SPEC® OMPG2012 Result
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NEC
(Test Sponsor: RWTH University Aachen)

NEC HPC 1812Rg

SPECompG_peak2012 = Not Run

SPECompG_base2012 =   33.6
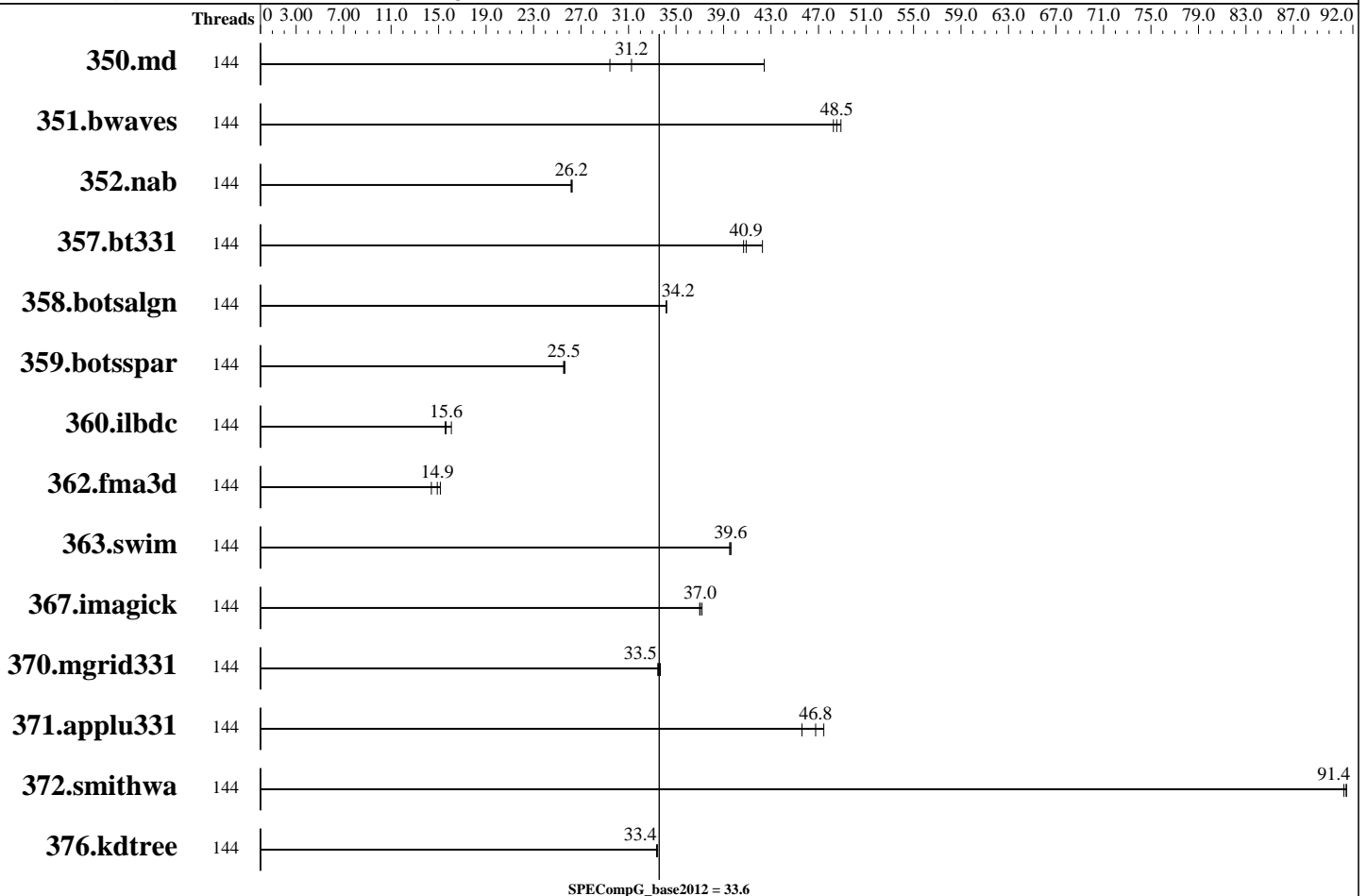
OMP2012 license:055A

Test sponsor: RWTH University Aachen

Tested by: Jennifer Witham, Bo Wang

Test date: Sep-2017

Hardware Availability: Oct-2016

Software Availability: Feb-2016

Benchmark	Threads	Result
350.md	144	31.2
351.bwaves	144	48.5
352.nab	144	26.2
357.bt331	144	40.9
358.botsalgn	144	34.2
359.botsspar	144	25.5
360.ilbdc	144	15.6
362.fma3d	144	14.9
363.swim	144	39.6
367.imagick	144	37.0
370.mgrid331	144	33.5
371.applu331	144	46.8
372.smithwa	144	91.4
376.kdtree	144	33.4

SPECompG_base2012 = 33.6

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

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: 144
Minimum Peak Threads: --
Maximum Peak Threads: --

Results Table

Benchmark	Base Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	144	**148**	**31.2**	157	29.4	109	42.4							
351.bwaves	144	93.9	48.3	**93.3**	**48.5**	92.7	48.9							
352.nab	144	148	26.3	**149**	**26.2**	149	26.2							
357.bt331	144	**116**	**40.9**	117	40.7	112	42.3							
358.botsalgn	144	127	34.2	127	34.2	**127**	**34.2**							
359.botsspar	144	205	25.6	**205**	**25.5**	206	25.5							
360.ilbdc	144	229	15.6	**228**	**15.6**	221	16.1							
362.fma3d	144	251	15.1	264	14.4	**255**	**14.9**							
363.swim	144	**114**	**39.6**	115	39.5	114	39.6							
367.imagick	144	189	37.2	**190**	**37.0**	190	37.0							
370.mgrid331	144	132	33.5	131	33.7	**132**	**33.5**							
371.applu331	144	**130**	**46.8**	128	47.4	133	45.6							
372.smithwa	144	58.7	91.3	58.6	91.5	**58.6**	**91.4**							
376.kdtree	144	**135**	**33.4**	135	33.4	135	33.4							

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 lns08.hpc.itc.rwth-aachen.de Fri Sep  8 12:50:00 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:       1056480760 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 lns08.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 16:51

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  44%
  /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)
```

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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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Tested by:	Jennifer Witham, Bo Wang	**Software Availability:**	Feb-2016

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

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