



SPEC® CFP2006 Result

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Bull SAS

NovaScale T860 E1
(Intel Xeon X5470, 3.33 GHz)

SPECfp®_rate2006 = 44.6

SPECfp_rate_base2006 = 41.8

CPU2006 license: 20

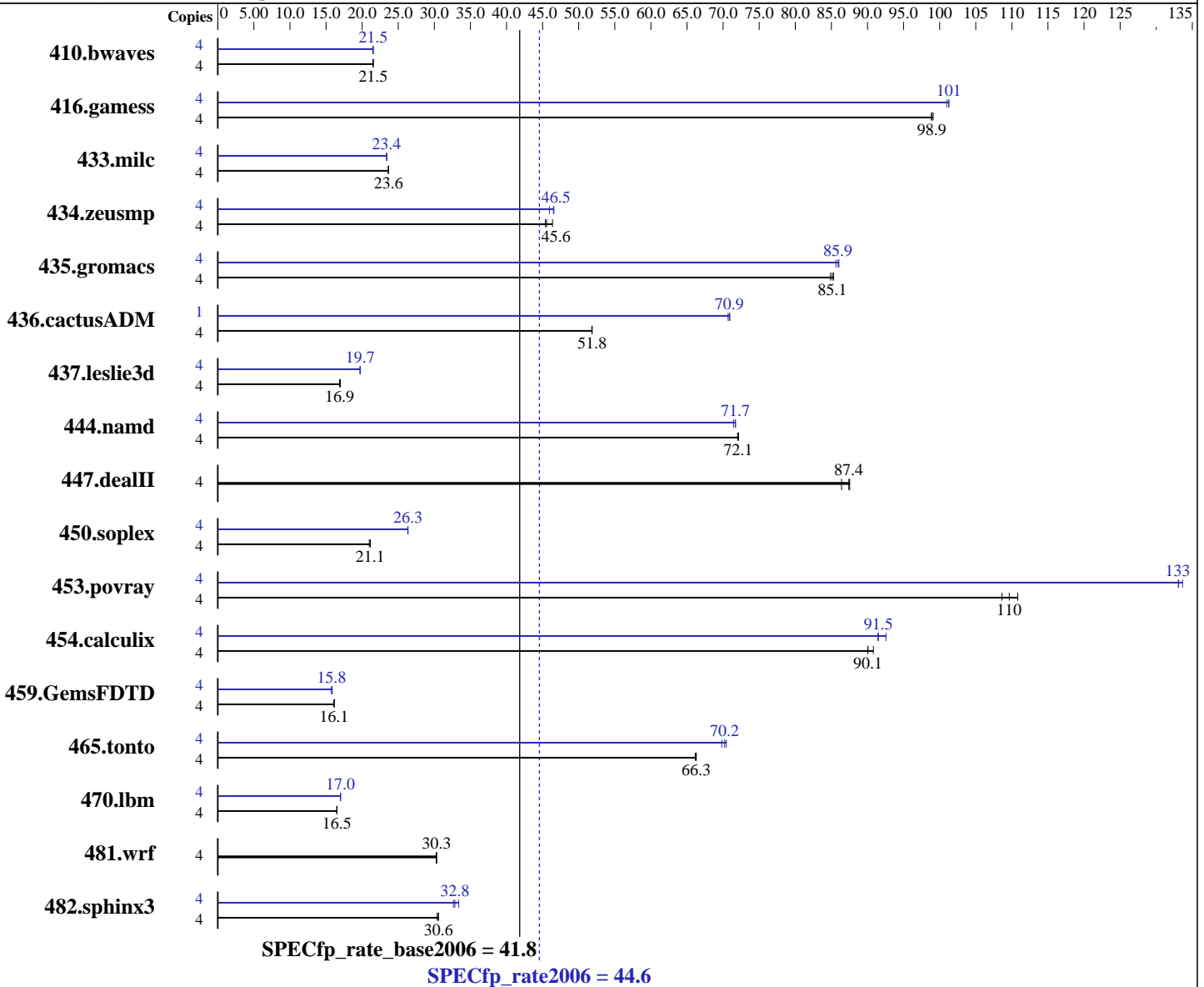
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5470
 CPU Characteristics: 3.33 GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3333
 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 (x86_64) SP2, Kernel 2.6.16.60-0.21-smpp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.044, l_cprof_b_11.0.044
 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 PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	2526	21.5	2525	21.5	<u>2526</u>	<u>21.5</u>	4	2523	21.5	<u>2526</u>	<u>21.5</u>	2532	21.5		
416.gamess	4	<u>792</u>	<u>98.9</u>	790	99.1	792	98.9	4	776	101	<u>773</u>	<u>101</u>	773	101		
433.milc	4	1553	23.6	1554	23.6	<u>1553</u>	<u>23.6</u>	4	1569	23.4	1570	23.4	<u>1569</u>	<u>23.4</u>		
434.zeusmp	4	785	46.4	802	45.4	<u>799</u>	<u>45.6</u>	4	782	46.6	792	45.9	<u>783</u>	<u>46.5</u>		
435.gromacs	4	<u>336</u>	<u>85.1</u>	336	84.9	335	85.3	4	<u>332</u>	<u>85.9</u>	334	85.6	332	86.0		
436.cactusADM	4	<u>922</u>	<u>51.8</u>	923	51.8	922	51.9	1	<u>169</u>	<u>70.9</u>	168	70.9	169	70.7		
437.leslie3d	4	<u>2225</u>	<u>16.9</u>	2214	17.0	2225	16.9	4	1905	19.7	1908	19.7	<u>1907</u>	<u>19.7</u>		
444.namd	4	445	72.1	446	72.0	<u>445</u>	<u>72.1</u>	4	449	71.5	447	71.7	<u>447</u>	<u>71.7</u>		
447.dealII	4	523	87.5	<u>523</u>	<u>87.4</u>	530	86.4	4	523	87.5	<u>523</u>	<u>87.4</u>	530	86.4		
450.soplex	4	1590	21.0	<u>1579</u>	<u>21.1</u>	1578	21.1	4	1266	26.4	1268	26.3	<u>1266</u>	<u>26.3</u>		
453.povray	4	196	109	192	111	<u>194</u>	<u>110</u>	4	159	134	<u>160</u>	<u>133</u>	160	133		
454.calculix	4	363	90.8	<u>366</u>	<u>90.1</u>	367	90.0	4	361	91.4	357	92.6	<u>361</u>	<u>91.5</u>		
459.GemsFDTD	4	2637	16.1	2631	16.1	<u>2631</u>	<u>16.1</u>	4	2693	15.8	2677	15.9	<u>2688</u>	<u>15.8</u>		
465.tonto	4	<u>594</u>	<u>66.3</u>	595	66.1	594	66.3	4	<u>561</u>	<u>70.2</u>	564	69.8	559	70.4		
470.lbm	4	3331	16.5	<u>3331</u>	<u>16.5</u>	3332	16.5	4	3233	17.0	3232	17.0	<u>3233</u>	<u>17.0</u>		
481.wrf	4	1474	30.3	1475	30.3	<u>1475</u>	<u>30.3</u>	4	1474	30.3	1475	30.3	<u>1475</u>	<u>30.3</u>		
482.sphinx3	4	<u>2551</u>	<u>30.6</u>	2565	30.4	2550	30.6	4	<u>2373</u>	<u>32.8</u>	2387	32.7	2335	33.4		

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.
taskset was used to bind processes to cores except
for 436.cactusADM peak

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M



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Platform Notes

Bios settings:
Hardware Prefetcher: Disabled
Adjacent Cache Line Prefetch: Disabled

General Notes

The NEC Express5800/120Lj(Intel Xeon X5470) and the Bull NovaScale T860 E1(Intel Xeon X5470, 3.33 GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Lj(Intel Xeon X5470) model.

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



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Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

482.sphinx3: /opt/intel/Compiler/11.0/044/bin/ia32/icc
-L/opt/intel/Compiler/11.0/044/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/044/ipp/ia32/include

C++ benchmarks (except as noted below):
icpc

450.soplex: /opt/intel/Compiler/11.0/044/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/044/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/044/ipp/ia32/include

Fortran benchmarks (except as noted below):
ifort

437.leslie3d: /opt/intel/Compiler/11.0/044/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/044/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/044/ipp/ia32/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

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Peak Portability Flags (Continued)

436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
444.namd: -DSPEC_CPU_LP64
447.dealII: -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

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias
470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32
482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias -auto-ilp32
447.dealII: basepeak = yes
450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-
434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static
437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

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Peak Optimization Flags (Continued)

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml>

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For other inquiries, please contact webmaster@spec.org.

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