# SPEC® OMPG2012 Result

## Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

<table>
<thead>
<tr>
<th>SPECCompG_peak2012</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECCompG_base2012</td>
<td>13.4</td>
</tr>
</tbody>
</table>

### CPU Details
- **CPU Name:** Intel Xeon E7-8890 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.40 GHz
- **CPU MHz:** 2200
- **CPU MHz Maximum:** 3400
- **FPU:** Integrated
- **CPU(s) enabled:** 48 cores, 2 chips, 24 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1.2 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:** 60 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1600 MHz)
- **Disk Subsystem:** 1 X 400 GB SSD SAS
- **Other Hardware:** None
- **Base Threads Run:** 96

### Software Details
- **Operating System:** Red Hat Enterprise Linux 6.7 (Santiago), Kernel 2.6.32-573.elf6.x86_64
- **Compiler:** C/C++/Fortran: Version 16.0.0.109 of Intel Composer for Linux Build 20150815
- **Auto Parallel:** No
- **File System:** Linux ext3
- **System State:** Default
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other Software:** None

### Hardware Details

<table>
<thead>
<tr>
<th>Threads</th>
<th>1.00</th>
<th>3.00</th>
<th>5.00</th>
<th>7.00</th>
<th>9.00</th>
<th>11.0</th>
<th>13.0</th>
<th>15.0</th>
<th>17.0</th>
<th>19.0</th>
<th>21.0</th>
<th>23.0</th>
<th>25.0</th>
<th>27.0</th>
<th>29.0</th>
<th>32.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>350.md</td>
<td>96</td>
<td>13.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>351.bwaves</td>
<td>96</td>
<td>13.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>352.nab</td>
<td>96</td>
<td>16.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>357.bt331</td>
<td>96</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>358.botsalgn</td>
<td>96</td>
<td>8.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>359.botsspar</td>
<td>96</td>
<td>8.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>360.ilbdc</td>
<td>96</td>
<td>13.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>362.fma3d</td>
<td>96</td>
<td>10.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>363.swim</td>
<td>96</td>
<td>14.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>367.imagick</td>
<td>96</td>
<td>9.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>370.mgrid331</td>
<td>96</td>
<td>31.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>371.applu331</td>
<td>96</td>
<td>18.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>372.smithwa</td>
<td>96</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
## SPEC OMPG2012 Result

### Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

**SPECompG_peak2012 = Not Run**

**SPECompG_base2012 = 13.4**

### OMP2012 license: 9019

**Test sponsor:** Cisco Systems  
**Tested by:** Cisco Systems  
**Minimum Peak Threads:** --  
**Maximum Peak Threads:** --

### Test date: May-2016  
**Hardware Availability:** Jul-2016  
**Software Availability:** Aug-2015

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Threads</td>
<td>Seconds</td>
</tr>
<tr>
<td>350.md</td>
<td>96</td>
<td>246</td>
</tr>
<tr>
<td>351.bwaves</td>
<td>96</td>
<td>347</td>
</tr>
<tr>
<td>352.nab</td>
<td>96</td>
<td>287</td>
</tr>
<tr>
<td>357.bt331</td>
<td>96</td>
<td>291</td>
</tr>
<tr>
<td>358.botsalgn</td>
<td>96</td>
<td>364</td>
</tr>
<tr>
<td>359.botsspar</td>
<td>96</td>
<td>600</td>
</tr>
<tr>
<td>360_anluc</td>
<td>96</td>
<td>432</td>
</tr>
<tr>
<td>362_fma3d</td>
<td>96</td>
<td>287</td>
</tr>
<tr>
<td>363_swim</td>
<td>96</td>
<td>441</td>
</tr>
<tr>
<td>367_imagick</td>
<td>96</td>
<td>485</td>
</tr>
<tr>
<td>370_mgrid331</td>
<td>96</td>
<td>487</td>
</tr>
<tr>
<td>371_applu331</td>
<td>96</td>
<td>193</td>
</tr>
<tr>
<td>372_smithwa</td>
<td>96</td>
<td>286</td>
</tr>
<tr>
<td>376_kdrrree</td>
<td>96</td>
<td>376</td>
</tr>
</tbody>
</table>

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

### Platform Notes

 Sysinfo program /opt/omp2012/Docs/sysinfo  
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647  
running on RHEL Thu May 05 21:08:56 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
http://www.spec.org/omp2012/Docs/config.html#sysinfo

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) CPU E7-8890 v4 @ 2.20GHz  
2 "physical id"s (chips)  
96 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)  
cpu cores : 24  
siblings : 48  
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29  
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29  
cache size : 61440 KB  
Continued on next page
## SPEC OMPG2012 Result

### Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

<table>
<thead>
<tr>
<th>SPECcompG_peak2012</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECcompG_base2012</td>
<td>13.4</td>
</tr>
</tbody>
</table>

**OMP2012 license:** 9019  
**Test sponsor:** Cisco Systems  
**Test by:** Cisco Systems

### Platform Notes (Continued)

From /proc/meminfo

- MemTotal: 264225480 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/run/bin/lsb_release -d

- Red Hat Enterprise Linux Server release 6.7 (Santiago)

From /etc/*release* /etc/*version*

- redhat-release: Red Hat Enterprise Linux Server release 6.7 (Santiago)
- system-release: Red Hat Enterprise Linux Server release 6.7 (Santiago)

/unsname -a:

- Linux RHEL 2.6.32-573.e16.x86_64 #1 SMP Wed Jul 1 18:23:37 EDT 2015 x86_64
- x86_64 x86_64 GNU/Linux

run-level 3 May 05 20:56

**SPEC is set to:** /opt/omp2012

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda1</td>
<td>ext4</td>
<td>367G</td>
<td>28G</td>
<td>321G</td>
<td>8%</td>
<td>/</td>
</tr>
</tbody>
</table>

**BIOS Cisco Systems, Inc. EXM4.3.1.1.3.0.42620161123 04/26/2016**

**Memory:**

- 16x 16 GB
- 16x 0xCE00 M393A2G40EB1-CRC 16 GB 1600 MHz 2 rank
- 32x NO DIMM NO DIMM

(End of data from sysinfo program)

### General Notes

---------------------------------------------

Transparent Huge Pages enabled with:

- echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

**BIOS settings notes:**

- Intel Turbo Boost Technology (Turbo) : Enabled
- CPU performance set to Enterprise
- Power Technology set to Performance
- Memory RAS configuration set to Maximum Performance
- Energy Performance BIAS setting set to OS

**General OMP Library Settings**

- ENV_KMP_LIBRARY=turnaround
- ENV_OMP_SCHEDULE=static
- ENV_KMP_BLOCKTIME=200
- ENV_KMP_STACKSIZE=8192M
- ENV_OMP_DYNAMIC=FALSE
- ENV_OMP_NESTED=FALSE

(Continued on next page)
General Notes (Continued)

========================================================================
General base OMP Library Settings
ENV_KMP_AFFINITY=compact,1

Submitted by: "Rajendra Yogendra (ryogendr)" <ryogendr@cisco.com>
Submitted: Wed May 18 17:07:51 EDT 2016
Submission: omp2012-20160511-00073.sub

Base Compiler Invocation

C benchmarks:
  icc

C++ benchmarks:
  icpc

Fortran benchmarks:
  ifort

Base Portability Flags

- 350.md: -FR
- 351.bwaves: No flags used
- 352.nab: No flags used
- 357.bt331: -mcmodel=medium
- 358.botsalg: No flags used
- 359.botsspar: No flags used
- 360.ifibdc: No flags used
- 362.fma3d: No flags used
- 363.swim: -mcmodel=medium
- 367.imagick: -std=c99
- 370.mgrid331: No flags used
- 371.applu331: No flags used
- 372.smithwa: No flags used
- 376.kdtree: No flags used

Base Optimization Flags

C benchmarks:
  -O2 -openmp -ipo -xCORE-AVX2 -ansi-alias

C++ benchmarks:
  -O2 -openmp -ipo -xCORE-AVX2 -ansi-alias
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECompG_peak2012</td>
<td>Not Run</td>
</tr>
<tr>
<td>SPECompG_base2012</td>
<td>13.4</td>
</tr>
</tbody>
</table>

Cisco Systems
Cisco UCS B260 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMP2012 license</td>
<td>9019</td>
</tr>
<tr>
<td>Test sponsor</td>
<td>Cisco Systems</td>
</tr>
<tr>
<td>Tested by</td>
<td>Cisco Systems</td>
</tr>
<tr>
<td>Test date</td>
<td>May-2016</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Jul-2016</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Aug-2015</td>
</tr>
</tbody>
</table>

**Base Optimization Flags (Continued)**

- Fortran benchmarks: `-O2 -openmp -ipo -xCORE-AVX2 -align array64byte`

The flags file that was used to format this result can be browsed at
https://pro.spec.org/private/hpg/submit/omp2012/flags/Intel-ic13.0-linux64.20140219.00.html

You can also download the XML flags source by saving the following link:
https://pro.spec.org/private/hpg/submit/omp2012/flags/Intel-ic13.0-linux64.20140219.00.xml

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC OMP2012 v1.0.