



SPEC[®] CFP2006 Result

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Bull SAS

SPECfp[®]2006 = 32.5

NovaScale R410 F2 (Intel Xeon X3440, 2.53 GHz)

SPECfp_base2006 = 31.2

CPU2006 license: 20

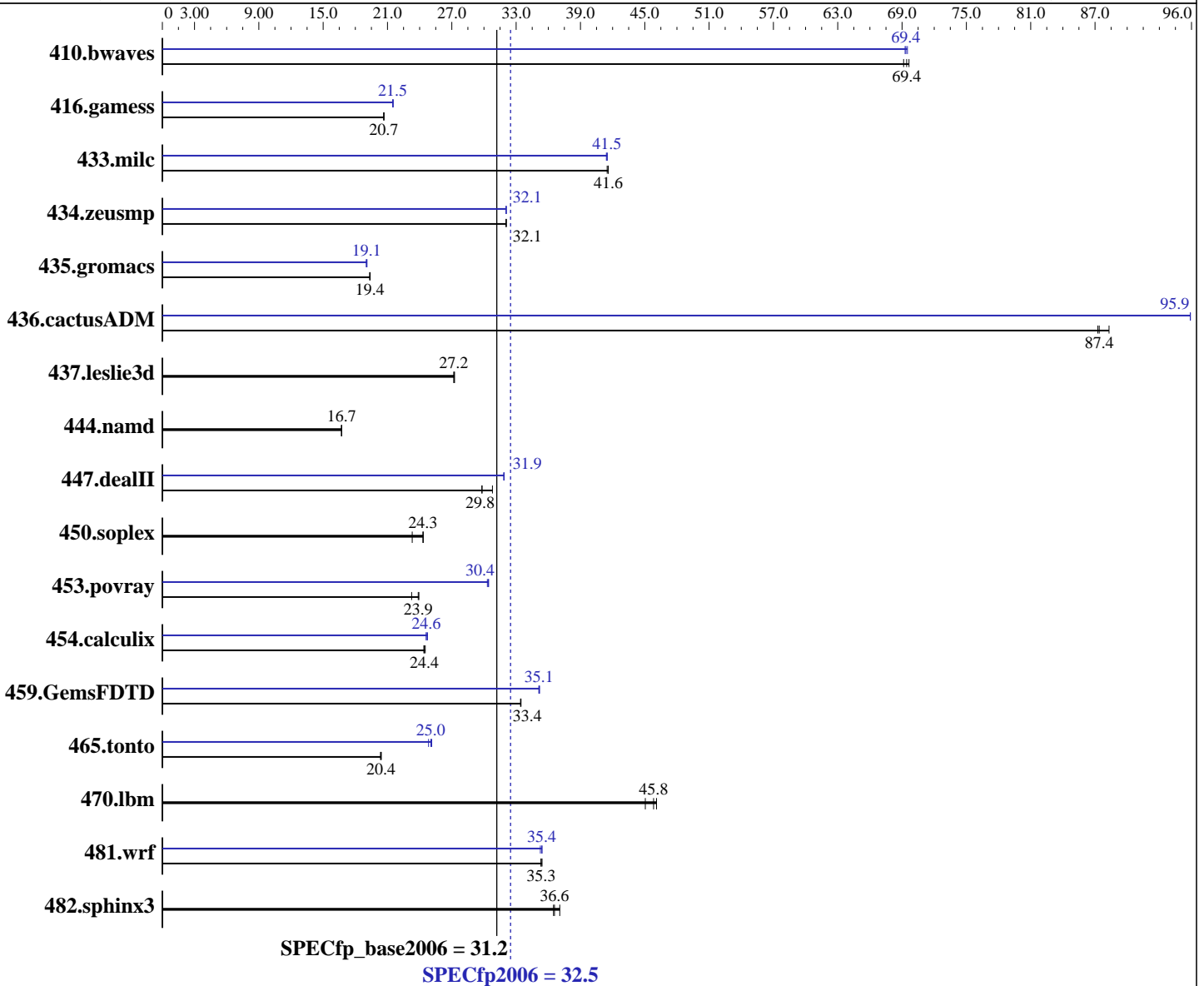
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Sep-2009

Hardware Availability: Dec-2009

Software Availability: Jul-2009



Hardware

CPU Name: Intel Xeon X3440
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
 CPU MHz: 2533
 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 UDIMM)
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	195	69.6	197	69.1	<u>196</u>	<u>69.4</u>	196	69.3	196	69.5	<u>196</u>	<u>69.4</u>
416.gamess	948	20.6	<u>948</u>	<u>20.7</u>	947	20.7	<u>911</u>	<u>21.5</u>	911	21.5	909	21.5
433.milc	221	41.6	221	41.5	<u>221</u>	<u>41.6</u>	221	41.5	<u>221</u>	<u>41.5</u>	222	41.4
434.zeusmp	<u>284</u>	<u>32.1</u>	284	32.1	284	32.1	<u>284</u>	<u>32.1</u>	284	32.1	284	32.1
435.gromacs	<u>369</u>	<u>19.4</u>	369	19.3	368	19.4	375	19.0	374	19.1	<u>375</u>	<u>19.1</u>
436.cactusADM	135	88.3	<u>137</u>	<u>87.4</u>	137	87.3	125	95.9	125	95.9	<u>125</u>	<u>95.9</u>
437.leslie3d	345	27.3	<u>346</u>	<u>27.2</u>	346	27.2	345	27.3	<u>346</u>	<u>27.2</u>	346	27.2
444.namd	<u>480</u>	<u>16.7</u>	480	16.7	480	16.7	<u>480</u>	<u>16.7</u>	480	16.7	480	16.7
447.dealII	372	30.8	<u>384</u>	<u>29.8</u>	384	29.8	359	31.9	<u>359</u>	<u>31.9</u>	359	31.9
450.soplex	<u>343</u>	<u>24.3</u>	358	23.3	343	24.3	<u>343</u>	<u>24.3</u>	358	23.3	343	24.3
453.povray	229	23.3	222	23.9	<u>223</u>	<u>23.9</u>	<u>175</u>	<u>30.4</u>	175	30.4	175	30.3
454.calculix	<u>338</u>	<u>24.4</u>	338	24.4	336	24.5	334	24.7	<u>335</u>	<u>24.6</u>	335	24.6
459.GemsFDTD	<u>317</u>	<u>33.4</u>	318	33.4	317	33.5	<u>302</u>	<u>35.1</u>	302	35.1	302	35.2
465.tonto	<u>482</u>	<u>20.4</u>	482	20.4	484	20.3	392	25.1	396	24.8	<u>393</u>	<u>25.0</u>
470.lbm	298	46.1	<u>300</u>	<u>45.8</u>	305	45.1	298	46.1	<u>300</u>	<u>45.8</u>	305	45.1
481.wrf	<u>316</u>	<u>35.3</u>	315	35.4	316	35.3	317	35.3	315	35.4	<u>316</u>	<u>35.4</u>
482.sphinx3	<u>533</u>	<u>36.6</u>	534	36.5	526	37.1	<u>533</u>	<u>36.6</u>	534	36.5	526	37.1

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
KMP_STACKSIZE set to 200M
The Dell PowerEdge R210 (Intel Xeon X3440, 2.53 GHz) and the Bull NovaScale R410 F2 (Intel Xeon X3440, 2.53 GHz) models are electronically equivalent. The results have been measured on a Dell PowerEdge R210 (Intel Xeon X3440, 2.53 GHz) 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.lelie3d: -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

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Base Optimization Flags (Continued)

C++ benchmarks:

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

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`

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Peak Optimization Flags (Continued)

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: 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>



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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-fp-linux64-revA.xml>

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