



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale T860 E1
(Intel Xeon E5430, 2.66 GHz)

SPECfp[®]_rate2006 = 39.9

SPECfp_rate_base2006 = 36.7

CPU2006 license: 20

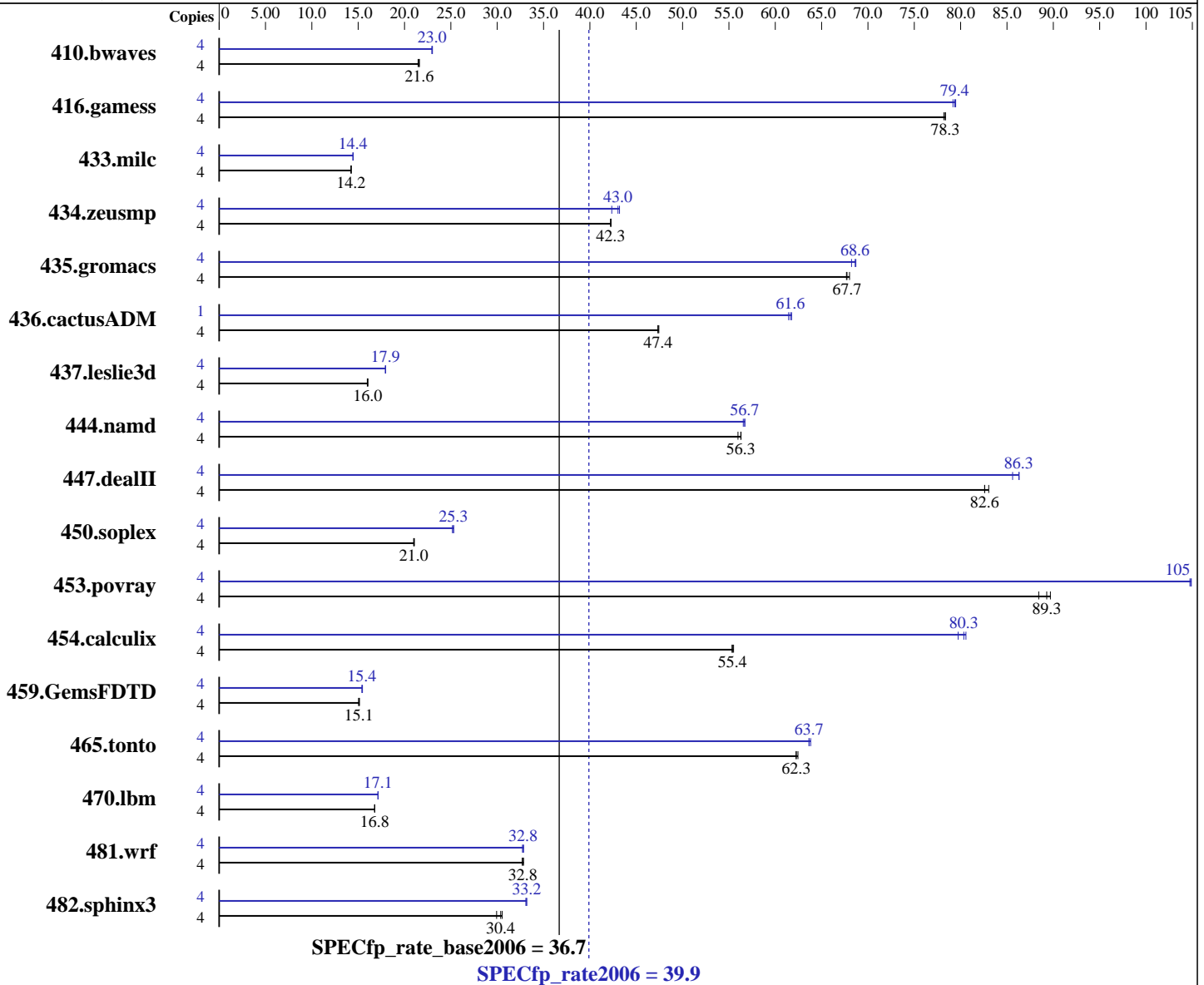
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5430
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2666
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System: SUSE LINUX Enterprise Server 10 SP1
 Kernel 2.6.16.46-0.12-smp for x86_64
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux
 Build 20070913 Package ID: l_cc_p_10.1.008,
 l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5
Disk Subsystem: 1x73 GB SAS, 15000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<u>2518</u>	<u>21.6</u>	2518	21.6	2533	21.5	4	<u>2365</u>	<u>23.0</u>	2369	22.9	2362	23.0
416.gamess	4	999	78.4	1002	78.2	<u>1000</u>	<u>78.3</u>	4	989	79.2	<u>987</u>	<u>79.4</u>	986	79.5
433.milc	4	2580	14.2	2578	14.2	<u>2579</u>	<u>14.2</u>	4	2544	14.4	<u>2544</u>	<u>14.4</u>	2537	14.5
434.zeusmp	4	<u>861</u>	<u>42.3</u>	862	42.2	861	42.3	4	859	42.4	<u>846</u>	<u>43.0</u>	843	43.2
435.gromacs	4	422	67.7	420	68.0	<u>422</u>	<u>67.7</u>	4	<u>416</u>	<u>68.6</u>	419	68.2	416	68.7
436.cactusADM	4	<u>1009</u>	<u>47.4</u>	1010	47.3	1008	47.4	1	194	61.4	193	61.8	<u>194</u>	<u>61.6</u>
437.leslie3d	4	2352	16.0	2343	16.1	<u>2346</u>	<u>16.0</u>	4	2093	18.0	2096	17.9	<u>2096</u>	<u>17.9</u>
444.namd	4	573	56.0	<u>570</u>	<u>56.3</u>	570	56.3	4	567	56.5	566	56.7	<u>566</u>	<u>56.7</u>
447.dealII	4	<u>554</u>	<u>82.6</u>	554	82.6	551	83.0	4	<u>530</u>	<u>86.3</u>	530	86.3	535	85.6
450.soplex	4	1584	21.1	<u>1588</u>	<u>21.0</u>	1589	21.0	4	1326	25.2	1319	25.3	<u>1319</u>	<u>25.3</u>
453.povray	4	<u>238</u>	<u>89.3</u>	241	88.4	237	89.7	4	<u>203</u>	<u>105</u>	203	105	203	105
454.calculix	4	595	55.5	<u>596</u>	<u>55.4</u>	596	55.3	4	414	79.7	410	80.6	<u>411</u>	<u>80.3</u>
459.GemsFDTD	4	<u>2814</u>	<u>15.1</u>	2803	15.1	2821	15.0	4	<u>2753</u>	<u>15.4</u>	2745	15.5	2754	15.4
465.tonto	4	<u>632</u>	<u>62.3</u>	630	62.4	632	62.2	4	617	63.8	618	63.6	<u>618</u>	<u>63.7</u>
470.lbm	4	<u>3275</u>	<u>16.8</u>	3275	16.8	3275	16.8	4	3207	17.1	<u>3206</u>	<u>17.1</u>	3205	17.1
481.wrf	4	1360	32.8	1366	32.7	<u>1364</u>	<u>32.8</u>	4	1360	32.8	1365	32.7	<u>1362</u>	<u>32.8</u>
482.sphinx3	4	2604	29.9	<u>2567</u>	<u>30.4</u>	2553	30.5	4	2349	33.2	<u>2350</u>	<u>33.2</u>	2356	33.1

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```

'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

```

General Notes

All benchmarks compiled in 64-bit mode except 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode



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Base Compiler Invocation

C benchmarks:
icc
C++ benchmarks:
icpc
Fortran benchmarks:
ifort
Benchmarks using both Fortran and C:
icc ifort

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:
-fast
C++ benchmarks:
-fast
Fortran benchmarks:
-fast
Benchmarks using both Fortran and C:
-fast



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib  
-I/opt/intel/fc/10.1.008/include
```

Benchmarks using both Fortran and C:

icc ifort

Peak 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  
444.namd: -DSPEC_CPU_LP64  
447.deallI: -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  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.html



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

http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.xml

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