



SPEC® CFP2006 Result

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Bull SAS

NovaScale T860 E1
(Intel Xeon E5430, 2.66 GHz)

SPECfp®_rate2006 = 70.8

SPECfp_rate_base2006 = 63.2

CPU2006 license: 20

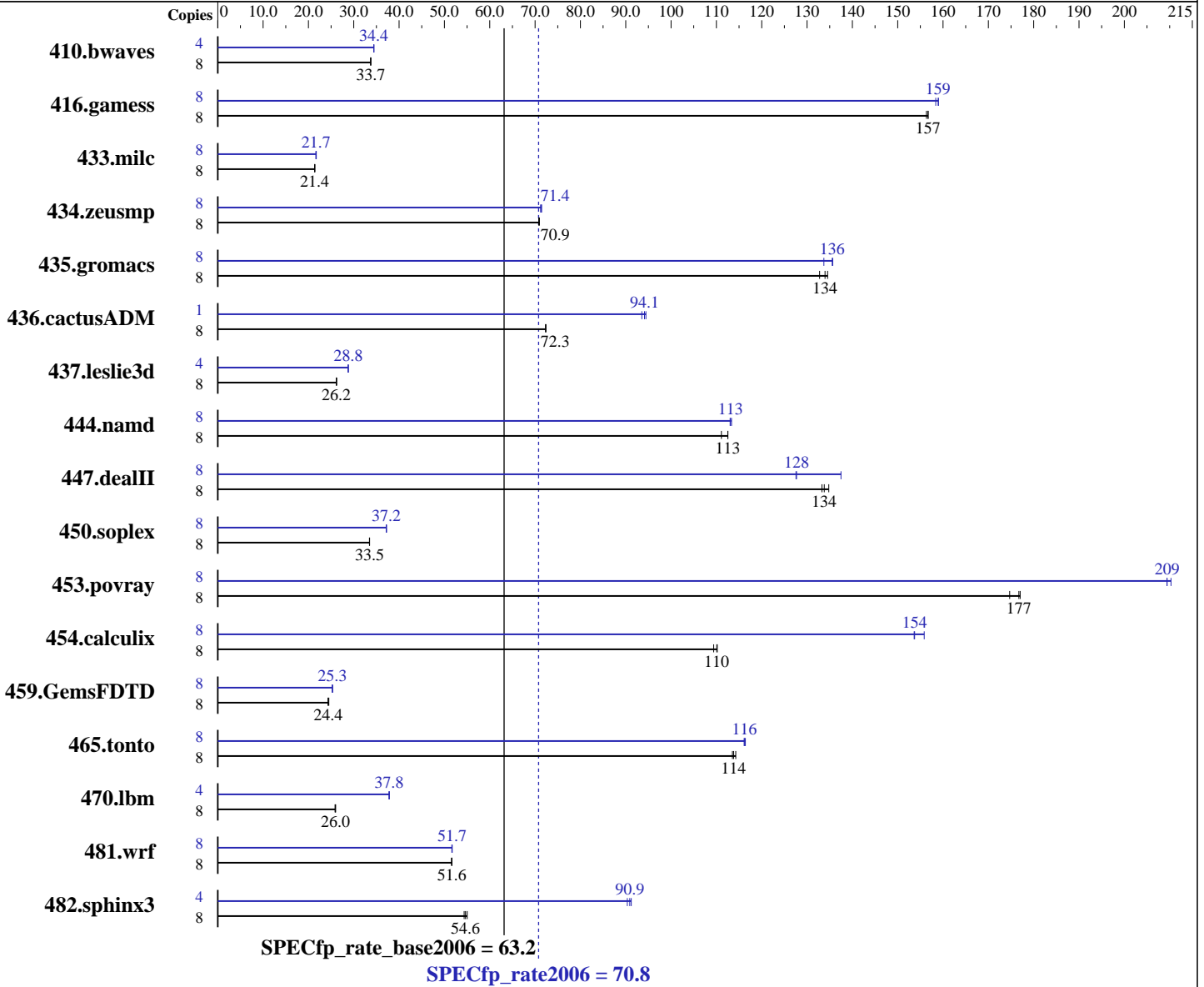
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5430
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2666
 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

Continued on next page

Software

Operating System: SUSE LINUX Enterprise Server 10 SP1
 Kernel 2.6.16.46-0.12-smp for x86_64
 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

Continued on next page



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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	3223	33.7	3221	33.7	<u>3222</u>	<u>33.7</u>	4	1579	34.4	1579	34.4	<u>1579</u>	<u>34.4</u>
416.gamess	8	<u>1000</u>	<u>157</u>	1000	157	1002	156	8	989	158	985	159	<u>986</u>	<u>159</u>
433.milc	8	3431	21.4	3436	21.4	<u>3433</u>	<u>21.4</u>	8	3379	21.7	<u>3385</u>	<u>21.7</u>	3394	21.6
434.zeusmp	8	1028	70.8	1026	71.0	<u>1027</u>	<u>70.9</u>	8	1019	71.4	<u>1020</u>	<u>71.4</u>	1022	71.2
435.gromacs	8	<u>426</u>	<u>134</u>	430	133	425	135	8	427	134	421	136	<u>421</u>	<u>136</u>
436.cactusADM	8	<u>1322</u>	<u>72.3</u>	1321	72.4	1322	72.3	1	127	94.5	<u>127</u>	<u>94.1</u>	128	93.5
437.leslie3d	8	2868	26.2	2876	26.2	<u>2874</u>	<u>26.2</u>	4	1306	28.8	<u>1306</u>	<u>28.8</u>	1307	28.8
444.namd	8	577	111	570	113	<u>570</u>	<u>113</u>	8	568	113	<u>567</u>	<u>113</u>	566	113
447.dealII	8	<u>684</u>	<u>134</u>	687	133	679	135	8	<u>717</u>	<u>128</u>	717	128	666	137
450.soplex	8	1994	33.5	<u>1993</u>	<u>33.5</u>	1992	33.5	8	1796	37.2	<u>1795</u>	<u>37.2</u>	1792	37.2
453.povray	8	240	177	244	175	<u>241</u>	<u>177</u>	8	202	210	203	209	<u>203</u>	<u>209</u>
454.calculix	8	603	109	599	110	<u>600</u>	<u>110</u>	8	<u>429</u>	<u>154</u>	423	156	430	154
459.GemsFDTD	8	3464	24.5	<u>3482</u>	<u>24.4</u>	3490	24.3	8	3349	25.3	3363	25.2	<u>3359</u>	<u>25.3</u>
465.tonto	8	<u>692</u>	<u>114</u>	689	114	693	114	8	676	116	678	116	<u>677</u>	<u>116</u>
470.lbm	8	<u>4232</u>	<u>26.0</u>	4231	26.0	4249	25.9	4	1452	37.8	<u>1454</u>	<u>37.8</u>	1454	37.8
481.wrf	8	1733	51.6	<u>1731</u>	<u>51.6</u>	1730	51.7	8	1731	51.6	<u>1729</u>	<u>51.7</u>	1728	51.7
482.sphinx3	8	2869	54.4	<u>2853</u>	<u>54.6</u>	2834	55.0	4	855	91.2	863	90.3	<u>858</u>	<u>90.9</u>

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

Operating System Notes

```

'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

```

General Notes

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



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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

Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast



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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.deallI: -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
```

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
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealIII: -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

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.20090713.00.html



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

http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.xml

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