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

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

$SPECfp^{®}\_rate2006 =$  433
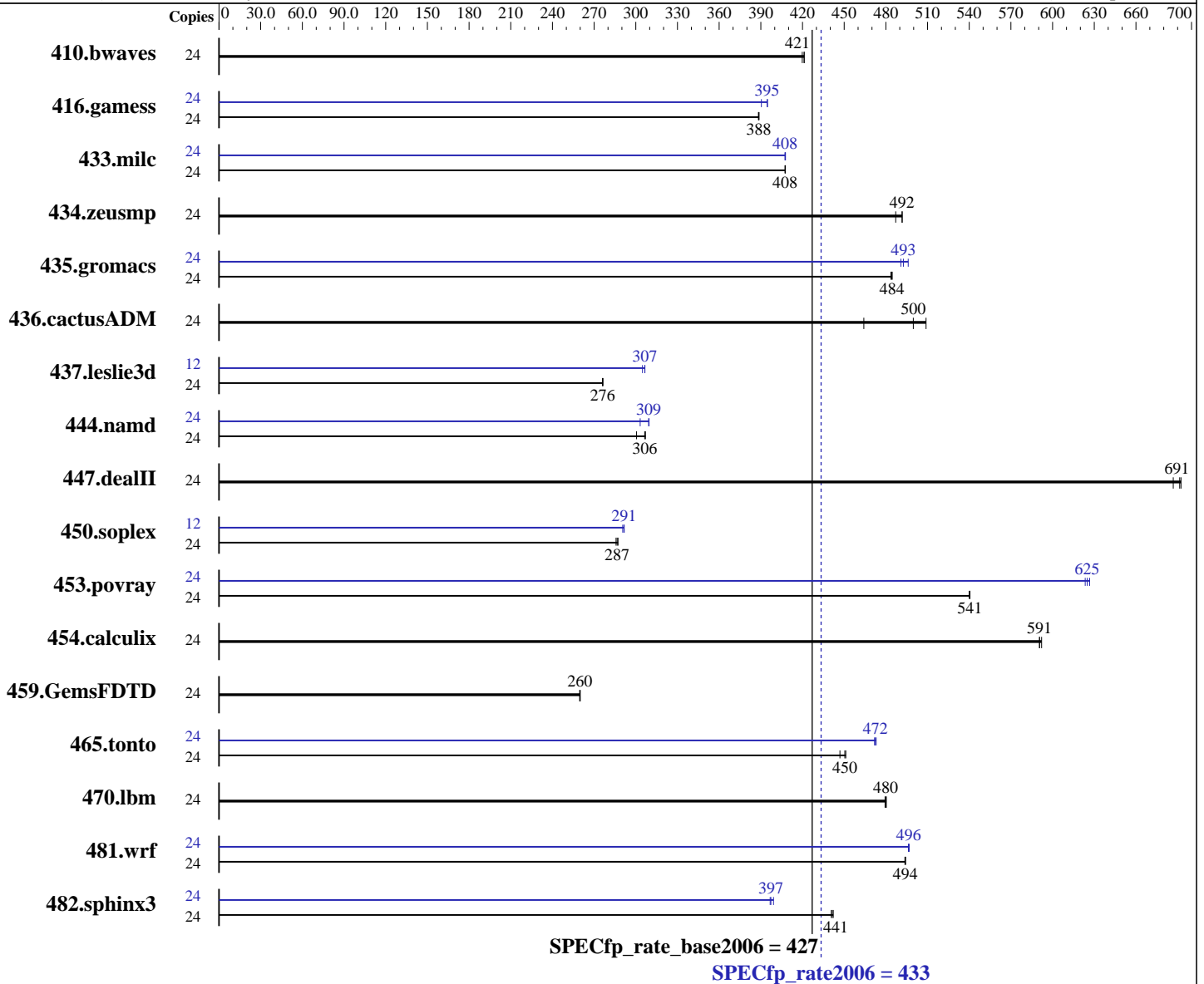
$SPECfp\_rate\_base2006 =$  427

| **CPU2006 license:** 9019 | **Test date:** Nov-2013 |
|---|---|
| **Test sponsor:** Cisco Systems | **Hardware Availability:** Sep-2013 |
| **Tested by:** Cisco Systems | **Software Availability:** Sep-2013 |



**Copies**

| Benchmark | Copies | Result |
|---|---|---|
| 410.bwaves | 24 | 421 |
| 416.gamess | 24 | 395 |
| | 24 | 388 |
| 433.milc | 24 | 408 |
| | 24 | 408 |
| 434.zeusmp | 24 | 492 |
| 435.gromacs | 24 | 493 |
| | 24 | 484 |
| 436.cactusADM | 24 | 500 |
| 437.leslie3d | 12 | 307 |
| | 24 | 276 |
| 444.namd | 24 | 309 |
| | 24 | 306 |
| 447.dealII | 24 | 691 |
| 450.soplex | 12 | 291 |
| | 24 | 287 |
| 453.povray | 24 | 625 |
| | 24 | 541 |
| 454.calculix | 24 | 591 |
| 459.GemsFDTD | 24 | 260 |
| 465.tonto | 24 | 472 |
| | 24 | 450 |
| 470.lbm | 24 | 480 |
| 481.wrf | 24 | 496 |
| | 24 | 494 |
| 482.sphinx3 | 24 | 397 |
| | 24 | 441 |

SPECfp_rate_base2006 = 427

SPECfp_rate2006 = 433

## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2630 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.10 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 cores/chip, 2 threads/core |
| 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 6.4 (Santiago) 2.6.32-358.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

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

$SPECfp\_rate2006 = \quad 433$

$SPECfp\_rate\_base2006 = \quad 427$

| | |
|---|---|
| **CPU2006 license:** 9019 | **Test date:** Nov-2013 |
| **Test sponsor:** Cisco Systems | **Hardware Availability:** Sep-2013 |
| **Tested by:** Cisco Systems | **Software Availability:** Sep-2013 |

| | | | |
|---|---|---|---|
| L3 Cache: | 15 MB I+D on chip per chip | System State: | Run level 3 (multi-user) |
| Other Cache: | None | Base Pointers: | 32/64-bit |
| Memory: | 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11) | Peak Pointers: | 32/64-bit |
| | | Other Software: | None |
| Disk Subsystem: | 1 X 300 GB 15000 RPM SAS | | |
| Other Hardware: | None | | |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 24 | **774** | **421** | 774 | 421 | 777 | 420 | 24 | **774** | **421** | 774 | 421 | 777 | 420 |
| 416.gamess | 24 | 1209 | 389 | **1210** | **388** | 1210 | 388 | 24 | 1190 | 395 | **1191** | **395** | 1204 | 390 |
| 433.milc | 24 | 541 | 408 | **541** | **408** | 541 | 407 | 24 | **541** | **408** | 541 | 407 | 540 | 408 |
| 434.zeusmp | 24 | **444** | **492** | 448 | 487 | 444 | 492 | 24 | **444** | **492** | 448 | 487 | 444 | 492 |
| 435.gromacs | 24 | 354 | 484 | **354** | **484** | 354 | 484 | 24 | 349 | 491 | **348** | **493** | 345 | 496 |
| 436.cactusADM | 24 | 618 | 464 | 564 | 509 | **574** | **500** | 24 | 618 | 464 | 564 | 509 | **574** | **500** |
| 437.leslie3d | 24 | 817 | 276 | 817 | 276 | **817** | **276** | 12 | 368 | 307 | **368** | **307** | 370 | 305 |
| 444.namd | 24 | 640 | 301 | **628** | **306** | 627 | 307 | 24 | 635 | 303 | **622** | **309** | 622 | 310 |
| 447.dealII | 24 | 400 | 687 | 397 | 692 | **397** | **691** | 24 | 400 | 687 | 397 | 692 | **397** | **691** |
| 450.soplex | 24 | 697 | 287 | **698** | **287** | 700 | 286 | 12 | **343** | **291** | 343 | 292 | 344 | 291 |
| 453.povray | 24 | 236 | 540 | 236 | 541 | **236** | **541** | 24 | **204** | **625** | 205 | 623 | 204 | 627 |
| 454.calculix | 24 | 334 | 592 | 335 | 591 | **335** | **591** | 24 | 334 | 592 | 335 | 591 | **335** | **591** |
| 459.GemsFDTD | 24 | **980** | **260** | 981 | 260 | 979 | 260 | 24 | **980** | **260** | 981 | 260 | 979 | 260 |
| 465.tonto | 24 | 528 | 447 | 523 | 451 | **524** | **450** | 24 | 499 | 473 | **500** | **472** | 501 | 472 |
| 470.lbm | 24 | 688 | 479 | **687** | **480** | 687 | 480 | 24 | 688 | 479 | **687** | **480** | 687 | 480 |
| 481.wrf | 24 | 543 | 494 | 543 | 494 | **543** | **494** | 24 | **540** | **496** | 540 | 496 | 540 | 497 |
| 482.sphinx3 | 24 | 1061 | 441 | **1060** | **441** | 1058 | 442 | 24 | 1179 | 397 | 1172 | 399 | **1178** | **397** |

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"

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp_rate2006 = 433

SPECfp_rate_base2006 = 427

| | | | |
|---|---|---|---|
| **CPU2006 license:** 9019 | | **Test date:** | Nov-2013 |
| **Test sponsor:** Cisco Systems | | **Hardware Availability:** | Sep-2013 |
| **Tested by:** Cisco Systems | | **Software Availability:** | Sep-2013 |

## Platform Notes

```
   Intel HT Technology = Enabled
   CPU performance set to HPC
   Power Technology set to Custom
   CPU Power State C6 set to Enabled
   CPU Power State C1 Enhanced set to Disabled
   Energy Performance policy set to Performance
   Memory RAS configuration set to Maximum Performance
   DRAM Clock Throttling Set to Performance
   LV DDR Mode set to Performance-mode
   DRAM Refresh Rate Set to 1x
    Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on C240M3-ivb Sat Nov  9 13:50:32 2013

    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 E5-2630 v2 @ 2.60GHz
          2 "physical id"s (chips)
          24 "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 : 6
          siblings  : 12
          physical 0: cores 0 1 2 3 4 5
          physical 1: cores 0 1 2 3 4 5
       cache size : 15360 KB

    From /proc/meminfo
       MemTotal:       132125268 kB
       HugePages_Total:        0
       Hugepagesize:        2048 kB

    /usr/bin/lsb_release -d
       Red Hat Enterprise Linux Server release 6.4 (Santiago)

    From /etc/*release* /etc/*version*
       redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
       system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
       system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

    uname -a:
       Linux C240M3-ivb 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
       x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Nov 9 13:49

    SPEC is set to: /opt/cpu2006-1.2
       Filesystem     Type    Size   Used Avail Use% Mounted on
```

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

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp_rate2006 =　433

SPECfp_rate_base2006 =　427

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

**Test date:** Nov-2013
**Hardware Availability:** Sep-2013
**Software Availability:** Sep-2013

## Platform Notes (Continued)

```
     /dev/sda1      ext4    275G   13G  248G   5% /

  Additional information from dmidecode:
    BIOS Cisco Systems, Inc. C240M3.1.5.3b.0.082020130616 08/20/2013
    Memory:
     16x 0xAD00 HMT31GR7EFR4C-RD 8 GB 1600 MHz 2 rank
     8x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

## General Notes

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

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 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>
```

## 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

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

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp_rate2006 =     433

SPECfp_rate_base2006 =   427

| | |
|---|---|
| **CPU2006 license:** 9019 | **Test date:** Nov-2013 |
| **Test sponsor:** Cisco Systems | **Hardware Availability:** Sep-2013 |
| **Tested by:** Cisco Systems | **Software Availability:** Sep-2013 |

## Base Portability Flags (Continued)

```
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:
```
-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
```

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp_rate2006 =     433

SPECfp_rate_base2006 =   427

| | | | |
|---|---|---|---|
| **CPU2006 license:** 9019 | | **Test date:** | Nov-2013 |
| **Test sponsor:** Cisco Systems | | **Hardware Availability:** | Sep-2013 |
| **Tested by:** Cisco Systems | | **Software Availability:** | Sep-2013 |

# 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
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.dealII: 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:

## Cisco Systems

Cisco UCS C240 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp_rate2006 =    433

SPECfp_rate_base2006 =    427

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

**Test date:** Nov-2013
**Hardware Availability:** Sep-2013
**Software Availability:** Sep-2013

# Peak Optimization Flags (Continued)

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

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-V1.2.20130717.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-V1.2.20130717.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 17:57:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  3 December 2013.