



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale B240
(Intel Xeon X3323, 2.50 GHz)

SPECfp[®]_rate2006 = 39.1

SPECfp_rate_base2006 = 36.6

CPU2006 license: 20

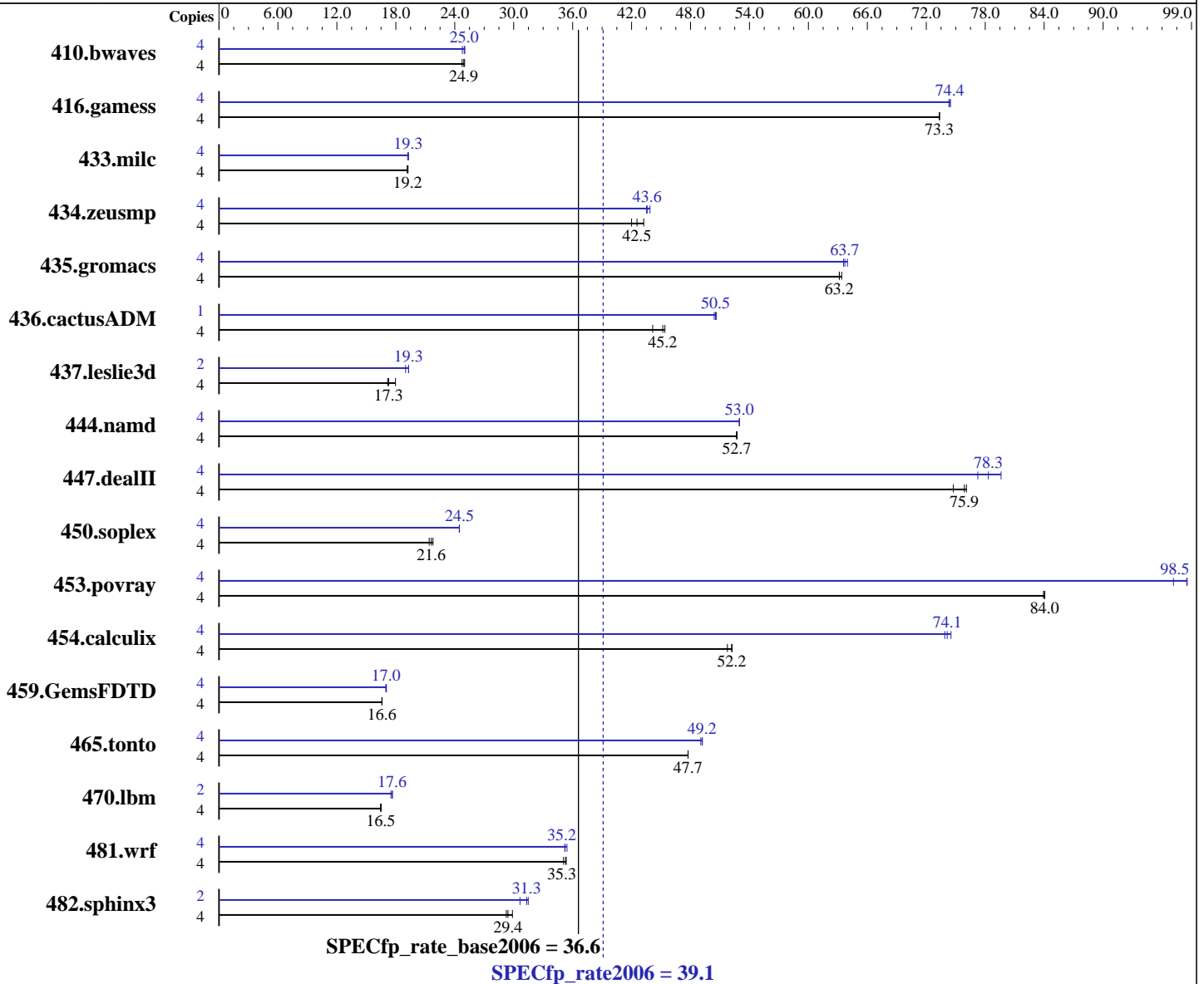
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Oct-2008

Hardware Availability: Jun-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X3323
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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, 3 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: 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	4	2196	24.8	<u>2181</u>	<u>24.9</u>	2174	25.0	4	2194	24.8	2172	25.0	<u>2178</u>	<u>25.0</u>
416.gamess	4	1068	73.3	<u>1068</u>	<u>73.3</u>	1068	73.3	4	1054	74.3	1052	74.5	<u>1053</u>	<u>74.4</u>
433.milc	4	1908	19.2	1916	19.2	<u>1912</u>	<u>19.2</u>	4	1912	19.2	1905	19.3	<u>1905</u>	<u>19.3</u>
434.zeusmp	4	<u>855</u>	<u>42.5</u>	842	43.2	867	42.0	4	<u>835</u>	<u>43.6</u>	830	43.9	836	43.5
435.gromacs	4	452	63.1	<u>452</u>	<u>63.2</u>	451	63.4	4	449	63.6	<u>448</u>	<u>63.7</u>	446	64.0
436.cactusADM	4	1083	44.1	<u>1058</u>	<u>45.2</u>	1053	45.4	1	237	50.4	236	50.6	<u>236</u>	<u>50.5</u>
437.leslie3d	4	2093	18.0	<u>2176</u>	<u>17.3</u>	2190	17.2	2	990	19.0	<u>974</u>	<u>19.3</u>	974	19.3
444.namd	4	608	52.7	<u>609</u>	<u>52.7</u>	609	52.7	4	605	53.0	<u>605</u>	<u>53.0</u>	606	53.0
447.dealII	4	612	74.8	601	76.1	<u>603</u>	<u>75.9</u>	4	575	79.6	<u>584</u>	<u>78.3</u>	592	77.2
450.soplex	4	1531	21.8	<u>1544</u>	<u>21.6</u>	1559	21.4	4	1364	24.5	1363	24.5	<u>1363</u>	<u>24.5</u>
453.povray	4	254	83.9	<u>253</u>	<u>84.0</u>	253	84.1	4	219	97.2	216	98.6	<u>216</u>	<u>98.5</u>
454.calculix	4	<u>632</u>	<u>52.2</u>	638	51.8	632	52.2	4	443	74.5	<u>445</u>	<u>74.1</u>	447	73.9
459.GemsFDTD	4	2559	16.6	<u>2558</u>	<u>16.6</u>	2556	16.6	4	2490	17.0	2498	17.0	<u>2495</u>	<u>17.0</u>
465.tonto	4	824	47.8	<u>824</u>	<u>47.7</u>	824	47.7	4	800	49.2	802	49.0	<u>800</u>	<u>49.2</u>
470.lbm	4	3331	16.5	<u>3336</u>	<u>16.5</u>	3340	16.5	2	1570	17.5	1557	17.6	<u>1558</u>	<u>17.6</u>
481.wrf	4	1264	35.3	1274	35.1	<u>1266</u>	<u>35.3</u>	4	1261	35.4	<u>1268</u>	<u>35.2</u>	1269	35.2
482.sphinx3	4	2610	29.9	2666	29.2	<u>2650</u>	<u>29.4</u>	2	1272	30.6	<u>1244</u>	<u>31.3</u>	1238	31.5

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 = Disabled

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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