



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

SPECfp<sup>®</sup>2006 = 72.2

SPECfp\_base2006 = 70.0

CPU2006 license: 9019

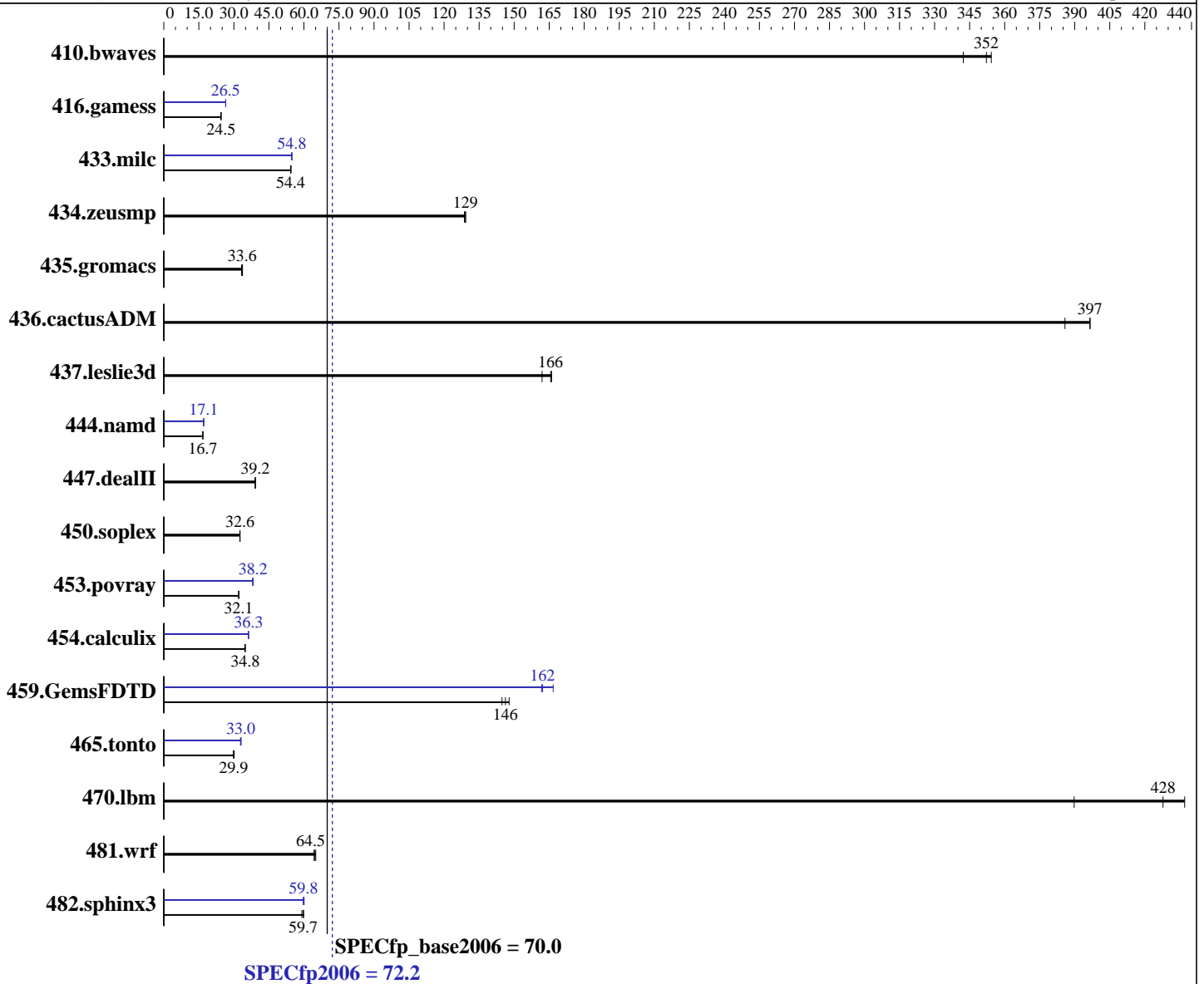
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Dec-2013

Hardware Availability: Dec-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2620 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
 CPU(s) orderable: 1,2 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

SPECfp2006 = **72.2**

SPECfp\_base2006 = **70.0**

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Dec-2013

Hardware Availability: Dec-2013

Software Availability: Sep-2013

L3 Cache: 15 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL7)  
Disk Subsystem: 1 X 300 GB 15000 RPM SAS  
Other Hardware: None

System State: Run level 3 (multi-user)  
Base Pointers: 32/64-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	38.4	354	39.7	342	<b><u>38.6</u></b>	<b><u>352</u></b>	38.4	354	39.7	342	<b><u>38.6</u></b>	<b><u>352</u></b>
416.gamess	801	24.4	799	24.5	<b><u>799</u></b>	<b><u>24.5</u></b>	739	26.5	<b><u>739</u></b>	<b><u>26.5</u></b>	739	26.5
433.milc	<b><u>169</u></b>	<b><u>54.4</u></b>	169	54.4	169	54.4	167	54.8	168	54.8	<b><u>168</u></b>	<b><u>54.8</u></b>
434.zeusmp	70.7	129	70.4	129	<b><u>70.4</u></b>	<b><u>129</u></b>	70.7	129	70.4	129	<b><u>70.4</u></b>	<b><u>129</u></b>
435.gromacs	212	33.7	214	33.3	<b><u>213</u></b>	<b><u>33.6</u></b>	212	33.7	214	33.3	<b><u>213</u></b>	<b><u>33.6</u></b>
436.cactusADM	30.1	397	<b><u>30.1</u></b>	<b><u>397</u></b>	31.0	386	30.1	397	<b><u>30.1</u></b>	<b><u>397</u></b>	31.0	386
437.leslie3d	56.6	166	58.0	162	<b><u>56.7</u></b>	<b><u>166</u></b>	56.6	166	58.0	162	<b><u>56.7</u></b>	<b><u>166</u></b>
444.namd	480	16.7	<b><u>480</u></b>	<b><u>16.7</u></b>	479	16.7	470	17.1	470	17.1	<b><u>470</u></b>	<b><u>17.1</u></b>
447.dealII	292	39.2	292	39.2	<b><u>292</u></b>	<b><u>39.2</u></b>	292	39.2	292	39.2	<b><u>292</u></b>	<b><u>39.2</u></b>
450.soplex	256	32.6	<b><u>256</u></b>	<b><u>32.6</u></b>	256	32.6	256	32.6	<b><u>256</u></b>	<b><u>32.6</u></b>	256	32.6
453.povray	166	32.0	165	32.2	<b><u>166</u></b>	<b><u>32.1</u></b>	<b><u>139</u></b>	<b><u>38.2</u></b>	139	38.2	140	38.0
454.calculix	<b><u>237</u></b>	<b><u>34.8</u></b>	237	34.9	237	34.8	<b><u>228</u></b>	<b><u>36.3</u></b>	227	36.3	228	36.3
459.GemsFDTD	<b><u>72.5</u></b>	<b><u>146</u></b>	73.3	145	71.8	148	65.6	162	<b><u>65.4</u></b>	<b><u>162</u></b>	63.6	167
465.tonto	<b><u>329</u></b>	<b><u>29.9</u></b>	326	30.1	330	29.8	300	32.8	<b><u>298</u></b>	<b><u>33.0</u></b>	298	33.0
470.lbm	35.3	390	31.4	437	<b><u>32.1</u></b>	<b><u>428</u></b>	35.3	390	31.4	437	<b><u>32.1</u></b>	<b><u>428</u></b>
481.wrf	172	65.1	<b><u>173</u></b>	<b><u>64.5</u></b>	174	64.4	172	65.1	<b><u>173</u></b>	<b><u>64.5</u></b>	174	64.4
482.sphinx3	<b><u>326</u></b>	<b><u>59.7</u></b>	325	59.9	330	59.1	324	60.1	<b><u>326</u></b>	<b><u>59.8</u></b>	326	59.7

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 HT Technology = Disabled  
CPU performance set to HPC  
Power Technology set to Custom  
CPU Power State C6 set to Enabled  
CPU Power State C1 Enhanced set to Disabled  
Energy Performance policy set to Performance  
Memory RAS configuration set to Maximum Performance  
DRAM Clock Throttling Set to Performance

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

SPECfp2006 = 72.2

SPECfp\_base2006 = 70.0

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Dec-2013

Hardware Availability: Dec-2013

Software Availability: Sep-2013

### Platform Notes (Continued)

LV DDR Mode set to Performance-mode

DRAM Refresh Rate Set to 1x

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191

running on SL1-IVB Mon Dec 23 22:51:20 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 E5-2620 v2 @ 2.10GHz

2 "physical id"s (chips)

12 "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 : 6

siblings : 6

physical 0: cores 0 1 2 3 4 5

physical 1: cores 0 1 2 3 4 5

cache size : 15360 KB

From /proc/meminfo

MemTotal: 132126884 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsc\_release -d

Red Hat Enterprise Linux Server release 6.4 (Santiago)

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

redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release-cpe: cpe:/o:redhat:enterprise\_linux:6server:ga:server

uname -a:

Linux SL1-IVB 2.6.32-358.el6.x86\_64 #1 SMP Tue Jan 29 11:47:41 EST 2013

x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Dec 23 22:43

SPEC is set to: /opt/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdb1 ext4 275G 270G 0 100% /

Additional information from dmidecode:

BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013

Memory:

16x 0xAD00 HMT31GR7EFR4C-RD 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp2006 = 72.2**

**SPECfp\_base2006 = 70.0**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Dec-2013

**Hardware Availability:** Dec-2013

**Software Availability:** Sep-2013

## General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
OMP_NUM_THREADS = "12"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

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

runspec command invoked through numactl i.e.:

```
numactl --interleave=all runspec <etc>
```

## 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
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
```



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp2006 = 72.2**

**SPECfp\_base2006 = 70.0**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Dec-2013

**Hardware Availability:** Dec-2013

**Software Availability:** Sep-2013

## Base Optimization Flags

C benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

## 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

## Peak Optimization Flags

C benchmarks:

433.milc: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32  
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp2006 = 72.2**

**SPECfp\_base2006 = 70.0**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Dec-2013

**Hardware Availability:** Dec-2013

**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp2006 = 72.2**

**SPECfp\_base2006 = 70.0**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Dec-2013

**Hardware Availability:** Dec-2013

**Software Availability:** Sep-2013

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 Thu Jul 24 21:15:24 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 January 2014.