



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale B280
(Intel Xeon E5405, 2.00 GHz)

SPECfp[®]_rate2006 = 63.0

SPECfp_rate_base2006 = 56.7

CPU2006 license: 20

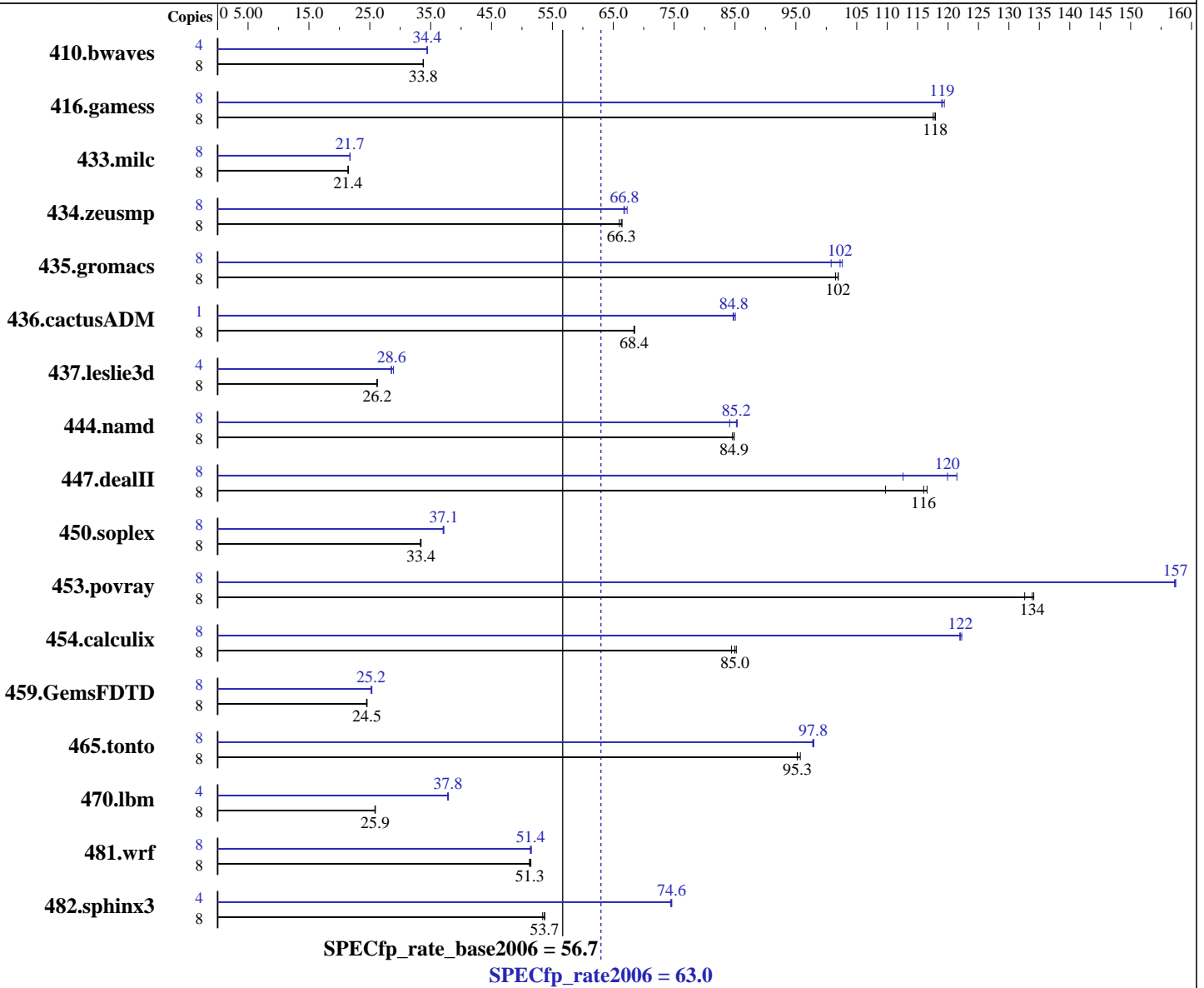
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Sep-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2000
 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-smp
 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	8	3220	33.8	<u>3218</u>	<u>33.8</u>	3215	33.8	4	<u>1579</u>	<u>34.4</u>	1579	34.4	1578	34.4
416.gamess	8	1328	118	<u>1329</u>	<u>118</u>	1332	118	8	<u>1316</u>	<u>119</u>	1312	119	1317	119
433.milc	8	<u>3425</u>	<u>21.4</u>	3421	21.5	3429	21.4	8	<u>3378</u>	<u>21.7</u>	3374	21.8	3378	21.7
434.zeusmp	8	1103	66.0	1096	66.4	<u>1098</u>	<u>66.3</u>	8	1082	67.3	<u>1089</u>	<u>66.8</u>	1091	66.7
435.gromacs	8	563	102	560	102	<u>560</u>	<u>102</u>	8	<u>559</u>	<u>102</u>	567	101	557	103
436.cactusADM	8	1395	68.5	1398	68.4	<u>1397</u>	<u>68.4</u>	1	141	84.7	<u>141</u>	<u>84.8</u>	140	85.1
437.leslie3d	8	<u>2871</u>	<u>26.2</u>	2867	26.2	2871	26.2	4	1302	28.9	<u>1316</u>	<u>28.6</u>	1318	28.5
444.namd	8	756	84.9	759	84.6	<u>756</u>	<u>84.9</u>	8	751	85.4	763	84.1	<u>753</u>	<u>85.2</u>
447.dealII	8	834	110	<u>789</u>	<u>116</u>	785	117	8	754	121	813	113	<u>763</u>	<u>120</u>
450.soplex	8	1996	33.4	2003	33.3	<u>1997</u>	<u>33.4</u>	8	1801	37.0	<u>1796</u>	<u>37.1</u>	1796	37.2
453.povray	8	321	133	<u>318</u>	<u>134</u>	317	134	8	270	157	<u>270</u>	<u>157</u>	271	157
454.calculix	8	775	85.2	782	84.4	<u>777</u>	<u>85.0</u>	8	540	122	541	122	<u>541</u>	<u>122</u>
459.GemsFDTD	8	<u>3460</u>	<u>24.5</u>	3471	24.5	3459	24.5	8	3348	25.3	<u>3364</u>	<u>25.2</u>	3365	25.2
465.tonto	8	822	95.7	827	95.2	<u>826</u>	<u>95.3</u>	8	<u>805</u>	<u>97.8</u>	804	98.0	805	97.8
470.lbm	8	4244	25.9	<u>4245</u>	<u>25.9</u>	4254	25.8	4	1450	37.9	1454	37.8	<u>1453</u>	<u>37.8</u>
481.wrf	8	1736	51.5	1744	51.2	<u>1742</u>	<u>51.3</u>	8	1733	51.5	<u>1737</u>	<u>51.4</u>	1739	51.4
482.sphinx3	8	<u>2904</u>	<u>53.7</u>	2920	53.4	2901	53.7	4	1048	74.4	<u>1045</u>	<u>74.6</u>	1045	74.6

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 configuration:
Hardware Prefetcher Enabled
Adjacent Cache-Line Prefetch Disabled

General Notes

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

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/EM64T_Intel101_fp_flags.20090713.html

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

http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.xml

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