SPEC® OMPG2012 Result

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NEC

(Test Sponsor: RWTH University Aachen)

NEC HPC 1812Rg

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 7.65

OMP2012 license: 055A

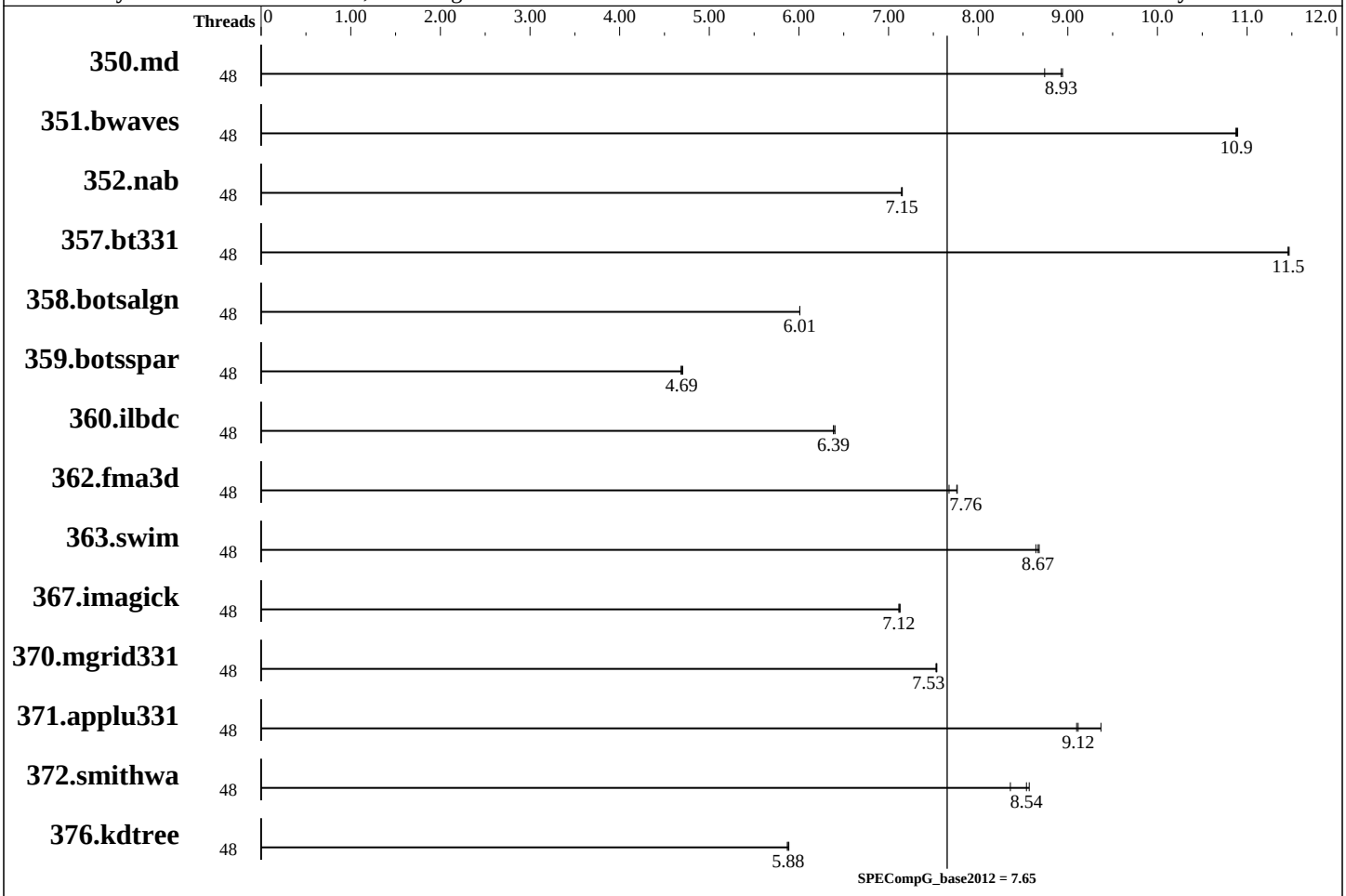
Test sponsor: RWTH University Aachen

Tested by: Jennifer Witham, Bo Wang

Test date: Sep-2017

Hardware Availability: Oct-2016

Software Availability: Feb-2016



Hardware

CPU Name:	Intel Xeon E5-2650 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 2.9 GHz (single)/2.2 GHz (all), 9.6 GT/s QPI, Hyper-Threading enabled
CPU MHz:	2200
CPU MHz Maximum:	2900
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable:	1-2 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx8 PC4-2400T-R)
Disk Subsystem:	SATA, Samsung SM863, 120GB, SSD
Other Hardware:	None

Continued on next page

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: 48
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	48	**519**	**8.93**	530	8.74	518	8.94							
351.bwaves	48	**416**	**10.9**	417	10.9	416	10.9							
352.nab	48	**544**	**7.15**	544	7.15	545	7.14							
357.bt331	48	413	11.5	**414**	**11.5**	414	11.5							
358.botsalgn	48	**724**	**6.01**	724	6.01	724	6.01							
359.botsspar	48	**1119**	**4.69**	1116	4.70	1121	4.68							
360.ilbdc	48	**557**	**6.39**	557	6.39	556	6.40							
362.fma3d	48	**490**	**7.76**	495	7.67	489	7.77							
363.swim	48	522	8.68	524	8.64	**523**	**8.67**							
367.imagick	48	988	7.12	986	7.13	**988**	**7.12**							
370.mgrid331	48	587	7.53	586	7.54	**587**	**7.53**							
371.applu331	48	666	9.10	**665**	**9.12**	647	9.37							
372.smithwa	48	**628**	**8.54**	625	8.57	641	8.36							
376.kdtree	48	767	5.87	**765**	**5.88**	764	5.89							

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 lnm357.hpc.itc.rwth-aachen.de Wed Sep 13 10:46:31 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 E5-2650 v4 @ 2.20GHz
      2 "physical id"s (chips)
      48 "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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
   cache size : 30720 KB
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       131744940 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 lnm357.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 23:17

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   64G   87G  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
```

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General Notes (Continued)

```
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 other inquiries, please contact webmaster@spec.org.

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