SPEC® CFP2006 Result

Cisco Systems

Cisco UCS C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

$SPECfp^{®}\_rate2006 = 618$

$SPECfp\_rate\_base2006 = 602$
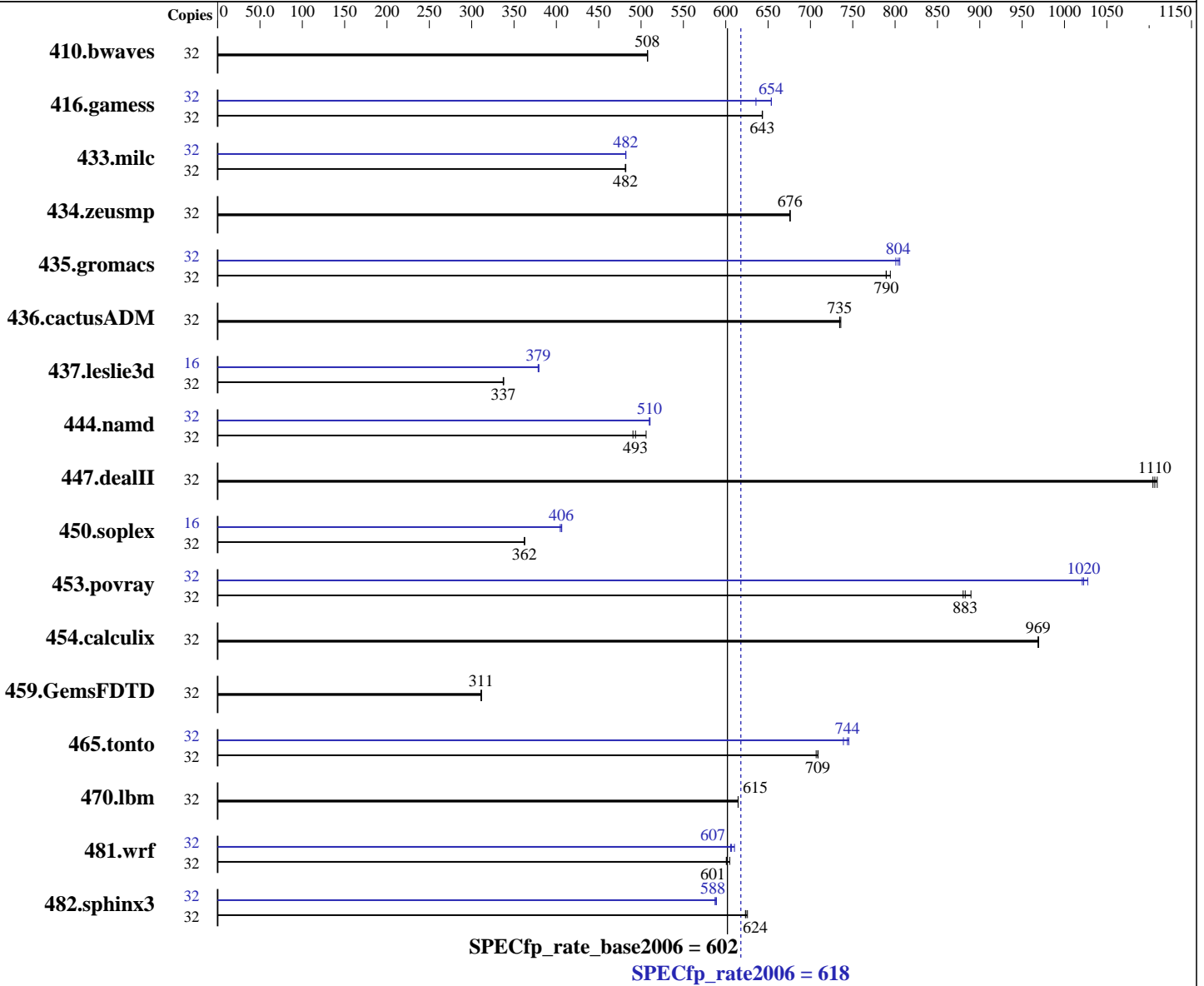
CPU2006 license: 9019   **Test date:** Oct-2013
Test sponsor: Cisco Systems   **Hardware Availability:** Sep-2013
Tested by: Cisco Systems   **Software Availability:** Sep-2013

Benchmark	Copies	Result
410.bwaves	32	508
416.gamess	32	654
416.gamess	32	643
433.milc	32	482
433.milc	32	482
434.zeusmp	32	676
435.gromacs	32	804
435.gromacs	32	790
436.cactusADM	32	735
437.leslie3d	16	379
437.leslie3d	32	337
444.namd	32	510
444.namd	32	493
447.dealII	32	1110
450.soplex	16	406
450.soplex	32	362
453.povray	32	1020
453.povray	32	883
454.calculix	32	969
459.GemsFDTD	32	311
465.tonto	32	744
465.tonto	32	709
470.lbm	32	615
481.wrf	32	607
481.wrf	32	601
482.sphinx3	32	588
482.sphinx3	32	624

SPECfp_rate_base2006 = 602

SPECfp_rate2006 = 618

Hardware

CPU Name: Intel Xeon E5-2667 v2
CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz: 3300
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 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 C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp_rate2006 = 618

SPECfp_rate_base2006 = 602

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

L3 Cache:	25 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 X 300 GB 15000 RPM SAS	Other Software:	None
Other Hardware:	None		

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	32	856	508	857	507	**857**	**508**	32	856	508	857	507	**857**	**508**
416.gamess	32	974	643	974	643	**974**	**643**	32	986	636	**958**	**654**	958	654
433.milc	32	610	481	609	482	**610**	**482**	32	609	482	**609**	**482**	610	482
434.zeusmp	32	**431**	**676**	431	676	431	676	32	**431**	**676**	431	676	431	676
435.gromacs	32	289	789	**289**	**790**	288	794	32	285	801	**284**	**804**	284	806
436.cactusADM	32	521	734	520	736	**521**	**735**	32	521	734	520	736	**521**	**735**
437.leslie3d	32	892	337	890	338	**892**	**337**	16	396	379	**397**	**379**	397	378
444.namd	32	**520**	**493**	507	506	523	490	32	503	510	**503**	**510**	503	511
447.dealII	32	**331**	**1110**	331	1100	330	1110	32	**331**	**1110**	331	1100	330	1110
450.soplex	32	**736**	**362**	736	363	737	362	16	**329**	**406**	328	406	330	405
453.povray	32	193	880	**193**	**883**	191	890	32	**166**	**1020**	167	1020	166	1030
454.calculix	32	**272**	**969**	272	969	273	969	32	**272**	**969**	272	969	273	969
459.GemsFDTD	32	**1091**	**311**	1090	312	1092	311	32	**1091**	**311**	1090	312	1092	311
465.tonto	32	446	707	444	709	**444**	**709**	32	426	739	422	745	**423**	**744**
470.lbm	32	715	615	715	615	**715**	**615**	32	715	615	715	615	**715**	**615**
481.wrf	32	595	601	591	605	**595**	**601**	32	586	610	**589**	**607**	590	606
482.sphinx3	32	997	626	**1000**	**624**	1001	623	32	1059	589	**1061**	**588**	1061	588

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 Settings:
Intel HT Technology = Enabled
CPU performance set to HPC

Continued on next page

Cisco Systems

Cisco UCS C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp_rate2006 = 618

SPECfp_rate_base2006 = 602

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013

Platform Notes (Continued)

```
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 rhel6.4-speed Thu Oct 10 15:37:30 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 E5-2667 v2 @ 3.30GHz
       2 "physical id"s (chips)
       32 "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 : 8
       siblings  : 16
       physical 0: cores 1 2 3 4 8 9 10 11
       physical 1: cores 1 2 3 4 8 9 10 11
    cache size : 25600 KB

 From /proc/meminfo
    MemTotal:      264457864 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 rhel6.4-speed 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 Oct 10 15:34

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/sdb1      ext4    275G   42G  219G  17% /
```

Continued on next page

Cisco Systems

Cisco UCS C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp_rate2006 = 618

SPECfp_rate_base2006 = 602

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

Platform Notes (Continued)

```
  Additional information from dmidecode:
    BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013
    Memory:
     16x 0xAD00 HMT42GR7AFR4C-RD 16 GB 1866 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/cpu2006-1.2/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
  437.leslie3d: -DSPEC_CPU_LP64
     444.namd: -DSPEC_CPU_LP64
   447.dealII: -DSPEC_CPU_LP64
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp_rate2006 = 618

SPECfp_rate_base2006 = 602

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

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Base Portability Flags (Continued)

```
   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
```

SPEC CFP2006 Result

Cisco Systems

Cisco UCS C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

$SPECfp\_rate2006 =$ 618

$SPECfp\_rate\_base2006 =$ 602

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 C200 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp_rate2006 = **618**

SPECfp_rate_base2006 = **602**

CPU2006 license: 9019		**Test date:**	Oct-2013
Test sponsor:	Cisco Systems	**Hardware Availability:**	Sep-2013
Tested by:	Cisco Systems	**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 18:12:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 December 2013.