## SPEC® CFP2006 Result

**Cisco Systems**  
Cisco UCS C220 M5 (Intel Xeon Platinum 8158, 3.00GHz)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>152</strong></td>
<td><strong>147</strong></td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9019  
**Test date:** Aug-2017  
**Test sponsor:** Cisco Systems  
**Hardware Availability:** Aug-2017  
**Tested by:** Cisco Systems  
**Software Availability:** Apr-2017

### Benchmark Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>51.3</td>
</tr>
<tr>
<td>416.gamess</td>
<td>48.6</td>
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<tr>
<td>433.milc</td>
<td>78.0</td>
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<tr>
<td>434.zeusmp</td>
<td>263</td>
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<tr>
<td>435.gromacs</td>
<td>64.1</td>
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<tr>
<td>436.cactusADM</td>
<td>1310</td>
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<tr>
<td>437.leslie3d</td>
<td>512</td>
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<tr>
<td>444.namd</td>
<td>36.5</td>
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<tr>
<td>447.dealII</td>
<td>72.5</td>
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<tr>
<td>450.soplex</td>
<td>51.3</td>
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<tr>
<td>453.povray</td>
<td>79.0</td>
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<tr>
<td>454.calculix</td>
<td>69.7</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>333</td>
</tr>
<tr>
<td>465.tonto</td>
<td>259</td>
</tr>
<tr>
<td>470.lbm</td>
<td>57.7</td>
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<tr>
<td>481.wrf</td>
<td>135</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>80.8</td>
</tr>
</tbody>
</table>

**Continued on next page**
SPEC CFP2006 Result

Cisco Systems
Cisco UCS C220 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp2006 = 152
SPECfp_base2006 = 147

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems
L3 Cache: 24.75 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 1 x 600 GB SAS 10K RPM
Other Hardware: None
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>450.soplex</td>
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<td>453.povray</td>
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<td>459.GemsFDTD</td>
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<td>465.tonto</td>
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<td>470.lbm</td>
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<td>1340</td>
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<tr>
<td>481.wrf</td>
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<td>241</td>
<td>80.8</td>
<td>242</td>
<td>80.4</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

BIOS Settings:
Intel HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS
SNC set to Disabled
IMC Interleaving set to Auto
Patrol Scrub set to Disabled
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-0fck Fri Aug 25 06:19:24 2017
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Cisco Systems
Cisco UCS C220 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp2006 = 152
SPECfp_base2006 = 147

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Platform Notes (Continued)

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) Platinum 8158 CPU @ 3.00GHz
  2 "physical id"s (chips)
  24 "processors"
core, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 12
siblings : 12
  physical 0: cores 0 1 3 9 10 16 18 19 24 25 26 27
  physical 1: cores 0 1 2 3 4 9 10 16 18 19 25 26
  cache size : 25344 KB

From /proc/meminfo
MemTotal: 394864956 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  NAME="SLES"
  VERSION="12-SP2"
  VERSION_ID="12.2"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
  Linux linux-0fck 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
  (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 25 06:18

SPEC is set to: /home/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 500G 39G 462G 8% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
Continued on next page
Platform Notes (Continued)

reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. C220M5.3.1.1d.0.0615170645 06/15/2017
Memory:
24x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006-1.2/lib/ia32:/home/cpu2006-1.2/lib/intel64:/home/cpu2006-1.2/sh10.2"
OMP_NUM_THREADS = "24"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:
  icc -m64

C++ benchmarks:
  icpc -m64

Fortran benchmarks:
  ifort -m64

Benchmarks using both Fortran and C:
  icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64 -nofor_main
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64

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CPU2006 license: 9019
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Base Portability Flags (Continued)

447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags
Cisco Systems
Cisco UCS C220 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp2006 =  152
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CPU2006 license: 9019
Test sponsor:  Cisco Systems
Tested by:  Cisco Systems

Test date:  Aug-2017
Hardware Availability:  Aug-2017
Software Availability:  Apr-2017

Peak Optimization Flags

C benchmarks:
433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -fno-alias -auto-llvm
447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:
410.bwaves: basepeak = yes
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll2 -inline-level=0 -qopt-prefetch -parallel
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -inline-call -qopt-malloc-options=3
        -auto -unroll4

Benchmarks using both Fortran and C:
435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
Cisco Systems
Cisco UCS C220 M5 (Intel Xeon Platinum 8158, 3.00GHz)

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CPU2006 license: 9019
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Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.html

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

http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.xml

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

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