



SPEC[®] CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp[®]_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

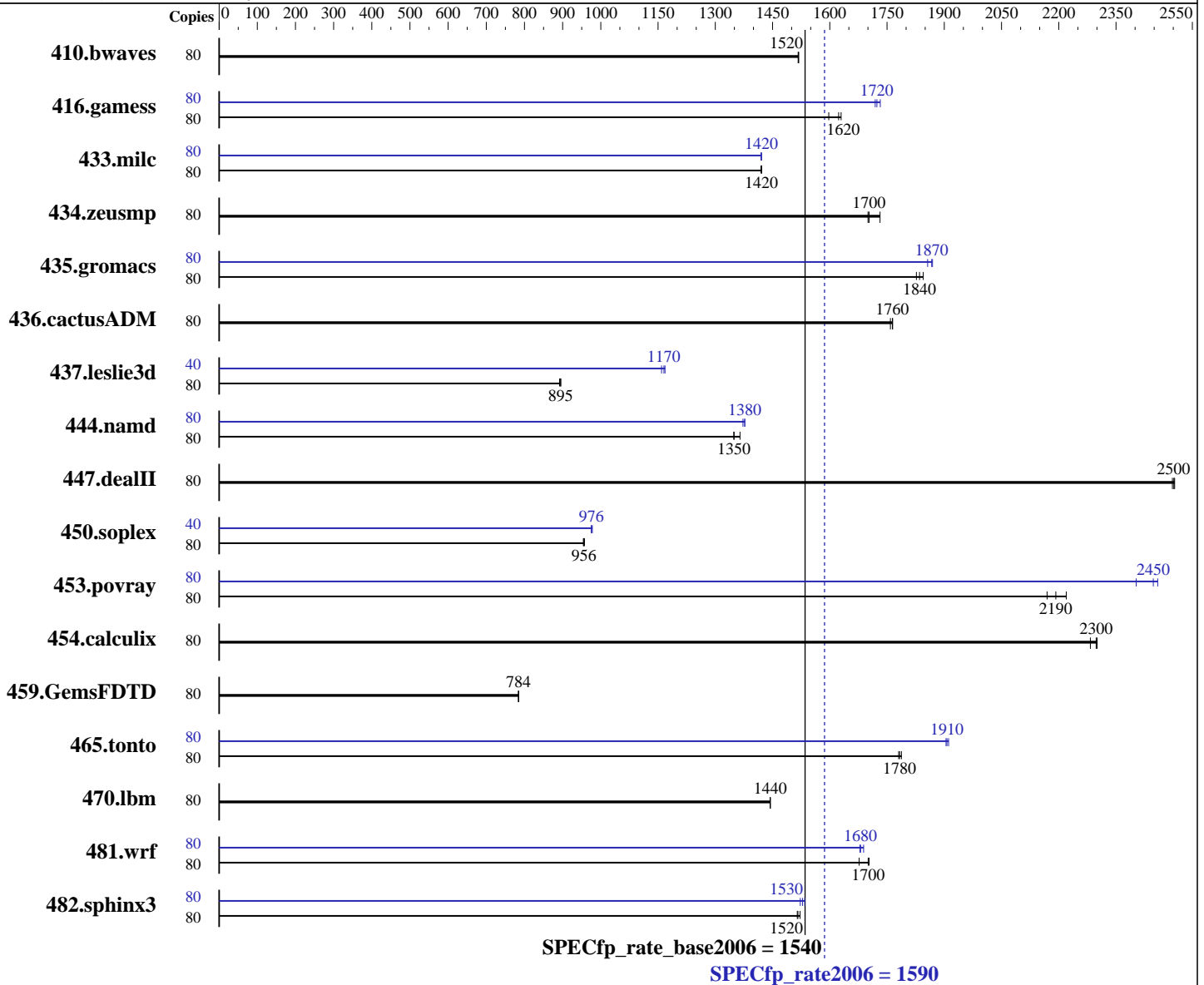
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014



Hardware

CPU Name: Intel Xeon E7-8891 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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: SUSE Linux Enterprise Server 12 (86_64)
 3.12.28-4-default
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014

L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 400 GB SSD SAS
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	80	717	1520	716	1520	716	1520	80	717	1520	716	1520	716	1520
416.gamess	80	961	1630	965	1620	981	1600	80	909	1720	911	1720	904	1730
433.milc	80	517	1420	517	1420	517	1420	80	517	1420	517	1420	517	1420
434.zeusmp	80	427	1700	428	1700	420	1730	80	427	1700	428	1700	420	1730
435.gromacs	80	310	1840	311	1840	313	1830	80	306	1870	308	1860	306	1870
436.cactusADM	80	542	1760	542	1760	544	1760	80	542	1760	542	1760	544	1760
437.leslie3d	80	843	892	840	895	841	895	40	324	1160	323	1170	322	1170
444.namd	80	470	1360	475	1350	476	1350	80	466	1380	466	1380	467	1370
447.dealII	80	366	2500	366	2500	366	2500	80	366	2500	366	2500	366	2500
450.soplex	80	698	956	697	957	699	954	40	342	976	341	978	342	975
453.povray	80	192	2220	194	2190	196	2170	80	177	2400	173	2460	174	2450
454.calculix	80	287	2300	287	2300	289	2280	80	287	2300	287	2300	289	2280
459.GemsFDTD	80	1082	784	1082	784	1082	784	80	1082	784	1082	784	1082	784
465.tonto	80	440	1790	441	1780	442	1780	80	413	1910	413	1900	412	1910
470.lbm	80	761	1440	761	1440	761	1440	80	761	1440	761	1440	761	1440
481.wrf	80	525	1700	525	1700	533	1680	80	532	1680	532	1680	529	1690
482.sphinx3	80	1029	1510	1028	1520	1024	1520	80	1020	1530	1016	1530	1024	1520

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

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

Test date: Jul-2015
Hardware Availability: May-2015
Software Availability: Nov-2014

Platform Notes

BIOS Configuration:
CPU performance set to Enterprise
Power Technology set to Performance
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on linux-kkg2 Thu Jul 30 04:51:33 2015

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 E7-8891 v3 @ 2.80GHz
 4 "physical id"s (chips)
 80 "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     : 10
  siblings      : 20
  physical 0:   cores 0 1 2 4 6 8 17 19 20 23
  physical 1:   cores 0 1 2 4 6 8 17 19 20 23
  physical 2:   cores 0 1 2 4 6 8 17 19 20 23
  physical 3:   cores 0 1 2 4 6 8 17 19 20 23
cache size     : 46080 KB
```

```
From /proc/meminfo
MemTotal:      1058666116 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 0
# 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"
VERSION_ID="12"
PRETTY_NAME="SUSE Linux Enterprise Server 12"
ID="sles"
ANSI_COLOR="0;32"
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

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

Test date: Jul-2015
Hardware Availability: May-2015
Software Availability: Nov-2014

Platform Notes (Continued)

CPE_NAME="cpe:/o:suse:sles:12"

```
uname -a:
Linux linux-kkg2 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 29 18:45
```

```
SPEC is set to: /home/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb2       xfs   332G  6.3G  326G   2% /home
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. C460M4.2.0.5b.0.052420152246 05/24/2015

Memory:
64x 0xCE00 M393A2G40DB0-CPB 16 GB 2 rank 1600 MHz
32x NO DIMM NO DIMM 1600 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006-1.2/libs/32:/home/cpu2006-1.2/libs/64:/home/cpu2006-1.2/sh"

```
Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014

Base Compiler Invocation (Continued)

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

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014

Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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.deallI: -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

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2)
 -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
 -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
 -unroll2

C++ benchmarks:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014

Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECfp_rate2006 = 1590

SPECfp_rate_base2006 = 1540

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jul-2015

Hardware Availability: May-2015

Software Availability: Nov-2014

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.20150812.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.20150812.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 Tue Aug 25 17:54:01 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 August 2015.