SPEC® OMPG2012 Result

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NEC

(Test Sponsor: RWTH University Aachen)

NEC HPC 1812Rg

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 9.97

OMP2012 license:055A

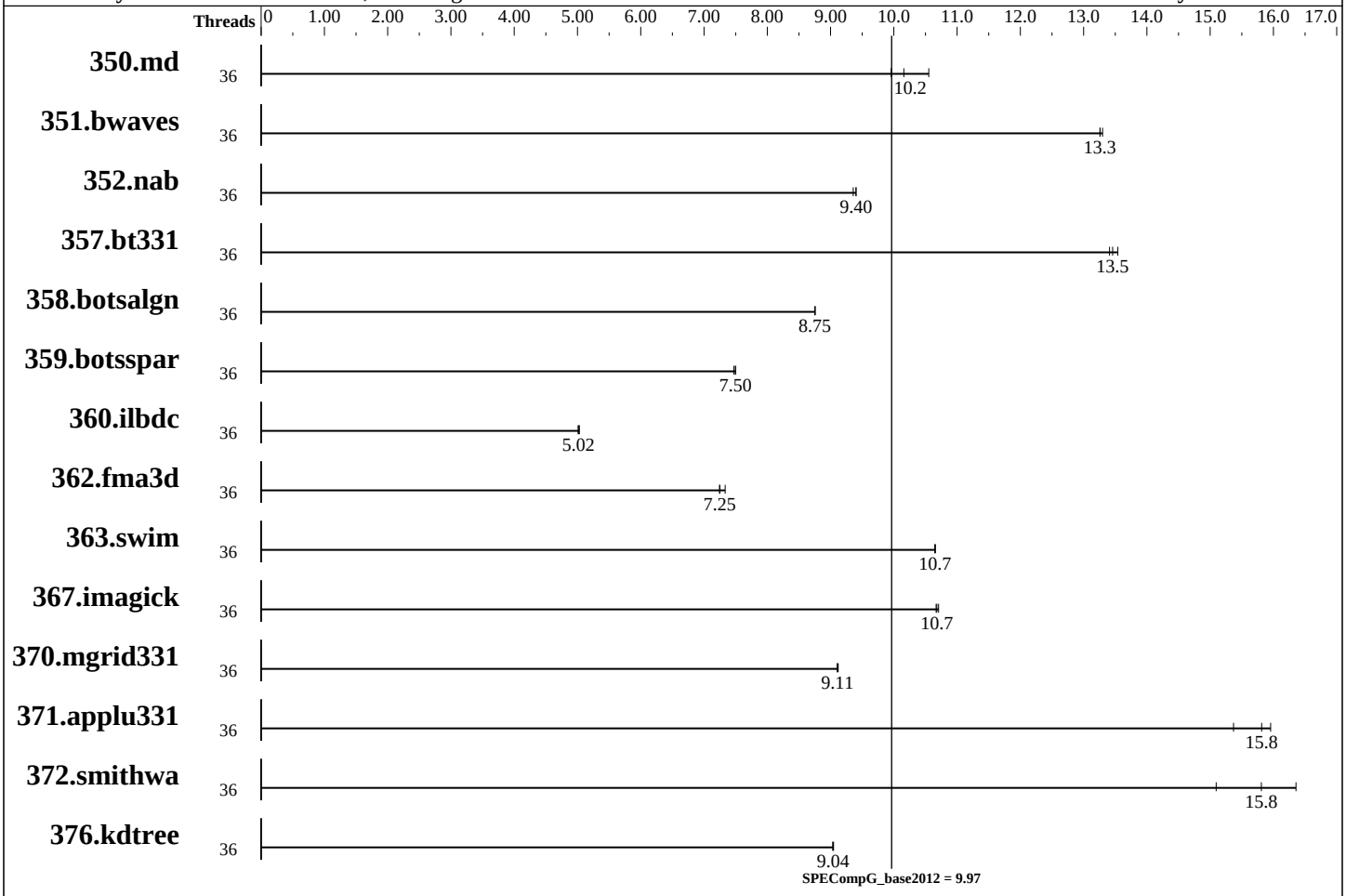
Test sponsor: RWTH University Aachen

Tested by: Jennifer Witham, Bo Wang

Test date: Sep-2017

Hardware Availability: Oct-2016

Software Availability: Feb-2016



Hardware

CPU Name:	Intel Xeon E7-8860 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.2 GHz (single)/2.2 GHz (all), 9.6 GT/s QPI, Hyper-Threading enabled
CPU MHz:	2200
CPU MHz Maximum:	3200
FPU:	Integrated
CPU(s) enabled:	144 cores, 8 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4,8 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	45 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64x16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	SATA, Samsung SM863, 2x1.92TB, NVMe SSD
Other Hardware:	None

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Software

Operating System:	CentOS Linux release 7.3.1611 (Core) 3.10.0-514.26.2.el7.x86_64
Compiler:	C/C++/Fortran: Version 16.0.2.181 of Intel Parallel Studio XE
Auto Parallel:	No
File System:	nfs
System State:	Multi-User
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	None

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Base Threads Run: 36
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	36	439	10.6	**456**	**10.2**	465	9.96							
351.bwaves	36	341	13.3	**342**	**13.3**	342	13.3							
352.nab	36	416	9.36	414	9.40	**414**	**9.40**							
357.bt331	36	353	13.4	350	13.5	**352**	**13.5**							
358.botsalgn	36	497	8.76	497	8.75	**497**	**8.75**							
359.botsspar	36	703	7.47	**700**	**7.50**	700	7.50							
360.ilbdc	36	**710**	**5.02**	711	5.01	708	5.03							
362.fma3d	36	524	7.25	518	7.33	**524**	**7.25**							
363.swim	36	425	10.6	**425**	**10.7**	425	10.7							
367.imagick	36	**658**	**10.7**	659	10.7	657	10.7							
370.mgrid331	36	**485**	**9.11**	485	9.12	486	9.10							
371.applu331	36	394	15.4	380	16.0	**383**	**15.8**							
372.smithwa	36	328	16.4	355	15.1	**339**	**15.8**							
376.kdtree	36	497	9.05	**498**	**9.04**	498	9.03							

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

Platform Notes

```
Sysinfo program /rwthfs/rz/cluster/home/jw331215/work/claixspec/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on lns01.hpc.itc.rwth-aachen.de Thu Sep 14 14:11:51 2017

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(R) CPU E7-8860 v4 @ 2.20GHz
      8 "physical id"s (chips)
      288 "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 : 18
      siblings  : 36
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
```

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Platform Notes (Continued)

```
        physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
        physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
        physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
        physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
     cache size : 46080 KB

  From /proc/meminfo
     MemTotal:       1056480792 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     CentOS Linux release 7.3.1611 (Core)

  From /etc/*release* /etc/*version*
     centos-release: CentOS Linux release 7.3.1611 (Core)
     centos-release-upstream: Derived from Red Hat Enterprise Linux 7.3 (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 7.3.1611 (Core)
     system-release: CentOS Linux release 7.3.1611 (Core)
     system-release-cpe: cpe:/o:centos:centos:7

  uname -a:
     Linux lns01.hpc.itc.rwth-aachen.de 3.10.0-514.26.2.el7.x86_64 #1 SMP Tue Jul
     4 15:04:05 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Aug 7 19:49

  SPEC is set to: /rwthfs/rz/cluster/home/jw331215/work/claixspec
     Filesystem                                     Type  Size  Used Avail Use%
     Mounted on
     isi.isi.hpc.itc.rwth-aachen.de:/home/jw331215 nfs   150G   65G   86G  43%
     /rwthfs/rz/cluster/home/jw331215
  Additional information from dmidecode:

     Warning: Use caution when you interpret this section. The 'dmidecode' program
     reads system data which is "intended to allow hardware to be accurately
     determined", but the intent may not be met, as there are frequent changes to
     hardware, firmware, and the "DMTF SMBIOS" standard.


  (End of data from sysinfo program)
```

General Notes

```
BIOS settings:
  Intel Hyper-Threading Technology (SMT): Enabled
  Intel Turbo Boost Technology (Turbo)  : Enabled
  ENV_OMP_SCHEDULE=static
  ENV_KMP_BLOCKTIME=200
  ENV_KMP_STACKSIZE=8192M
  ENV_OMP_DYNAMIC=FALSE
```

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 -openmp -ipo -xCORE-AVX2 -ansi-alias`

C++ benchmarks:
`-O3 -openmp -ipo -xCORE-AVX2 -ansi-alias`

Fortran benchmarks:
`-O3 -openmp -ipo -xCORE-AVX2 -align all`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/omp2012/flags/Intel-linux64.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/omp2012/flags/Intel-linux64.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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