# SPEC® OMPG2012 Result

**IBM**
(Test Sponsor: Indiana University)

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

$SPECompG\_peak2012 =$ Not Run

$SPECompG\_base2012 =$ 4.24

| | | |
|---|---|---|
| **OMP2012 license:** 3440A | **Test date:** | Apr-2018 |
| **Test sponsor:** Indiana University | **Hardware Availability:** | Sep-2017 |
| **Tested by:** Indiana University | **Software Availability:** | Dec-2017 |



| Benchmark | Threads | Result |
|---|---|---|
| 350.md | 20 | 2.50 |
| 351.bwaves | 20 | 0.822 |
| 352.nab | 20 | 2.43 |
| 357.bt331 | 20 | 8.45 |
| 358.botsalgn | 20 | 2.12 |
| 359.botsspar | 20 | 3.02 |
| 360.ilbdc | 20 | 10.1 |
| 362.fma3d | 20 | 3.23 |
| 363.swim | 20 | 11.2 |
| 367.imagick | 20 | 4.97 |
| 370.mgrid331 | 20 | 8.23 |
| 371.applu331 | 20 | 12.8 |
| 372.smithwa | 20 | 5.75 |
| 376.kdtree | 20 | 2.08 |

**SPECompG_base2012 = 4.24**

## 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 |

## 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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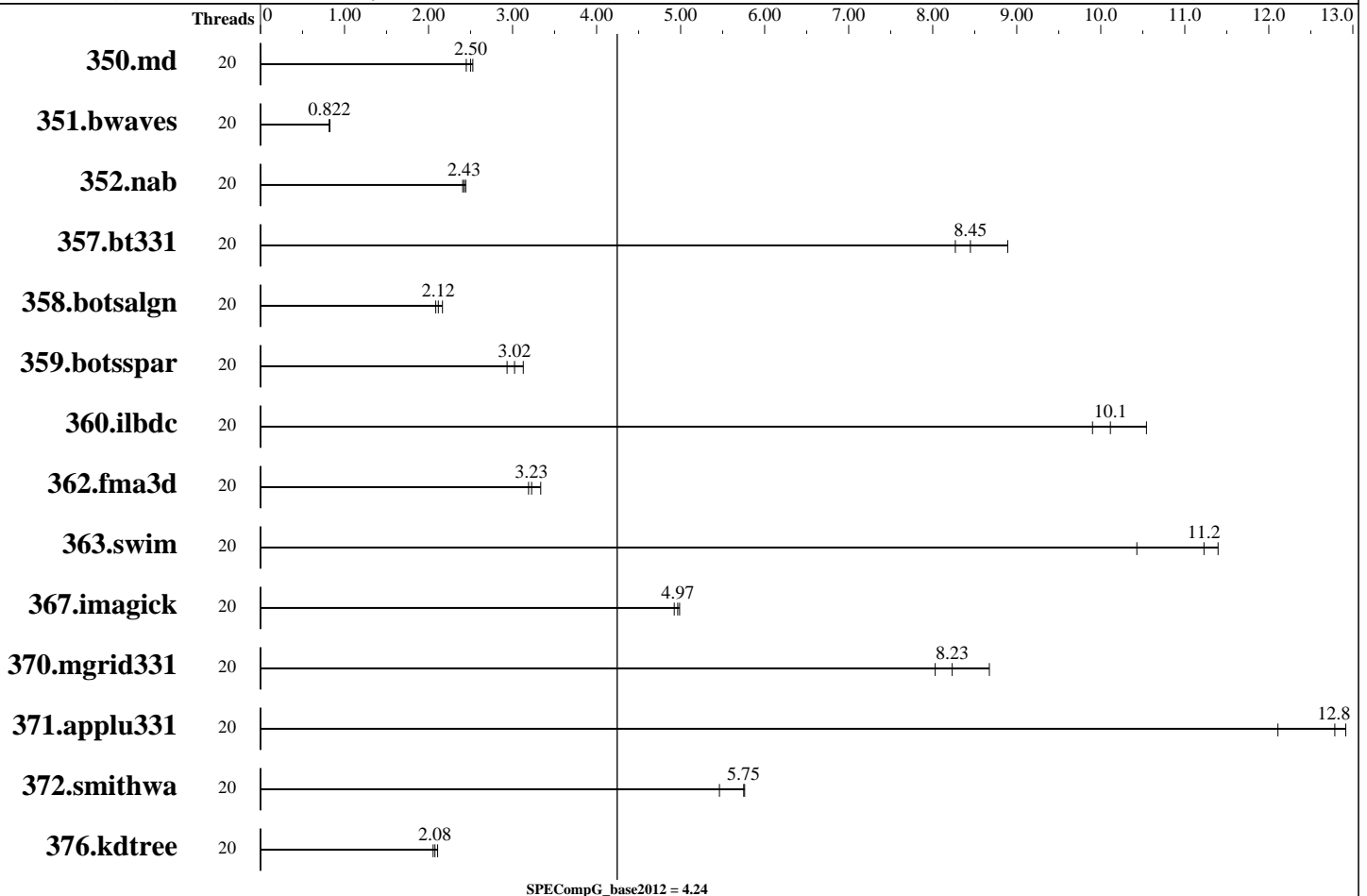SPECompG_base2012 =         4.24

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Minimum Peak Threads:    --
Maximum Peak Threads:    --

## Results Table

| Benchmark | Threads | Base Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350.md | 20 | 1891 | 2.45 | **1851** | **2.50** | 1832 | 2.53 | | | | | | | |
| 351.bwaves | 20 | 5535 | 0.818 | **5511** | **0.822** | 5491 | 0.825 | | | | | | | |
| 352.nab | 20 | 1616 | 2.41 | **1604** | **2.43** | 1593 | 2.44 | | | | | | | |
| 357.bt331 | 20 | 573 | 8.27 | 533 | 8.89 | **561** | **8.45** | | | | | | | |
| 358.botsalgn | 20 | 2085 | 2.09 | 2008 | 2.17 | **2055** | **2.12** | | | | | | | |
| 359.botsspar | 20 | 1679 | 3.13 | 1789 | 2.93 | **1736** | **3.02** | | | | | | | |
| 360.ilbdc | 20 | 360 | 9.90 | 338 | 10.5 | **352** | **10.1** | | | | | | | |
| 362.fma3d | 20 | 1191 | 3.19 | 1139 | 3.34 | **1178** | **3.23** | | | | | | | |
| 363.swim | 20 | 434 | 10.4 | 398 | 11.4 | **403** | **11.2** | | | | | | | |
| 367.imagick | 20 | **1416** | **4.97** | 1409 | 4.99 | 1428 | 4.92 | | | | | | | |
| 370.mgrid331 | 20 | 550 | 8.03 | **537** | **8.23** | 510 | 8.67 | | | | | | | |
| 371.applu331 | 20 | 500 | 12.1 | **474** | **12.8** | 469 | 12.9 | | | | | | | |
| 372.smithwa | 20 | 981 | 5.46 | **932** | **5.75** | 930 | 5.76 | | | | | | | |
| 376.kdtree | 20 | 2190 | 2.05 | 2135 | 2.11 | **2167** | **2.08** | | | | | | | |

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 Wed Apr 25 02:00:57 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 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  500T  109T  83% /gpfs/homeb

 (End of data from sysinfo program)
```

## General Notes

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

## Base Compiler Invocation

C benchmarks:
      clang

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## 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

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

Tested with SPEC OMP2012 v1.1.
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