SPEC® OMPG2012 Result

Intel

Intel R2308WTTYS (Intel Xeon E5-2699 v4, 2.2GHz, DDR4-2133 MHz,SMT ON Turbo ON)

SPECompG_peak2012 = NC

SPECompG_base2012 = NC

OMP2012 license:	13	**Test date:**	Mar-2016
Test sponsor:	Intel	**Hardware Availability:**	Mar-2016
Tested by:	Intel	**Software Availability:**	Feb-2016

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	Threads
350.md	
351.bwaves	
352.nab	
357.bt331	
358.botsalgn	
359.botsspar	
360.ilbdc	
362.fma3d	
363.swim	
367.imagick	
370.mgrid331	
371.applu331	
372.smithwa	
376.kdtree	

Hardware

CPU Name:	Intel Xeon E5-2699 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2200
CPU MHz Maximum:	3600
FPU:	Integrated

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.el6.x86_64

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CPU(s) enabled:	44 cores, 2 chips, 22 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:	256 KB I+D on chip per core
L3 Cache:	55 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC4-2400U-R, running at 2133Mhz)
Disk Subsystem:	NFS via 10GBPS Ethernet
Other Hardware:	--
Base Threads Run:	88
Minimum Peak Threads:	44
Maximum Peak Threads:	88

Compiler:	C/C++/Fortran: Version 14.0.4.211 of Intel Composer XE for Linux Build 20140805 C/C++/Fortran: Version 16.0.2.181 of Intel Composer XE for Linux Build 20160204
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	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
351.bwaves	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC
352.nab	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
357.bt331	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
358.botsalgn	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
359.botsspar	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC
360.ilbdc	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
362.fma3d	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
363.swim	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC
367.imagick	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
370.mgrid331	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC
371.applu331	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC
372.smithwa	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC
376.kdtree	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC

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

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Non-Compliant

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Submit Notes

```
The config file option 'submit' was used.
```

Platform Notes

```
Sysinfo program /root/pshelepu/SpecOMP/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on bdw-ep2 Tue Mar 15 05:38:4[illegible] 2016

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) CPU E5-2699 v4 @ 2.20GHz
      2 "physical id"s (chips)
      88 "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 : 22
      siblings : 44
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
      28
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
      28
   cache size : 56320 KB

From /proc/meminfo
   MemTotal:       132020108 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

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Platform Notes (Continued)

```
uname -a:
   Linux bdw-ep2 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 5 05:55

SPEC is set to: /root/pshelepu/specOMP
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/mapper/vg_hswep2-lv_root
                  ext4      50G   39G  8.6G  82% /

Additional information from dmidecode:
  BIOS Intel Corporation GRRFSDP1.86B.0271.R00.1510301446 10/30/2015
  Memory:
   8x   16 GB
   8x 0x11 Unknown 16 GB 2134 MHz 1 rank
   8x NO DIMM Unknown   2400 MHz 2 rank
   8x NO DIMM Unknown   2400 MHz 3 rank

(End of data from sysinfo program)
```

General Notes

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

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

========================================================================
General OMP Library Settings
  KMP_LIBRARY=turnaround
  KMP_STACKSIZE=256M
  KMP_BLOCKTIME=infinite
  OMP_DYNAMIC=FALSE
  OMP_NESTED=FALSE
  OMP_SCHEDULE=static
========================================================================
```

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General Notes (Continued)

```
Compiler selection proxy script spec{icc/ifort/icpc/run} was used:
#!/bin/sh
COMPBIN=${BASH_SOURCE[0]:-$0}
COMPBIN=${COMPBIN##*/spec}
version=$1
shift

COMPILER_ROOT_PATHS="/home/tools/compilers"

for COMPILER_ROOT_PATH in $COMPILER_ROOT_PATHS ; do
if [ -e "$COMPILER_ROOT_PATH/${version}/bin/compilervars.sh" ] ; then
. $COMPILER_ROOT_PATH/${version}/bin/compilervars.sh intel64
break
fi
done

exec $COMPBIN "$@"
for specrun last line
exec "$@"
Compiler for base and most peak: C/C++/Fortran: Version 14.0.4.211 of Intel Composer XE for Linux Build 20140805
Compiler for some peak components (where 2016u2 is specified): C/C++/Fortran: Version 16.0.2.181 of Intel Composer XE for Linux Build 20160204
=========================================================================
351.bwaves:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=static,1

=========================================================================
359.botsspar:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=guided

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

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

=========================================================================
372.smithwa:peak:
```

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General Notes (Continued)

```
ENV_OMP_SCHEDULE=static,1
```

Base Compiler Invocation

C benchmarks:
```
specicc 2013_sp1.4.211
```

C++ benchmarks:
```
specicpc 2013_sp1.4.211
```

Fortran benchmarks:
```
specifort 2013_sp1.4.211
```

Base Portability Flags

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

Base Optimization Flags

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

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

Fortran benchmarks:
```
-O3 -openmp -ipo  -xCORE-AVX2 -align array64byte
```

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Peak Compiler Invocation

C benchmarks (except as noted below):
`specicc 2016u2`

359.botsspar: `specicc 2013_sp1.4.211`

372.smithwa: `specicc 2013_sp1.4.211`

C++ benchmarks:
`specicpc 2013_sp1.4.211`

Fortran benchmarks (except as noted below):
`specifort 2013_sp1.4.211`

350.md: `specifort 2016u2`

371.applu331: `specifort 2016u2`

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 -qopenmp -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 -qopenmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias`

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Peak Optimization Flags (Continued)

359.botsspar: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -ansi-alias`

367.imagick: `-O3 -qopenmp -ipo  -xCORE-AVX2 -ansi-alias`

372.smithwa: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -opt-streaming-stores always -opt-malloc-options=1 -ansi-alias`

C++ benchmarks:

`-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -ansi-alias`

Fortran benchmarks:

350.md: `-O3 -qopenmp -ipo  -xCORE-AVX2 -fno-alias -opt-malloc-options=1 -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

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: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -align array64byte`

362.fma3d: Same as 360.ilbdc

363.swim: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -opt-streaming-stores always -opt-malloc-options=3 -align array64byte`

370.mgrid331: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -opt-malloc-options=3 -align array64byte`

371.applu331: `-O3 -qopenmp -ipo  -xCORE-AVX2 -align array64byte`

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The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20160331.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20160331.00.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 Wed Jun 22 11:21:30 2016 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 31 March 2016.