### SGI

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

**OMPG2012 Result**

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Jun-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Jun-2016</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Apr-2016</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECompG_peak2012</th>
<th>SPECompG_base2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>350.md</td>
<td>576</td>
<td>512</td>
</tr>
<tr>
<td>351.bwaves</td>
<td>576</td>
<td>512</td>
</tr>
<tr>
<td>352.nab</td>
<td>567</td>
<td>512</td>
</tr>
<tr>
<td>357.bt331</td>
<td>540</td>
<td>512</td>
</tr>
<tr>
<td>358.botsalgn</td>
<td>512</td>
<td></td>
</tr>
<tr>
<td>359.botsspar</td>
<td>288</td>
<td>512</td>
</tr>
<tr>
<td>360.ilbdc</td>
<td>576</td>
<td>512</td>
</tr>
<tr>
<td>362.fma3d</td>
<td>567</td>
<td>512</td>
</tr>
<tr>
<td>363.swim</td>
<td>288</td>
<td>512</td>
</tr>
<tr>
<td>367.imagick</td>
<td>512</td>
<td></td>
</tr>
<tr>
<td>370.mgrid331</td>
<td>256</td>
<td>512</td>
</tr>
<tr>
<td>371.applu331</td>
<td>512</td>
<td></td>
</tr>
<tr>
<td>372.smithwa</td>
<td>576</td>
<td>512</td>
</tr>
<tr>
<td>376.kdtree</td>
<td>549</td>
<td>512</td>
</tr>
</tbody>
</table>

**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

**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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**SPEC OMPG2012 Result**

**SGI**

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

| SPECCompG_peak2012 | 62.0 |
| SPECCompG_base2012 | 57.0 |

**OMPG2012 license:** 14
**Test sponsor:** SGI
**Tested by:** SGI

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

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
</tr>
<tr>
<td>350.md</td>
<td>45.2</td>
<td>102</td>
<td>45.1</td>
</tr>
<tr>
<td>351.bwaves</td>
<td>61.9</td>
<td>73.2</td>
<td>62.0</td>
</tr>
<tr>
<td>352.nab</td>
<td>103</td>
<td>37.9</td>
<td>103</td>
</tr>
<tr>
<td>357.bt331</td>
<td>74.5</td>
<td>63.7</td>
<td>74.5</td>
</tr>
<tr>
<td>358.botsalgn</td>
<td>60.0</td>
<td>72.5</td>
<td>60.0</td>
</tr>
<tr>
<td>359.botsspar</td>
<td>198</td>
<td>26.5</td>
<td>217</td>
</tr>
<tr>
<td>360.llbdc</td>
<td>99.0</td>
<td>36.0</td>
<td>99.0</td>
</tr>
<tr>
<td>362.fma3d</td>
<td>166</td>
<td>22.9</td>
<td>166</td>
</tr>
<tr>
<td>363.swim</td>
<td>71.5</td>
<td>63.3</td>
<td>71.4</td>
</tr>
<tr>
<td>367.imagick</td>
<td>111</td>
<td>63.6</td>
<td>111</td>
</tr>
<tr>
<td>370.mgrid331</td>
<td>75.8</td>
<td>58.3</td>
<td>75.9</td>
</tr>
<tr>
<td>371.applu331</td>
<td>108</td>
<td>56.0</td>
<td>108</td>
</tr>
<tr>
<td>372.smithwa</td>
<td>33.0</td>
<td>163</td>
<td>33.1</td>
</tr>
<tr>
<td>376.ktree</td>
<td>70.2</td>
<td>64.1</td>
<td>70.3</td>
</tr>
</tbody>
</table>

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

Continued on next page
## 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 -mcmode=medium
  -shared-intel`

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

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

## Peak Compiler Invocation

### C benchmarks:
- `icc`
SGI UV 300 (Intel Xeon E7-8867 v4, 2.40 GHz)  
SPECompG_peak2012 = 62.0  
SPECompG_base2012 = 57.0

OMPG2012 license:14  
Test date:  
Test sponsor: SGI  
Hardware Availability: Jun-2016  
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 -mcmode=medium 
-shared-intel
358.botsalign: basepeak = yes
359.botsspar: Same as 352.nab
367.imagick: basepeak = yes
372.smithwa: Same as 352.nab

C++ benchmarks:
-03 -xCORE-AVX2 -ipo1 -openmp -ansi-alias -mcmode=medium 
-shared-intel

Fortran benchmarks:
350.md: -O3 -xCORE-AVX2 -ipo1 -openmp -mcmode=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

Continued on next page
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<tbody>
<tr>
<td>SPECompG_base2012 = 57.0</td>
</tr>
</tbody>
</table>

**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


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


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**For other inquiries, please contact webmaster@spec.org.**

**For questions about this result, please contact the tester.**

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Tested with SPEC OMP2012 v25.


Originally published on 6 July 2016.