SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

SPECfp®_rate2006 = 189

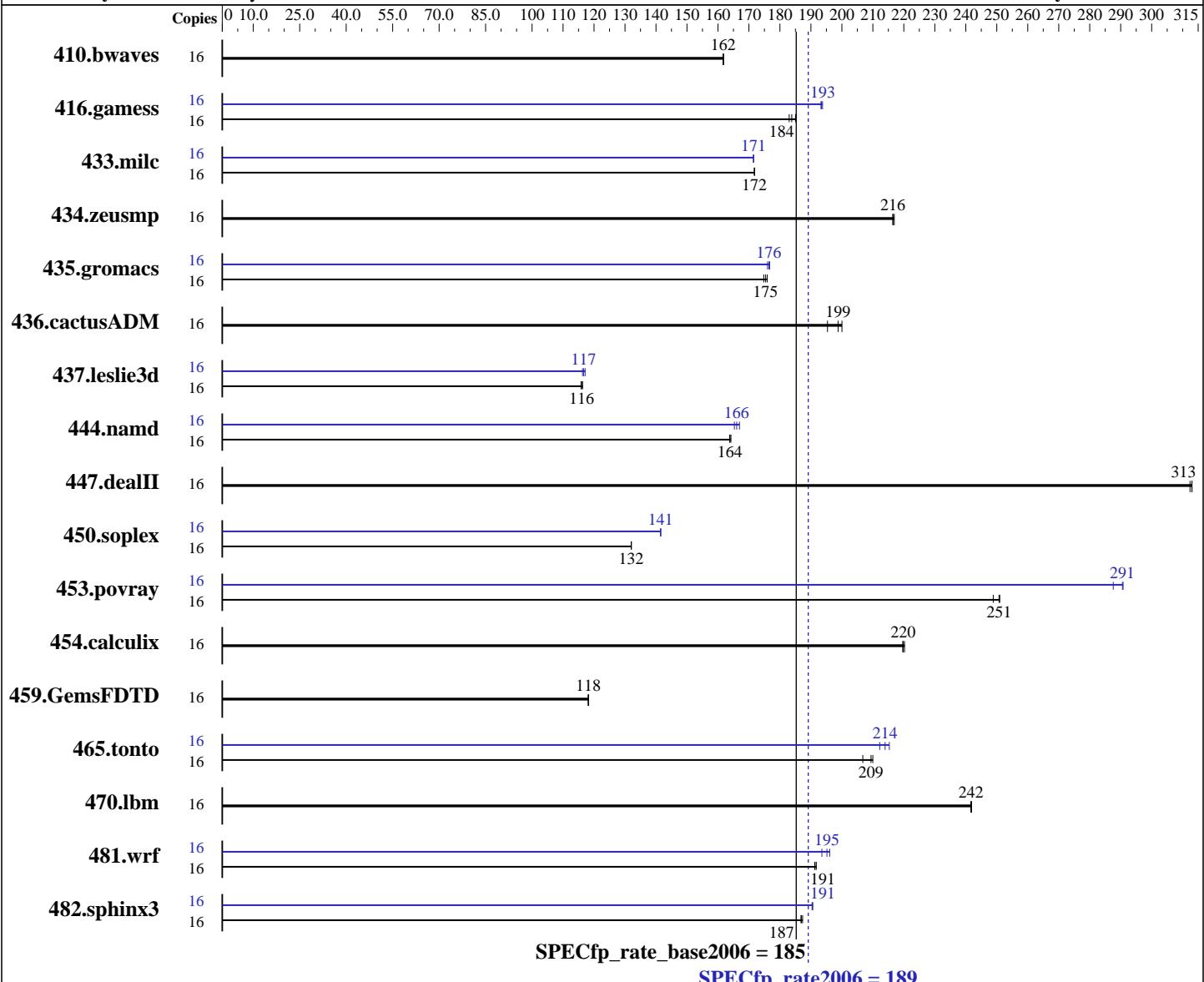SPECfp_rate_base2006 = 185

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

Test date: Feb-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Copies

Benchmark	Copies	Value
410.bwaves	16	162
416.gamess	16	193
416.gamess	16	184
433.milc	16	171
433.milc	16	172
434.zeusmp	16	216
435.gromacs	16	176
435.gromacs	16	175
436.cactusADM	16	199
437.leslie3d	16	117
437.leslie3d	16	116
444.namd	16	166
444.namd	16	164
447.dealII	16	313
450.soplex	16	141
450.soplex	16	132
453.povray	16	291
453.povray	16	251
454.calculix	16	220
459.GemsFDTD	16	118
465.tonto	16	214
465.tonto	16	209
470.lbm	16	242
481.wrf	16	195
481.wrf	16	191
482.sphinx3	16	191
482.sphinx3	16	187

SPECfp_rate_base2006 = 185

SPECfp_rate2006 = 189

Hardware

CPU Name: Intel Xeon E5640
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2667
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
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: Red Hat Enterprise Linux Server release 6.2 (Santiago)
2.6.32-220.el6.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
Fortran: Version 12.1.0.225 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

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

SPECfp_rate2006 = 189

SPECfp_rate_base2006 = 185

CPU2006 license: 9019	**Test date:** Feb-2012
Test sponsor: Cisco Systems	**Hardware Availability:** Mar-2011
Tested by: Cisco Systems	**Software Availability:** Dec-2011

L3 Cache:	12 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3L-10600R-9, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	600 GB SAS 10K RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1344	162	**1344**	**162**	1345	162	16	1344	162	**1344**	**162**	1345	162
416.gamess	16	1712	183	**1704**	**184**	1693	185	16	**1620**	**193**	1621	193	1617	194
433.milc	16	855	172	855	172	**855**	**172**	16	856	171	**856**	**171**	857	171
434.zeusmp	16	673	216	**673**	**216**	671	217	16	673	216	**673**	**216**	671	217
435.gromacs	16	**651**	**175**	649	176	654	175	16	**647**	**176**	646	177	649	176
436.cactusADM	16	979	195	956	200	**962**	**199**	16	979	195	956	200	**962**	**199**
437.leslie3d	16	**1296**	**116**	1293	116	1299	116	16	**1289**	**117**	1293	116	1284	117
444.namd	16	784	164	782	164	**783**	**164**	16	769	167	**773**	**166**	776	165
447.dealII	16	**585**	**313**	586	312	585	313	16	**585**	**313**	586	312	585	313
450.soplex	16	1010	132	**1011**	**132**	1011	132	16	943	141	**943**	**141**	943	142
453.povray	16	342	249	**339**	**251**	339	251	16	293	291	296	288	**293**	**291**
454.calculix	16	599	220	601	220	**601**	**220**	16	599	220	601	220	**601**	**220**
459.GemsFDTD	16	**1436**	**118**	1437	118	1436	118	16	**1436**	**118**	1437	118	1436	118
465.tonto	16	**752**	**209**	750	210	761	207	16	**736**	**214**	731	215	742	212
470.lbm	16	909	242	910	242	**910**	**242**	16	909	242	910	242	**910**	**242**
481.wrf	16	935	191	932	192	**934**	**191**	16	911	196	**916**	**195**	923	194
482.sphinx3	16	**1669**	**187**	1665	187	1669	187	16	**1637**	**191**	1638	190	1636	191

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

BIOS Configuration : Data Reuse Optimization = Disabled
Sysinfo program /opt/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

SPECfp_rate2006 = 189

SPECfp_rate_base2006 = 185

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

Test date: Feb-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Platform Notes (Continued)

```
running on localhost.localdomain Fri Feb  3 09:21:32 2012

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 E5640 @ 2.67GHz
      2 "physical id"s (chips)
      16 "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  : 8
      physical 0: cores 0 1 9 10
      physical 1: cores 0 1 9 10
   cache size : 12288 KB

From /proc/meminfo
   MemTotal:        98997800 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
   EST 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 3 09:19

SPEC is set to: /opt/cpu2006
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/sda1      ext4    917G  5.5G  865G   1% /

Additional information from dmidecode:

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006/libs/32:/opt/cpu2006/libs/64"
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

SPECfp_rate2006 = 189

SPECfp_rate_base2006 = 185

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

Test date: Feb-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never  > /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>
```

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 C200 M2 (Intel Xeon E5640, 2.67 GHz)

$SPECfp_rate2006 = $ 189

$SPECfp_rate_base2006 = $ 185

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

Test date: Feb-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -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.dealII: `-DSPEC_CPU_LP64`
    453.povray: `-DSPEC_CPU_LP64`

Continued on next page

SPEC CFP2006 Result

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

SPECfp_rate2006 = 189

SPECfp_rate_base2006 = 185

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: -xSSE4.2(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) -static -auto-ilp32

   470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
            -unroll2
```

C++ benchmarks:

```
  444.namd: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

SPEC CFP2006 Result

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5640, 2.67 GHz)

$SPECfp\_rate2006 =$ 189

$SPECfp\_rate\_base2006 =$ 185

CPU2006 license: 9019	**Test date:**	Feb-2012
Test sponsor: Cisco Systems	**Hardware Availability:**	Mar-2011
Tested by: Cisco Systems	**Software Availability:**	Dec-2011

Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(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: -xSSE4.2(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 -static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

---

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

---

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 Thu Jul 24 01:54:25 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 March 2012.