



# SPEC® OMPG2012 Result

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## SGI

SPECompG\_peak2012 = 84.2

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

SPECompG\_base2012 = 80.1

OMP2012 license:14

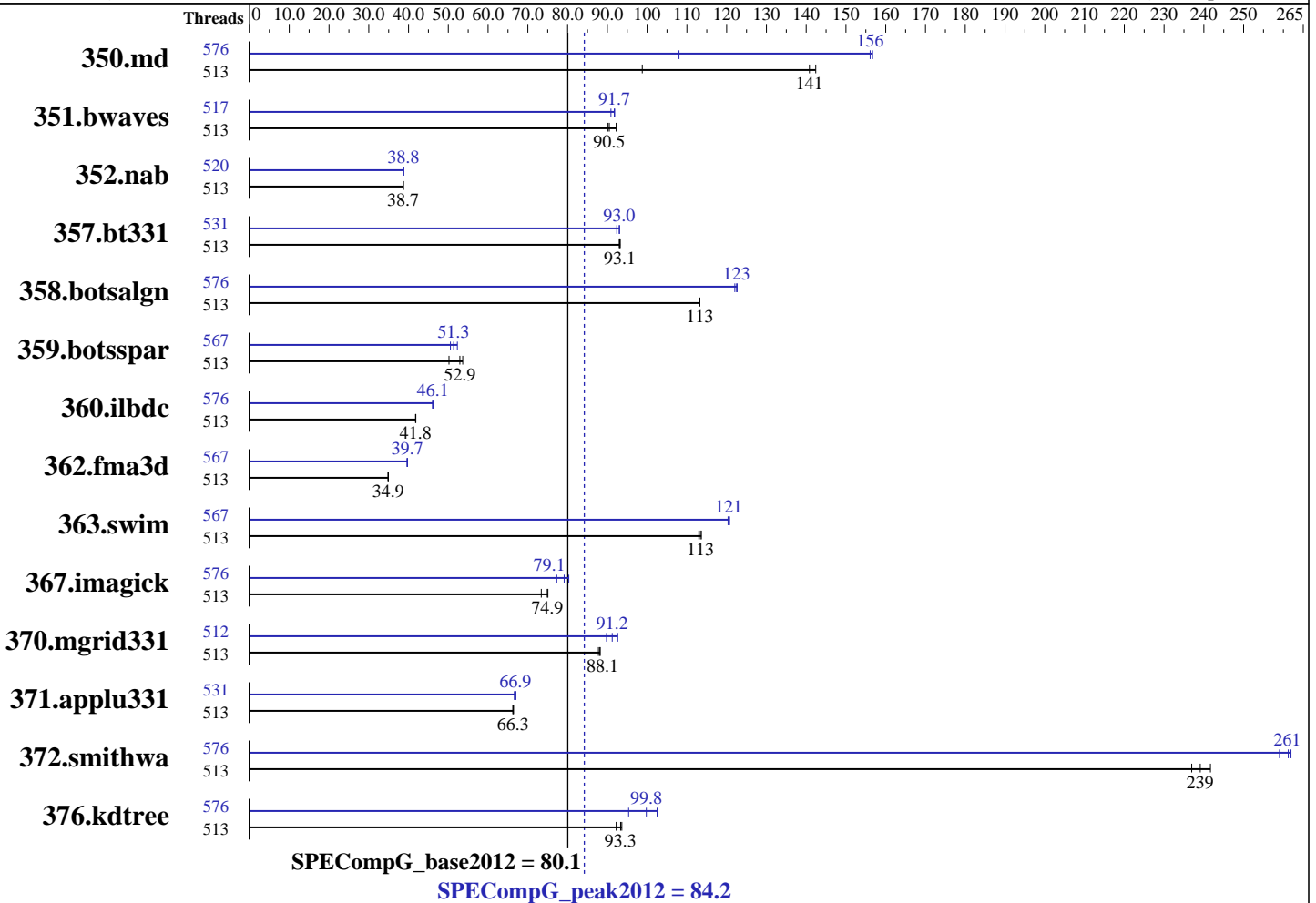
Test sponsor: SGI

Tested by: SGI

Test date: May-2016

Hardware Availability: Jun-2016

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: 576 cores, 32 chips, 18 cores/chip  
 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: 8 TB (512 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 16.0.1.150 of Intel Composer XE for Linux, Build 20151021  
 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: 513

Minimum Peak Threads: 512

Maximum Peak Threads: 576

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	513	<u>32.9</u>	<u>141</u>	46.9	98.8	32.5	142	576	42.9	108	29.5	157	<u>29.7</u>	<u>156</u>
351.bwaves	513	<u>50.1</u>	<u>90.5</u>	50.2	90.2	49.1	92.2	517	49.8	90.9	49.3	91.9	<u>49.4</u>	<u>91.7</u>
352.nab	513	<u>101</u>	<u>38.7</u>	101	38.7	101	38.6	520	101	38.7	100	38.8	<u>100</u>	<u>38.8</u>
357.bt331	513	51.0	93.0	<u>50.9</u>	<u>93.1</u>	50.8	93.3	531	50.9	93.1	<u>51.0</u>	<u>93.0</u>	51.3	92.4
358.botsalgn	513	38.4	113	<u>38.4</u>	<u>113</u>	38.5	113	576	<u>35.5</u>	<u>123</u>	35.5	123	35.6	122
359.botsspar	513	97.9	53.6	<u>99.2</u>	<u>52.9</u>	105	50.2	567	104	50.5	100	52.3	<u>102</u>	<u>51.3</u>
360.ilbdc	513	85.2	41.8	<u>85.2</u>	<u>41.8</u>	85.1	41.8	576	77.2	46.1	77.3	46.1	<u>77.2</u>	<u>46.1</u>
362.fma3d	513	<u>109</u>	<u>34.9</u>	109	34.9	109	34.9	567	95.9	39.6	<u>95.7</u>	<u>39.7</u>	95.7	39.7
363.swim	513	<u>39.9</u>	<u>113</u>	40.1	113	39.9	114	567	37.5	121	37.6	120	<u>37.6</u>	<u>121</u>
367.imagick	513	93.7	75.0	<u>93.9</u>	<u>74.9</u>	95.8	73.4	576	<u>88.8</u>	<u>79.1</u>	91.0	77.3	87.5	80.3
370.mgrid331	513	50.1	88.2	<u>50.2</u>	<u>88.1</u>	50.4	87.8	512	<u>48.5</u>	<u>91.2</u>	47.7	92.6	49.2	89.8
371.applu331	513	91.5	66.2	91.3	66.4	<u>91.4</u>	<u>66.3</u>	531	91.0	66.6	<u>90.6</u>	<u>66.9</u>	90.5	67.0
372.smithwa	513	22.2	242	22.6	237	<u>22.4</u>	<u>239</u>	576	<u>20.5</u>	<u>261</u>	20.7	259	20.5	262
376.kdtree	513	<u>48.2</u>	<u>93.3</u>	48.1	93.6	48.8	92.2	576	47.2	95.4	43.9	103	<u>45.1</u>	<u>99.8</u>

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 set to Disabled

## General Notes

372.smithwa (peak): "redundant" src.alt was used.

372.smithwa (base): "redundant" src.alt was used.

## 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:

-O2 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmmodel=medium  
-shared-intel

C++ benchmarks:

-O2 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmmodel=medium  
-shared-intel

Fortran benchmarks:

-O2 -xCORE-AVX2 -ipo1 -openmp -mcmmodel=medium -shared-intel



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## Peak Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

## Peak Portability Flags

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

## Peak Optimization Flags

C benchmarks:

-O2 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mmodel=medium  
-shared-intel

C++ benchmarks:

-O2 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mmodel=medium  
-shared-intel

Fortran benchmarks:

-O2 -xCORE-AVX2 -ipo1 -openmp -mmodel=medium -shared-intel

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

<http://www.spec.org/omp2012/flags/SGI-OMP2012-ic16.html>

<http://www.spec.org/omp2012/flags/SGI-UV300-RevB.html>

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

<http://www.spec.org/omp2012/flags/SGI-OMP2012-ic16.xml>

<http://www.spec.org/omp2012/flags/SGI-UV300-RevB.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC OMP2012 v1.0.

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