



SPEC® CFP2006 Result

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Bull SAS

SPECfp®2006 = 32.8

NovaScale T820 F2 (Intel Xeon X3440, 2.53 GHz)

SPECfp_base2006 = 31.5

CPU2006 license: 20

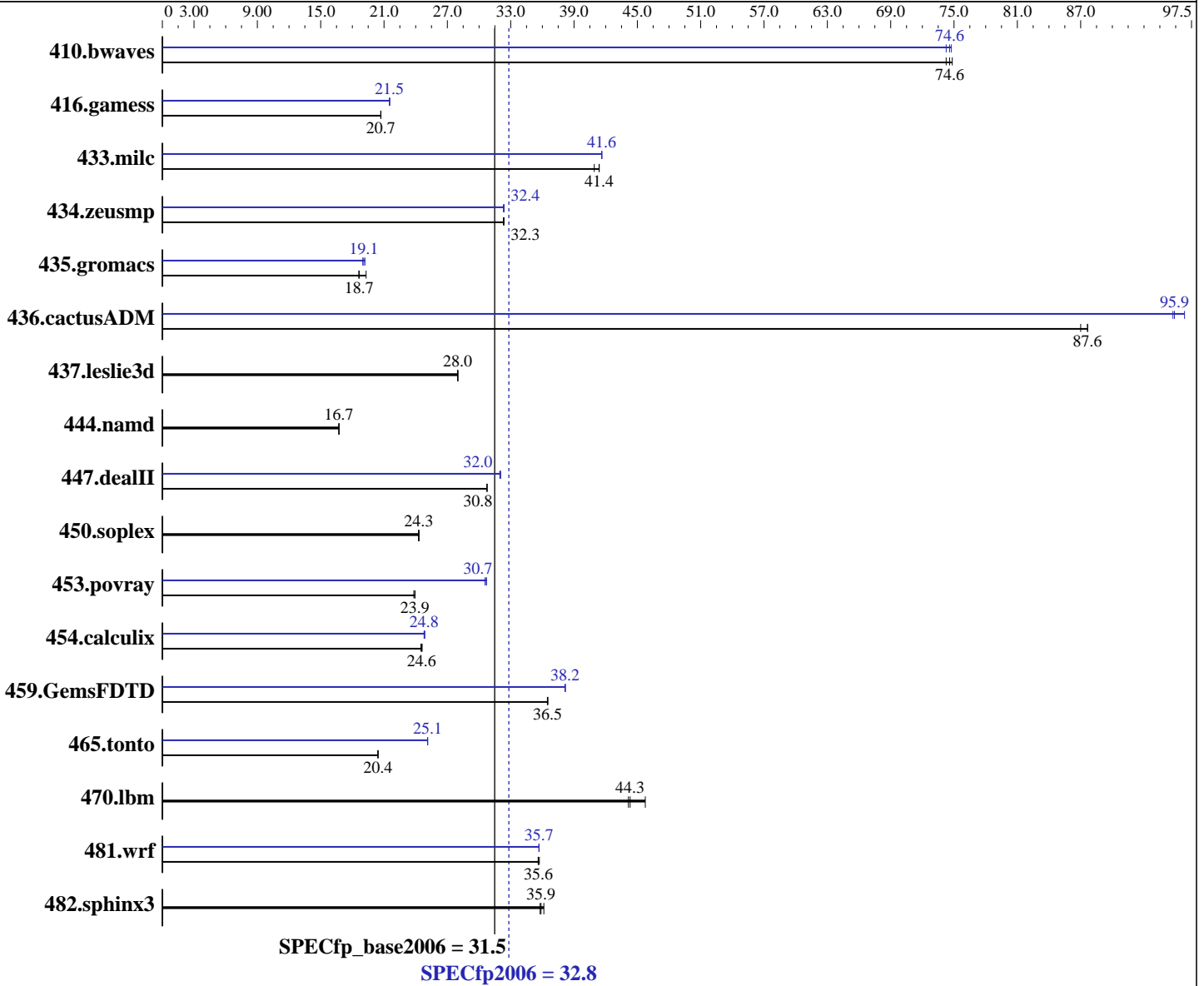
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Nov-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 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	183	74.3	182	74.8	<u>182</u>	<u>74.6</u>	183	74.3	<u>182</u>	<u>74.6</u>	182	74.8
416.gamess	<u>946</u>	<u>20.7</u>	946	20.7	945	20.7	909	21.5	<u>910</u>	<u>21.5</u>	910	21.5
433.milc	222	41.4	224	40.9	<u>222</u>	<u>41.4</u>	<u>221</u>	<u>41.6</u>	220	41.6	221	41.6
434.zeusmp	281	32.4	282	32.3	<u>281</u>	<u>32.3</u>	281	32.4	<u>281</u>	<u>32.4</u>	282	32.3
435.gromacs	370	19.3	<u>383</u>	<u>18.7</u>	384	18.6	<u>374</u>	<u>19.1</u>	372	19.2	376	19.0
436.cactusADM	<u>136</u>	<u>87.6</u>	137	87.0	136	87.7	125	95.7	<u>125</u>	<u>95.9</u>	123	96.8
437.leslie3d	<u>336</u>	<u>28.0</u>	336	28.0	336	28.0	<u>336</u>	<u>28.0</u>	336	28.0	336	28.0
444.namd	<u>480</u>	<u>16.7</u>	479	16.7	480	16.7	<u>480</u>	<u>16.7</u>	479	16.7	480	16.7
447.dealII	372	30.8	<u>372</u>	<u>30.8</u>	372	30.8	358	32.0	357	32.1	<u>357</u>	<u>32.0</u>
450.soplex	<u>343</u>	<u>24.3</u>	343	24.3	344	24.3	<u>343</u>	<u>24.3</u>	343	24.3	344	24.3
453.povray	223	23.8	222	23.9	<u>222</u>	<u>23.9</u>	<u>173</u>	<u>30.7</u>	174	30.6	173	30.7
454.calculix	<u>336</u>	<u>24.6</u>	335	24.6	337	24.5	332	24.9	<u>333</u>	<u>24.8</u>	333	24.8
459.GemsFDTD	291	36.5	290	36.5	<u>291</u>	<u>36.5</u>	<u>278</u>	<u>38.2</u>	278	38.2	278	38.2
465.tonto	482	20.4	481	20.4	<u>482</u>	<u>20.4</u>	392	25.1	<u>391</u>	<u>25.1</u>	391	25.1
470.lbm	300	45.8	<u>310</u>	<u>44.3</u>	311	44.2	300	45.8	<u>310</u>	<u>44.3</u>	311	44.2
481.wrf	313	35.7	<u>314</u>	<u>35.6</u>	314	35.6	313	35.7	<u>313</u>	<u>35.7</u>	313	35.7
482.sphinx3	545	35.8	<u>543</u>	<u>35.9</u>	539	36.1	545	35.8	<u>543</u>	<u>35.9</u>	539	36.1

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 T310 (Intel Xeon X3440, 2.53 GHz) and the Bull NovaScale T820 F2 (Intel Xeon X3440, 2.53 GHz) models are electronically equivalent. The results have been measured on a Dell PowerEdge T310 (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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