



SPEC® CFP2006 Result

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Bull SAS

NovaScale R460 E1
(Intel Xeon X5460,3.16GHz)

SPECfp®2006 = 23.3

SPECfp_base2006 = 19.6

CPU2006 license: 20

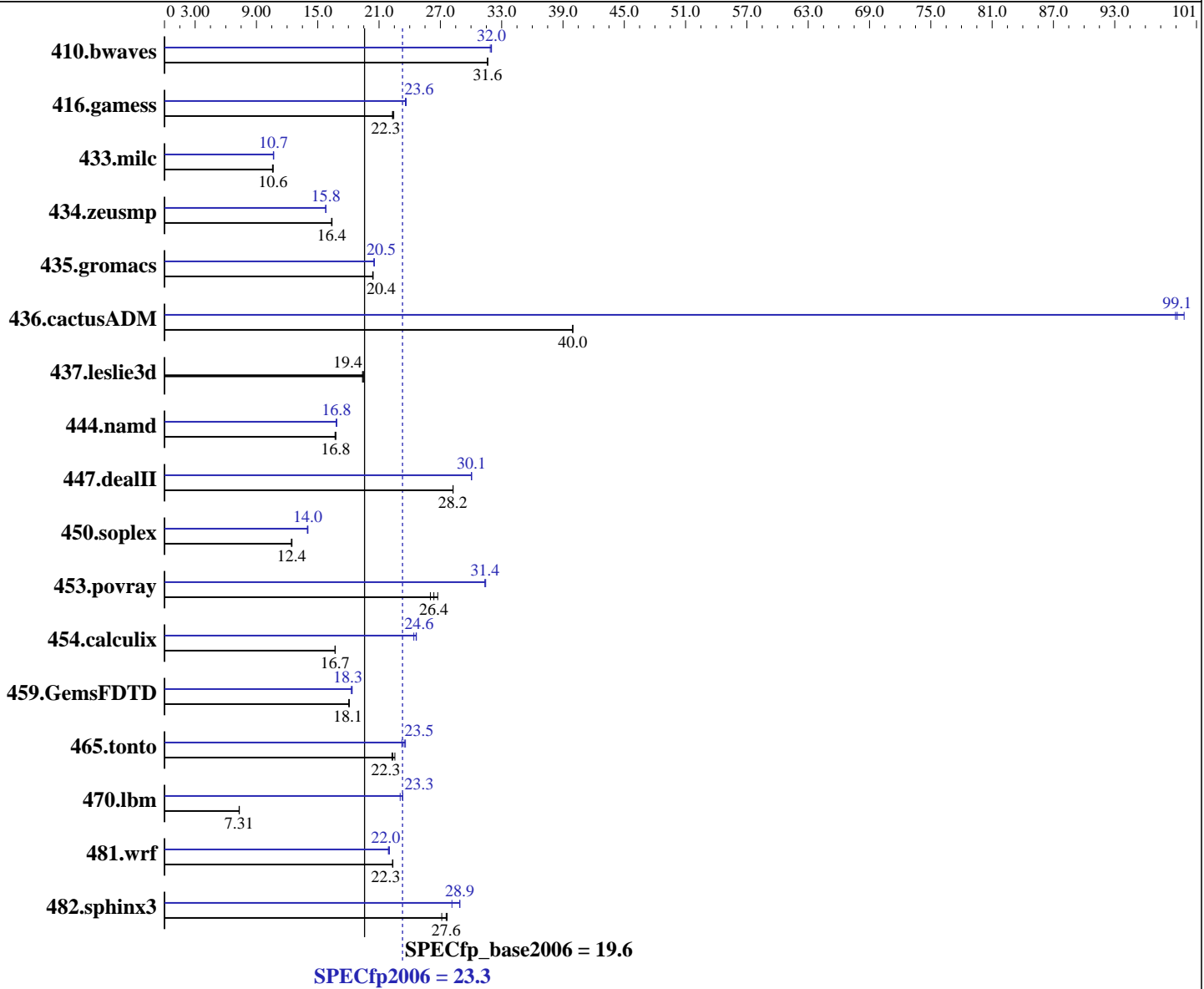
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Dec-2007

Hardware Availability: Dec-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 3160
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 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) SP1, Kernel 2.6.16.46-0.12-smpp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2

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L3 Cache: None
Other Cache: None
Memory: 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.tar.gz, Version 2.17

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	430	31.6	430	31.6	429	31.6	425	32.0	426	31.9	425	32.0
416.gamess	876	22.3	878	22.3	873	22.4	830	23.6	828	23.7	830	23.6
433.milc	865	10.6	863	10.6	868	10.6	860	10.7	858	10.7	862	10.7
434.zeusmp	557	16.4	555	16.4	556	16.4	576	15.8	576	15.8	577	15.8
435.gromacs	350	20.4	350	20.4	350	20.4	348	20.5	348	20.5	348	20.5
436.cactusADM	299	40.0	299	40.0	299	40.0	121	99.1	121	99.0	120	99.8
437.leslie3d	483	19.5	485	19.4	484	19.4	483	19.5	485	19.4	484	19.4
444.namd	478	16.8	480	16.7	478	16.8	477	16.8	477	16.8	475	16.9
447.dealII	405	28.3	405	28.2	405	28.2	381	30.1	381	30.1	381	30.0
450.soplex	668	12.5	671	12.4	671	12.4	594	14.0	594	14.0	597	14.0
453.povray	204	26.0	202	26.4	199	26.7	170	31.4	170	31.4	169	31.4
454.calculix	494	16.7	493	16.7	494	16.7	338	24.4	335	24.6	335	24.7
459.GemsFDTD	588	18.0	587	18.1	586	18.1	578	18.4	580	18.3	579	18.3
465.tonto	436	22.5	442	22.3	440	22.3	417	23.6	424	23.2	419	23.5
470.lbm	1874	7.33	1882	7.30	1879	7.31	589	23.3	589	23.3	596	23.1
481.wrf	500	22.3	500	22.4	500	22.3	510	21.9	509	22.0	507	22.0
482.sphinx3	705	27.7	707	27.6	718	27.1	674	28.9	675	28.9	693	28.1

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

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 (default).

Platform Notes

Bios settings:
Intel SpeedStep Technology: Disabled

General Notes

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

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General Notes (Continued)

The NEC Express5800/120Rh-1(Intel Xeon Processor X5460), the NEC Express5800/120Rj-2(Intel Xeon Processor X5460), the Bull NovaScale R440 E1 (Intel Xeon X5460,3.16GHz) and the Bull NovaScale R460 E1 (Intel Xeon X5460,3.16GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor X5460) 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.deall: -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 -parallel

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Base Optimization Flags (Continued)

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

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:
ifort

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
437.leslie3d: -DSPEC_CPU_LP64
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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX



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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

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealII: -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 -parallel

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: basepeak = yes

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

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

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Peak Optimization Flags (Continued)

481.wrf: -fast -parallel -prefetch -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.00.html>

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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.00.xml>

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