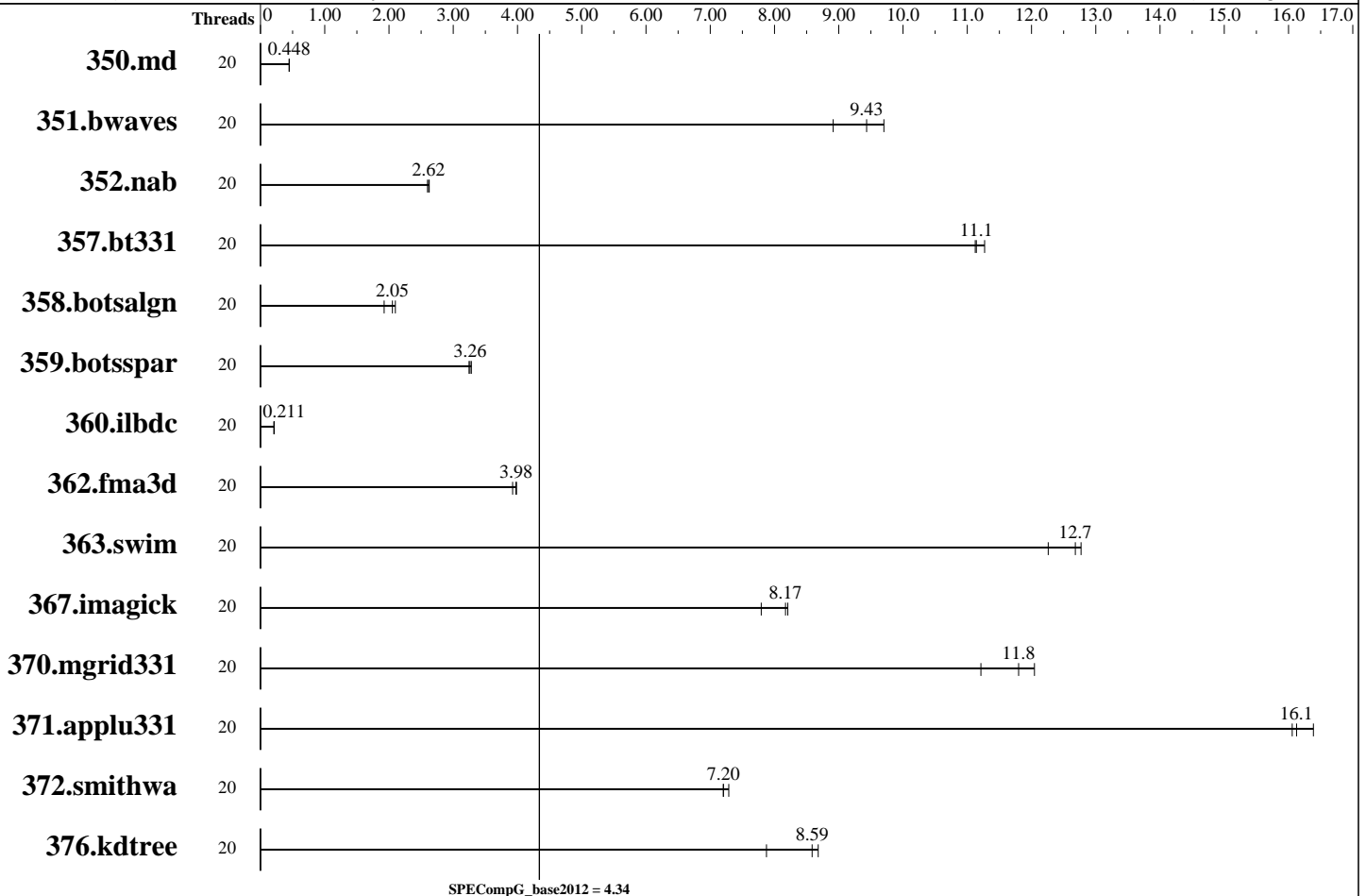
Test sponsor: Indiana University

Tested by: Indiana University

Test date: Jan-2018

Hardware Availability: Sep-2017

Software Availability: Aug-2017



### Hardware

CPU Name: POWER8 with NVLink  
 CPU Characteristics: IBM Intelligent Energy Optimization enabled, up to 3.492 GHz  
 CPU MHz: 2860  
 CPU MHz Maximum: 3492  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 8 threads/core  
 CPU(s) orderable: 1-2 chips  
 Primary Cache: 32 KB I + 64 KB D on chip per core  
 Secondary Cache: 512 KB I+D on chip per core  
 L3 Cache: 8 MB I+D on chip per core  
 Other Cache: 16 MB I+D off chip per 4 DIMMs  
 Memory: 256 GB (32 x 8 GB DIMMs DDR4 1600 MHz)  
 Disk Subsystem: 609TB GPFS  
 Other Hardware: None  
 Base Threads Run: 20

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### Software

Operating System: CentOS Linux release 7.4.1708 (AltArch)  
 3.10.0-693.11.1.el7.ppc64le  
 Compiler: C/C++/Fortran: Version 7.2.0 of gcc  
 Auto Parallel: No  
 File System: GPFS 4.2.3.6  
 System State: Run level 5 (Multi-user, graphical)  
 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	20	<b><u>10346</u></b>	<b><u>0.448</u></b>	10388	0.446	10306	0.449							
351.bwaves	20	467	9.70	<b><u>480</u></b>	<b><u>9.43</u></b>	508	8.91							
352.nab	20	<b><u>1486</u></b>	<b><u>2.62</u></b>	1481	2.63	1497	2.60							
357.bt331	20	<b><u>425</u></b>	<b><u>11.1</u></b>	421	11.3	426	11.1							
358.botsalgn	20	2260	1.92	<b><u>2118</u></b>	<b><u>2.05</u></b>	2072	2.10							
359.botsspar	20	1600	3.28	<b><u>1610</u></b>	<b><u>3.26</u></b>	1617	3.25							
360.ilbdc	20	16660	0.214	16941	0.210	<b><u>16909</u></b>	<b><u>0.211</u></b>							
362.fma3d	20	<b><u>956</u></b>	<b><u>3.98</u></b>	968	3.92	954	3.98							
363.swim	20	355	12.8	369	12.3	<b><u>357</u></b>	<b><u>12.7</u></b>							
367.imagick	20	<b><u>860</u></b>	<b><u>8.17</u></b>	902	7.79	857	8.21							
370.mgrid331	20	367	12.0	<b><u>375</u></b>	<b><u>11.8</u></b>	394	11.2							
371.applu331	20	377	16.1	<b><u>376</u></b>	<b><u>16.1</u></b>	370	16.4							
372.smithwa	20	<b><u>744</u></b>	<b><u>7.20</u></b>	735	7.29	744	7.20							
376.kdtree	20	571	7.88	<b><u>524</u></b>	<b><u>8.59</u></b>	518	8.68							

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

## Platform Notes

Sysinfo program /gpfs/homeb/padc/padc021/spec/omp2012-1.1-run/Docs/sysinfo  
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)  
running on juroncl3.juron.dns.zone Tue Jan 23 02:15:47 2018

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
clock : 4023.000000MHz
machine : PowerNV 8335-GTB
model : 8335-GTB
platform : PowerNV
revision : 1.0 (pvr 004c 0100)
cpu : POWER8NVL (raw), altivec supported
```

```
*
* 0 "physical id" tags found. Perhaps this is an older system,
* or a virtualized system. Not attempting to guess how to
* count chips/cores for this system.
*
```

160 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The

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## Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

From /proc/meminfo

MemTotal: 267801664 kB

HugePages\_Total: 0

Hugepagesize: 16384 kB

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

centos-release: CentOS Linux release 7.4.1708 (AltArch)

centos-release-upstream: Derived from Red Hat Enterprise Linux 7.4 (Source)

os-release:

NAME="CentOS Linux"

VERSION="7 (AltArch)"

ID="centos"

ID\_LIKE="rhel fedora"

VERSION\_ID="7"

PRETTY\_NAME="CentOS Linux 7 (AltArch)"

ANSI\_COLOR="0;31"

CPE\_NAME="cpe:/o:centos:centos:7"

redhat-release: CentOS Linux release 7.4.1708 (AltArch)

system-release: CentOS Linux release 7.4.1708 (AltArch)

system-release-cpe: cpe:/o:centos:centos:7

uname -a:

Linux juroncl3.juron.dns.zone 3.10.0-693.11.1.el7.ppc64le #1 SMP Mon Dec 4 15:48:14 GMT 2017 ppc64le ppc64le ppc64le GNU/Linux

run-level 5 Dec 15 13:40

SPEC is set to: /gpfs/homeb/padc/padc021/spec/omp2012-1.1-run

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
homeb	gpfs	609T	579T	30T	96%	/gpfs/homeb

(End of data from sysinfo program)

## General Notes

Environment Variables:

OMP\_STACKSIZE=1G

ulimit -s unlimited

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on

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## General Notes (Continued)

past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC HPG Policy document, <http://www.spec.org/hpg/policy.html>

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

## Base Compiler Invocation

C benchmarks:

gcc

C++ benchmarks:

g++

Fortran benchmarks:

gfortran

## Base Portability Flags

350.md: -ffree-form -fno-range-check

## Base Optimization Flags

C benchmarks:

-Ofast -fopenmp -fsigned-char

C++ benchmarks:

-Ofast -fopenmp

Fortran benchmarks:

-Ofast -fopenmp

The flags file that was used to format this result can be browsed at

<http://www.spec.org/omp2012/flags/gcc-linux64.20180620.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/omp2012/flags/gcc-linux64.20180620.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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