SPEC® OMPG2012 Result

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IBM
(Test Sponsor: Indiana University)

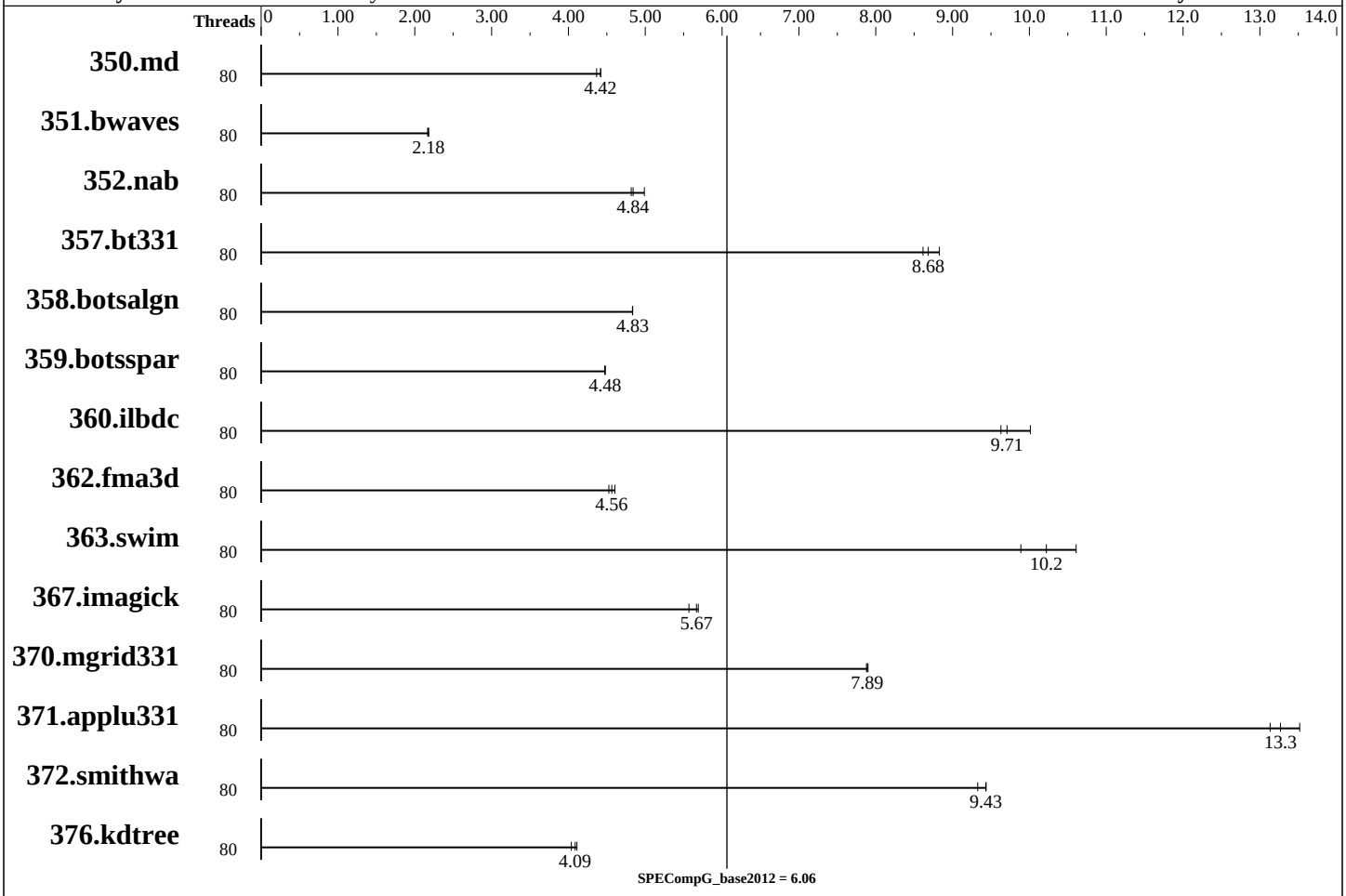
IBM S822LC for HPC
(Power8 with NVLink, 2.860 GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 6.06

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

Test date: Apr-2018
Hardware Availability: Sep-2017
Software Availability: Dec-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:	80

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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++: Version 4.0.1 of Clang Fortran: Version 4.0.1 of Flang
Auto Parallel:	No
File System:	GPFS 4.2.3.6
System State:	Run level 3 (multi-user)
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	80	1048	4.42	**1048**	**4.42**	1060	4.37							
351.bwaves	80	2077	2.18	**2081**	**2.18**	2091	2.17							
352.nab	80	780	4.99	808	4.82	**803**	**4.84**							
357.bt331	80	537	8.83	**546**	**8.68**	550	8.62							
358.botsalgn	80	899	4.84	**900**	**4.83**	900	4.83							
359.botsspar	80	1172	4.48	1174	4.47	**1173**	**4.48**							
360.ilbdc	80	356	10.0	370	9.63	**367**	**9.71**							
362.fma3d	80	825	4.60	**833**	**4.56**	840	4.53							
363.swim	80	427	10.6	**443**	**10.2**	458	9.89							
367.imagick	80	1235	5.69	**1241**	**5.67**	1262	5.57							
370.mgrid331	80	560	7.90	**560**	**7.89**	561	7.88							
371.applu331	80	461	13.1	448	13.5	**457**	**13.3**							
372.smithwa	80	**568**	**9.43**	575	9.33	568	9.44							
376.kdtree	80	1115	4.04	1095	4.11	**1101**	**4.09**							

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 juronc13.juron.dns.zone Tue Apr 24 04:07:10 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
```

Continued on next page

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 juronc13.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 3 Apr 10 19:42

   SPEC is set to: /gpfs/homeb/padc/padc021/spec/omp2012-1.1-run
      Filesystem     Type  Size  Used Avail Use% Mounted on
      homeb          gpfs  609T  499T  110T  82% /gpfs/homeb

   (End of data from sysinfo program)
```

General Notes

```
Environment Variables:
    OMP_STACKSIZE=1G
    ulimit -s unlimited
```

Base Compiler Invocation

C benchmarks:
clang

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Base Portability Flags

350.md: -Mfreeform
357.bt331: -mcmodel=medium

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/llvm40.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/llvm40.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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