



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale R440 E1
(Intel Xeon E5205, 1.86 GHz)

SPECfp[®]_rate2006 = 21.3

SPECfp_rate_base2006 = 19.9

CPU2006 license: 20

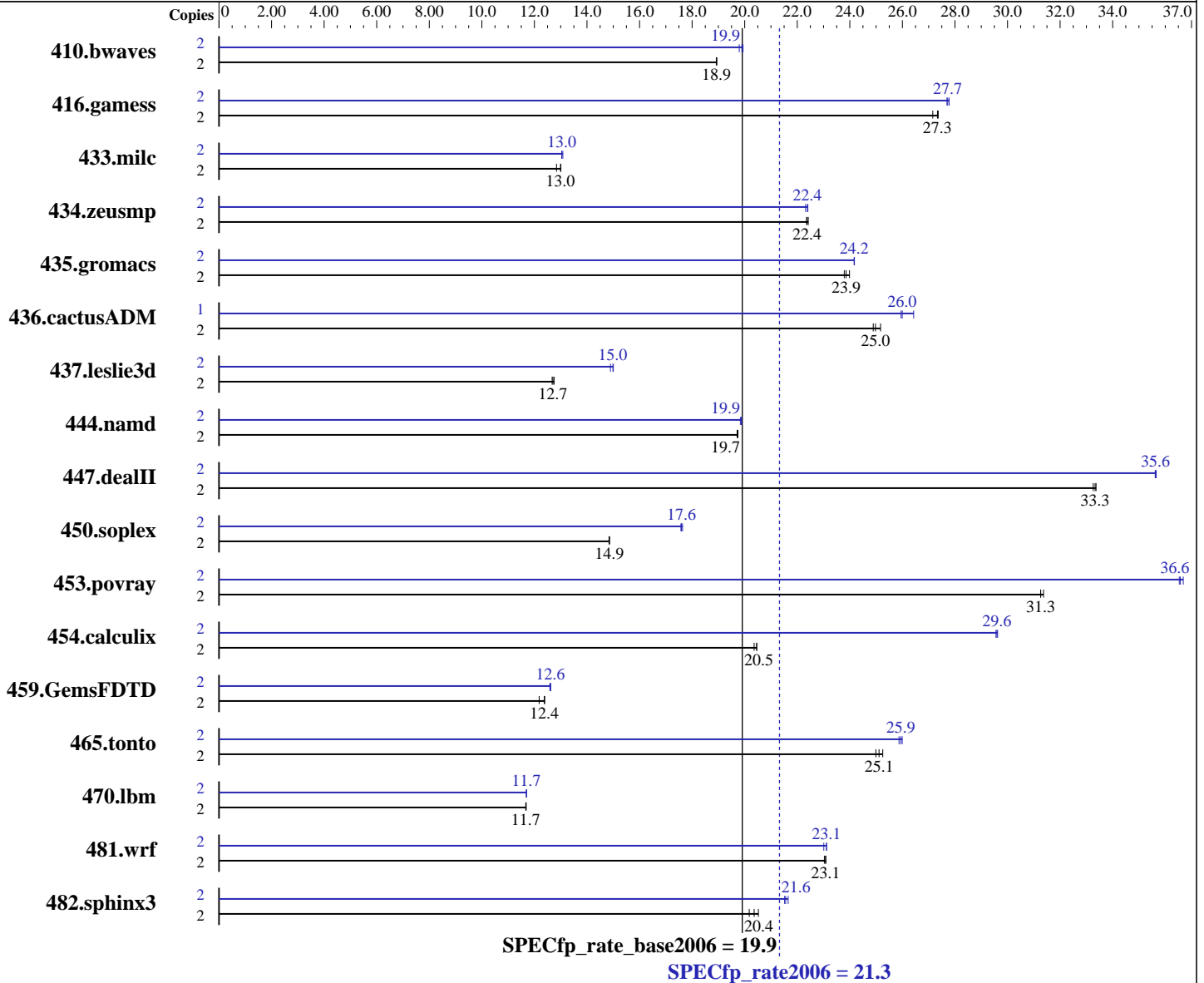
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Jun-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5205
 CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip

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Software

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

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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

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils 2.17

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	2	1437	18.9	<u>1436</u>	<u>18.9</u>	1435	18.9	2	1363	19.9	1373	19.8	<u>1366</u>	<u>19.9</u>		
416.gamess	2	1431	27.4	1442	27.2	<u>1433</u>	<u>27.3</u>	2	1414	27.7	1410	27.8	<u>1413</u>	<u>27.7</u>		
433.milc	2	1411	13.0	<u>1413</u>	<u>13.0</u>	1430	12.8	2	<u>1408</u>	<u>13.0</u>	1403	13.1	1408	13.0		
434.zeusmp	2	<u>813</u>	<u>22.4</u>	814	22.4	812	22.4	2	815	22.3	<u>813</u>	<u>22.4</u>	812	22.4		
435.gromacs	2	600	23.8	595	24.0	<u>599</u>	<u>23.9</u>	2	591	24.2	591	24.2	<u>591</u>	<u>24.2</u>		
436.cactusADM	2	950	25.2	960	24.9	<u>957</u>	<u>25.0</u>	1	452	26.4	461	25.9	<u>460</u>	<u>26.0</u>		
437.leslie3d	2	1475	12.7	1483	12.7	<u>1480</u>	<u>12.7</u>	2	1253	15.0	1262	14.9	<u>1254</u>	<u>15.0</u>		
444.namd	2	814	19.7	<u>813</u>	<u>19.7</u>	812	19.7	2	807	19.9	809	19.8	<u>807</u>	<u>19.9</u>		
447.dealII	2	686	33.4	<u>686</u>	<u>33.3</u>	688	33.3	2	<u>642</u>	<u>35.6</u>	642	35.6	642	35.7		
450.soplex	2	1123	14.9	1124	14.8	<u>1123</u>	<u>14.9</u>	2	946	17.6	<u>948</u>	<u>17.6</u>	949	17.6		
453.povray	2	339	31.4	<u>340</u>	<u>31.3</u>	340	31.3	2	<u>291</u>	<u>36.6</u>	291	36.5	290	36.7		
454.calculix	2	<u>807</u>	<u>20.5</u>	806	20.5	810	20.4	2	<u>558</u>	<u>29.6</u>	557	29.6	558	29.6		
459.GemsFDTD	2	1712	12.4	1742	12.2	<u>1715</u>	<u>12.4</u>	2	<u>1683</u>	<u>12.6</u>	1681	12.6	1686	12.6		
465.tonto	2	<u>784</u>	<u>25.1</u>	787	25.0	779	25.3	2	757	26.0	761	25.9	<u>759</u>	<u>25.9</u>		
470.lbm	2	2351	11.7	<u>2353</u>	<u>11.7</u>	2354	11.7	2	2350	11.7	2349	11.7	<u>2349</u>	<u>11.7</u>		
481.wrf	2	<u>968</u>	<u>23.1</u>	968	23.1	970	23.0	2	971	23.0	966	23.1	<u>967</u>	<u>23.1</u>		
482.sphinx3	2	1932	20.2	1899	20.5	<u>1915</u>	<u>20.4</u>	2	1811	21.5	1800	21.7	<u>1808</u>	<u>21.6</u>		

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
'/usr/bin/taskset' used to bind processes to CPUs
except for 436.cactusADM at peak.
OMP_NUM_THREADS set to number of cores

Platform Notes

Bios settings:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled
Intel SpeedStep Technology: Disabled



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General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode

The NEC Express5800/120Rh-1(Intel Xeon E5205), the NEC Express5800/120Rj-2(Intel Xeon E5205), the Bull NovaScale R440 E1 (Intel Xeon E5205,1.86GHz) and the Bull NovaScale R460 E1 (Intel Xeon E5205,1.86GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon E5205) 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.deallI: -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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

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.dealII: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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
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
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

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Peak Optimization Flags (Continued)

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/NEC-Intel-ic10.1-FP-intel64-linux-flags.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.xml>

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