Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E7-8890 v4</td>
<td>Operating System: Red Hat Enterprise Linux 6.7</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz</td>
<td>(Santiago), Kernel 2.6.32-573.elf6.x86_64</td>
</tr>
<tr>
<td>CPU MHz: 2200</td>
<td>Compiler: C/C++/Fortran: Version 16.0.0.109 of Intel</td>
</tr>
<tr>
<td>CPU MHz Maximum: 3400</td>
<td>Composer for Linux Build 20150815</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>AUTO Parallel: No</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>File System: Linux ext3</td>
</tr>
<tr>
<td>L3 Cache: 60 MB I+D on chip per chip</td>
<td>System State: Default</td>
</tr>
<tr>
<td>Other Cache: None</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2400T-R, running at 1600 MHz)</td>
<td>Peak Pointers: 64-bit</td>
</tr>
<tr>
<td>Disk Subsystem: 1 X 300 GB SAS, 15K RPM</td>
<td>Other Software: None</td>
</tr>
<tr>
<td>Other Hardware: None</td>
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<tr>
<td>Base Threads Run: 192</td>
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</table>

SPECompG_peak2012 = Not Run
SPECompG_base2012 = 26.0

| Threads | 2.00 | 5.00 | 8.00 | 11.0 | 14.0 | 17.0 | 20.0 | 23.0 | 26.0 | 29.0 | 32.0 | 35.0 | 38.0 | 41.0 | 44.0 | 47.0 | 50.0 | 53.0 | 56.0 | 59.0 |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 350.md  |      |      |      |      |      |      |      |      | 25.3 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 351.bwaves | 192 |      |      |      |      |      |      |      | 22.1 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 352.nab  |      |      |      |      |      |      |      |      | 29.8 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 357.bt331 | 192 |      |      |      |      |      |      |      | 24.5 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 358.botsalogn | 192 |      |      |      |      |      |      |      | 15.2 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 359.botsspar | 192 |      |      |      |      |      |      |      | 15.9 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 360.ilbdc | 192 |      |      |      |      |      |      |      | 22.2 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 362.fma3d | 192 |      |      |      |      |      |      |      | 20.4 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 363.swim  |      |      |      |      |      |      |      |      | 27.8 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 367.imagick | 192 |      |      |      |      |      |      |      | 17.7 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 370.mgrid331 | 192 |      |      |      |      |      |      |      | 58.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 371.applu331 | 192 |      |      |      |      |      |      |      | 57.1 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 372.smithwa | 192 |      |      |      |      |      |      |      | 23.7 |      |      |      |      |      |      |      |      |      |      |      |      |      |

Hardware Availability: Jul-2016
Software Availability: Aug-2015
Test date: May-2016
Test sponsor: Cisco Systems
Tested by: Cisco Systems
OMP2012 license: 9019
## Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

**SPECompG_peak2012 = Not Run**  
**SPECompG_base2012 = 26.0**

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>124</td>
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</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 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963ae67685e50647
- running on rhe167 Sat May  7 17:19:06 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
4 "physical id"s (chips)
192 "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
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
```

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**Platform Notes (Continued)**

```
27 28 29
physical 3: 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
```

From /proc/meminfo
- MemTotal: 529124784 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

```
/usr/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)

```
uname -a:
Linux rhel67 2.6.32-573.el6.x86_64 #1 SMP Wed Jul 1 18:23:37 EDT 2015 x86_64
x86_64 x86_64 GNU/Linux
```

run-level 3 May 7 11:54

SPEC is set to: /opt/omp2012
Facebook      Type  Size  Used Avail Use% Mounted on
/dev/sdb2      ext4  225G   64G  150G  30% /

Additional information from dmidecode:
- BIOS Cisco Systems, Inc. C460M4.2.0.11.30.032820161452 03/28/2016
- Memory:
  - 32x 16 GB
  - 32x 0xCE00 M393A2G40EB1-CRC 16 GB 1600 MHz 2 rank
  - 64x 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
- Processor Power State set to C0/C1
- Power Technology set to Performance
- Memory RAS configuration set to Maximum Performance
- Energy Performance BIAS setting set to OS
- Memory Power Saving Mode set to Disabled
- QPI Snoop Mode set to Cluster-on-Die

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OMP2012 license: 9019
Test sponsor: Cisco Systems
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General Notes (Continued)

General OMP Library Settings
ENV_KMP_LIBRARY=turnaround
ENV_OMP_SCHEDULE=static
ENV_KMP_BLOCKTIME=200
ENV_KMP_STACKSIZE=702M
ENV_OMP_DYNAMIC=FALSE
ENV_OMP_NESTED=FALSE

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

Base Compiler Invocation

C benchmarks:
   icc

C++ benchmarks:
   icpc

Fortran benchmarks:
   ifort

Base Portability Flags

350.md: -Fp
357.b331: -mcmodel=medium
363.swim: -mcmodel=medium
367.imagick: -std=c99

Base Optimization Flags

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

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

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

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20140219.html
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SPECompG_peak2012 = Not Run  
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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>OMP2012 license</td>
<td>9019</td>
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<td>Test sponsor</td>
<td>Cisco Systems</td>
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<td>Tested by</td>
<td>Cisco Systems</td>
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<tr>
<td>Test date</td>
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<tr>
<td>Hardware Availability</td>
<td>Jul-2016</td>
</tr>
<tr>
<td>Software Availability</td>
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You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20140219.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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