



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]2006 = 29.3

PowerEdge T310 (Intel Xeon X3430, 2.40 GHz)

SPECfp_base2006 = 28.1

CPU2006 license: 55

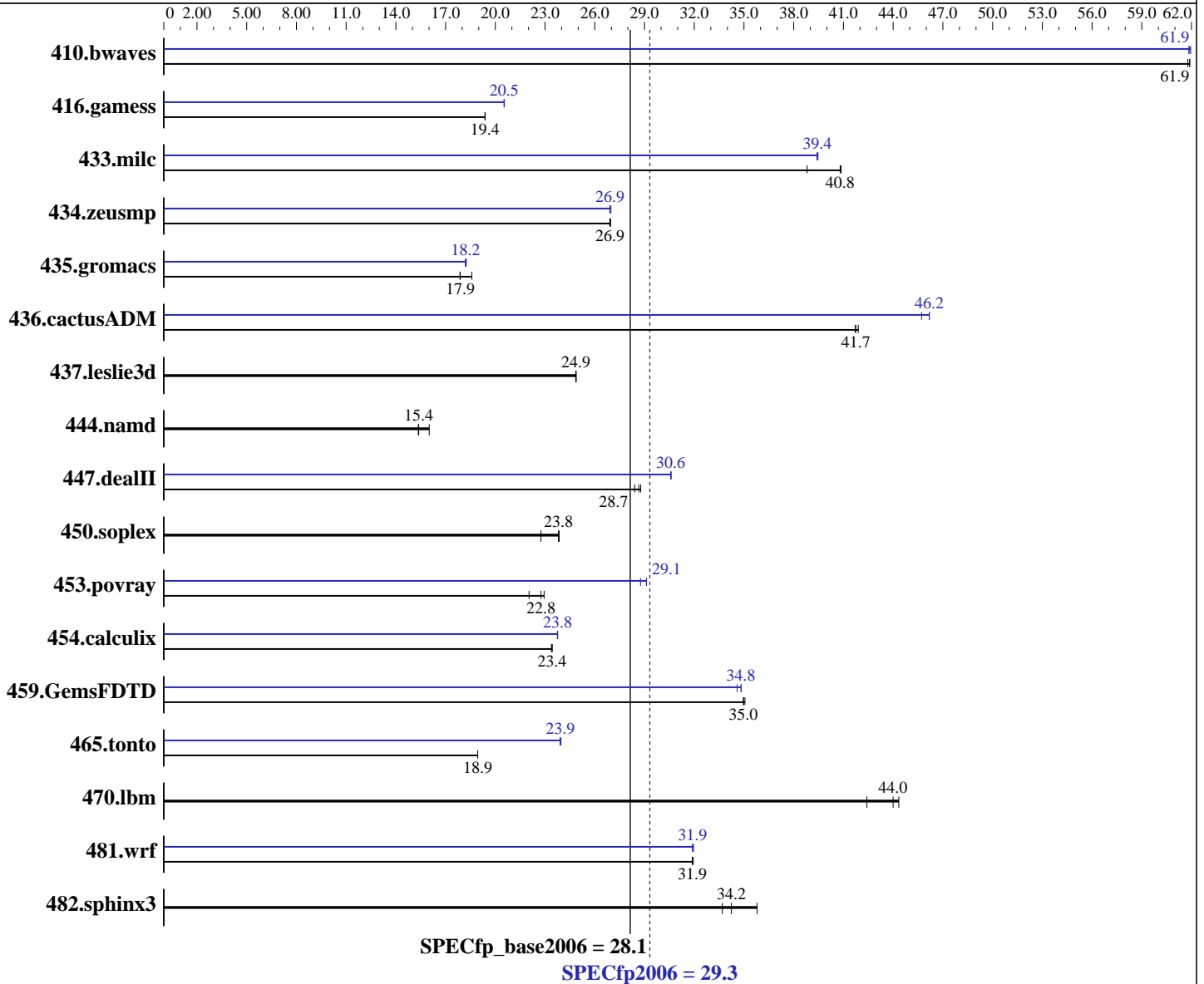
Test date: Oct-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009



Hardware

CPU Name: Intel Xeon X3430
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2400
 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 RDIMM)
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	220	61.9	<u>220</u>	<u>61.9</u>	220	61.8	220	61.8	219	61.9	<u>220</u>	<u>61.9</u>
416.gamess	<u>1010</u>	<u>19.4</u>	1010	19.4	1010	19.4	<u>953</u>	<u>20.5</u>	953	20.5	954	20.5
433.milc	237	38.8	225	40.9	<u>225</u>	<u>40.8</u>	<u>233</u>	<u>39.4</u>	233	39.4	233	39.5
434.zeusmp	<u>338</u>	<u>26.9</u>	338	26.9	338	27.0	337	27.0	338	26.9	<u>338</u>	<u>26.9</u>
435.gromacs	400	17.9	<u>399</u>	<u>17.9</u>	384	18.6	393	18.2	391	18.2	<u>392</u>	<u>18.2</u>
436.cactusADM	<u>286</u>	<u>41.7</u>	285	41.9	286	41.7	259	46.2	261	45.7	<u>259</u>	<u>46.2</u>
437.leslie3d	378	24.9	378	24.9	<u>378</u>	<u>24.9</u>	378	24.9	378	24.9	<u>378</u>	<u>24.9</u>
444.namd	501	16.0	522	15.4	<u>521</u>	<u>15.4</u>	501	16.0	522	15.4	<u>521</u>	<u>15.4</u>
447.dealII	398	28.8	<u>399</u>	<u>28.7</u>	403	28.4	374	30.6	374	30.6	<u>374</u>	<u>30.6</u>
450.soplex	<u>350</u>	<u>23.8</u>	367	22.8	350	23.9	<u>350</u>	<u>23.8</u>	367	22.8	350	23.9
453.povray	241	22.0	232	22.9	<u>234</u>	<u>22.8</u>	<u>183</u>	<u>29.1</u>	185	28.8	183	29.1
454.calculix	352	23.4	353	23.4	<u>352</u>	<u>23.4</u>	347	23.8	<u>347</u>	<u>23.8</u>	347	23.7
459.GemsFDTD	303	35.0	<u>303</u>	<u>35.0</u>	303	35.1	307	34.6	305	34.8	<u>305</u>	<u>34.8</u>
465.tonto	<u>520</u>	<u>18.9</u>	520	18.9	520	18.9	411	24.0	412	23.9	<u>411</u>	<u>23.9</u>
470.lbm	310	44.3	324	42.4	<u>312</u>	<u>44.0</u>	310	44.3	324	42.4	<u>312</u>	<u>44.0</u>
481.wrf	350	31.9	<u>350</u>	<u>31.9</u>	350	31.9	350	32.0	<u>350</u>	<u>31.9</u>	350	31.9
482.sphinx3	578	33.7	545	35.8	<u>569</u>	<u>34.2</u>	578	33.7	545	35.8	<u>569</u>	<u>34.2</u>

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 T310 and the Bull NovaScale T820 F2 models are electronically equivalent.
This result was measured on a Dell PowerEdge T310.

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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