



# SPEC® CFP2006 Result

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## Cisco Systems

### SPECfp®\_rate2006 = 179

### Cisco UCS C210 M2 (Intel Xeon E5620, 2.40 GHz)

### SPECfp\_rate\_base2006 = 175

CPU2006 license: 9019

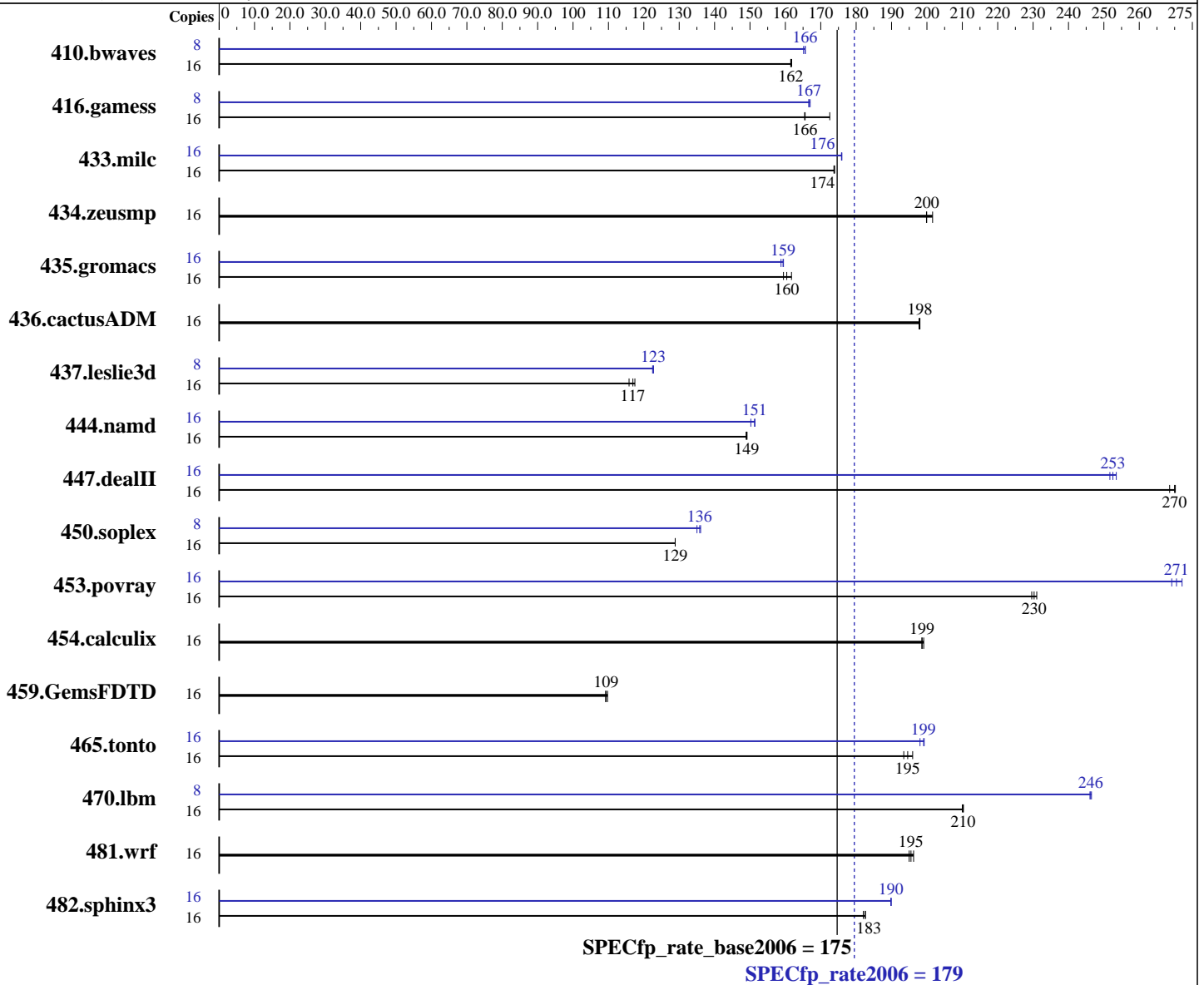
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2011

Hardware Availability: Mar-2011

Software Availability: Jan-2011



#### 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

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#### 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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L3 Cache: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 4 GB 2Rx4 PC3L-10600R-9, ECC)  
Disk Subsystem: 73 GB SAS, 15K RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1344	162	<b><u>1346</u></b>	<b><u>162</u></b>	1346	162	8	<b><u>657</u></b>	<b><u>166</u></b>	656	166	658	165
416.gamess	16	1816	173	1894	165	<b><u>1892</u></b>	<b><u>166</u></b>	8	<b><u>940</u></b>	<b><u>167</u></b>	938	167	940	167
433.milc	16	<b><u>845</u></b>	<b><u>174</u></b>	845	174	845	174	16	<b><u>835</u></b>	<b><u>176</u></b>	835	176	835	176
434.zeusmp	16	<b><u>728</u></b>	<b><u>200</u></b>	728	200	722	202	16	<b><u>728</u></b>	<b><u>200</u></b>	728	200	722	202
435.gromacs	16	706	162	<b><u>712</u></b>	<b><u>160</u></b>	716	159	16	<b><u>717</u></b>	<b><u>159</u></b>	716	159	720	159
436.cactusADM	16	967	198	<b><u>966</u></b>	<b><u>198</u></b>	966	198	16	967	198	<b><u>966</u></b>	<b><u>198</u></b>	966	198
437.leslie3d	16	1298	116	1280	117	<b><u>1286</u></b>	<b><u>117</u></b>	8	<b><u>613</u></b>	<b><u>123</u></b>	614	122	613	123
444.namd	16	860	149	862	149	<b><u>861</u></b>	<b><u>149</u></b>	16	847	151	<b><u>848</u></b>	<b><u>151</u></b>	854	150
447.dealII	16	<b><u>678</u></b>	<b><u>270</u></b>	681	269	677	270	16	727	252	<b><u>725</u></b>	<b><u>253</u></b>	722	254
450.soplex	16	1035	129	<b><u>1035</u></b>	<b><u>129</u></b>	1035	129	8	494	135	<b><u>491</u></b>	<b><u>136</u></b>	490	136
453.povray	16	368	231	371	230	<b><u>370</u></b>	<b><u>230</u></b>	16	<b><u>315</u></b>	<b><u>271</u></b>	313	272	316	269
454.calculix	16	665	199	<b><u>665</u></b>	<b><u>199</u></b>	663	199	16	665	199	<b><u>665</u></b>	<b><u>199</u></b>	663	199
459.GemsFDTD	16	1554	109	<b><u>1553</u></b>	<b><u>109</u></b>	1547	110	16	1554	109	<b><u>1553</u></b>	<b><u>109</u></b>	1547	110
465.tonto	16	814	193	<b><u>809</u></b>	<b><u>195</u></b>	803	196	16	790	199	<b><u>791</u></b>	<b><u>199</u></b>	795	198
470.lbm	16	1047	210	1045	210	<b><u>1046</u></b>	<b><u>210</u></b>	8	446	247	<b><u>446</u></b>	<b><u>246</u></b>	447	246
481.wrf	16	917	195	911	196	<b><u>914</u></b>	<b><u>195</u></b>	16	917	195	911	196	<b><u>914</u></b>	<b><u>195</u></b>
482.sphinx3	16	<b><u>1709</u></b>	<b><u>183</u></b>	1707	183	1713	182	16	<b><u>1642</u></b>	<b><u>190</u></b>	1643	190	1642	190

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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## General Notes

Binaries compiled on RHEL5.5 with  
binutils-2.17.50.0.6-14.el5

## 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

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## Base Optimization Flags (Continued)

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

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

453.povray: icpc -m64

-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks (except as noted below):

ifort -m64

437.leslie3d: ifort -m64

-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

465.tonto: ifort -m64

-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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.deallI: -DSPEC\_CPU\_LP64

453.povray: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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  
 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.dealIII: -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  
 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

### 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

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## Peak Optimization Flags (Continued)

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

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

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-ic12.0-linux64-revA.20110303.02.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110303.02.xml>

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

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