SPEC® OMPG2012 Result

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SGI

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

$SPECompG\_peak2012 = 90.0$

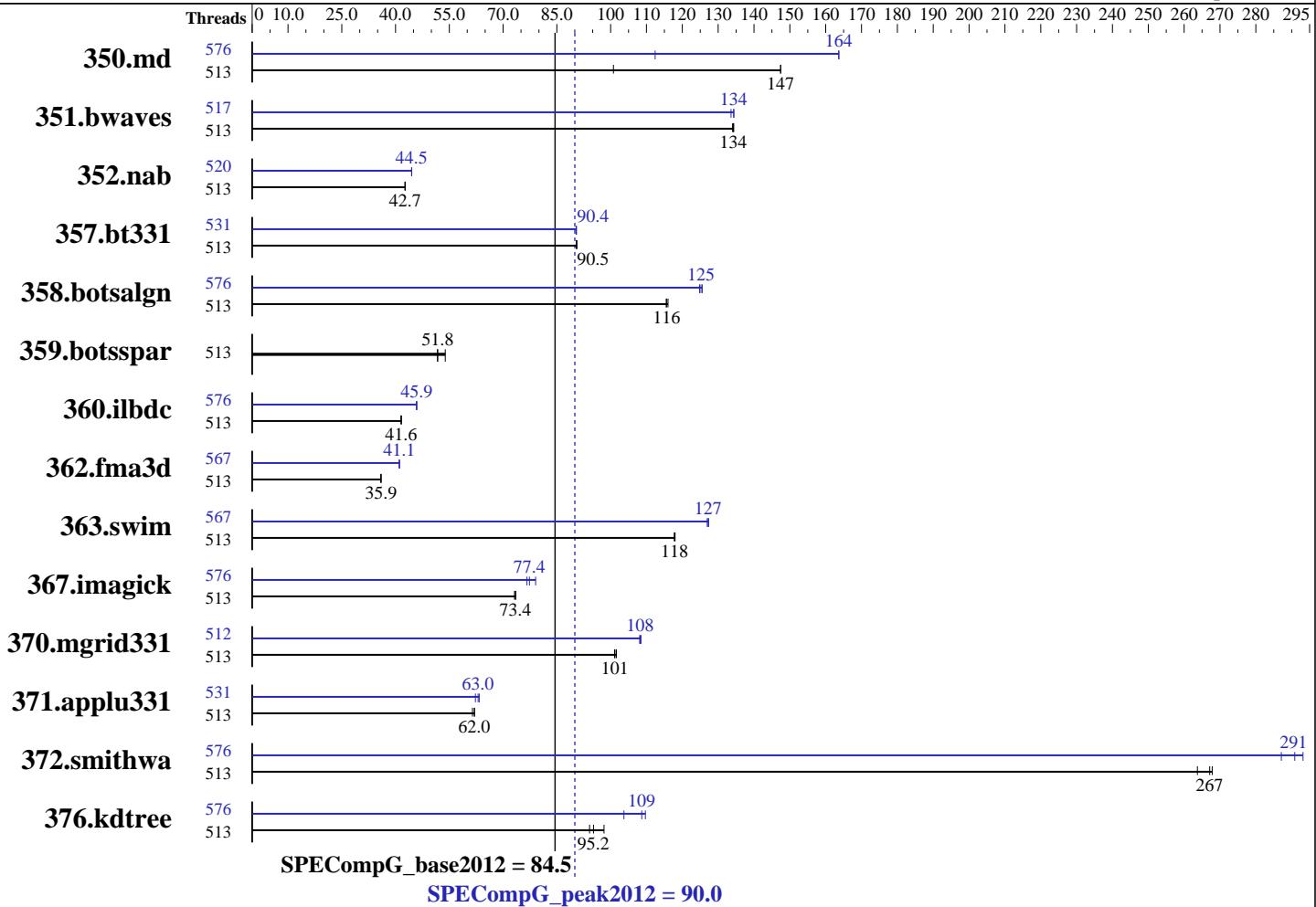$SPECompG\_base2012 = 84.5$

OMP2012 license: 14
Test sponsor: SGI
Tested by: SGI

Test date: Jun-2016
Hardware Availability: Jun-2016
Software Availability: Apr-2016

Threads

Benchmark	Threads	Value
350.md	576	164
350.md	513	147
351.bwaves	517	134
351.bwaves	513	134
352.nab	520	44.5
352.nab	513	42.7
357.bt331	531	90.4
357.bt331	513	90.5
358.botsalgn	576	125
358.botsalgn	513	116
359.botsspar	513	51.8
360.ilbdc	576	45.9
360.ilbdc	513	41.6
362.fma3d	567	41.1
362.fma3d	513	35.9
363.swim	567	127
363.swim	513	118
367.imagick	576	77.4
367.imagick	513	73.4
370.mgrid331	512	108
370.mgrid331	513	101
371.applu331	531	63.0
371.applu331	513	62.0
372.smithwa	576	291
372.smithwa	513	267
376.kdtree	576	109
376.kdtree	513	95.2

$SPECompG\_base2012 = 84.5$

$SPECompG\_peak2012 = 90.0$

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

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: 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	31.4	147	**31.4**	**147**	45.9	101	576	28.3	164	41.2	112	**28.3**	**164**
351.bwaves	513	**33.8**	**134**	33.7	134	33.8	134	517	**33.7**	**134**	33.7	134	33.9	134
352.nab	513	91.1	42.7	**91.2**	**42.7**	91.2	42.7	520	**87.4**	**44.5**	87.5	44.5	87.4	44.5
357.bt331	513	**52.4**	**90.5**	52.3	90.6	52.4	90.4	531	**52.4**	**90.4**	52.4	90.5	52.5	90.4
358.botsalgn	513	37.7	116	**37.6**	**116**	37.5	116	576	34.6	126	**34.7**	**125**	34.9	125
359.botsspar	513	**101**	**51.8**	102	51.7	97.5	53.9	513	**101**	**51.8**	102	51.7	97.5	53.9
360.ilbdc	513	85.7	41.5	**85.7**	**41.6**	85.5	41.6	576	**77.6**	**45.9**	77.7	45.8	77.6	45.9
362.fma3d	513	**106**	**35.9**	106	36.0	106	35.9	567	92.5	41.1	92.6	41.0	**92.5**	**41.1**
363.swim	513	38.5	118	**38.4**	**118**	38.4	118	567	**35.6**	**127**	35.7	127	35.6	127
367.imagick	513	95.6	73.5	**95.7**	**73.4**	96.1	73.2	576	88.9	79.1	91.7	76.7	**90.9**	**77.4**
370.mgrid331	513	**43.7**	**101**	43.7	101	43.5	102	512	**40.8**	**108**	40.9	108	40.7	108
371.applu331	513	98.6	61.5	97.7	62.0	**97.7**	**62.0**	531	**96.1**	**63.0**	97.3	62.3	95.7	63.3
372.smithwa	513	20.3	264	20.0	268	**20.1**	**267**	576	**18.4**	**291**	18.3	293	18.7	287
376.kdtree	513	47.8	94.1	**47.3**	**95.2**	45.8	98.2	576	41.0	110	**41.4**	**109**	43.4	104

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
```

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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Tested by:	SGI	**Software Availability:**	Apr-2016

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: Same as 352.nab

    359.botsspar: basepeak = yes

    367.imagick: Same as 352.nab

    372.smithwa: Same as 352.nab

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`

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

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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 other inquiries, please contact webmaster@spec.org.

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