



SPEC® CFP2006 Result

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Bull SAS

SPECfp®2006 = 46.8

NovaScale R460 F2 (Intel Xeon X5667, 3.06 GHz)

SPECfp_base2006 = 43.4

CPU2006 license: 20

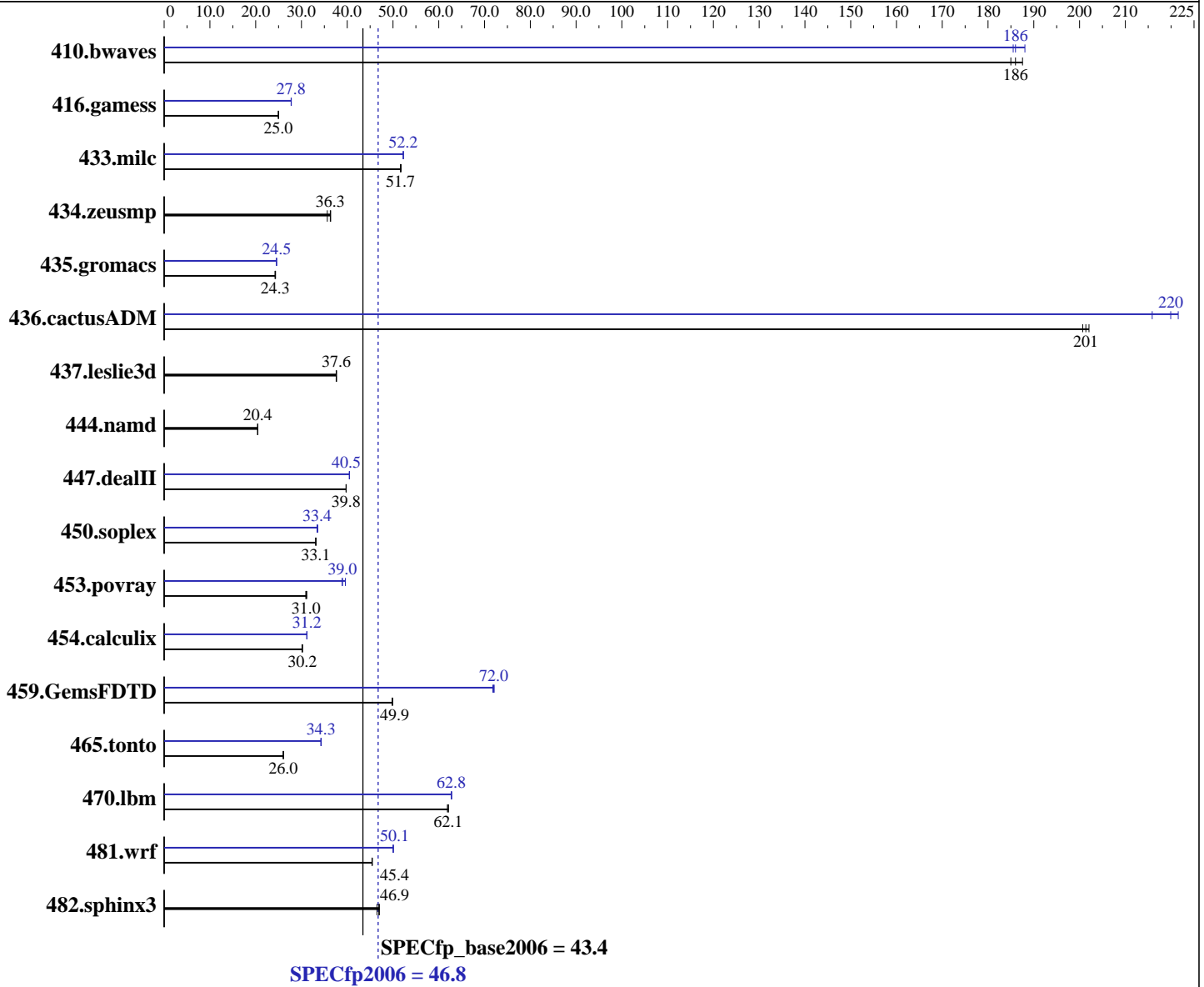
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: May-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon X5667
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3067
 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 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)

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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	<u>73.1</u>	<u>186</u>	73.5	185	72.5	188	72.3	188	73.3	186	<u>73.1</u>	<u>186</u>
416.gamess	<u>784</u>	<u>25.0</u>	784	25.0	784	25.0	705	27.8	<u>705</u>	<u>27.8</u>	706	27.7
433.milc	178	51.6	177	51.8	<u>178</u>	<u>51.7</u>	176	52.3	<u>176</u>	<u>52.2</u>	176	52.2
434.zeusmp	250	36.4	255	35.6	<u>251</u>	<u>36.3</u>	250	36.4	255	35.6	<u>251</u>	<u>36.3</u>
435.gromacs	294	24.2	<u>294</u>	<u>24.3</u>	293	24.3	291	24.6	291	24.5	<u>291</u>	<u>24.5</u>
436.cactusADM	59.5	201	59.1	202	<u>59.3</u>	<u>201</u>	53.9	222	55.4	216	<u>54.3</u>	<u>220</u>
437.leslie3d	250	37.6	<u>250</u>	<u>37.6</u>	250	37.6	250	37.6	<u>250</u>	<u>37.6</u>	250	37.6
444.namd	<u>392</u>	<u>20.4</u>	393	20.4	392	20.5	<u>392</u>	<u>20.4</u>	393	20.4	392	20.5
447.dealII	288	39.8	288	39.7	<u>288</u>	<u>39.8</u>	<u>283</u>	<u>40.5</u>	283	40.5	283	40.5
450.soplex	<u>252</u>	<u>33.1</u>	252	33.1	251	33.2	<u>249</u>	<u>33.4</u>	248	33.6	250	33.4
453.povray	171	31.2	172	31.0	<u>171</u>	<u>31.0</u>	137	38.9	<u>137</u>	<u>39.0</u>	134	39.6
454.calculix	274	30.1	273	30.2	<u>273</u>	<u>30.2</u>	264	31.2	<u>265</u>	<u>31.2</u>	265	31.2
459.GemsFDTD	213	49.9	213	49.8	<u>213</u>	<u>49.9</u>	<u>147</u>	<u>72.0</u>	147	72.1	148	71.8
465.tonto	377	26.1	379	26.0	<u>378</u>	<u>26.0</u>	287	34.3	287	34.2	<u>287</u>	<u>34.3</u>
470.lbm	<u>221</u>	<u>62.1</u>	221	62.1	222	61.9	<u>219</u>	<u>62.8</u>	219	62.7	219	62.8
481.wrf	<u>246</u>	<u>45.4</u>	246	45.4	246	45.5	223	50.0	223	50.1	<u>223</u>	<u>50.1</u>
482.sphinx3	414	47.0	<u>416</u>	<u>46.9</u>	419	46.5	414	47.0	<u>416</u>	<u>46.9</u>	419	46.5

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

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

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General Notes (Continued)

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
The Dell PowerEdge R710 and
the Bull NovaScale R460 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R710 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

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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`

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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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