SPEC® OMPG2012 Result

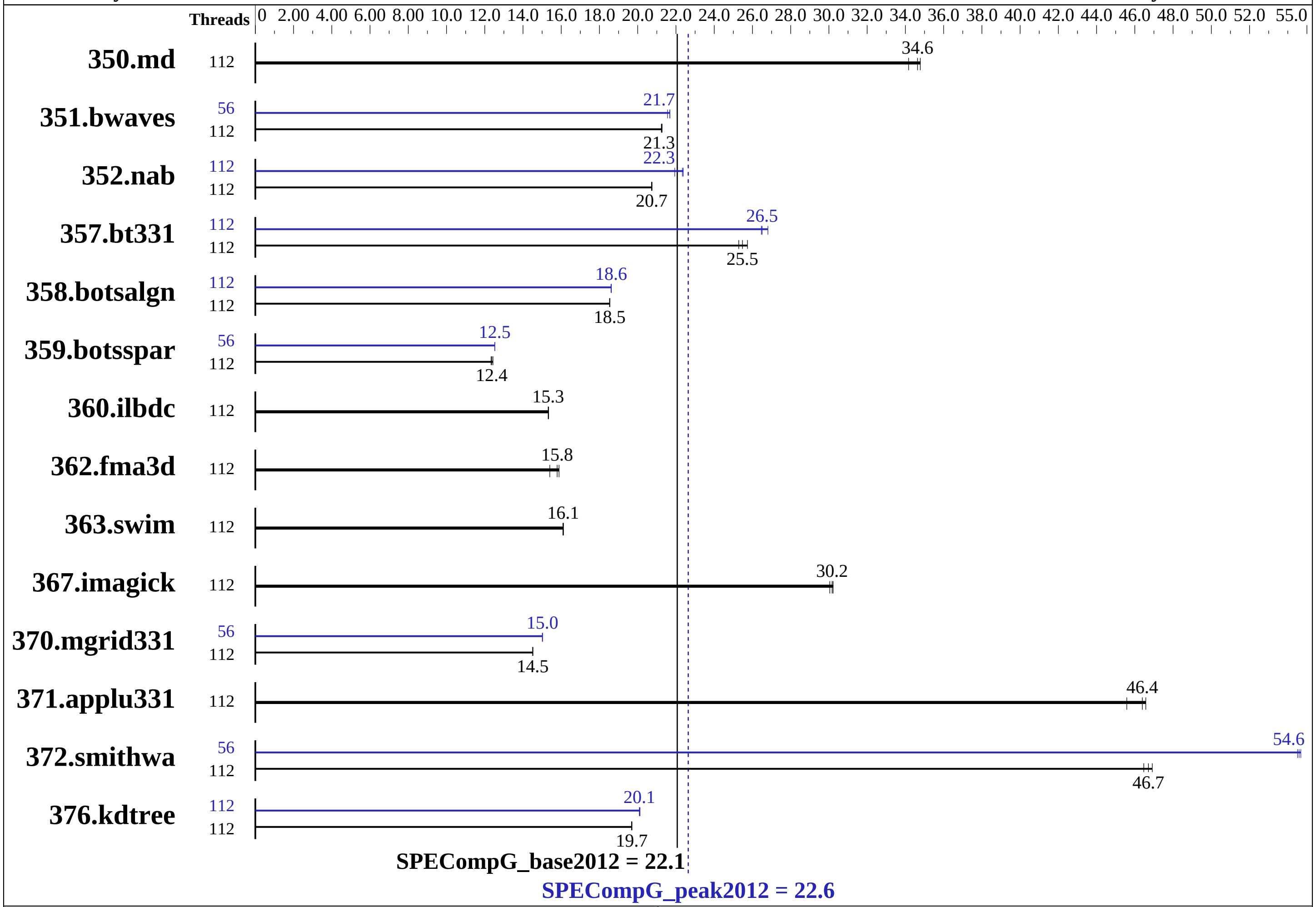
Huawei

Huawei CH121 V5 (Intel Xeon Platinum 8180)

SPECompG_peak2012 = 22.6

SPECompG_base2012 = 22.1

OMP2012 license:	27	**Test date:**	Jun-2017
Test sponsor:	Huawei	**Hardware Availability:**	Jul-2017
Tested by:	Huawei	**Software Availability:**	Feb-2017



Hardware

CPU Name:	Intel Xeon Platinum 8180
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2500
CPU MHz Maximum:	3800
FPU:	Integrated
CPU(s) enabled:	56 cores, 2 chips, 28 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:	1 MB I+D on chip per core
L3 Cache:	38.5 MB I+D on chip per chip
Other Cache:	None
Memory:	384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem:	1 X 1.2 TB SAS, 10000 RPM
Other Hardware:	None
Base Threads Run:	112
Minimum Peak Threads:	56

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 12 SP2 linux-jm4z 4.4.21-69-default
Compiler:	C/C++/Fortran: Version 17.0.4.196 of Intel Composer XE for Linux Build 20170411
Auto Parallel:	No
File System:	ext4
System State:	run level 3
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	None

SPEC OMPG2012 Result

Huawei

Huawei CH121 V5 (Intel Xeon Platinum 8180)

SPECompG_peak2012 = 22.6

SPECompG_base2012 = 22.1

OMP2012 license: 27 **Test date:** Jun-2017

Test sponsor: Huawei **Hardware Availability:** Jul-2017

Tested by: Huawei **Software Availability:** Feb-2017

Maximum Peak Threads: 112

Results Table

Benchmark	Base Threads	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Threads	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
350.md	112	136	34.2	**134**	**34.6**	133	34.8	112	136	34.2	**134**	**34.6**	133	34.8
351.bwaves	112	213	21.2	213	21.3	**213**	**21.3**	56	210	21.6	209	21.7	**209**	**21.7**
352.nab	112	188	20.7	**188**	**20.7**	187	20.8	112	**174**	**22.3**	177	21.9	174	22.4
357.bt331	112	187	25.3	184	25.7	**186**	**25.5**	112	**179**	**26.5**	177	26.8	179	26.5
358.botsalgn	112	235	18.5	**235**	**18.5**	235	18.5	112	234	18.6	234	18.6	**234**	**18.6**
359.botsspar	112	426	12.3	422	12.4	**424**	**12.4**	56	419	12.5	**419**	**12.5**	419	12.5
360.ilbdc	112	232	15.3	232	15.3	**232**	**15.3**	112	232	15.3	232	15.3	**232**	**15.3**
362.fma3d	112	247	15.4	**241**	**15.8**	239	15.9	112	247	15.4	**241**	**15.8**	239	15.9
363.swim	112	281	16.1	**281**	**16.1**	282	16.1	112	281	16.1	**281**	**16.1**	282	16.1
367.imagick	112	**233**	**30.2**	233	30.2	234	30.0	112	**233**	**30.2**	233	30.2	234	30.0
370.mgrid331	112	304	14.5	305	14.5	**305**	**14.5**	56	294	15.0	**294**	**15.0**	295	15.0
371.applu331	112	130	46.6	**131**	**46.4**	133	45.6	112	130	46.6	**131**	**46.4**	133	45.6
372.smithwa	112	**115**	**46.7**	115	46.5	114	46.9	56	98.0	54.7	**98.2**	**54.6**	98.3	54.5
376.kdtree	112	228	19.7	229	19.7	**228**	**19.7**	112	224	20.1	**224**	**20.1**	224	20.1

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

Platform Notes

```
Sysinfo program /specomp2012/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on linux-jm4z Tue Jun 20 00:07:03 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) Platinum 8180 CPU @ 2.50GHz
      2 "physical id"s (chips)
      112 "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
   cache size : 39424 KB
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       394122080 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 2
      # 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-SP2"
      VERSION_ID="12.2"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
   Linux linux-jm4z 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
   (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 17 16:37

SPEC is set to: /specomp2012
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      xfs   828G   57G  772G   7% /

Additional information from dmidecode:
  BIOS INSYDE Corp. 0.10 03/09/2017
  Memory:
   24x Samsung M393A2K43BB1-CTD 16 GB 2666 MHz 2 rank

(End of data from sysinfo program)
```

General Notes

```
========================================================================
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  BIOS settings notes:
  Power Policy set to Performance
  Set Patrol Scrub to Disable
  General OMP Library Settings
  ENV_KMP_LIBRARY=turnaround
  ENV_OMP_SCHEDULE=static
  ENV_KMP_STACKSIZE=256M
```

Continued on next page

General Notes (Continued)

```
  ENV_OMP_DYNAMIC=FALSE
  ENV_OMP_NESTED=FALSE
  ENV_KMP_AFFINITY=compact,0
========================================================================
Per benchmark peak OMP Library Settings

========================================================================
351.bwaves:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=static,1
========================================================================
357.bt331:peak
  ENV_OMP_SCHEDULE=static,1
========================================================================
359.botsspar:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=guided

========================================================================
370.mgrid331:peak
  ENV_KMP_AFFINITY=compact,1

========================================================================
372.smithwa:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=static,1
```

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:
`-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias`

C++ benchmarks:
`-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias`

Fortran benchmarks:
`-O2 -openmp -ipo -xCORE-AVX2 -align array64byte`

Peak Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

352.nab: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-malloc-options=1 -opt-calloc -fp-model fast=2 -no-prec-div -no-prec-sqrt -ansi-alias`

358.botsalgn: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias`

359.botsspar: `Same as 358.botsalgn`

367.imagick: `basepeak = yes`

372.smithwa: `-O2 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-streaming-stores always -opt-malloc-options=1 -ansi-alias`

Continued on next page

Peak Optimization Flags (Continued)

C++ benchmarks:
`-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias`

Fortran benchmarks:

350.md: `basepeak = yes`

351.bwaves: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

357.bt331: `Same as 351.bwaves`

360.ilbdc: `basepeak = yes`

362.fma3d: `basepeak = yes`

363.swim: `basepeak = yes`

370.mgrid331: `-O2 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-malloc-options=3 -align array64byte`

371.applu331: `basepeak = yes`

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20161208.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20161208.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 Jul 11 12:25:40 2017 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 11 July 2017.