SPEC® OMPG2012 Result

Huawei

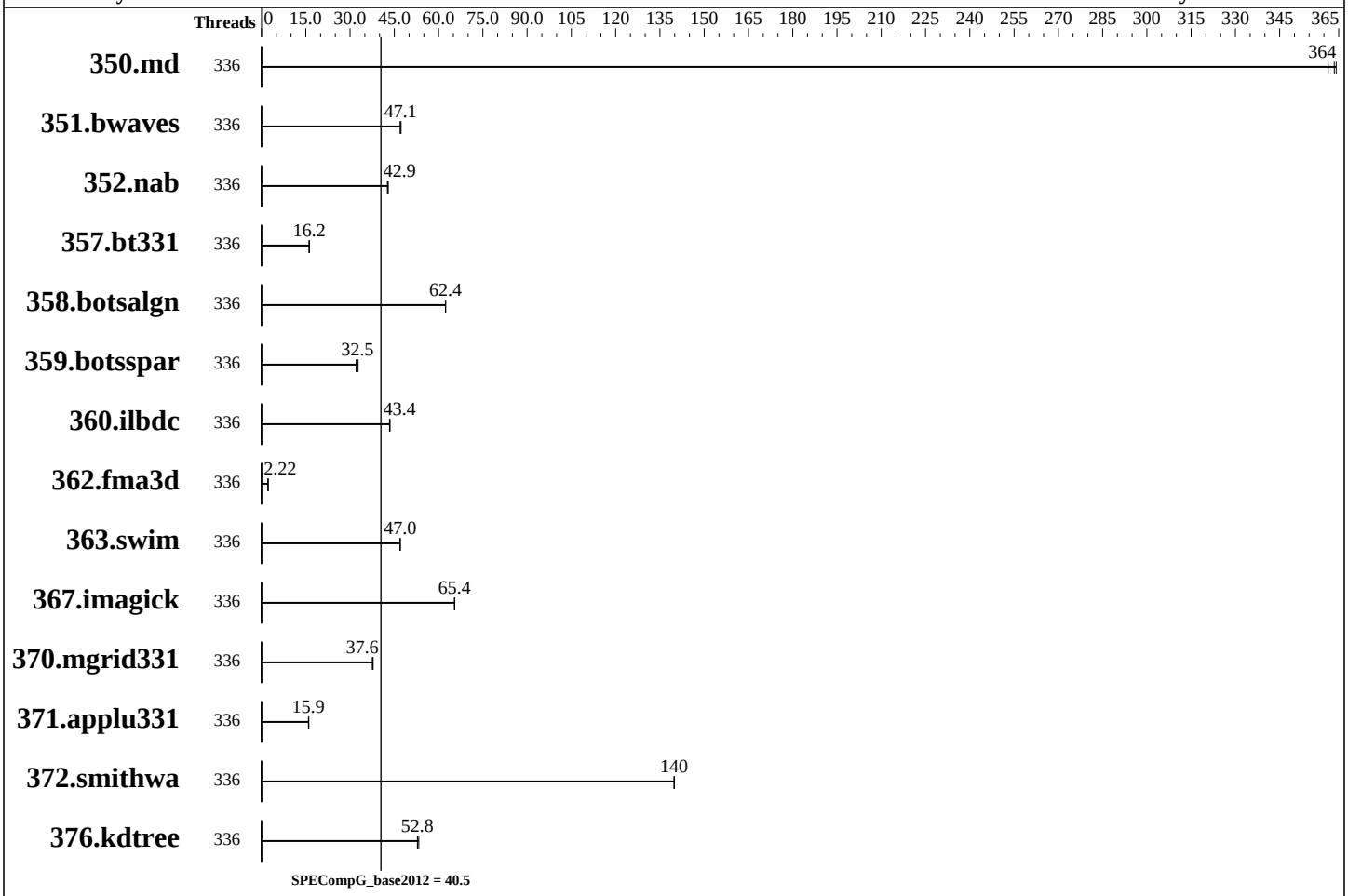
Huawei Kunlun 9008 V5 (Intel Xeon Platinum 8280, 2.7 GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 40.5

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:	168 cores, 6 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:	1152 GB (36 x 32 GB 2Rx4 PC4-2933Y-R)
Disk Subsystem:	2x900 GB 10 K RPM SAS HDD,RAID 0
Other Hardware:	None
Base Threads Run:	336
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

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	336	**12.7**	**364**	12.8	361	12.7	364							
351.bwaves	336	**96.2**	**47.1**	96.4	47.0	95.8	47.3							
352.nab	336	91.2	42.6	**90.8**	**42.9**	90.7	42.9							
357.bt331	336	294	16.1	293	16.2	**293**	**16.2**							
358.botsalgn	336	**69.8**	**62.4**	69.8	62.3	69.7	62.4							
359.botsspar	336	164	32.0	160	32.7	**162**	**32.5**							
360.ilbdc	336	81.7	43.6	82.1	43.4	**82.1**	**43.4**							
362.fma3d	336	1724	2.20	**1715**	**2.22**	1714	2.22							
363.swim	336	96.6	46.9	**96.4**	**47.0**	96.4	47.0							
367.imagick	336	108	65.4	**108**	**65.4**	107	65.5							
370.mgrid331	336	118	37.6	**117**	**37.6**	117	37.8							
371.applu331	336	381	15.9	**380**	**15.9**	378	16.0							
372.smithwa	336	**38.3**	**140**	38.3	140	38.3	140							
376.kdtree	336	**85.2**	**52.8**	84.5	53.3	85.2	52.8							

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 Tue Mar 12 09:01:40 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
      6 "physical id"s (chips)
      336 "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
     cache size : 39424 KB

  From /proc/meminfo
     MemTotal:       1186999604 kB
     HugePages_Total:   24576
     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 12 08:56

  SPEC is set to: /home/omp
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda4      xfs   1.6T   53G  1.5T   4% /home

  Additional information from dmidecode:
    BIOS INSYDE Corp. 9.25 02/15/2019
    Memory:
     60x NO DIMM NO DIMM
     36x 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

 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=336

 ========================================================================
 General base OMP Library Settings
  ENV_KMP_AFFINITY=granularity=fine,proclist=[0-27,168-195,28-55,196-223,56-83,224-251,84-111,252-279,112-139,280-307,140-167,308-335],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

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Base Portability Flags (Continued)

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

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

Tested with SPEC OMP2012 v1.0.
Report generated on Tue Apr 2 13:36:29 2019 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 2 April 2019.