



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale R480 E1
(Intel Xeon E7430, 2.13 GHz)

SPECfp[®]_rate2006 = 59.3

SPECfp_rate_base2006 = 56.3

CPU2006 license: 20

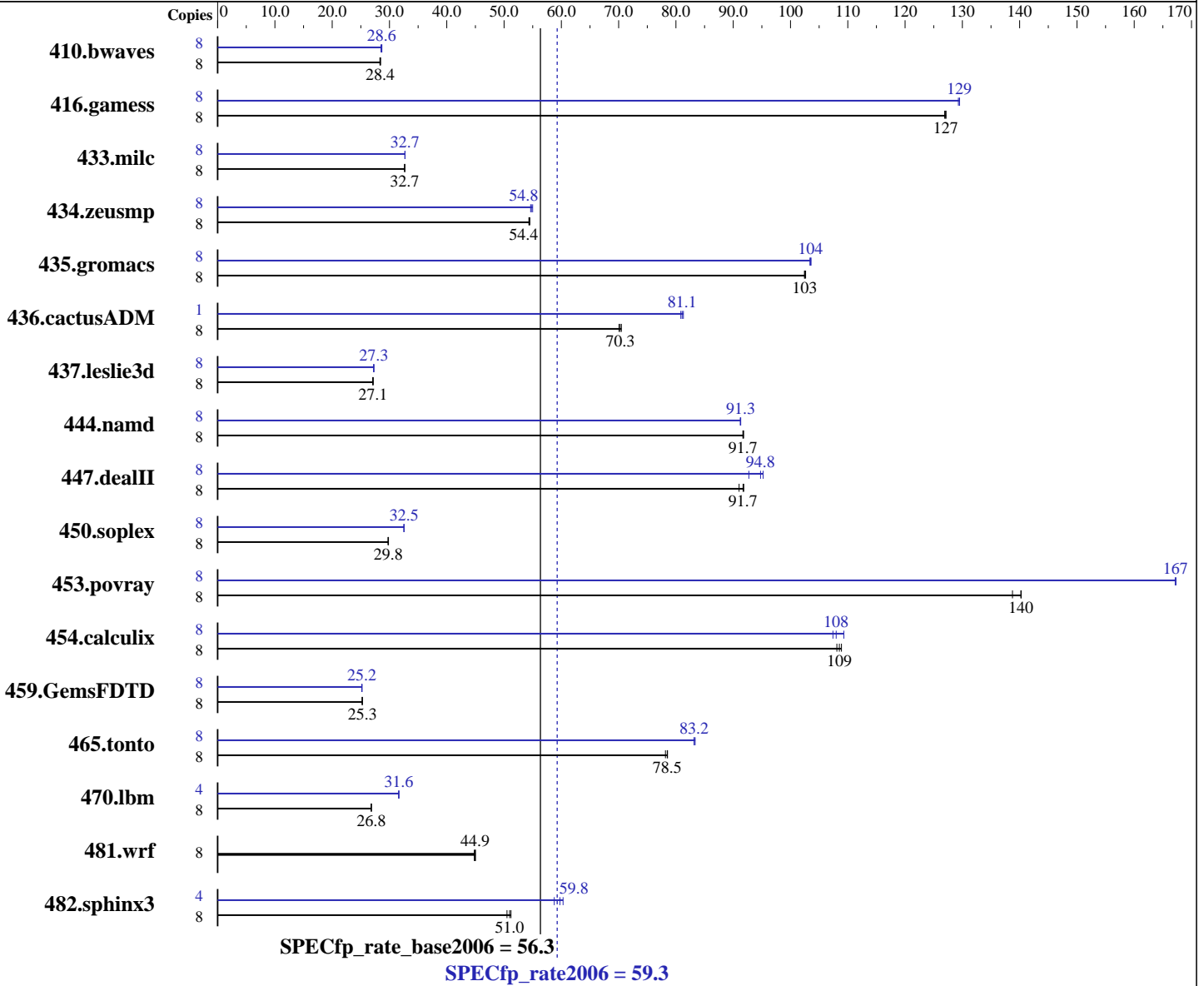
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Feb-2009

Hardware Availability: Nov-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E7430
 CPU Characteristics: 1066 MHz system bus
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2,3,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip, 3 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-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (16 x 2GB DDR2-667 FBDIMM)
Disk Subsystem: 1x146 GB SAS, 10000 RPM
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	8	3829	28.4	3822	28.4	3838	28.3	8	3813	28.5	3792	28.7	3795	28.6
416.gamess	8	1232	127	1234	127	1233	127	8	1210	129	1210	129	1211	129
433.milc	8	2251	32.6	2248	32.7	2248	32.7	8	2246	32.7	2246	32.7	2245	32.7
434.zeusmp	8	1339	54.4	1336	54.5	1340	54.3	8	1332	54.6	1329	54.8	1324	55.0
435.gromacs	8	558	102	556	103	557	103	8	551	104	553	103	552	104
436.cactusADM	8	1356	70.5	1364	70.1	1360	70.3	1	147	81.1	147	81.3	148	80.9
437.leslie3d	8	2769	27.2	2778	27.1	2773	27.1	8	2762	27.2	2759	27.3	2756	27.3
444.namd	8	699	91.8	700	91.7	700	91.7	8	703	91.2	703	91.3	703	91.3
447.dealII	8	996	91.8	1005	91.0	998	91.7	8	961	95.2	966	94.8	987	92.7
450.soplex	8	2244	29.7	2240	29.8	2237	29.8	8	2052	32.5	2050	32.5	2050	32.5
453.povray	8	304	140	303	140	307	139	8	254	167	255	167	255	167
454.calculix	8	611	108	608	109	606	109	8	611	108	614	107	604	109
459.GemsFDTD	8	3367	25.2	3358	25.3	3360	25.3	8	3375	25.2	3369	25.2	3368	25.2
465.tonto	8	1002	78.5	1003	78.5	1007	78.2	8	944	83.4	946	83.2	946	83.2
470.lbm	8	4098	26.8	4097	26.8	4097	26.8	4	1738	31.6	1737	31.6	1738	31.6
481.wrf	8	1995	44.8	1988	44.9	1985	45.0	8	1995	44.8	1988	44.9	1985	45.0
482.sphinx3	8	3045	51.2	3059	51.0	3087	50.5	4	1293	60.3	1327	58.8	1305	59.8

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
For peak modules using 1/2 the number of available cores, copies were each assigned to a single L2 cache using mysubmit.pl script.
See the flags description file for mysubmit.pl details.

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:
Adjacent Cache Line Prefetch = Disabled
Hardware Prefetcher = Disabled
High Bandwidth option = Enabled

General Notes

The NEC Express5800/R140a-4(Intel Xeon E7430) and the Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) models are electronically equivalent. The results have been measured on a Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) 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/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

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

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks (except as noted below):
ifort

437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/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: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-
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

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Peak Optimization Flags (Continued)

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

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-revA.20090710.00.html>
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.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-revA.20090710.00.xml>
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.xml>

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