SPEC® OMPG2012 Result

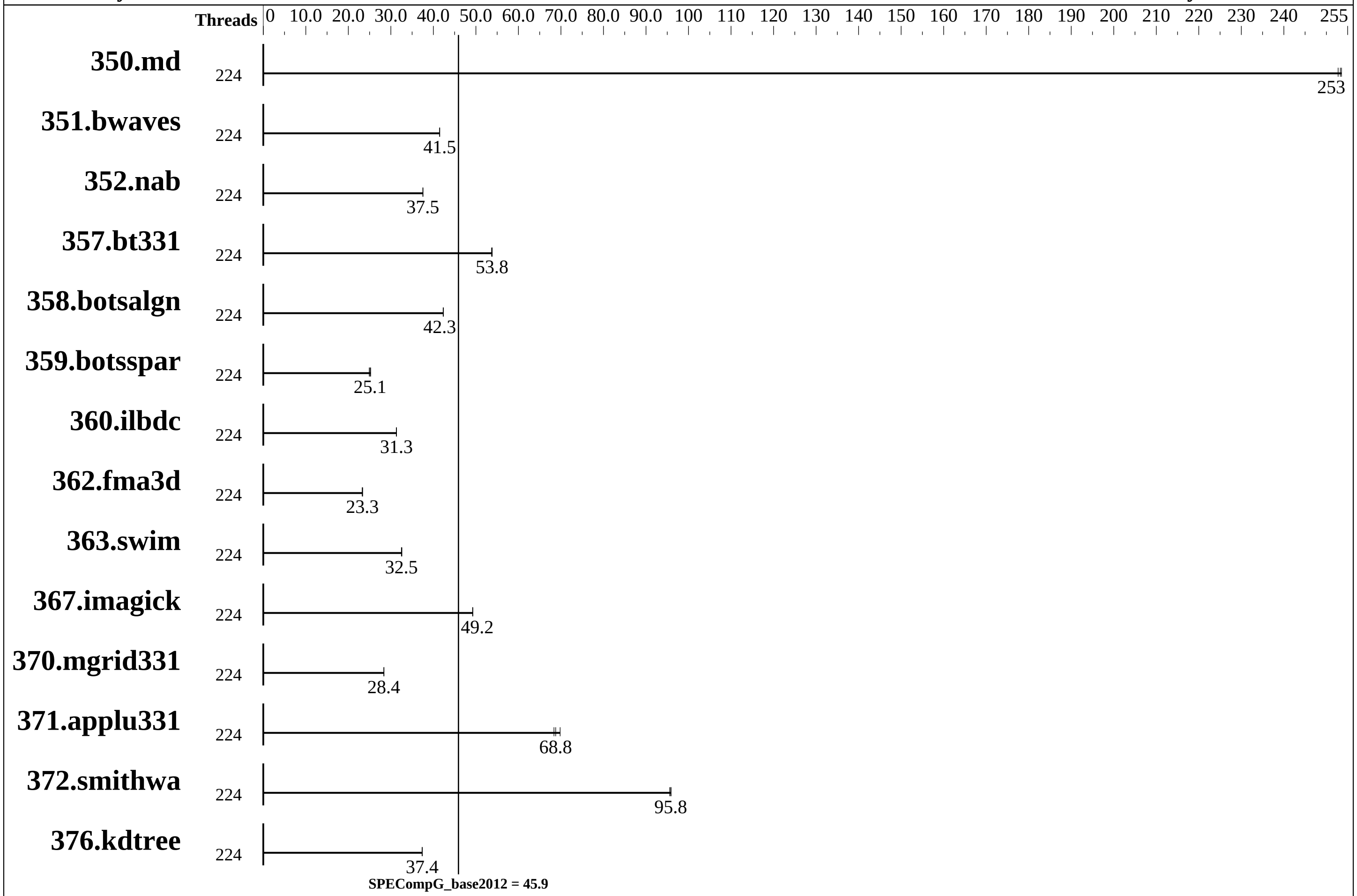
Huawei

Huawei 2488H V5 (Intel Xeon Platinum 8280, 2.7 GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 45.9

OMP2012 license:	27	**Test date:**	Feb-2019
Test sponsor:	Huawei	**Hardware Availability:**	Apr-2019
Tested by:	Huawei	**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:	112 cores, 4 chips, 28 cores/chip, 2 threads/core
CPU(s) orderable:	2 to 4 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:	1x900 GB 10 K RPM SAS HDD,RAID 0
Other Hardware:	None
Base Threads Run:	224
Minimum Peak Threads:	--

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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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Test sponsor: Huawei
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Test date: Feb-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Maximum Peak Threads: --

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	224	18.3	253	**18.3**	**253**	18.3	254							
351.bwaves	224	**109**	**41.5**	109	41.5	109	41.5							
352.nab	224	**104**	**37.5**	104	37.5	104	37.6							
357.bt331	224	**88.1**	**53.8**	88.0	53.8	88.3	53.7							
358.botsalgn	224	103	42.3	**103**	**42.3**	103	42.3							
359.botsspar	224	208	25.3	**209**	**25.1**	211	24.9							
360.ilbdc	224	114	31.3	**114**	**31.3**	114	31.3							
362.fma3d	224	**163**	**23.3**	163	23.3	163	23.4							
363.swim	224	**139**	**32.5**	139	32.6	139	32.5							
367.imagick	224	143	49.2	**143**	**49.2**	143	49.3							
370.mgrid331	224	**156**	**28.4**	156	28.4	156	28.4							
371.applu331	224	**88.1**	**68.8**	88.6	68.4	86.8	69.8							
372.smithwa	224	56.1	95.6	55.9	95.9	**55.9**	**95.8**							
376.kdtree	224	120	37.4	120	37.4	**120**	**37.4**							

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-7ven Wed Feb 27 16:47:16 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
      4 "physical id"s (chips)
      224 "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
     cache size : 39424 KB

  From /proc/meminfo
     MemTotal:       1583460908 kB
     HugePages_Total:   262144
     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-7ven 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 Feb 27 16:04

  SPEC is set to: /home/omp
     Filesystem     Type   Size  Used Avail Use% Mounted on
     /dev/sda4      btrfs  696G   27G  668G   4% /home

  Additional information from dmidecode:
    BIOS INSYDE Corp. 6.36 02/15/2019
    Memory:
     48x Samsung M393A4K40CB2-CVF 32 GB 2933 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

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

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General Notes (Continued)

```
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=224

========================================================================
General base OMP Library Settings
  ENV_KMP_AFFINITY=granularity=fine,proclist=[0-27,112-139,28-55,140-167,56-83,168-195,84-111,196-223],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

Base Portability Flags

350.md: -FR
357.bt331: -mcmodel=medium
363.swim: -mcmodel=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-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-Platform-Settings-SKL-V1.7.xml

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