



# SPEC® CFP2006 Result

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## Cisco Systems

## SPECfp®\_rate2006 = 168

## UCS C210 M1 (Intel Xeon E5540)

## SPECfp\_rate\_base2006 = 162

CPU2006 license: 9019

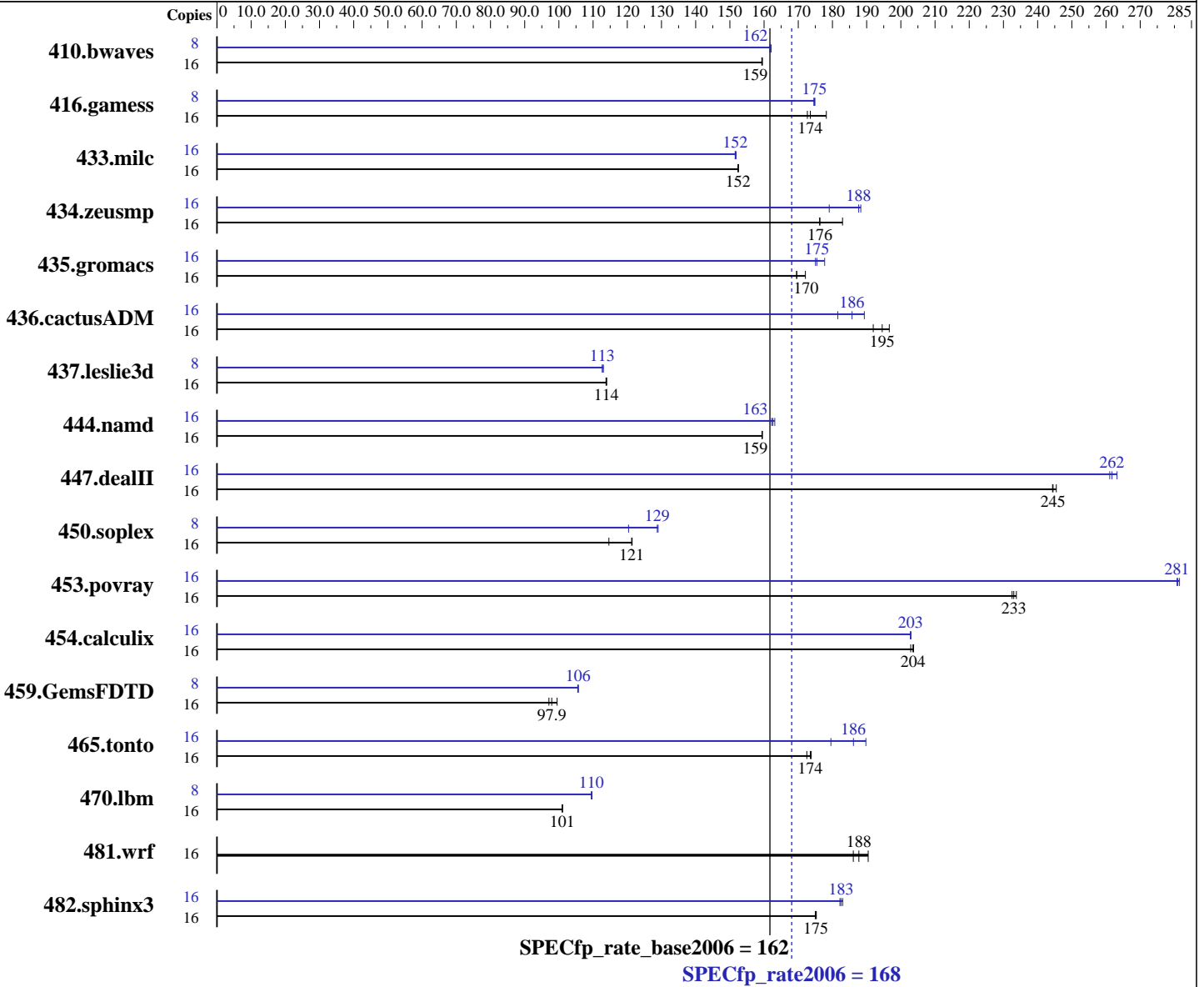
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jan-2010

Hardware Availability: Oct-2009

Software Availability: Mar-2009



### Hardware

CPU Name: Intel Xeon E5540  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2533  
 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

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### Software

Operating System: SuSe Linux Enterprise Server 11 (x86\_64), Kernel 2.6.27-15-2-default, RC4  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080, l\_cprof\_p\_11.0.080  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 24 GB (12 \* 2GB DDR3-1066 MHz)  
Disk Subsystem: 73 GB SATA, 15kRPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1363	160	<b><u>1364</u></b>	<b><u>159</u></b>	1365	159	8	<b><u>671</u></b>	<b><u>162</u></b>	671	162	673	162
416.gamess	16	<b><u>1805</u></b>	<b><u>174</u></b>	1814	173	1758	178	8	896	175	<b><u>896</u></b>	<b><u>175</u></b>	897	175
433.milc	16	964	152	<b><u>964</u></b>	<b><u>152</u></b>	963	153	16	967	152	<b><u>969</u></b>	<b><u>152</u></b>	969	152
434.zeusmp	16	826	176	796	183	<b><u>826</u></b>	<b><u>176</u></b>	16	773	188	<b><u>776</u></b>	<b><u>188</u></b>	813	179
435.gromacs	16	664	172	<b><u>674</u></b>	<b><u>170</u></b>	674	170	16	643	178	<b><u>651</u></b>	<b><u>175</u></b>	653	175
436.cactusADM	16	996	192	972	197	<b><u>983</u></b>	<b><u>195</u></b>	16	1010	189	1053	182	<b><u>1029</u></b>	<b><u>186</u></b>
437.leslie3d	16	1320	114	1322	114	<b><u>1320</u></b>	<b><u>114</u></b>	8	667	113	<b><u>667</u></b>	<b><u>113</u></b>	665	113
444.namd	16	805	159	805	159	<b><u>805</u></b>	<b><u>159</u></b>	16	<b><u>789</u></b>	<b><u>163</u></b>	791	162	787	163
447.dealII	16	749	244	<b><u>749</u></b>	<b><u>245</u></b>	746	245	16	701	261	695	263	<b><u>699</u></b>	<b><u>262</u></b>
450.soplex	16	1164	115	1099	121	<b><u>1100</u></b>	<b><u>121</u></b>	8	554	120	517	129	<b><u>518</u></b>	<b><u>129</u></b>
453.povray	16	364	234	366	233	<b><u>365</u></b>	<b><u>233</u></b>	16	303	281	<b><u>303</u></b>	<b><u>281</u></b>	302	281
454.calculix	16	651	203	648	204	<b><u>649</u></b>	<b><u>204</u></b>	16	651	203	650	203	<b><u>651</u></b>	<b><u>203</u></b>
459.GemsFDTD	16	<b><u>1734</u></b>	<b><u>97.9</u></b>	1749	97.1	1706	99.5	8	803	106	<b><u>804</u></b>	<b><u>106</u></b>	804	106
465.tonto	16	913	173	<b><u>907</u></b>	<b><u>174</u></b>	906	174	16	877	180	830	190	<b><u>846</u></b>	<b><u>186</u></b>
470.lbm	16	2177	101	<b><u>2177</u></b>	<b><u>101</u></b>	2175	101	8	1002	110	<b><u>1003</u></b>	<b><u>110</u></b>	1004	110
481.wrf	16	938	190	<b><u>952</u></b>	<b><u>188</u></b>	960	186	16	938	190	<b><u>952</u></b>	<b><u>188</u></b>	960	186
482.sphinx3	16	1782	175	<b><u>1780</u></b>	<b><u>175</u></b>	1779	175	16	1712	182	<b><u>1708</u></b>	<b><u>183</u></b>	1704	183

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

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## 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

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

Benchmarks using both Fortran and C:

icc ifort

## 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  
 444.namd: -DSPEC\_CPU\_LP64  
 447.deallI: -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

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
 -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: -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)

437.leslie3d: -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 -opt-prefetch

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 -opt-prefetch

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

### 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

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## Peak Optimization Flags (Continued)

436.cactusADM: -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 -opt-prefetch -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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-ic11.0-fp-linux64-revH.20100317.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revH.20100317.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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