



# SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160  
2.10GHz)

**SPECfp®2006 = 148**

**SPECfp\_base2006 = 141**

CPU2006 license: 9019

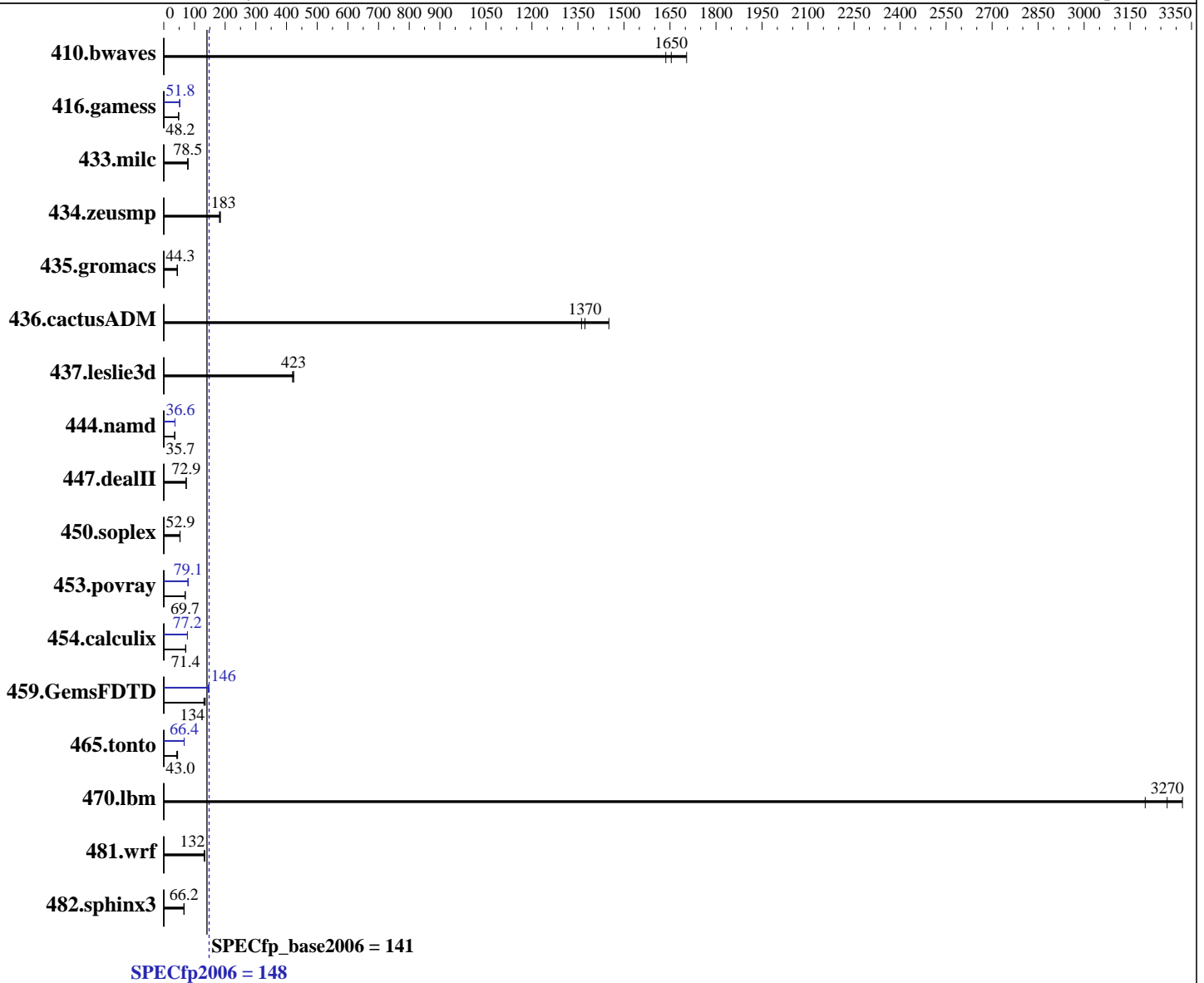
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Platinum 8160  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 96 cores, 4 chips, 24 cores/chip  
 CPU(s) orderable: 2,4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86\_64)  
 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++  
 Compiler for Linux;  
 Fortran: Version 17.0.3.191 of Intel Fortran  
 Compiler for Linux  
 Auto Parallel: Yes  
 File System: xfs  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160 2.10GHz)

SPECfp2006 = **148**

SPECfp\_base2006 = **141**

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

L3 Cache: 33 MB I+D on chip per chip  
Other Cache: None  
Memory: 768 GB (48 x 16 GB 2Rx4 PC4-2666V-R)  
Disk Subsystem: 1 x 600 GB SAS HDD, 10K RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8.30	1640	7.97	1700	<u>8.22</u>	<u>1650</u>	8.30	1640	7.97	1700	<u>8.22</u>	<u>1650</u>
416.gamess	405	48.3	406	48.2	<u>406</u>	<u>48.2</u>	<u>378</u>	<u>51.8</u>	378	51.8	378	51.7
433.milc	116	79.2	118	77.6	<u>117</u>	<u>78.5</u>	116	79.2	118	77.6	<u>117</u>	<u>78.5</u>
434.zeusmp	<u>49.7</u>	<u>183</u>	49.3	184	50.2	181	<u>49.7</u>	<u>183</u>	49.3	184	50.2	181
435.gromacs	163	43.7	161	44.3	<u>161</u>	<u>44.3</u>	163	43.7	161	44.3	<u>161</u>	<u>44.3</u>
436.cactusADM	8.24	1450	8.78	1360	<u>8.70</u>	<u>1370</u>	8.24	1450	8.78	1360	<u>8.70</u>	<u>1370</u>
437.leslie3d	22.4	420	<u>22.2</u>	<u>423</u>	22.2	423	22.4	420	<u>22.2</u>	<u>423</u>	22.2	423
444.namd	<u>224</u>	<u>35.7</u>	224	35.7	225	35.7	219	36.6	<u>219</u>	<u>36.6</u>	220	36.5
447.dealII	157	72.9	<u>157</u>	<u>72.9</u>	157	72.9	157	72.9	<u>157</u>	<u>72.9</u>	157	72.9
450.soplex	159	52.5	157	53.1	<u>158</u>	<u>52.9</u>	159	52.5	157	53.1	<u>158</u>	<u>52.9</u>
453.povray	76.5	69.5	<u>76.3</u>	<u>69.7</u>	76.1	69.9	<u>67.2</u>	<u>79.1</u>	67.1	79.3	67.3	79.0
454.calculix	115	71.6	<u>116</u>	<u>71.4</u>	116	71.3	<u>107</u>	<u>77.2</u>	107	77.3	107	76.9
459.GemsFDTD	<u>79.4</u>	<u>134</u>	81.2	131	78.6	135	72.9	146	<u>72.7</u>	<u>146</u>	72.1	147
465.tonto	218	45.1	232	42.5	<u>229</u>	<u>43.0</u>	149	66.3	<u>148</u>	<u>66.4</u>	148	66.7
470.lbm	4.14	3320	4.29	3200	<u>4.20</u>	<u>3270</u>	4.14	3320	4.29	3200	<u>4.20</u>	<u>3270</u>
481.wrf	84.8	132	<u>84.4</u>	<u>132</u>	83.7	134	84.8	132	<u>84.4</u>	<u>132</u>	83.7	134
482.sphinx3	<u>295</u>	<u>66.2</u>	294	66.3	298	65.5	<u>295</u>	<u>66.2</u>	294	66.3	298	65.5

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-nvug Wed Aug 9 11:20:04 2017

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160 2.10GHz)

SPECfp2006 = 148

SPECfp\_base2006 = 141

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

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

### 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 8160 CPU @ 2.10GHz
 4 "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 : 24
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
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 : 33792 KB
```

```
From /proc/meminfo
MemTotal: 791193120 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-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-nvug 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 9 11:14
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160 2.10GHz)

SPECfp2006 = 148

SPECfp\_base2006 = 141

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

### Platform Notes (Continued)

SPEC is set to: /home/cpu2006-1.2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	xfs	644G	96G	549G	15%	/

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program 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. C480M5.3.1.0.248.0518171057 05/18/2017

Memory:

48x 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 = "96"

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160  
2.10GHz)

SPECfp2006 = 148

SPECfp\_base2006 = 141

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

## Base Portability Flags (Continued)

```

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



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160 2.10GHz)

**SPECfp2006 = 148**

**SPECfp\_base2006 = 141**

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

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

## Peak Portability Flags

Same as Base Portability Flags

## 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-ilp32

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-calloc -qopt-malloc-options=3  
-auto -unroll4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8160 2.10GHz)

**SPECfp2006 = 148**

**SPECfp\_base2006 = 141**

**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 (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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>

SPEC and SPECfp are registered trademarks 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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Sep 6 11:46:14 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 5 September 2017.