



SPEC® CFP2006 Result

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Bull SAS

NovaScale R460 E1
(Intel Xeon E5420,2.50GHz)

SPECfp®_rate2006 = 68.7

SPECfp_rate_base2006 = 61.4

CPU2006 license: 20

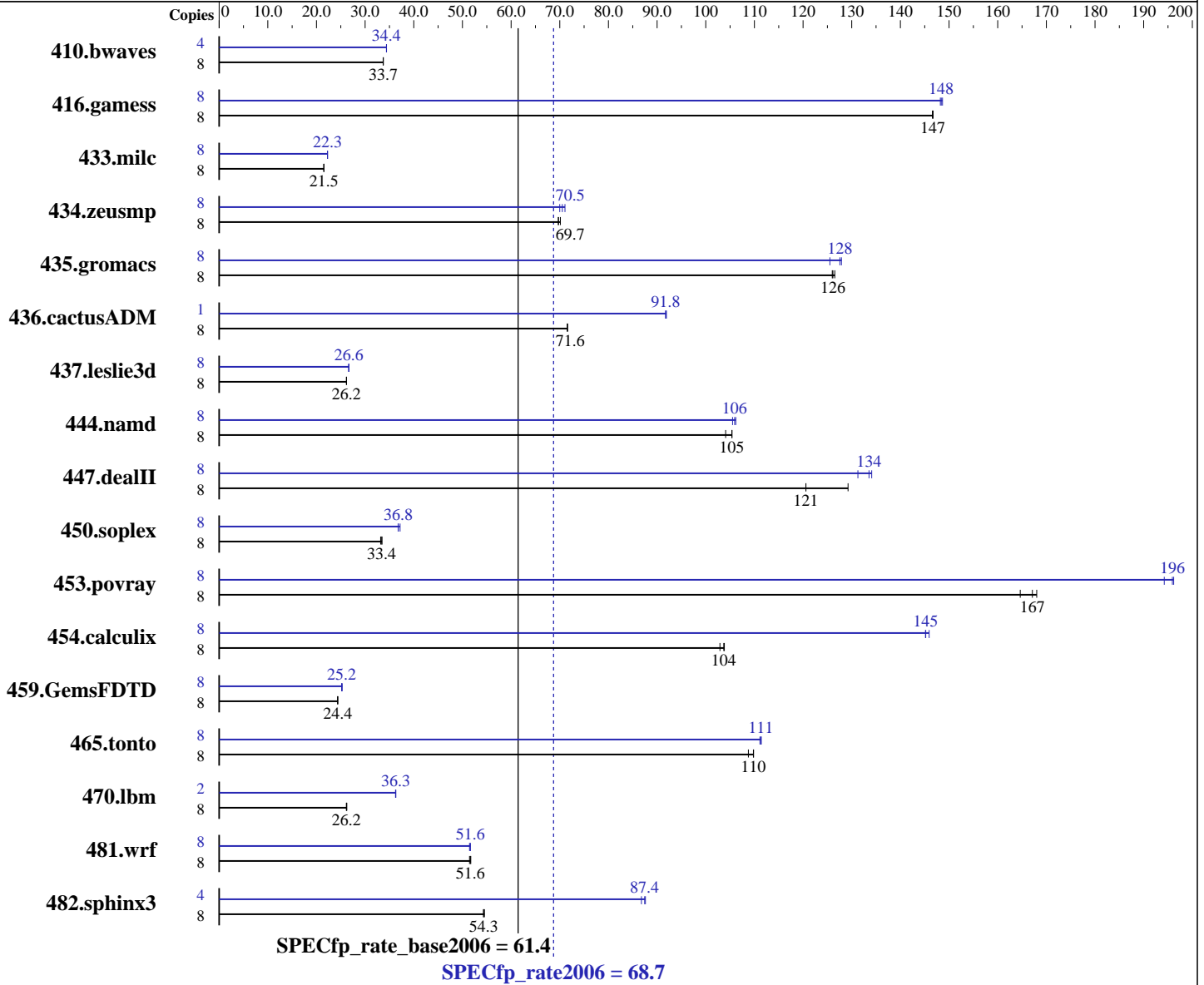
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Jan-2008

Hardware Availability: Dec-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 2.50 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 2500
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3226	33.7	3222	33.7	<u>3225</u>	<u>33.7</u>	4	1580	34.4	1581	34.4	<u>1581</u>	<u>34.4</u>
416.gamess	8	1069	147	<u>1068</u>	<u>147</u>	1068	147	8	1054	149	<u>1055</u>	<u>148</u>	1057	148
433.milc	8	3415	21.5	<u>3410</u>	<u>21.5</u>	3409	21.5	8	3300	22.3	<u>3298</u>	<u>22.3</u>	3296	22.3
434.zeusmp	8	1045	69.7	1038	70.1	<u>1044</u>	<u>69.7</u>	8	1040	70.0	<u>1032</u>	<u>70.5</u>	1024	71.1
435.gromacs	8	453	126	<u>453</u>	<u>126</u>	451	127	8	447	128	<u>448</u>	<u>128</u>	455	126
436.cactusADM	8	1335	71.6	1336	71.6	<u>1336</u>	<u>71.6</u>	1	130	91.9	130	91.8	<u>130</u>	<u>91.8</u>
437.leslie3d	8	2873	26.2	2874	26.2	<u>2874</u>	<u>26.2</u>	8	<u>2822</u>	<u>26.6</u>	2822	26.6	2823	26.6
444.namd	8	609	105	616	104	<u>609</u>	<u>105</u>	8	604	106	<u>606</u>	<u>106</u>	608	106
447.dealII	8	<u>759</u>	<u>121</u>	708	129	759	121	8	<u>685</u>	<u>134</u>	682	134	697	131
450.soplex	8	2010	33.2	<u>1997</u>	<u>33.4</u>	1994	33.5	8	1814	36.8	<u>1812</u>	<u>36.8</u>	1794	37.2
453.povray	8	253	168	259	165	<u>255</u>	<u>167</u>	8	<u>217</u>	<u>196</u>	219	194	217	196
454.calculix	8	636	104	<u>636</u>	<u>104</u>	641	103	8	<u>454</u>	<u>145</u>	455	145	452	146
459.GemsFDTD	8	<u>3484</u>	<u>24.4</u>	3489	24.3	3481	24.4	8	3371	25.2	<u>3371</u>	<u>25.2</u>	3356	25.3
465.tonto	8	717	110	724	109	<u>717</u>	<u>110</u>	8	<u>707</u>	<u>111</u>	708	111	707	111
470.lbm	8	4204	26.1	<u>4199</u>	<u>26.2</u>	4189	26.2	2	757	36.3	758	36.2	<u>757</u>	<u>36.3</u>
481.wrf	8	1737	51.5	1728	51.7	<u>1731</u>	<u>51.6</u>	8	<u>1731</u>	<u>51.6</u>	1737	51.5	1731	51.6
482.sphinx3	8	2860	54.5	<u>2869</u>	<u>54.3</u>	2869	54.3	4	898	86.8	<u>892</u>	<u>87.4</u>	890	87.6

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
OMP_NUM_THREADS set to number of cores (default).

Platform Notes

Bios settings:
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 Processor E5420), the NEC Express5800/120Rj-2(Intel Xeon Processor E5420), the Bull NovaScale R440 E1 (Intel Xeon E5420,2.50GHz) and the Bull NovaScale R460 E1 (Intel Xeon E5420,2.50GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor E5420) 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.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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 18:05:29 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 April 2008.