SPEC® CFP2006 Result
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Cisco Systems

Cisco UCS C200 M2 (Intel Xeon E5649, 2.53 GHz)

$SPECfp®\_rate2006 =$ 220

$SPECfp\_rate\_base2006 =$ 216

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

Test date: Feb-2011
Hardware Availability: Mar-2011
Software Availability: Jan-2011

Benchmark results chart:

Benchmark	Copies	base/peak value
410.bwaves	12	170
410.bwaves	24	170
416.gamess	12	259
416.gamess	24	271
433.milc	24	179
433.milc	24	179
434.zeusmp	24	259
435.gromacs	24	250
435.gromacs	24	250
436.cactusADM	24	282
437.leslie3d	12	123
437.leslie3d	24	120
444.namd	24	239
444.namd	24	233
447.dealII	24	330
447.dealII	24	341
450.soplex	12	144
450.soplex	24	129
453.povray	24	426
453.povray	24	362
454.calculix	24	302
459.GemsFDTD	24	111
465.tonto	24	238
465.tonto	24	231
470.lbm	12	250
470.lbm	24	248
481.wrf	24	196
482.sphinx3	24	204
482.sphinx3	24	195

SPECfp_rate_base2006 = 216

SPECfp_rate2006 = 220

Hardware

CPU Name:	Intel Xeon E5649
CPU Characteristics:	Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz:	2533
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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) with SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)

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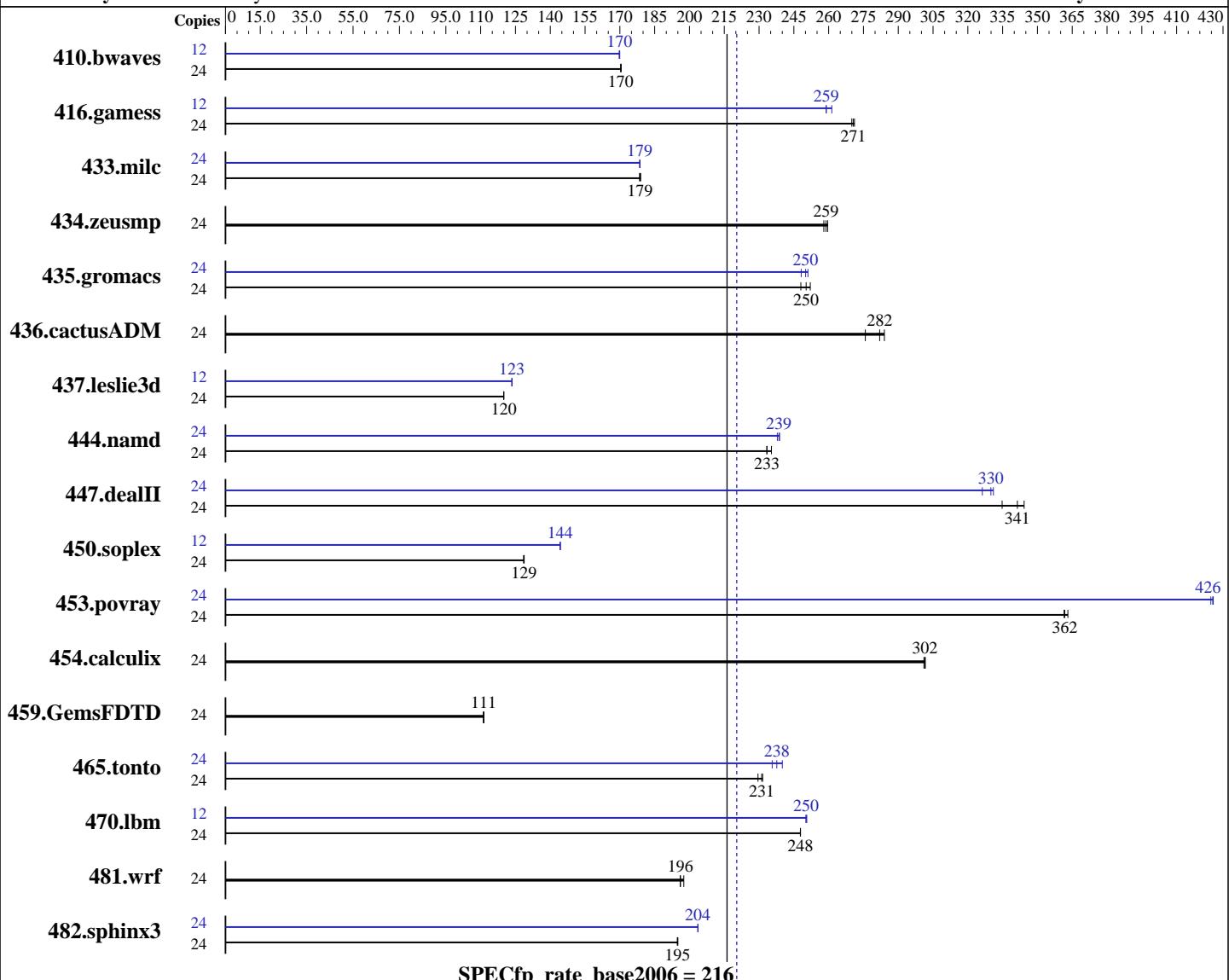|	
CPU2006 license: 9019	**Test date:** Feb-2011
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L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	32-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (12 x 4 GB 2Rx4 PC3L-10600R-9, ECC)	Other Software:	Binaries compiled on RHEL5.5 with
Disk Subsystem:	73 GB SAS, 15K RPM		binutils-2.17.50.0.6-14.el5
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1912	171	1915	170	**1914**	**170**	12	959	170	**960**	**170**	961	170
416.gamess	24	**1737**	**271**	1733	271	1741	270	12	907	259	899	261	**907**	**259**
433.milc	24	**1233**	**179**	1231	179	1235	178	24	1233	179	1234	179	**1233**	**179**
434.zeusmp	24	847	258	841	260	**844**	**259**	24	847	258	841	260	**844**	**259**
435.gromacs	24	680	252	**685**	**250**	691	248	24	683	251	**685**	**250**	690	248
436.cactusADM	24	**1017**	**282**	1010	284	1040	276	24	**1017**	**282**	1010	284	1040	276
437.leslie3d	24	1882	120	1880	120	**1881**	**120**	12	**914**	**123**	913	124	914	123
444.namd	24	818	235	**825**	**233**	825	233	24	806	239	**807**	**239**	809	238
447.dealII	24	798	344	820	335	**804**	**341**	24	**832**	**330**	842	326	829	331
450.soplex	24	1555	129	**1555**	**129**	1558	128	12	**693**	**144**	693	144	694	144
453.povray	24	**353**	**362**	352	363	353	361	24	**300**	**426**	301	425	300	426
454.calculix	24	656	302	658	301	**657**	**302**	24	656	302	658	301	**657**	**302**
459.GemsFDTD	24	2291	111	2286	111	**2287**	**111**	24	2291	111	2286	111	**2287**	**111**
465.tonto	24	**1022**	**231**	1020	232	1029	230	24	984	240	1002	236	**994**	**238**
470.lbm	24	1330	248	**1331**	**248**	1331	248	12	658	251	659	250	**659**	**250**
481.wrf	24	1357	198	**1367**	**196**	1368	196	24	1357	198	**1367**	**196**	1368	196
482.sphinx3	24	2402	195	**2400**	**195**	2399	195	24	**2297**	**204**	2297	204	2296	204

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
   Large pages were not enabled for this run
```

Platform Notes

```
   BIOS Configuration : Data Reuse Optimization = Disabled
```

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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 -ansi-alias

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

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

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

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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) -prof-use(pass 2) -static -auto-ilp32`

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

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Peak Optimization Flags (Continued)

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

C++ benchmarks:

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

450.soplex: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

453.povray: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

Fortran benchmarks:

410.bwaves: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -static`

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`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

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`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

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) -prof-use(pass 2) -opt-prefetch`
`-static -auto-ilp32`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Intel-Platform-Settings.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Intel-Platform-Settings.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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