



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp[®]2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

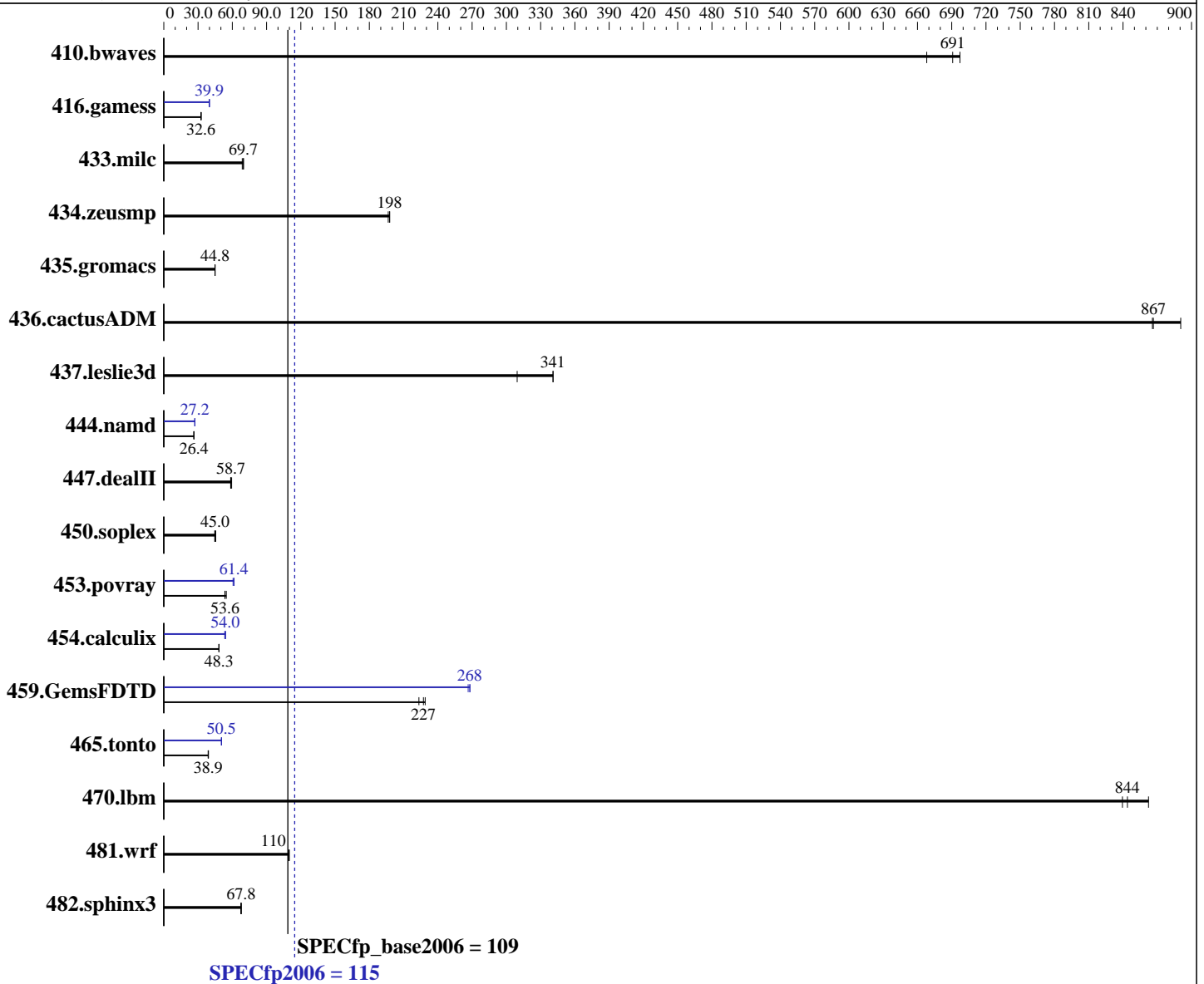
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015



Hardware

CPU Name: Intel Xeon E5-2683 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
 CPU(s) orderable: 1,2 chips
 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: SUSE Linux Enterprise Server 12 SP1 (x86_64) 3.12.49-11-default
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = **115**

SPECfp_base2006 = **109**

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

L3 Cache: 40 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x 300 GB SAS 15k RPM
Other Hardware: None

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	20.3	668	19.5	697	19.7	691	20.3	668	19.5	697	19.7	691
416.gamess	600	32.6	599	32.7	601	32.6	492	39.8	490	39.9	490	39.9
433.milc	134	68.7	132	69.7	132	69.8	134	68.7	132	69.7	132	69.8
434.zeusmp	46.0	198	46.3	197	46.0	198	46.0	198	46.3	197	46.0	198
435.gromacs	159	44.9	159	44.8	159	44.8	159	44.9	159	44.8	159	44.8
436.cactusADM	13.8	867	13.4	891	13.8	866	13.8	867	13.4	891	13.8	866
437.leslie3d	27.6	341	27.6	341	30.4	309	27.6	341	27.6	341	30.4	309
444.namd	304	26.4	304	26.4	304	26.4	295	27.2	295	27.2	295	27.2
447.dealII	195	58.7	193	59.4	195	58.5	195	58.7	193	59.4	195	58.5
450.soplex	187	44.6	183	45.5	186	45.0	187	44.6	183	45.5	186	45.0
453.povray	99.2	53.6	97.2	54.7	99.5	53.5	86.4	61.5	86.6	61.4	87.7	60.6
454.calculix	171	48.3	170	48.4	171	48.3	155	53.4	153	54.0	153	54.1
459.GemsFDTD	47.5	223	46.7	227	46.4	229	39.6	268	39.6	268	39.8	267
465.tonto	252	39.1	253	38.9	253	38.9	195	50.4	195	50.5	195	50.6
470.lbm	15.9	862	16.4	839	16.3	844	15.9	862	16.4	839	16.3	844
481.wrf	102	109	102	110	102	110	102	109	102	110	102	110
482.sphinx3	289	67.5	287	67.8	288	67.8	289	67.5	287	67.8	288	67.8

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 Hyper-Threading Technology option set to Disabled
CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled
QPI Snoop Mode set to Home Directory Snoop with OSB
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

Platform Notes (Continued)

running on linux-6mvl Sat Jul 23 08:54:29 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/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) CPU E5-2683 v4 @ 2.10GHz
 2 "physical id"s (chips)
 32 "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    : 16
  siblings     : 16
 physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 cache size   : 40960 KB

```

From /proc/meminfo

```

MemTotal:      264567868 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

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

```

SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

```

uname -a:

```

Linux linux-6mvl 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jul 22 11:31

SPEC is set to: /opt/cpu2006-1.2

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       xfs   279G  16G  263G   6% /

```

Additional information from dmidecode:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

Platform Notes (Continued)

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. C220M4.2.0.10c.0.032320160810 03/23/2016

Memory:

16x 0xCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

8x NO DIMM NO DIMM

(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 = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"

OMP_NUM_THREADS = "32"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

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

435.gromacs: -DSPEC_CPU_LP64 -nofor_main

436.cactusADM: -DSPEC_CPU_LP64 -nofor_main

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

Base Portability Flags (Continued)

```

437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deall: -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 -opt-prefetch
-ansi-alias

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

```

Fortran benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -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

```



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

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: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -inline-calloc

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECfp2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

Peak Optimization Flags (Continued)

465.tonto (continued):

`-opt-malloc-options=3 -auto -unroll4`

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 -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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.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.

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Aug 24 13:15:13 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 23 August 2016.

Standard Performance Evaluation Corporation

info@spec.org

<http://www.spec.org/>