



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 43.3

PowerEdge R610 (Intel Xeon X5650, 2.66 GHz)

SPECfp_base2006 = 40.2

CPU2006 license: 55

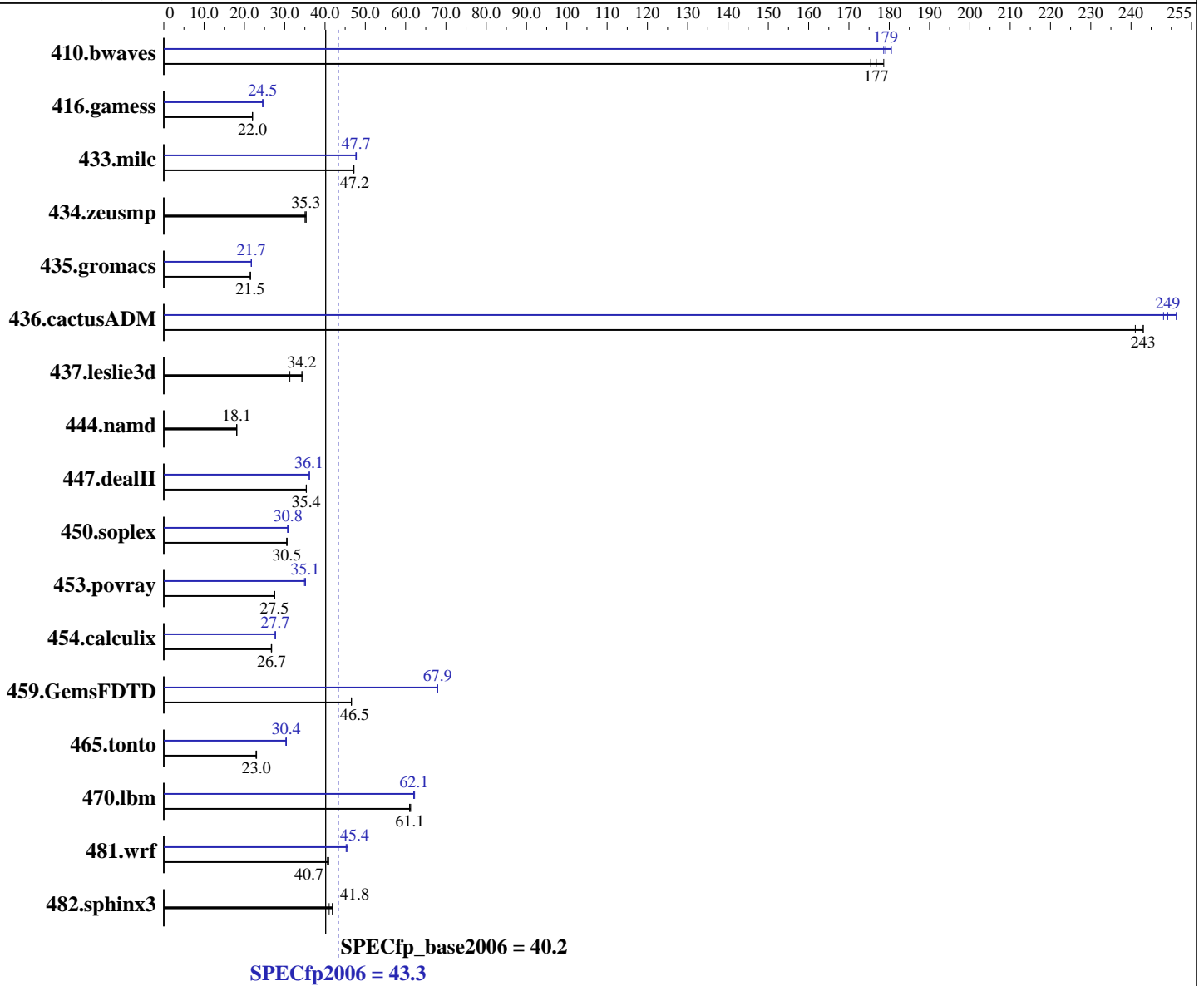
Test date: Jun-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon X5650
 CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz
 CPU MHz: 2667
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM, CL9, ECC)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	77.5	175	<u>76.9</u>	<u>177</u>	76.1	179	75.3	181	<u>75.9</u>	<u>179</u>	76.1	179
416.gamess	<u>889</u>	<u>22.0</u>	889	22.0	891	22.0	796	24.6	<u>798</u>	<u>24.5</u>	798	24.5
433.milc	195	47.1	195	47.2	<u>195</u>	<u>47.2</u>	193	47.7	<u>192</u>	<u>47.7</u>	192	47.8
434.zeusmp	258	35.3	<u>258</u>	<u>35.3</u>	260	35.0	258	35.3	<u>258</u>	<u>35.3</u>	260	35.0
435.gromacs	<u>332</u>	<u>21.5</u>	333	21.5	332	21.5	328	21.7	<u>328</u>	<u>21.7</u>	329	21.7
436.cactusADM	49.6	241	49.2	243	<u>49.2</u>	<u>243</u>	47.6	251	<u>48.0</u>	<u>249</u>	48.2	248
437.leslie3d	273	34.4	301	31.3	<u>275</u>	<u>34.2</u>	273	34.4	301	31.3	<u>275</u>	<u>34.2</u>
444.namd	444	18.1	<u>443</u>	<u>18.1</u>	443	18.1	444	18.1	<u>443</u>	<u>18.1</u>	443	18.1
447.dealII	<u>324</u>	<u>35.4</u>	323	35.4	324	35.3	317	36.1	<u>317</u>	<u>36.1</u>	317	36.1
450.soplex	<u>273</u>	<u>30.5</u>	273	30.5	273	30.6	271	30.7	271	30.8	<u>271</u>	<u>30.8</u>
453.povray	194	27.4	193	27.5	<u>194</u>	<u>27.5</u>	<u>152</u>	<u>35.1</u>	151	35.2	152	34.9
454.calculix	308	26.8	309	26.7	<u>309</u>	<u>26.7</u>	298	27.7	299	27.6	<u>298</u>	<u>27.7</u>
459.GemsFDTD	<u>228</u>	<u>46.5</u>	228	46.5	228	46.6	156	67.8	156	67.9	<u>156</u>	<u>67.9</u>
465.tonto	<u>429</u>	<u>23.0</u>	427	23.0	430	22.9	323	30.4	325	30.3	<u>324</u>	<u>30.4</u>
470.lbm	224	61.3	225	61.0	<u>225</u>	<u>61.1</u>	222	62.0	221	62.2	<u>221</u>	<u>62.1</u>
481.wrf	275	40.6	273	40.9	<u>274</u>	<u>40.7</u>	<u>246</u>	<u>45.4</u>	245	45.6	247	45.2
482.sphinx3	475	41.0	465	41.9	<u>466</u>	<u>41.8</u>	475	41.0	465	41.9	<u>466</u>	<u>41.8</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

Platform Notes

BIOS Settings:
 Power Management = Maximum Performance (Default = Active Power Controller)
 Data Reuse = Disabled (Default = Enabled)

General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to granularity=fine,scatter

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General Notes (Continued)

KMP_STACKSIZE set to 200M
The Dell PowerEdge R610 and the Bull NovaScale R440 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R610 model.

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 -parallel -opt-prefetch

C++ benchmarks:

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

Continued on next page



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Base Optimization Flags (Continued)

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:

`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)
-ansi-alias`

470.lbm: `-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)
-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

447.dealIII: `-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- -auto-ilp32`

Continued on next page



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Peak Optimization Flags (Continued)

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 -auto-ilp32

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

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: Same as 454.calculix

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml>

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