Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2670, 2.60 GHz)

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>53.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>49.7</td>
</tr>
</tbody>
</table>

CPU2006 license: 9019  
Test date: Jul-2013  
Test sponsor: Cisco Systems  
Hardware Availability: Apr-2012  
Tested by: Cisco Systems  
Software Availability: Dec-2011

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**Hardware**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2670</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2600</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 2 chips, 8 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>20 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 X 600 GB 10000 RPM SAS</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V9.01</td>
</tr>
</tbody>
</table>
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>332</td>
<td>29.5</td>
<td>331</td>
<td>29.5</td>
<td>331</td>
<td>29.5</td>
<td>282</td>
<td>34.7</td>
<td>282</td>
<td>34.7</td>
<td>282</td>
<td>34.7</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>438</td>
<td>22.0</td>
<td>438</td>
<td>22.0</td>
<td>439</td>
<td>22.0</td>
<td>431</td>
<td>22.4</td>
<td>430</td>
<td>22.4</td>
<td>430</td>
<td>22.4</td>
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<tr>
<td>403.mcf</td>
<td>253</td>
<td>31.9</td>
<td>252</td>
<td>31.9</td>
<td>253</td>
<td>31.8</td>
<td>250</td>
<td>32.1</td>
<td>251</td>
<td>32.1</td>
<td>251</td>
<td>32.1</td>
</tr>
<tr>
<td>429.gcc</td>
<td>142</td>
<td>64.2</td>
<td>142</td>
<td>64.4</td>
<td>140</td>
<td>65.1</td>
<td>142</td>
<td>64.2</td>
<td>142</td>
<td>64.4</td>
<td>140</td>
<td>65.1</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>446</td>
<td>23.5</td>
<td>446</td>
<td>23.5</td>
<td>446</td>
<td>23.5</td>
<td>414</td>
<td>25.4</td>
<td>414</td>
<td>25.4</td>
<td>414</td>
<td>25.4</td>
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<tr>
<td>456.hmmer</td>
<td>184</td>
<td>50.7</td>
<td>184</td>
<td>50.6</td>
<td>184</td>
<td>50.7</td>
<td>181</td>
<td>51.7</td>
<td>180</td>
<td>51.9</td>
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<td>51.9</td>
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<tr>
<td>458.sjeng</td>
<td>441</td>
<td>27.4</td>
<td>441</td>
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<td>442</td>
<td>27.4</td>
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<td>27.3</td>
<td>442</td>
<td>27.4</td>
<td>442</td>
<td>27.4</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>6.87</td>
<td>3020</td>
<td>6.87</td>
<td>3020</td>
<td>6.87</td>
<td>3020</td>
<td>6.87</td>
<td>3020</td>
<td>6.87</td>
<td>3020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>511</td>
<td>43.3</td>
<td>510</td>
<td>43.4</td>
<td>512</td>
<td>43.3</td>
<td>423</td>
<td>52.3</td>
<td>422</td>
<td>52.5</td>
<td>423</td>
<td>52.4</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>232</td>
<td>26.9</td>
<td>230</td>
<td>27.2</td>
<td>231</td>
<td>27.1</td>
<td>173</td>
<td>36.1</td>
<td>173</td>
<td>36.1</td>
<td>174</td>
<td>36.0</td>
</tr>
<tr>
<td>473.astar</td>
<td>238</td>
<td>29.5</td>
<td>239</td>
<td>29.3</td>
<td>238</td>
<td>29.6</td>
<td>238</td>
<td>29.5</td>
<td>239</td>
<td>29.3</td>
<td>238</td>
<td>29.6</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>137</td>
<td>50.3</td>
<td>136</td>
<td>50.7</td>
<td>137</td>
<td>50.4</td>
<td>132</td>
<td>52.1</td>
<td>131</td>
<td>52.8</td>
<td>132</td>
<td>52.2</td>
</tr>
</tbody>
</table>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Processor Power State C6 set to Disabled
Processor Power State C1 Enhanced set to Disabled
Energy Performance Set to Performance
DRAM Clock Throttling Set to Performance

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Mon Jul 22 02:37:34 2013

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/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2670 0 @ 2.60GHz
  2 "physical id"s (chips)
   16 "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 : 8
siblings : 8
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7

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CPU2006 license: 9019
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License owner: Cisco Systems
Hardware Availability: Apr-2012
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Platform Notes (Continued)

cache size : 20480 KB

From /proc/meminfo
MemTotal: 132135276 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/redhat-release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release*/etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jul 22 02:33

SPEC is set to: /opt/cpu2006-1.2

Additional information from dmidecode:
Memory:
16x 0xAD00 HMT31GR7CFR4A-PB 8 GB 1600 MHz 1 rank

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = ":/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
Power Technology set to Custom
Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
Transparent Huge Pages enabled with:
echo always /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches
Intel HT Technology=Disable

Base Compiler Invocation

C benchmarks:
  icc -m64

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Base Compiler Invocation (Continued)

C++ benchmarks:
  icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/smartheap -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
 icc -m64
 400.perlbench: icc -m32
 445.gobmk: icc -m32

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Peak Compiler Invocation (Continued)

464.h264ref: icc -m32
C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,-muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -03 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,-muldefs -L/smartheap -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.xml

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

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