



SPEC® OMPG2012 Result

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Intel

Intel R2308WTTY5 (Intel Xeon E5-2699 v4, 2.2GHz, DDR4-2133 MHz,SMT ON Turbo ON)

SPECompG_peak2012 = **NC**

SPECompG_base2012 = **NC**

OMP2012 license:13

Test sponsor: Intel

Tested by: Intel

Test date: Mar-2016

Hardware Availability: Mar-2016

Software Availability: Feb-2016

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und at <http://www.spec.org/omp2012/results/res2016q2/omp2012-20160530-0007>

| | Threads |
|--------------|---------|
| 350.md | |
| 351.bwaves | |
| 352.nab | |
| 357.bt331 | |
| 358.botsalgn | |
| 359.botsspar | |
| 360.ilbdc | |
| 362.fma3d | |
| 363.swim | |
| 367.imagick | |
| 370.mgrid371 | |
| 371.applu331 | |
| 376.kdtune | |

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
 Parallel File System: No
 File System: Linux ext3
 System Date: 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.syrup | 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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Submit Note

The config file option 'submit' was used.

Platform Note

Sysinfo program /root/pshelep/SpecOMP/Docs/sysinfo
\$Rev: 395 \$ \$Date:: 2012-07-25 \$ \$ 8f70fe9e1c658963ale67685e50647
running on bdw-ep2 Tue Mar 15 05:38:40 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 definition: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 2

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

2

cache size : 36320 KB

MemTotal: 132020108 kB

MemFree: 0

MemAvailable: 0

HugePagesSize: 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 Jun 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/psheler/specO
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_hswep2-l__root
                ext4      10G   39G  8.6G  82% /
```

```
Additional information from dmidecode:
BIOS Intel Corporation GR...P1.86...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 dsinfo 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/icc/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 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.l.tromp:peak:
ENV_KMP_AFFINITY=compact,1
ENV_OMP_SCHEDULE=guided
=====
```

```
=====
363.swin: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.aplu331: specifort 2016u2

Peak Portability Flags

350.md: -fR
357.bt331: -mcmodel=medium
373.swim: -mcmodel=medium
367.ingeick: -std=c99

Peak Optimization Flags

C benchmarks:

352.mab: -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

-O3 -openmp -ipo -xCORE-AVX2 -fno-alias
-opt-streaming-stores always -opt-malloc-options=3
-align array64byte

370.mg1231: -O3 -openmp -ipo -xCORE-AVX2 -fno-alias
-opt-malloc-options=3 -align array64byte

371.aplu331: -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>

Non-Compliant

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

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