



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp[®]_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

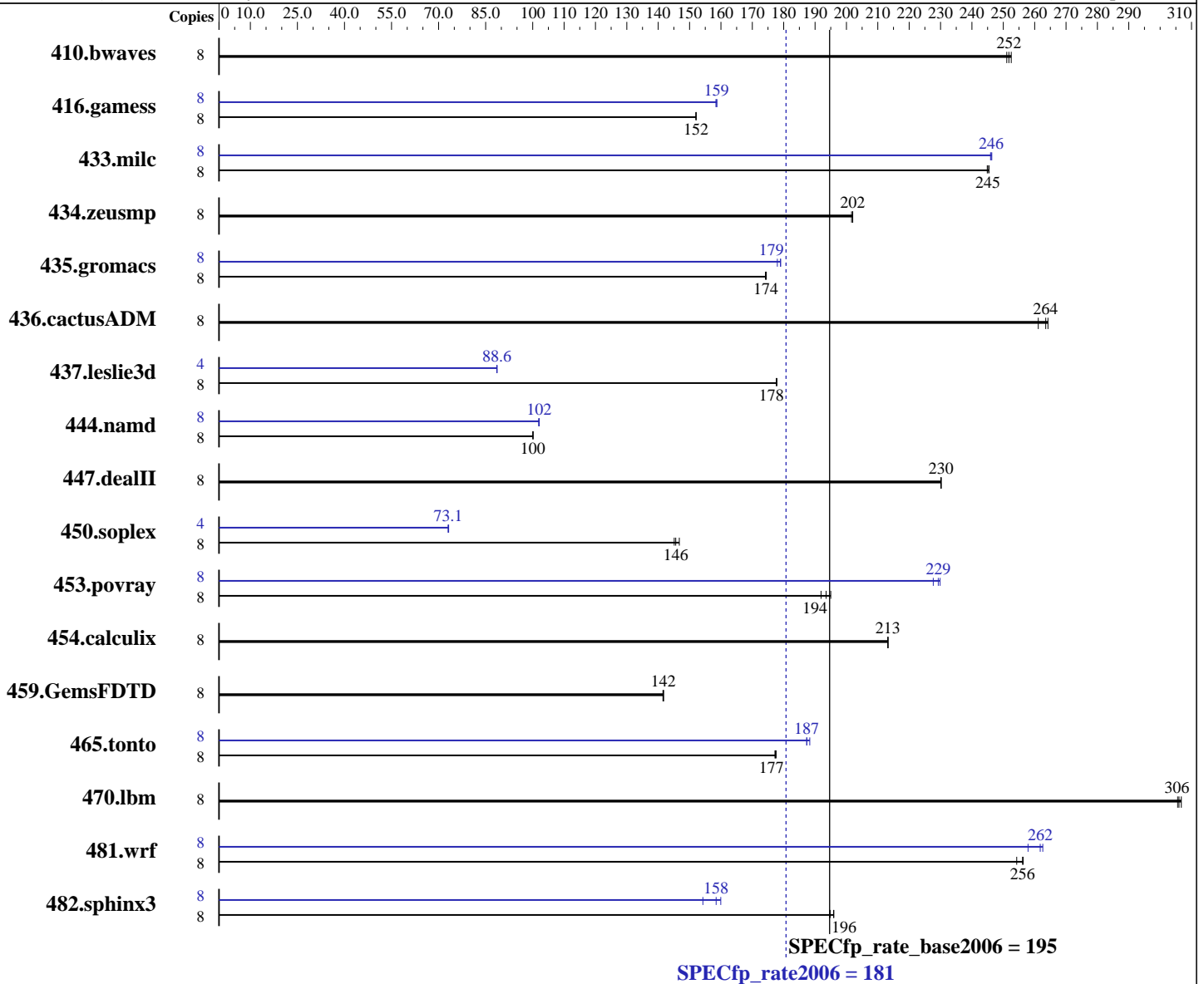
Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2403 v2
 CPU Characteristics:
 CPU MHz: 1800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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 6.5 (Santiago)
 2.6.32-431.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: No
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
 Disk Subsystem: 1 X 146 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	431	253	433	251	432	252	8	431	253	433	251	432	252
416.gamess	8	1030	152	1030	152	1030	152	8	987	159	989	158	988	159
433.milc	8	299	245	300	245	300	245	8	298	246	298	246	299	246
434.zeusmp	8	361	202	360	202	360	202	8	361	202	360	202	360	202
435.gromacs	8	328	174	327	174	328	174	8	319	179	319	179	321	178
436.cactusADM	8	363	264	366	261	362	264	8	363	264	366	261	362	264
437.leslie3d	8	423	178	423	178	423	178	4	425	88.5	424	88.6	424	88.7
444.namd	8	641	100	641	100	641	100	8	629	102	628	102	630	102
447.dealII	8	398	230	398	230	398	230	8	398	230	398	230	398	230
450.soplex	8	455	147	458	146	460	145	4	456	73.2	456	73.1	457	73.1
453.povray	8	220	194	222	192	218	195	8	185	230	187	228	186	229
454.calculix	8	310	213	310	213	309	213	8	310	213	310	213	309	213
459.GemsFDTD	8	600	142	599	142	599	142	8	600	142	599	142	599	142
465.tonto	8	444	177	444	177	443	178	8	420	187	420	187	418	188
470.lbm	8	358	307	360	306	359	306	8	358	307	360	306	359	306
481.wrf	8	351	254	349	256	349	256	8	341	262	340	263	347	258
482.sphinx3	8	796	196	796	196	800	195	8	975	160	984	158	1011	154

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"

Platform Notes

CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Disabled

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

Platform Notes (Continued)

```

CPU Power State C1 Enhanced set to Disabled
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on B22M3 Tue Jun 24 09:18:58 2014
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 E5-2403 v2 @ 1.80GHz
  2 "physical id"s (chips)
  8 "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     : 4
    siblings      : 4
    physical 0    : cores 0 1 2 3
    physical 1    : cores 0 1 2 3
  cache size     : 10240 KB
From /proc/meminfo
  MemTotal:       99008384 kB
  HugePages_Total: 0
  Hugepagesize:   2048 kB
/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.5 (Santiago)
From /etc/*release* /etc/*version*
  redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
  system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
  system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
uname -a:
  Linux B22M3 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64
  x86_64 x86_64 GNU/Linux
run-level 3 Jun 23 22:39
SPEC is set to: /opt/cpu2006-1.4
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sdal       ext4  134G  11G  117G   9% /
Additional information from dmidecode:
  BIOS Cisco Systems, Inc. B22M3.2.2.1.8.042120141915 04/21/2014
  Memory:
    12x 0xCE00 M393B1K70DH0-YK0 8 GB 1333 MHz 2 rank
(End of data from sysinfo program)

```

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

General Notes (Continued)

```

echo always > /sys/kernel/mm/redhat_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>
Submitted_by: "Sheshgiri I (shei)" <shei@cisco.com>
Submitted: Wed Sep 17 01:52:38 EDT 2014
Submission: cpu2006-20140903-31181.sub

```

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.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

```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 5



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

Peak Portability Flags (Continued)

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

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) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

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

C++ benchmarks:

444.namd: -xAVX(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.dealIII: basepeak = yes

450.soplex: -xAVX(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: -xAVX(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: -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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

SPECfp_rate2006 = 181

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_rate_base2006 = 195

CPU2006 license: 9019

Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013

Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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-revB.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-revB.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 Sep 24 16:18:24 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 24 September 2014.