SPEC® OMPG2012 Result

Intel

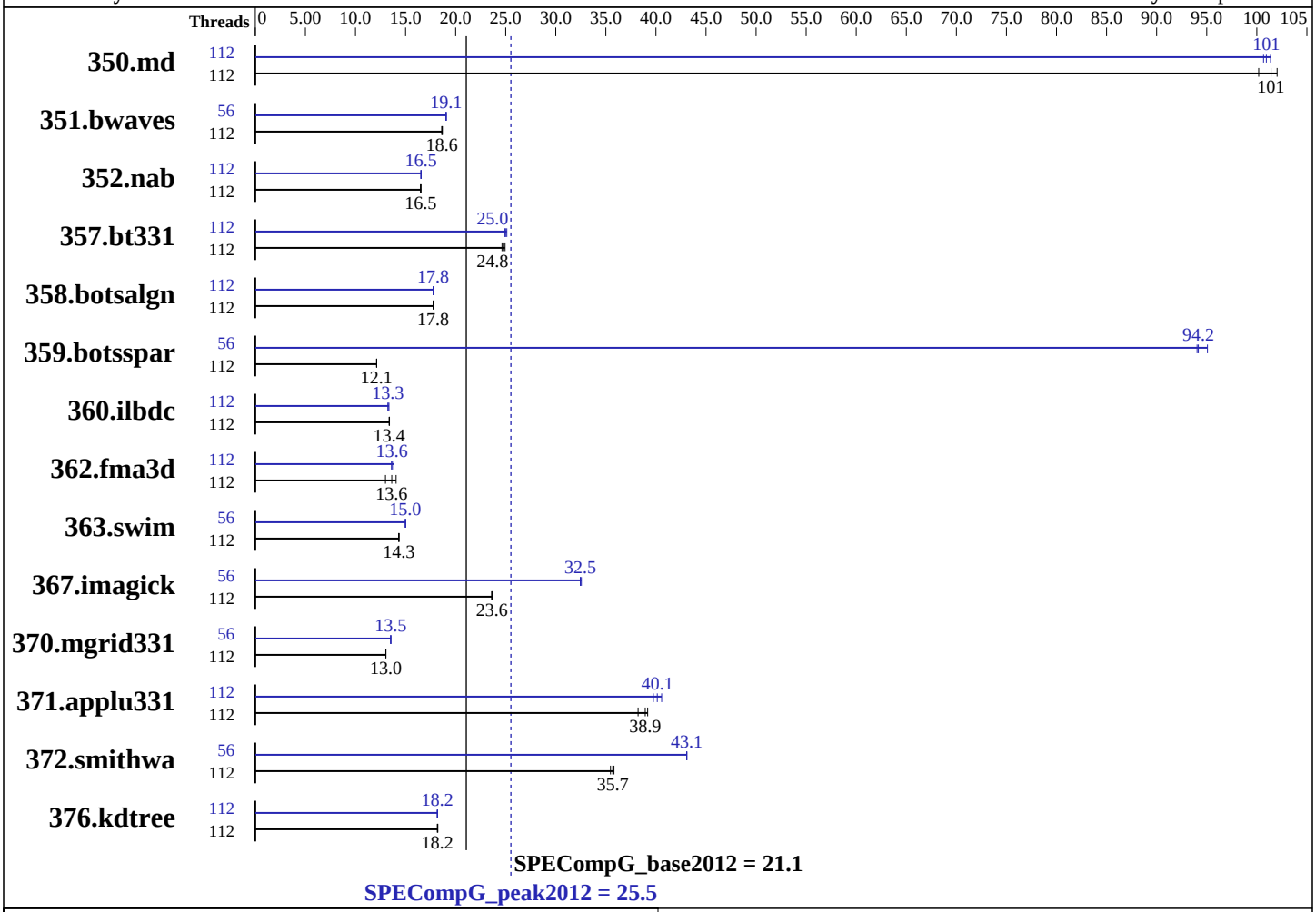
Intel Server System R2208WFTZS (2 x Intel Xeon Platinum 8180, DDR4-2666, SMT ON Turbo ON)

SPECompG_peak2012 = 25.5

SPECompG_base2012 = 21.1

OMP2012 license: 13
Test sponsor: Intel
Tested by: Intel

Test date: Jul-2017
Hardware Availability: Jul-2017
Software Availability: Sep-2017



Hardware

CPU Name:	Intel Xeon Platinum 8180
CPU Characteristics:	Intel Turbo Boost Technology up to 3.8 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:	192 GB (12 x 16 GB 2Rx4 DDR4-2666)
Disk Subsystem:	NFS via 10GBPS Ethernet (Size 20TB)
Other Hardware:	--
Base Threads Run:	112
Minimum Peak Threads:	56

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Software

Operating System:	Red Hat Enterprise Linux Server release 7.2
Compiler:	C/C++/Fortran: Version 18.0.0.082 of Intel Compiler for Linux Beta Build 20170510
Auto Parallel:	No
File System:	Linux ext3
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	None

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	112	46.2	100	45.4	102	**45.7**	**101**	112	**45.9**	**101**	45.7	101	46.0	101
351.bwaves	112	243	18.7	**243**	**18.6**	243	18.6	56	238	19.1	238	19.0	**238**	**19.1**
352.nab	112	235	16.5	**236**	**16.5**	236	16.5	112	**235**	**16.5**	235	16.5	235	16.6
357.bt331	112	**191**	**24.8**	190	24.9	192	24.6	112	190	24.9	**190**	**25.0**	189	25.1
358.botsalgn	112	245	17.8	245	17.8	**245**	**17.8**	112	245	17.8	245	17.8	**245**	**17.8**
359.botsspar	112	**433**	**12.1**	433	12.1	433	12.1	56	**55.8**	**94.2**	55.2	95.1	55.8	94.0
360.ilbdc	112	**266**	**13.4**	266	13.4	266	13.4	112	267	13.3	269	13.2	**269**	**13.3**
362.fma3d	112	270	14.1	**279**	**13.6**	292	13.0	112	**279**	**13.6**	279	13.6	275	13.8
363.swim	112	317	14.3	**316**	**14.3**	316	14.3	56	**303**	**15.0**	302	15.0	303	15.0
367.imagick	112	298	23.6	**298**	**23.6**	297	23.6	56	217	32.5	216	32.6	**217**	**32.5**
370.mgrid331	112	339	13.0	**339**	**13.0**	339	13.0	56	326	13.5	327	13.5	**327**	**13.5**
371.applu331	112	**156**	**38.9**	159	38.2	155	39.2	112	149	40.6	152	39.7	**151**	**40.1**
372.smithwa	112	151	35.5	150	35.8	**150**	**35.7**	56	124	43.1	124	43.1	**124**	**43.1**
376.kdtree	112	248	18.2	**247**	**18.2**	247	18.2	112	**247**	**18.2**	248	18.1	247	18.2

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

Platform Notes

```
Sysinfo program /nfs/pdx/home/aknyaze1/OMP2012/1.1/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on ortce-skl3 Mon Jul 17 20:24:23 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
```

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Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       196526484 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 7.2 (Maipo)

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.2 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.2"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:
   Linux ortce-skl3 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 17 20:21

SPEC is set to: /nfs/pdx/home/aknyaze1/OMP2012/1.1
   Filesystem                                Type  Size  Used Avail Use% Mounted on
   cthor-fs1.jf.intel.com:/home/aknyaze1 nfs    19T   14T  4.4T  76%
   /nfs/pdx/home/aknyaze1

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

(End of data from sysinfo program)
```

General Notes

```
================================================================================
General base OMP Library Settings
  ENV_KMP_AFFINITY=compact,0,verbose

================================================================================
General peak OMP Library Settings
  ENV_KMP_AFFINITY=compact,0,verbose

================================================================================
Per benchmark peak OMP Library Settings

================================================================================
```

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General Notes (Continued)

```
System settings notes:
  Intel Turbo Boost Technology (Turbo)  : Enabled

================================================================================
General OMP Library Settings
  KMP_LIBRARY=turnaround
  KMP_STACKSIZE=292M
  KMP_BLOCKTIME=infinite
  OMP_DYNAMIC=FALSE
  OMP_NESTED=FALSE
  OMP_SCHEDULE=static
================================================================================
351.bwaves:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

================================================================================
359.botsspar:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

================================================================================
363.swim:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

================================================================================
367.imagick:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

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

================================================================================
372.smithwa:peak:
  ENV_KMP_AFFINITY=compact,1,verbose
```

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 -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt`

C++ benchmarks:
`-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt`

Fortran benchmarks:
`-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt -align all`

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:

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Peak Optimization Flags (Continued)

352.nab: `-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -fno-alias -no-prec-div -no-prec-sqrt`

358.botsalgn: Same as 352.nab

359.botsspar: Same as 352.nab

367.imagick: `-O3 -qopenmp -xCORE-AVX2 -fp-model fast=2 -fno-alias -no-prec-div -no-prec-sqrt`

372.smithwa: Same as 367.imagick

C++ benchmarks:
`-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -fno-alias -no-prec-div -no-prec-sqrt`

Fortran benchmarks:

350.md: `-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -fno-alias -no-prec-div -no-prec-sqrt -align all`

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

357.bt331: Same as 350.md

360.ilbdc: `-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt -align all`

362.fma3d: Same as 350.md

363.swim: `-O3 -qopenmp -xCORE-AVX2 -fp-model fast=2 -no-prec-div -no-prec-sqrt -fno-alias -qopt-malloc-options=3 -align all`

370.mgrid331: Same as 363.swim

371.applu331: Same as 351.bwaves

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20170722.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20170722.xml

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

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