



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]2006 = 37.1

PowerEdge T610 (Intel Xeon X5550, 2.67 GHz)

SPECfp_base2006 = 35.2

CPU2006 license: 55

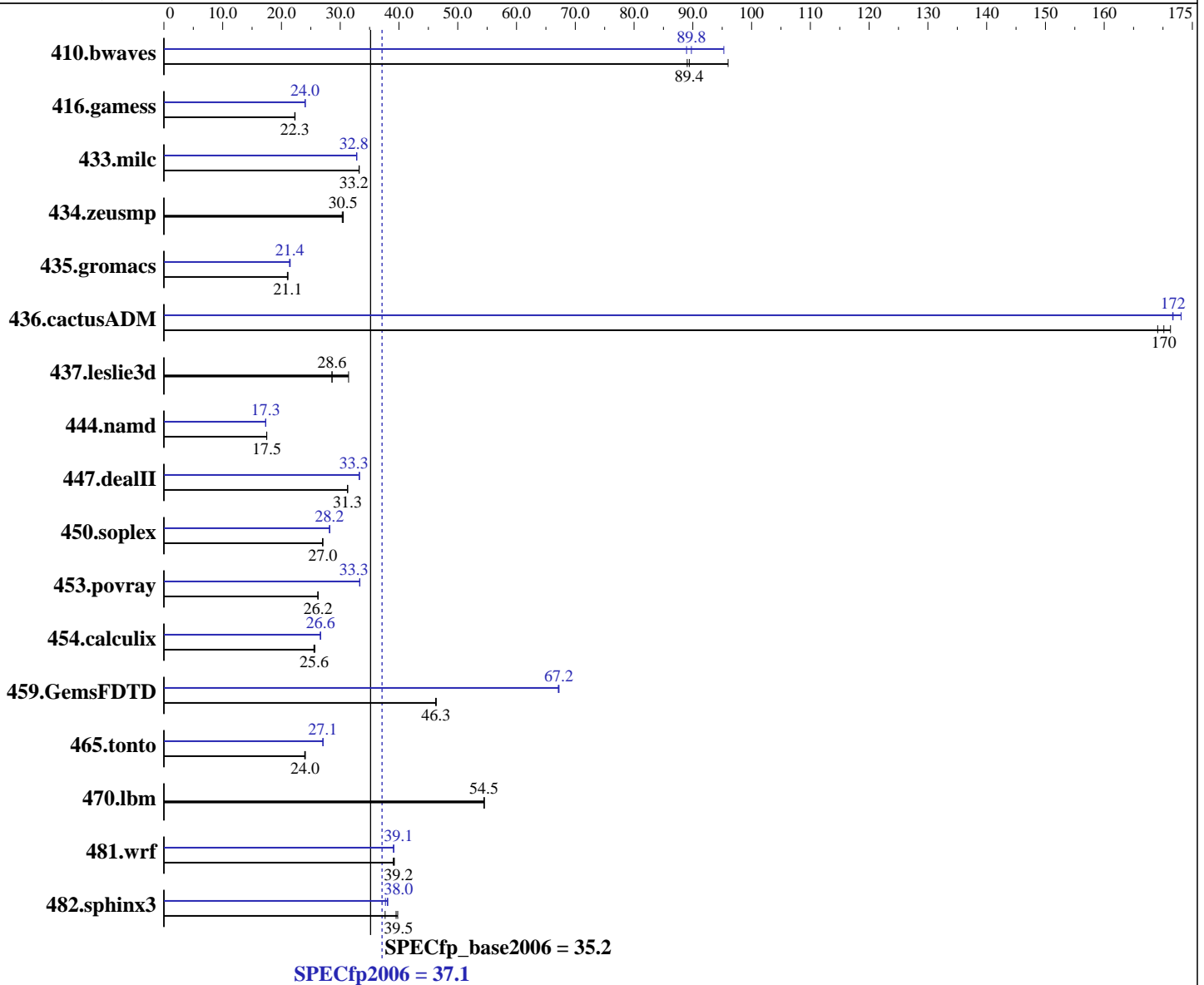
Test date: Mar-2009

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Feb-2009



Hardware	
CPU Name:	Intel Xeon X5550
CPU Characteristics:	Intel Turbo Boost Technology up to 3.06 GHz
CPU MHz:	2667
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

Software	
Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-sm-p
Compiler:	Intel C++ and Fortran Compiler Professional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

Continued on next page

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB DDR3-1333 DR RDIMM)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-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	142	96.0	<u>152</u>	<u>89.4</u>	153	89.0	143	95.3	<u>151</u>	<u>89.8</u>	153	88.9
416.gamess	877	22.3	<u>879</u>	<u>22.3</u>	879	22.3	815	24.0	814	24.1	<u>815</u>	<u>24.0</u>
433.milc	276	33.2	<u>276</u>	<u>33.2</u>	276	33.2	280	32.8	<u>280</u>	<u>32.8</u>	280	32.8
434.zeusmp	298	30.5	<u>299</u>	<u>30.5</u>	300	30.3	298	30.5	<u>299</u>	<u>30.5</u>	300	30.3
435.gromacs	<u>339</u>	<u>21.1</u>	339	21.1	340	21.0	334	21.4	332	21.5	<u>333</u>	<u>21.4</u>
436.cactusADM	69.8	171	70.7	169	<u>70.2</u>	<u>170</u>	69.0	173	69.6	172	<u>69.6</u>	<u>172</u>
437.leslie3d	299	31.4	329	28.6	<u>329</u>	<u>28.6</u>	299	31.4	329	28.6	<u>329</u>	<u>28.6</u>
444.namd	459	17.5	<u>458</u>	<u>17.5</u>	458	17.5	463	17.3	<u>463</u>	<u>17.3</u>	463	17.3
447.dealII	366	31.3	<u>366</u>	<u>31.3</u>	366	31.2	<u>344</u>	<u>33.3</u>	344	33.3	344	33.3
450.soplex	308	27.0	<u>308</u>	<u>27.0</u>	309	27.0	296	28.2	296	28.2	<u>296</u>	<u>28.2</u>
453.povray	203	26.2	<u>203</u>	<u>26.2</u>	203	26.2	<u>160</u>	<u>33.3</u>	160	33.3	160	33.3
454.calculix	323	25.5	321	25.7	<u>323</u>	<u>25.6</u>	<u>310</u>	<u>26.6</u>	310	26.6	310	26.7
459.GemsFDTD	229	46.3	229	46.2	<u>229</u>	<u>46.3</u>	<u>158</u>	<u>67.2</u>	158	67.1	158	67.2
465.tonto	409	24.1	<u>410</u>	<u>24.0</u>	411	24.0	364	27.1	363	27.1	<u>364</u>	<u>27.1</u>
470.lbm	<u>252</u>	<u>54.5</u>	252	54.5	252	54.5	<u>252</u>	<u>54.5</u>	252	54.5	252	54.5
481.wrf	<u>285</u>	<u>39.2</u>	286	39.0	285	39.2	<u>286</u>	<u>39.1</u>	286	39.1	286	39.1
482.sphinx3	518	37.6	<u>493</u>	<u>39.5</u>	490	39.8	<u>517</u>	<u>37.7</u>	<u>513</u>	<u>38.0</u>	512	38.1

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

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

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Base Compiler Invocation (Continued)

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 -parallel -opt-prefetch

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

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

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

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

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Peak Compiler Invocation (Continued)

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):

`icpc`

450.soplex: `icpc -m32`

Fortran benchmarks:

`ifort`

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`
 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`

470.lbm: `basepeak = yes`

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

C++ benchmarks:

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Peak Optimization Flags (Continued)

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- -opt-prefetch

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
-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: basepeak = yes

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

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Peak Optimization Flags (Continued)

```
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-ic11.0-fp-linux64-revA.20090710.04.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-revA.20090710.04.xml>

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

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