



SPEC® OMPG2012 Result

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SGI

SPECompG_peak2012 = 62.0

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

SPECompG_base2012 = 57.0

OMP2012 license:14

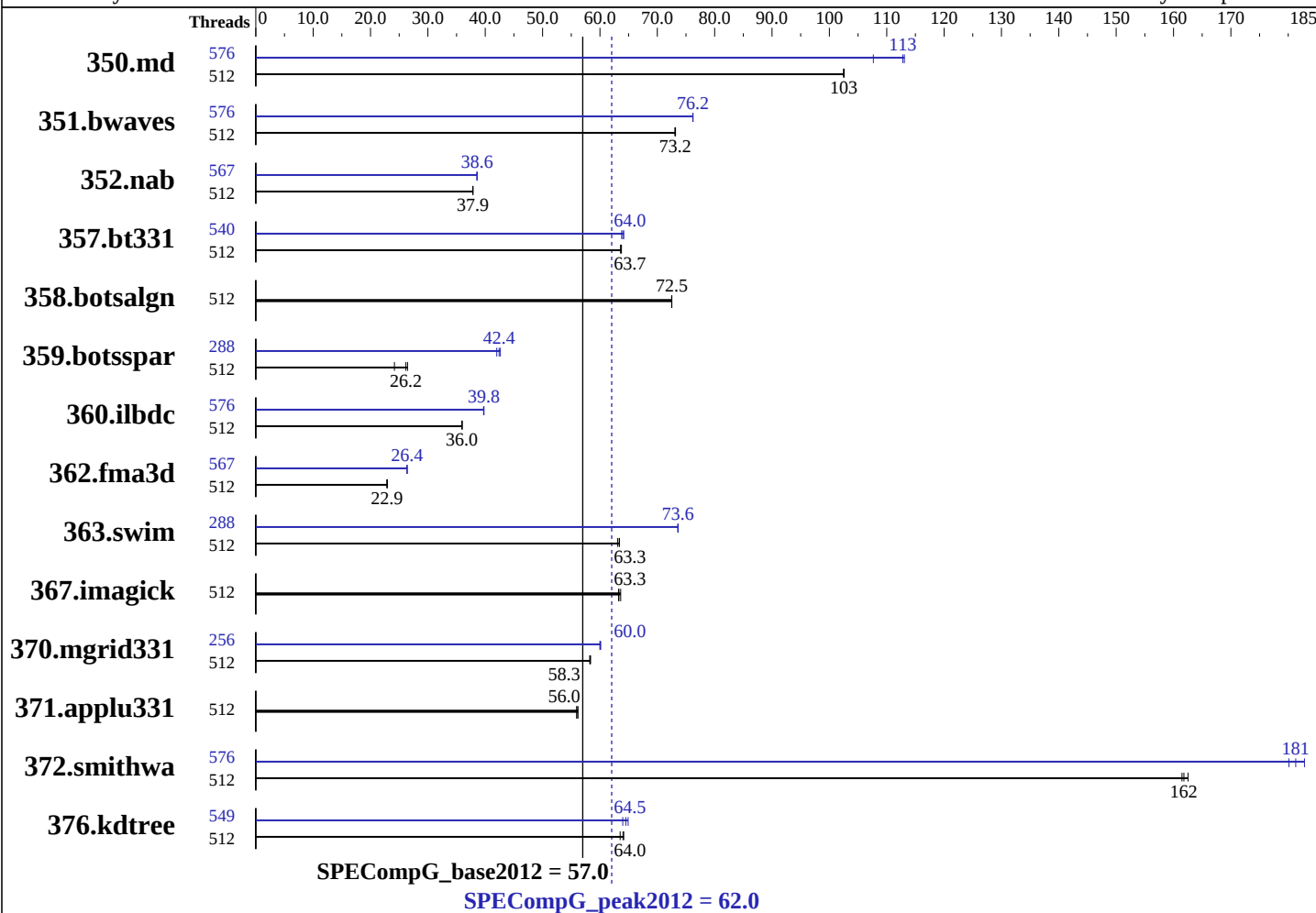
Test sponsor: SGI

Tested by: SGI

Test date: Jun-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: 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

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

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

Fortran benchmarks:
-O3 -xCORE-AVX2 -ipo1 -openmp -mmodel=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 -mmodel=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 -mmodel=medium
-shared-intel

Fortran benchmarks:

350.md: -O3 -xCORE-AVX2 -ipo1 -openmp -mmodel=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.aplu331: 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>

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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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