



# SPEC® OMPG2012 Result

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## NEC

(Test Sponsor: RWTH University Aachen)

SPECompG\_peak2012 = Not Run

## NEC HPC 1812Rg

SPECompG\_base2012 = 7.22

OMP2012 license:055A

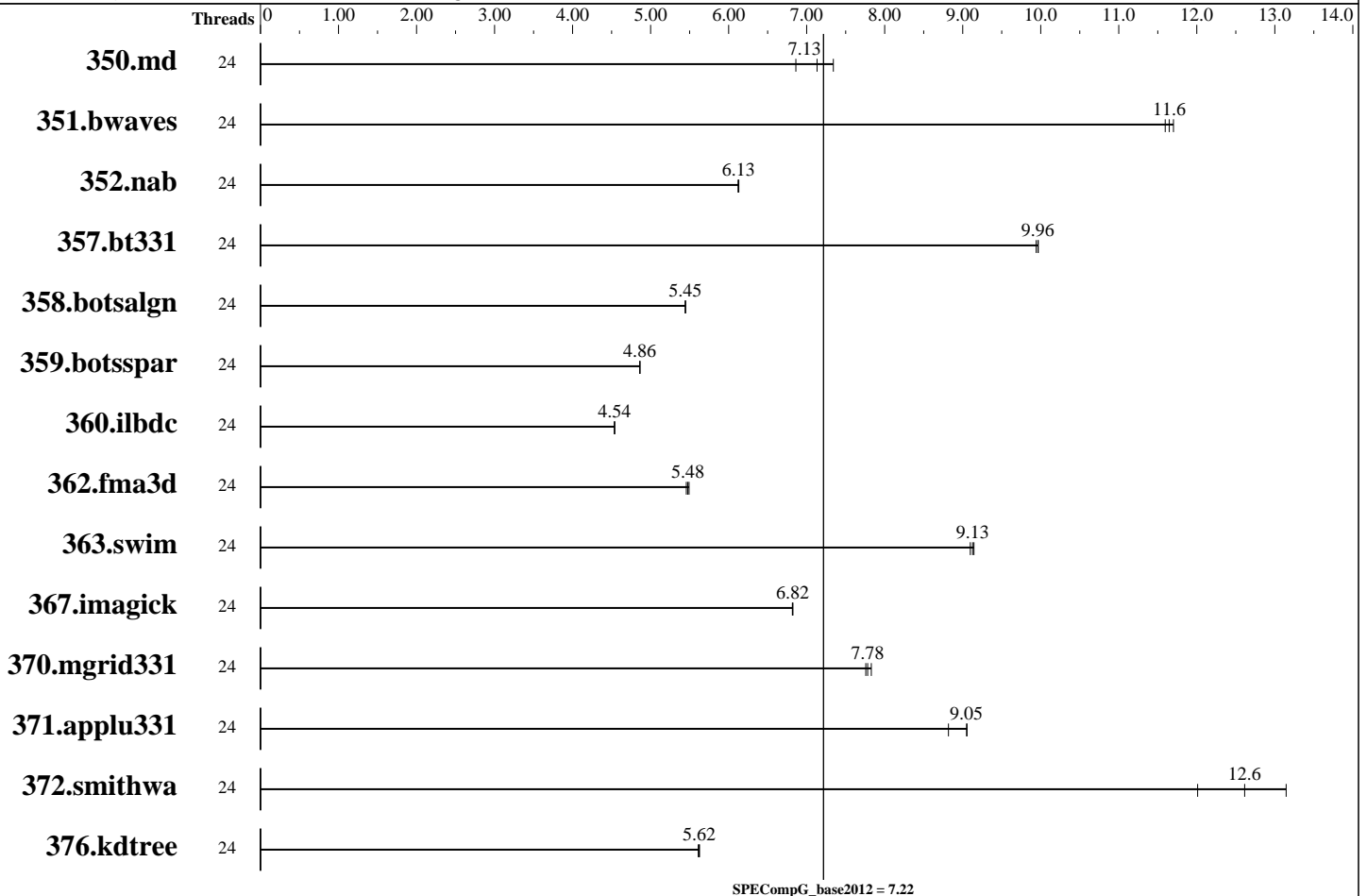
Test sponsor: RWTH University Aachen

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

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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: 24

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	24	<b>649</b>	<b>7.13</b>	675	6.86	631	7.34							
351.bwaves	24	<b>389</b>	<b>11.6</b>	387	11.7	391	11.6							
352.nab	24	<b>635</b>	<b>6.13</b>	635	6.13	635	6.12							
357.bt331	24	475	9.97	<b>476</b>	<b>9.96</b>	477	9.94							
358.botsalgn	24	<b>799</b>	<b>5.45</b>	799	5.45	799	5.44							
359.botsspar	24	1080	4.86	1080	4.86	<b>1080</b>	<b>4.86</b>							
360.ilbdc	24	785	4.54	784	4.54	<b>784</b>	<b>4.54</b>							
362.fma3d	24	696	5.46	692	5.49	<b>694</b>	<b>5.48</b>							
363.swim	24	<b>496</b>	<b>9.13</b>	495	9.14	498	9.10							
367.imagick	24	<b>1031</b>	<b>6.82</b>	1031	6.82	1030	6.82							
370.mgrid331	24	<b>568</b>	<b>7.78</b>	565	7.83	570	7.76							
371.applu331	24	687	8.82	669	9.06	<b>670</b>	<b>9.05</b>							
372.smithwa	24	408	13.1	<b>425</b>	<b>12.6</b>	446	12.0							
376.kdtree	24	<b>801</b>	<b>5.62</b>	802	5.61	800	5.63							

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/claixspe/Docs/sysinfo  
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)  
running on lnm482.hpc.itc.rwth-aachen.de Thu Sep 14 10:42:14 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
```

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### 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 lnm482.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 9 01:52

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
```

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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: -mmodel=medium  
363.swim: -mmodel=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](mailto:webmaster@spec.org).

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