



SPEC® CFP2006 Result

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Bull SAS

NovaScale B240
(Intel Xeon E3113, 3.00 GHz)

SPECfp®_rate2006 = 30.5

SPECfp_rate_base2006 = 28.5

CPU2006 license: 20

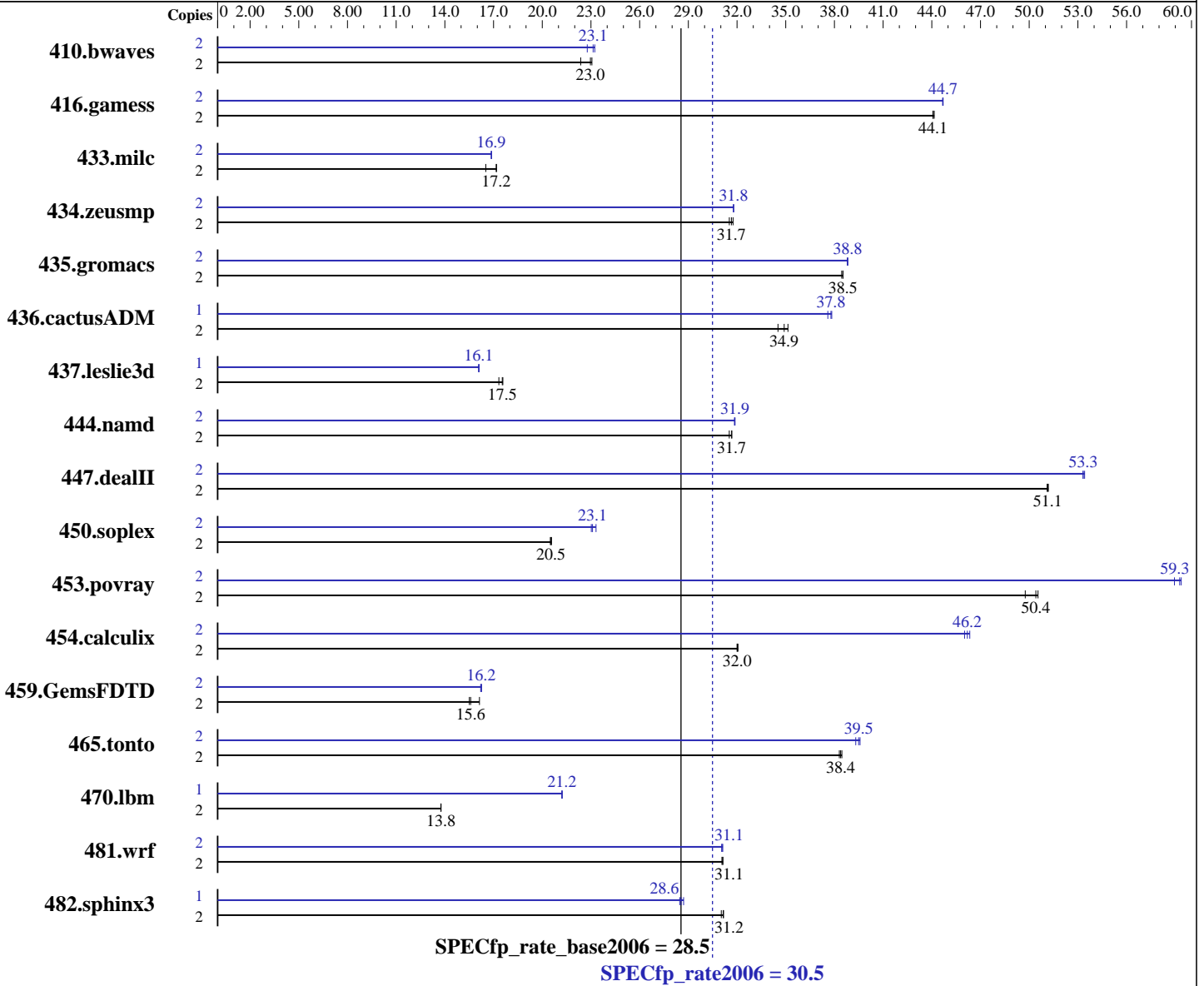
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Oct-2008

Hardware Availability: Jun-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E3113
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1 chip
 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 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: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 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	2	1215	22.4	<u>1183</u>	<u>23.0</u>	1179	23.1	2	<u>1175</u>	<u>23.1</u>	1194	22.8	1170	23.2
416.gamess	2	889	44.1	887	44.2	<u>888</u>	<u>44.1</u>	2	877	44.7	<u>876</u>	<u>44.7</u>	876	44.7
433.milc	2	1111	16.5	<u>1070</u>	<u>17.2</u>	1068	17.2	2	1088	16.9	1089	16.9	<u>1089</u>	<u>16.9</u>
434.zeusmp	2	577	31.5	<u>575</u>	<u>31.7</u>	573	31.8	2	<u>573</u>	<u>31.8</u>	573	31.8	573	31.8
435.gromacs	2	<u>371</u>	<u>38.5</u>	371	38.4	371	38.5	2	368	38.8	<u>368</u>	<u>38.8</u>	368	38.8
436.cactusADM	2	692	34.5	<u>685</u>	<u>34.9</u>	680	35.1	1	318	37.6	<u>316</u>	<u>37.8</u>	316	37.8
437.leslie3d	2	1085	17.3	<u>1072</u>	<u>17.5</u>	1070	17.6	1	584	16.1	<u>584</u>	<u>16.1</u>	585	16.1
444.namd	2	506	31.7	509	31.5	<u>506</u>	<u>31.7</u>	2	503	31.9	504	31.8	<u>503</u>	<u>31.9</u>
447.dealII	2	448	51.1	<u>447</u>	<u>51.1</u>	447	51.2	2	428	53.4	<u>429</u>	<u>53.3</u>	429	53.3
450.soplex	2	811	20.6	814	20.5	<u>812</u>	<u>20.5</u>	2	725	23.0	<u>722</u>	<u>23.1</u>	715	23.3
453.povray	2	214	49.8	211	50.5	<u>211</u>	<u>50.4</u>	2	180	58.9	<u>180</u>	<u>59.3</u>	179	59.4
454.calculix	2	515	32.1	<u>515</u>	<u>32.0</u>	516	32.0	2	356	46.3	<u>357</u>	<u>46.2</u>	359	46.0
459.GemsFDTD	2	1369	15.5	<u>1361</u>	<u>15.6</u>	1315	16.1	2	1305	16.3	<u>1306</u>	<u>16.2</u>	1309	16.2
465.tonto	2	514	38.3	512	38.5	<u>513</u>	<u>38.4</u>	2	501	39.3	497	39.6	<u>498</u>	<u>39.5</u>
470.lbm	2	1996	13.8	1998	13.8	<u>1998</u>	<u>13.8</u>	1	<u>648</u>	<u>21.2</u>	647	21.2	648	21.2
481.wrf	2	719	31.1	<u>718</u>	<u>31.1</u>	718	31.1	2	718	31.1	<u>719</u>	<u>31.1</u>	719	31.1
482.sphinx3	2	1256	31.0	<u>1251</u>	<u>31.2</u>	1251	31.2	1	<u>682</u>	<u>28.6</u>	685	28.5	679	28.7

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 Settings:
Hardware Prefetcher = Enabled
Adjacent Cache Line Prefetch = Enabled

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

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Base Optimization Flags (Continued)

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  
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

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

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Peak Optimization Flags (Continued)

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.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.xml

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For other inquiries, please contact webmaster@spec.org.

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