SPEC® CFP2006 Result

Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5620, 2.40 GHz)

$SPECfp®\_rate2006 =$ 164

$SPECfp\_rate\_base2006 =$ 164

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

Test date: Oct-2010
Hardware Availability: Apr-2010
Software Availability: Jan-2010

Copies

Benchmark	Copies	Value
410.bwaves	12	155
410.bwaves	16	163
416.gamess	12	123
416.gamess	16	160
433.milc	16	177
433.milc	16	177
434.zeusmp	16	193
435.gromacs	16	159
435.gromacs	16	158
436.cactusADM	16	199
437.leslie3d	12	106
437.leslie3d	16	111
444.namd	16	153
444.namd	16	149
447.dealII	16	261
447.dealII	16	264
450.soplex	12	130
450.soplex	16	128
453.povray	16	268
453.povray	16	222
454.calculix	16	198
459.GemsFDTD	12	99.6
459.GemsFDTD	16	103
465.tonto	16	200
465.tonto	16	186
470.lbm	12	103
470.lbm	16	101
481.wrf	16	191
482.sphinx3	16	191
482.sphinx3	16	178

SPECfp_rate_base2006 = 164

SPECfp_rate2006 = 164

Hardware

CPU Name: Intel Xeon E5620
CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz: 2400
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: SuSe Linux Enterprise Server 11 (x86_64), Kernel 2.6.27-15-2-default, RC4
Compiler: Intel C++ and Fortran Compiler 11.1 IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064 l_cprof_p_11.1.064
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)

Continued on next page

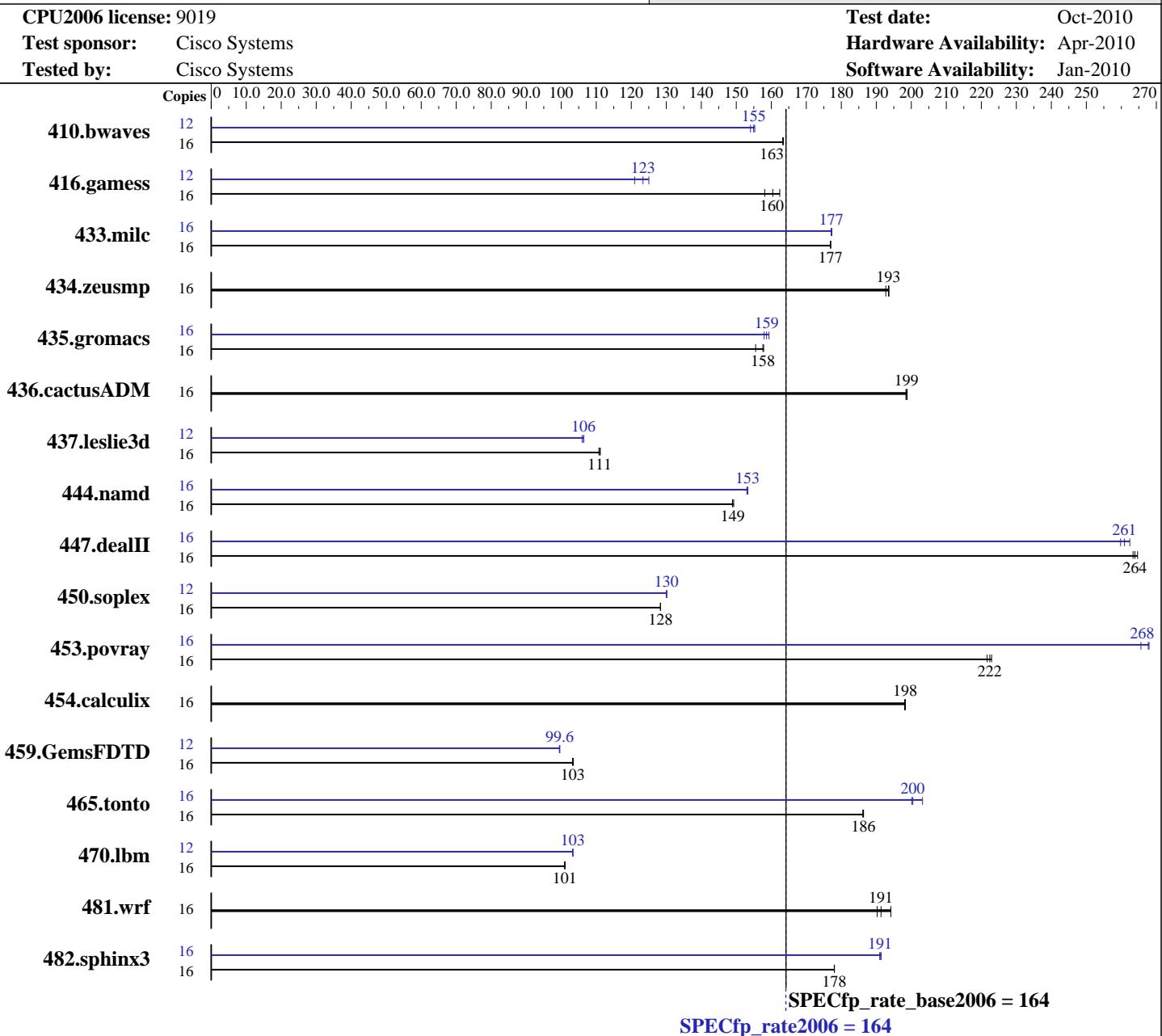# SPEC CFP2006 Result
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L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)	Other Software:	None
Disk Subsystem:	146 GB SAS, 10K RPM		
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	**1331**	**163**	1330	163	1332	163	12	1050	155	1059	154	**1052**	**155**
416.gamess	16	**1953**	**160**	1981	158	1929	162	12	1942	121	1879	125	**1905**	**123**
433.milc	16	830	177	**830**	**177**	830	177	16	828	177	**829**	**177**	829	177
434.zeusmp	16	752	194	756	193	**753**	**193**	16	752	194	756	193	**753**	**193**
435.gromacs	16	724	158	734	156	**725**	**158**	16	723	158	**720**	**159**	717	159
436.cactusADM	16	963	198	962	199	**963**	**199**	16	963	198	962	199	**963**	**199**
437.leslie3d	16	1353	111	**1355**	**111**	1358	111	12	**1060**	**106**	1065	106	1060	106
444.namd	16	860	149	862	149	**861**	**149**	16	**838**	**153**	837	153	839	153
447.dealII	16	695	263	692	265	**694**	**264**	16	705	260	697	262	**702**	**261**
450.soplex	16	**1040**	**128**	1040	128	1040	128	12	**769**	**130**	770	130	769	130
453.povray	16	**383**	**222**	382	223	384	222	16	320	266	318	268	**318**	**268**
454.calculix	16	666	198	666	198	**666**	**198**	16	666	198	666	198	**666**	**198**
459.GemsFDTD	16	**1643**	**103**	1641	103	1644	103	12	**1279**	**99.6**	1279	99.6	1280	99.5
465.tonto	16	**845**	**186**	845	186	846	186	16	775	203	787	200	**786**	**200**
470.lbm	16	2175	101	**2177**	**101**	2177	101	12	1595	103	1597	103	**1597**	**103**
481.wrf	16	920	194	**934**	**191**	939	190	16	920	194	**934**	**191**	939	190
482.sphinx3	16	**1752**	**178**	1751	178	1752	178	16	1629	191	1633	191	**1632**	**191**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
    The config file option 'submit' was used.
     numactl was used to bind copies to the cores
```

Operating System Notes

```
    ulimit -s unlimited was used to set the stacksize to unlimited prior to run
```

General Notes

```
    Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
```

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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

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

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

Benchmarks using both Fortran and C:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

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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`
        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) -static(pass 2) -prof-use(pass 2)`
               `-fno-alias -opt-prefetch`

         470.lbm: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
               `-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
               `-opt-malloc-options=3 -ansi-alias -auto-ilp32`

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Peak Optimization Flags (Continued)

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

C++ benchmarks:

444.namd: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-fno-alias -auto-ilp32`

447.dealII: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(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) -static(pass 2) -prof-use(pass 2)`
`-unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

416.gamess: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `basepeak = yes`

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

459.GemsFDTD: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-unroll2 -Ob0`

465.tonto: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(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) -static(pass 2) -prof-use(pass 2)`
`-opt-prefetch -auto-ilp32`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revG.20100929.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revG.20100929.xml

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