



# SPEC® OMPG2012 Result

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## Huawei

Huawei Kunlun 9008 V5 (Intel Xeon Platinum 8280, 2.7 GHz)

SPECompG\_peak2012 = Not Run

SPECompG\_base2012 = 48.6

OMP2012 license:27

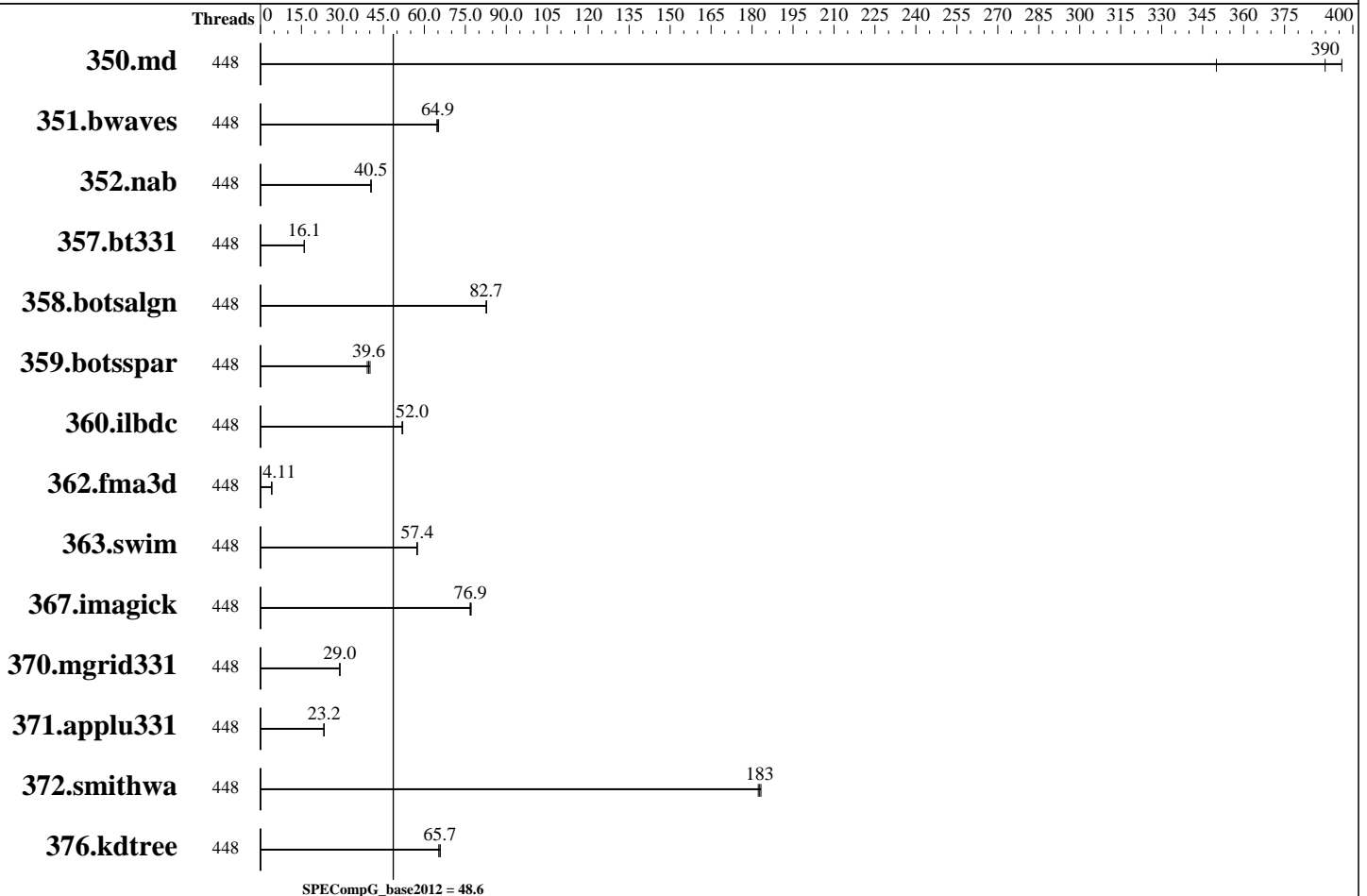
Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2019

Hardware Availability: Jun-2019

Software Availability: Feb-2019



### Hardware

CPU Name: Intel Xeon Platinum 8280  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 2700  
 CPU MHz Maximum: 4000  
 FPU: Integrated  
 CPU(s) enabled: 224 cores, 8 chips, 28 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4,6,8 Chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: 38.5 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 1536 GB (48 x 32 GB 2Rx4 PC4-2933Y-R)  
 Disk Subsystem: 2x900 GB 10 K RPM SAS HDD,RAID 0  
 Other Hardware: None  
 Base Threads Run: 448  
 Minimum Peak Threads: --

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 12 SP4 4.12.14-94.41-default  
 Compiler: C/C++: Version 19.0.1.144 of Intel C++ Studio XE for Linux;  
 Fortran: Version 19.0.1.144 of Intel Fortran  
 Auto Parallel: No  
 File System: btrfs  
 System State: Default  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other Software: None



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Maximum Peak Threads: --

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	448	13.2	350	11.7	396	<b><u>11.9</u></b>	<b><u>390</u></b>							
351.bwaves	448	<b><u>69.8</u></b>	<b><u>64.9</u></b>	70.1	64.6	69.5	65.2							
352.nab	448	96.1	40.5	96.1	40.5	<b><u>96.1</u></b>	<b><u>40.5</u></b>							
357.bt331	448	296	16.0	295	16.1	<b><u>295</u></b>	<b><u>16.1</u></b>							
358.botsalgn	448	52.5	82.8	52.6	82.6	<b><u>52.6</u></b>	<b><u>82.7</u></b>							
359.botsspar	448	131	40.1	<b><u>133</u></b>	<b><u>39.6</u></b>	134	39.1							
360.ilbdc	448	68.3	52.1	68.6	51.9	<b><u>68.5</u></b>	<b><u>52.0</u></b>							
362.fma3d	448	<b><u>925</u></b>	<b><u>4.11</u></b>	925	4.11	928	4.10							
363.swim	448	78.9	57.4	79.1	57.2	<b><u>78.9</u></b>	<b><u>57.4</u></b>							
367.imagick	448	91.1	77.1	<b><u>91.4</u></b>	<b><u>76.9</u></b>	91.6	76.7							
370.mgrid331	448	152	29.0	152	29.1	<b><u>152</u></b>	<b><u>29.0</u></b>							
371.applu331	448	261	23.2	260	23.3	<b><u>261</u></b>	<b><u>23.2</u></b>							
372.smithwa	448	29.4	182	29.2	183	<b><u>29.3</u></b>	<b><u>183</u></b>							
376.kdtree	448	<b><u>68.5</u></b>	<b><u>65.7</u></b>	68.4	65.8	68.9	65.3							

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

## Platform Notes

```
Sysinfo program /home/omp/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 $# 8f8c0fe9e19c658963a1e67685e50647
running on linux-2yo1 Mon Mar 4 14:11:43 2019
```

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 Xeon Platinum 8280 CPU @ 2.70GHz
8 "physical id"s (chips)
448 "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 : 28
siblings : 56
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
```

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### Platform Notes (Continued)

```

physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
cache size : 39424 KB

```

From /proc/meminfo

```

MemTotal:      1583360772 kB
HugePages_Total:    524288
Hugepagesize:      2048 kB

```

/usr/bin/lsb\_release -d

SUSE Linux Enterprise Server 12 SP4

From /etc/\*release\* /etc/\*version\*

SuSE-release:

```

SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 4

```

# This file is deprecated and will be removed in a future service pack or release.

# Please check /etc/os-release for details about this release.

os-release:

```

NAME="SLES"
VERSION="12-SP4"
VERSION_ID="12.4"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp4"

```

uname -a:

```

Linux linux-2yo1 4.12.14-94.41-default #1 SMP Wed Oct 31 12:25:04 UTC 2018
(3090901) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 5 Mar 4 14:09

SPEC is set to: /home/omp

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda4        xfs       1.6T   52G  1.5T   4% /home

```

Additional information from dmidecode:

BIOS INSYDE Corp. 9.25 02/15/2019

Memory:

```

48x NO DIMM NO DIMM
48x Samsung M393A4K40CB2-CVF 32 GB 2933 MHz 2 rank

```

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## Platform Notes (Continued)

(End of data from sysinfo program)

## General Notes

Power profile set with:  
cpupower -c all frequency-set -g performance

System settings notes:  
Intel Turbo Boost Technology (Turbo) : Enabled  
Memory RAS Configuration set to Maximum Performance

General Notes and Enviroment variables

```
ENV_KMP_BLOCKTIME=infinite
ENV_KMP_DETERMINISTIC_REDUCTION=1
ENV_OMP_DYNAMIC=FALSE
ENV_KMP_LIBRARY=turnaround
ENV_KMP_SCHEDULE=static,balanced
ENV_KMP_STACKSIZE=256M
ENV_OMP_NESTED=FALSE
ENV_OMP_NUM_THREADS=448
```

General base OMP Library Settings

```
ENV_KMP_AFFINITY=granularity=fine,proclist=[0-27,224-251,28-55,252-279,56-83,280-307,84-111,308-335,112-139,336-363,140-167,364-391,168-195,392-419,196-223,420-447],explicit
```

BIOS settings:

XPT Prefetch Set to Enabled

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort



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## Base Portability Flags

350.md: -FR  
357.bt331: -mcmmodel=medium  
363.swim: -mcmmodel=medium  
367.imagick: -std=c99

## Base Optimization Flags

C benchmarks:

-O3 -qopenmp -ipo -xCORE-AVX512 -fp-model fast=2 -no-prec-div  
-no-prec-sqrt -ansi-alias

C++ benchmarks:

-O3 -qopenmp -ipo -xCORE-AVX512 -fp-model fast=2 -no-prec-div  
-no-prec-sqrt -ansi-alias

Fortran benchmarks:

-O3 -qopenmp -ipo -xCORE-AVX512 -fp-model fast=2 -no-prec-div  
-no-prec-sqrt -align all

The flags files that were used to format this result can be browsed at

[http://www.spec.org/omp2012/flags/Huawei\\_Intel-ic17.0-linux64.html](http://www.spec.org/omp2012/flags/Huawei_Intel-ic17.0-linux64.html)

<http://www.spec.org/omp2012/flags/Huawei-Platform-Settings-SKL-V1.7.html>

You can also download the XML flags sources by saving the following links:

[http://www.spec.org/omp2012/flags/Huawei\\_Intel-ic17.0-linux64.xml](http://www.spec.org/omp2012/flags/Huawei_Intel-ic17.0-linux64.xml)

<http://www.spec.org/omp2012/flags/Huawei-Platform-Settings-SKL-V1.7.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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