



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®2006 = 37.4

PowerEdge R210 (Intel Xeon X3470, 2.93 GHz)

SPECfp_base2006 = 36.0

CPU2006 license: 55

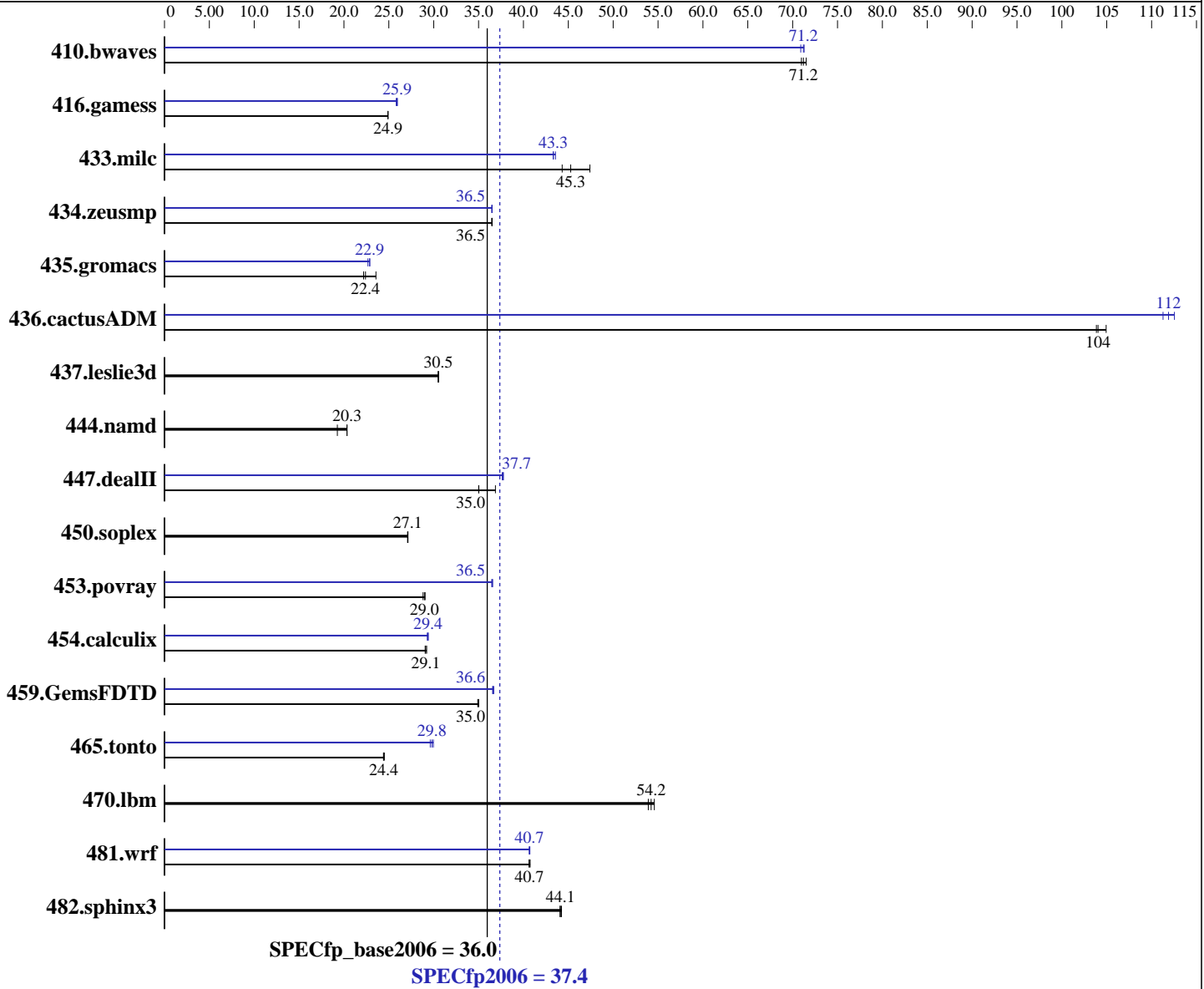
Test date: Sep-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009



Hardware

CPU Name: Intel Xeon X3470
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2933
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 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: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
 Compiler: Intel Fortran Compiler and Intel C++ Compiler Professional Edition 11.1 For Linux Build 20090511 Package ID: l_cproc_p_11.1.040, l_cprof_p_11.1.040
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (4 x 2 GB DDR3-1333 DR UDIMM)
Disk Subsystem: 1 x 160 GB 7200 RPM SATA
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	190	71.5	<u>191</u>	<u>71.2</u>	191	71.0	191	71.3	<u>191</u>	<u>71.2</u>	192	70.9
416.gamess	786	24.9	<u>786</u>	<u>24.9</u>	787	24.9	<u>755</u>	<u>25.9</u>	758	25.8	754	26.0
433.milc	194	47.4	<u>203</u>	<u>45.3</u>	207	44.3	212	43.3	211	43.6	<u>212</u>	<u>43.3</u>
434.zeusmp	249	36.5	<u>249</u>	<u>36.5</u>	249	36.5	249	36.5	<u>249</u>	<u>36.5</u>	249	36.5
435.gromacs	303	23.6	<u>319</u>	<u>22.4</u>	322	22.2	<u>312</u>	<u>22.9</u>	312	22.9	315	22.7
436.cactusADM	115	104	<u>115</u>	<u>104</u>	114	105	<u>107</u>	<u>112</u>	107	111	106	113
437.leslie3d	308	30.5	<u>308</u>	<u>30.5</u>	308	30.5	308	30.5	<u>308</u>	<u>30.5</u>	308	30.5
444.namd	394	20.3	<u>394</u>	<u>20.3</u>	416	19.3	394	20.3	<u>394</u>	<u>20.3</u>	416	19.3
447.dealII	<u>327</u>	<u>35.0</u>	310	36.9	327	35.0	303	37.8	<u>303</u>	<u>37.7</u>	304	37.6
450.soplex	<u>308</u>	<u>27.1</u>	307	27.1	308	27.1	<u>308</u>	<u>27.1</u>	307	27.1	308	27.1
453.povray	<u>184</u>	<u>29.0</u>	185	28.8	183	29.0	145	36.6	146	36.5	<u>146</u>	<u>36.5</u>
454.calculix	282	29.2	284	29.0	<u>283</u>	<u>29.1</u>	282	29.3	281	29.4	<u>281</u>	<u>29.4</u>
459.GemsFDTD	<u>303</u>	<u>35.0</u>	303	35.0	304	34.9	290	36.6	289	36.7	<u>290</u>	<u>36.6</u>
465.tonto	402	24.5	<u>403</u>	<u>24.4</u>	403	24.4	<u>330</u>	<u>29.8</u>	328	30.0	332	29.6
470.lbm	252	54.6	<u>253</u>	<u>54.2</u>	255	53.9	252	54.6	<u>253</u>	<u>54.2</u>	255	53.9
481.wrf	274	40.7	275	40.6	<u>275</u>	<u>40.7</u>	<u>275</u>	<u>40.7</u>	275	40.7	274	40.7
482.sphinx3	<u>442</u>	<u>44.1</u>	442	44.1	441	44.2	<u>442</u>	<u>44.1</u>	442	44.1	441	44.2

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.

Operating System Notes

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

Platform Notes

BIOS Settings:

Power Management = Maximum Performance (Default = Active Power Controller)



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General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
The Dell PowerEdge R210 and the Bull NovaScale R410 F2 models are electronically equivalent.
This result was measured on a Dell PowerEdge R210.

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 -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

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Base Optimization Flags (Continued)

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

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: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

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- -opt-prefetch`

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Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

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
-parallel

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: Same as 410.bwaves

437.leslie3d: basepeak = yes

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 -parallel

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

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 -parallel -auto-ilp32

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

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revA.xml>



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