



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®2006 = 33.1

PowerEdge T710 (Intel Xeon E5540, 2.53 GHz)

SPECfp_base2006 = 31.0

CPU2006 license: 55

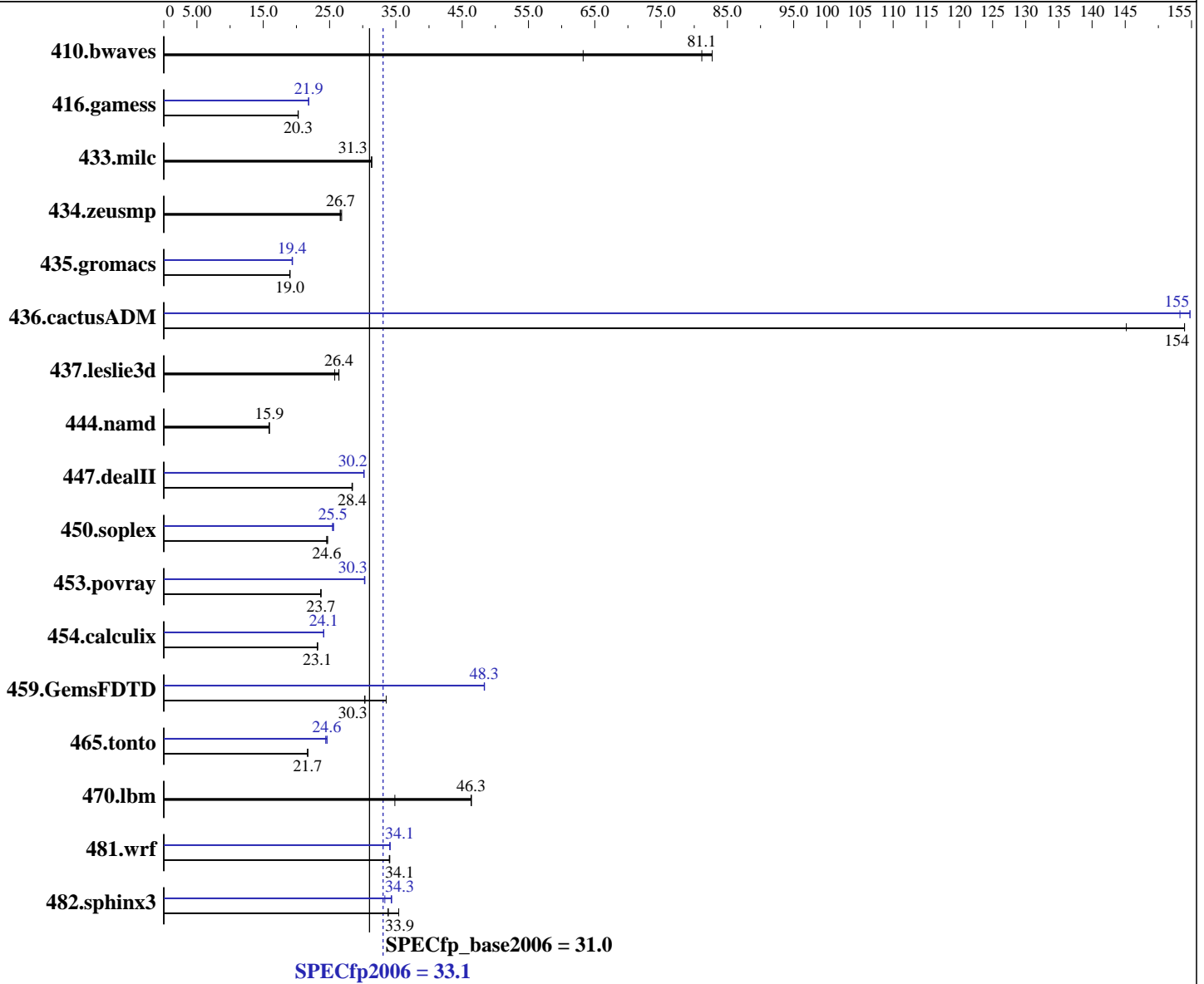
Test date: May-2009

Test sponsor: Dell Inc.

Hardware Availability: Jun-2009

Tested by: Dell Inc.

Software Availability: Feb-2009



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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 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
 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)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB DDR3-1066 DR RDIMM)
Disk Subsystem: 1 x 73 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	<u>167</u>	<u>81.1</u>	164	82.7	215	63.2	<u>167</u>	<u>81.1</u>	164	82.7	215	63.2
416.gamess	967	20.2	<u>966</u>	<u>20.3</u>	966	20.3	896	21.9	<u>896</u>	<u>21.9</u>	897	21.8
433.milc	293	31.4	<u>293</u>	<u>31.3</u>	293	31.3	293	31.4	<u>293</u>	<u>31.3</u>	293	31.3
434.zeusmp	339	26.8	<u>341</u>	<u>26.7</u>	342	26.6	339	26.8	<u>341</u>	<u>26.7</u>	342	26.6
435.gromacs	376	19.0	375	19.0	<u>375</u>	<u>19.0</u>	369	19.4	368	19.4	<u>369</u>	<u>19.4</u>
436.cactusADM	77.6	154	<u>77.6</u>	<u>154</u>	82.3	145	77.2	155	78.0	153	<u>77.2</u>	<u>155</u>
437.leslie3d	<u>356</u>	<u>26.4</u>	365	25.8	356	26.4	<u>356</u>	<u>26.4</u>	365	25.8	356	26.4
444.namd	504	15.9	<u>504</u>	<u>15.9</u>	504	15.9	504	15.9	<u>504</u>	<u>15.9</u>	504	15.9
447.dealII	402	28.4	403	28.4	<u>402</u>	<u>28.4</u>	379	30.2	379	30.2	<u>379</u>	<u>30.2</u>
450.soplex	339	24.6	337	24.7	<u>339</u>	<u>24.6</u>	328	25.4	326	25.6	<u>327</u>	<u>25.5</u>
453.povray	224	23.7	<u>224</u>	<u>23.7</u>	225	23.7	<u>176</u>	<u>30.3</u>	176	30.3	175	30.3
454.calculix	355	23.2	<u>357</u>	<u>23.1</u>	357	23.1	342	24.1	<u>342</u>	<u>24.1</u>	342	24.1
459.GemsFDTD	316	33.5	350	30.3	<u>350</u>	<u>30.3</u>	<u>220</u>	<u>48.3</u>	220	48.3	219	48.4
465.tonto	453	21.7	454	21.7	<u>454</u>	<u>21.7</u>	<u>400</u>	<u>24.6</u>	400	24.6	403	24.4
470.lbm	394	34.8	<u>297</u>	<u>46.3</u>	296	46.4	394	34.8	<u>297</u>	<u>46.3</u>	296	46.4
481.wrf	328	34.1	<u>328</u>	<u>34.1</u>	328	34.0	<u>327</u>	<u>34.1</u>	328	34.1	327	34.1
482.sphinx3	576	33.8	550	35.4	<u>576</u>	<u>33.9</u>	585	33.3	567	34.4	<u>568</u>	<u>34.3</u>

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

Operating System Notes

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

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

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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 -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



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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:

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: basepeak = yes

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: 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

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: basepeak = yes

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

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



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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.20090805.01.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.20090805.01.xml>

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