SPEC® OMPG2012 Result

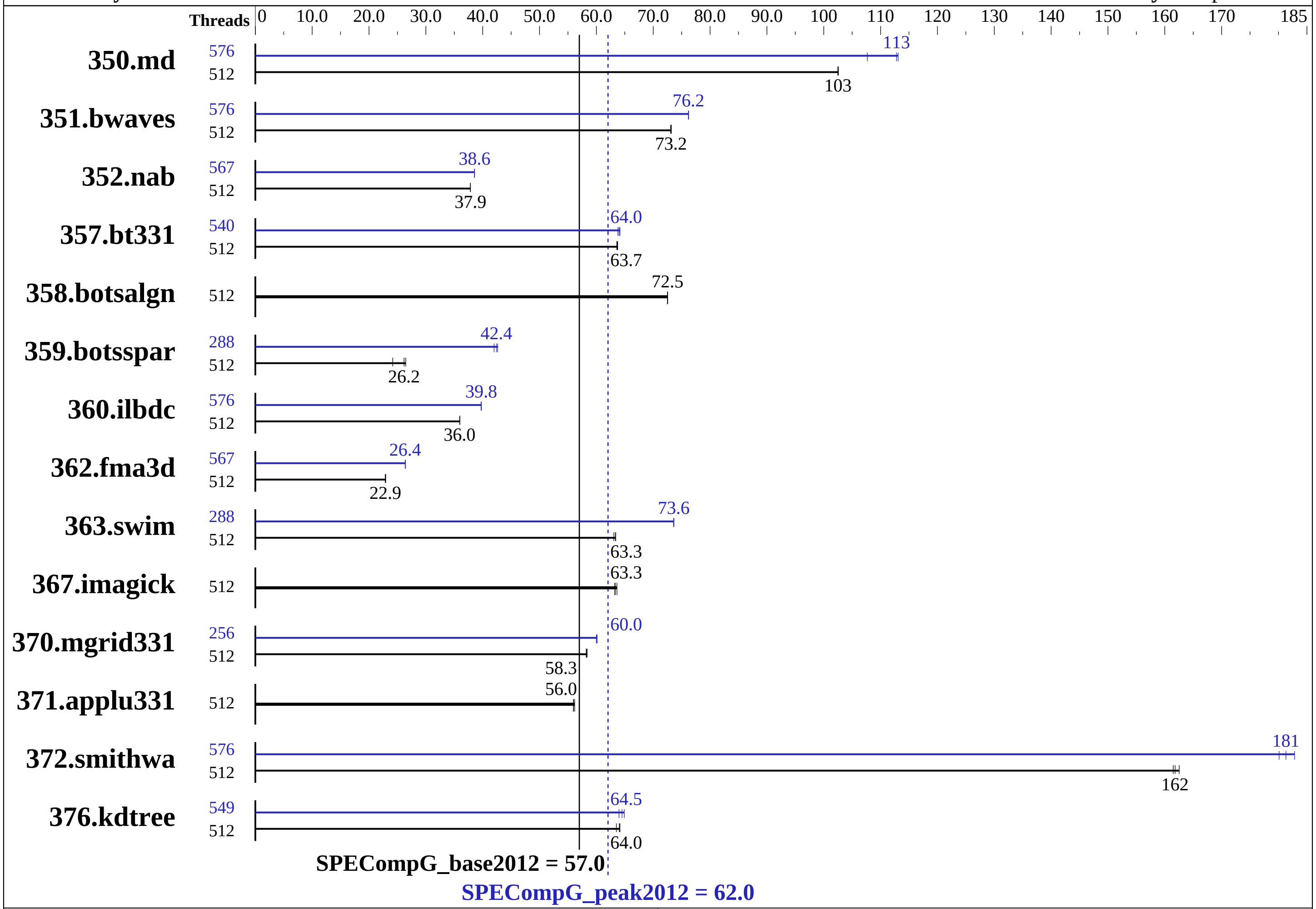
SGI

SPECompG_peak2012 = 62.0

SGI UV 300 (Intel Xeon E7-8867 v4, 2.40 GHz)

SPECompG_base2012 = 57.0

OMP2012 license:	14	**Test date:**	Jun-2016
Test sponsor:	SGI	**Hardware Availability:**	Jun-2016
Tested by:	SGI	**Software Availability:**	Apr-2016



Hardware

CPU Name:	Intel Xeon E7-8867 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2400
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	288 cores, 16 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4-32 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:	45 MB I+D on chip per chip
Other Cache:	None
Memory:	4 TB (256 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	1 x 400 GB SSD (Intel SSD 3500 Series, SATA II)
Other Hardware:	None

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Software

Operating System:	SUSE Linux Enterprise Server 12 (x86_64) SP1 Kernel 3.12.57-60.35-default
Compiler:	C/C++/Fortran: Version 16.0.3.210 of Intel Composer XE for Linux, Build 20160415
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	SGI Accelerate 1.12 (Build 714r28.sles12sp1-1604201900), SGI Foundation Software 2.14 (Build 714r28.sles12sp1-1604201900)

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Base Threads Run: 512
Minimum Peak Threads: 256
Maximum Peak Threads: 576

Results Table

	Base							Peak						
Benchmark	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	512	45.2	102	45.1	103	**45.2**	**103**	576	40.9	113	43.0	108	**41.0**	**113**
351.bwaves	512	**61.9**	**73.2**	62.0	73.1	61.9	73.2	576	**59.4**	**76.2**	59.4	76.2	59.5	76.2
352.nab	512	**103**	**37.9**	103	37.9	103	37.8	567	**101**	**38.6**	101	38.6	101	38.6
357.bt331	512	**74.5**	**63.7**	74.5	63.6	74.4	63.8	540	74.3	63.8	**74.1**	**64.0**	73.9	64.2
358.botsalgn	512	60.0	72.5	60.0	72.5	**60.0**	**72.5**	512	60.0	72.5	60.0	72.5	**60.0**	**72.5**
359.botsspar	512	198	26.5	217	24.2	**201**	**26.2**	288	**124**	**42.4**	123	42.6	125	42.0
360.ilbdc	512	99.0	36.0	**99.0**	**36.0**	99.0	35.9	576	89.6	39.7	**89.5**	**39.8**	89.5	39.8
362.fma3d	512	166	22.9	166	22.9	**166**	**22.9**	567	144	26.4	144	26.4	**144**	**26.4**
363.swim	512	**71.5**	**63.3**	71.4	63.4	71.8	63.1	288	61.6	73.6	61.5	73.6	**61.5**	**73.6**
367.imagick	512	111	63.6	**111**	**63.3**	111	63.2	512	111	63.6	**111**	**63.3**	111	63.2
370.mgrid331	512	**75.8**	**58.3**	75.9	58.2	75.7	58.4	256	73.7	60.0	73.5	60.1	**73.6**	**60.0**
371.applu331	512	108	56.2	**108**	**56.0**	108	56.0	512	108	56.2	**108**	**56.0**	108	56.0
372.smithwa	512	33.0	163	**33.1**	**162**	33.2	161	576	29.8	180	29.3	183	**29.6**	**181**
376.kdtree	512	70.2	64.1	**70.3**	**64.0**	70.8	63.5	549	69.3	64.9	70.3	64.0	**69.8**	**64.5**

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

Submit Notes

```
The config file option 'submit' was used.
For all benchmarks threads were bound to cores using
the following submit command:
    dplace -x2 $command
This binds threads in order of creation, beginning
with the master thread on logical cpu 0, the first slave
thread on logical cpu 1, and so on.  The -x2 flag instructs
dplace to skip placement of the lightweight OpenMP monitor
thread, which is created prior to the slave threads.
```

Operating System Notes

```
Transparent Hugepages :
    Transparent Hugepages are disabled by
    echo never > /sys/kernel/mm/transparent_hugepage/enabled

Software Environment:
    export KMP_AFFINITY=disabled
    export KMP_STACKSIZE=200M
```

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Operating System Notes (Continued)

```
export KMP_SCHEDULE=static,balanced
export OMP_DYNAMIC=FALSE
ulimit -s unlimited
```

Platform Notes

```
Intel Hyperthreading Enabled
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

Base Portability Flags

350.md: `-free`
367.imagick: `-std=c99`

Base Optimization Flags

C benchmarks:
```
-O3 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmodel=medium
-shared-intel
```

C++ benchmarks:
```
-O3 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmodel=medium
-shared-intel
```

Fortran benchmarks:
```
-O3 -xCORE-AVX2 -ipo1 -openmp -mcmodel=medium -shared-intel
-align array64byte
```

Peak Compiler Invocation

C benchmarks:
`icc`

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Peak Compiler Invocation (Continued)

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

Peak Portability Flags

350.md: `-free`
367.imagick: `-std=c99`

Peak Optimization Flags

C benchmarks:

352.nab: `-O3 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmodel=medium -shared-intel`

358.botsalgn: `basepeak = yes`

359.botsspar: `Same as 352.nab`

367.imagick: `basepeak = yes`

372.smithwa: `Same as 352.nab`

C++ benchmarks:
`-O3 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmodel=medium -shared-intel`

Fortran benchmarks:

350.md: `-O3 -xCORE-AVX2 -ipo1 -openmp -mcmodel=medium -shared-intel -align array64byte`

351.bwaves: `Same as 350.md`

357.bt331: `Same as 350.md`

360.ilbdc: `Same as 350.md`

362.fma3d: `Same as 350.md`

363.swim: `Same as 350.md`

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Peak Optimization Flags (Continued)

370.mgrid331: `Same as 350.md`

371.applu331: `basepeak = yes`

The flags files that were used to format this result can be browsed at

http://www.spec.org/omp2012/flags/SGI-OMP2012-ic16.20160706.html
http://www.spec.org/omp2012/flags/SGI-UV300-RevB.20160706.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/omp2012/flags/SGI-OMP2012-ic16.20160706.xml
http://www.spec.org/omp2012/flags/SGI-UV300-RevB.20160706.xml

Tested with SPEC OMP2012 v25.
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