



SPEC[®] CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp[®]2006 = 127

SPECfp_base2006 = 121

CPU2006 license: 9019

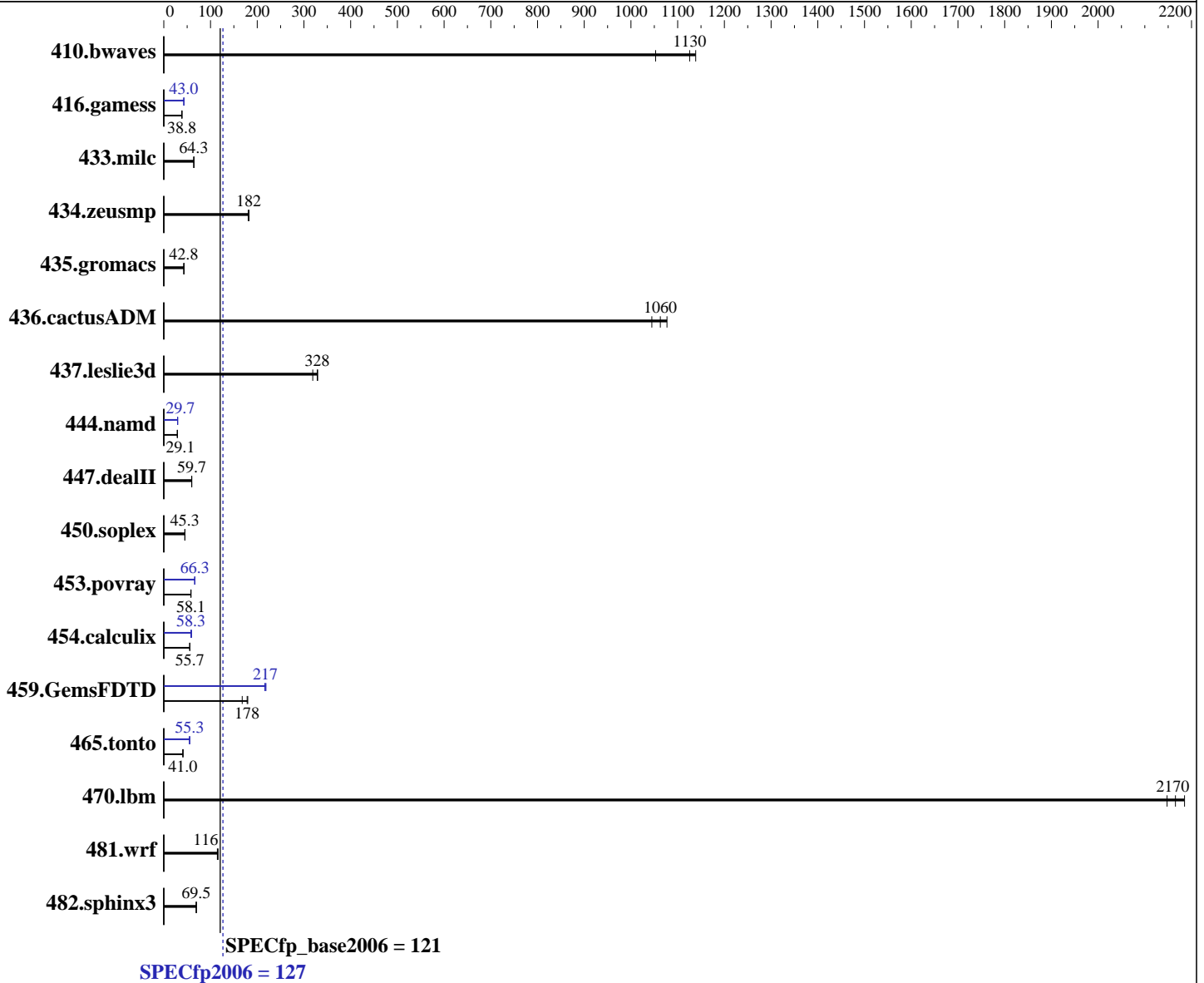
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016



Hardware

CPU Name: Intel Xeon E7-8880 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 88 cores, 4 chips, 22 cores/chip
 CPU(s) orderable: 2,4 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 17.0.0.098 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.0.098 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 B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = **127**

SPECfp_base2006 = **121**

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016

L3 Cache: 55 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (32 x 32 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 400 GB SAS SSD
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	12.1	1130	11.9	1140	12.9	1050	12.1	1130	11.9	1140	12.9	1050
416.gamess	505	38.8	505	38.8	505	38.8	456	43.0	457	42.9	455	43.0
433.milc	143	64.3	143	64.4	143	64.3	143	64.3	143	64.4	143	64.3
434.zeusmp	50.0	182	50.4	181	49.9	182	50.0	182	50.4	181	49.9	182
435.gromacs	167	42.8	167	42.8	164	43.6	167	42.8	167	42.8	164	43.6
436.cactusADM	11.4	1040	11.1	1080	11.2	1060	11.4	1040	11.1	1080	11.2	1060
437.leslie3d	29.5	319	28.5	329	28.6	328	29.5	319	28.5	329	28.6	328
444.namd	276	29.1	277	29.0	276	29.1	270	29.7	270	29.7	273	29.4
447.dealII	191	60.0	192	59.7	192	59.6	191	60.0	192	59.7	192	59.6
450.soplex	185	45.0	184	45.4	184	45.3	185	45.0	184	45.4	184	45.3
453.povray	91.4	58.2	92.0	57.8	91.5	58.1	80.3	66.3	80.3	66.3	80.2	66.3
454.calculix	148	55.7	148	55.7	148	55.6	139	59.5	142	58.3	142	58.3
459.GemsFDTD	59.0	180	63.2	168	59.5	178	48.8	217	49.1	216	48.5	219
465.tonto	240	41.1	240	41.0	241	40.8	178	55.4	179	54.9	178	55.3
470.lbm	6.29	2190	6.40	2150	6.34	2170	6.29	2190	6.40	2150	6.34	2170
481.wrf	96.4	116	97.4	115	96.3	116	96.4	116	97.4	115	96.3	116
482.sphinx3	281	69.4	280	69.5	280	69.7	281	69.4	280	69.5	280	69.7

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 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.rev6993

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = 127

SPECfp_base2006 = 121

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

Test date: Apr-2017
Hardware Availability: Apr-2016
Software Availability: Sep-2016

Platform Notes (Continued)

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-3y2r Wed Apr 19 11:12:22 2017

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 E7-8880 v4 @ 2.20GHz
 4 "physical id"s (chips)
 88 "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 : 22
  siblings  : 22
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
 28
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
 28
  physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
 28
  physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
 28
cache size : 56320 KB

```

```

From /proc/meminfo
MemTotal:      1058506896 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-3y2r 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = 127

SPECfp_base2006 = 121

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016

Platform Notes (Continued)

run-level 3 Jan 3 01:10

SPEC is set to: /opt/cpu2006-1.2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdal	xfs	373G	21G	352G	6%	/

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. EXM4.3.1.2c.0.080220161434 08/02/2016

Memory:

32x 0xCE00 M393A4K40BB0-CPB 32 GB 2 rank 2133 MHz, configured at 1600 MHz
64x NO DIMM NO DIMM 2400 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 = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh10.2"

OMP_NUM_THREADS = "88"

Binaries compiled on a system with 1x Intel Core i7-4790K 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



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = 127

SPECfp_base2006 = 121

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016

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.deallI: -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 B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = 127

SPECfp_base2006 = 121

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016

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 B460 M4 (Intel Xeon E7-8880 v4 2.20 GHz)

SPECfp2006 = 127

SPECfp_base2006 = 121

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2017

Hardware Availability: Apr-2016

Software Availability: Sep-2016

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.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revD.20170404.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.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revD.20170404.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 May 31 12:00:13 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 31 May 2017.

Standard Performance Evaluation Corporation

info@spec.org

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