



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale B240
(Intel Xeon E3113, 3.00 GHz)

SPECfp[®]2006 = 21.1

SPECfp_base2006 = 19.8

CPU2006 license: 20

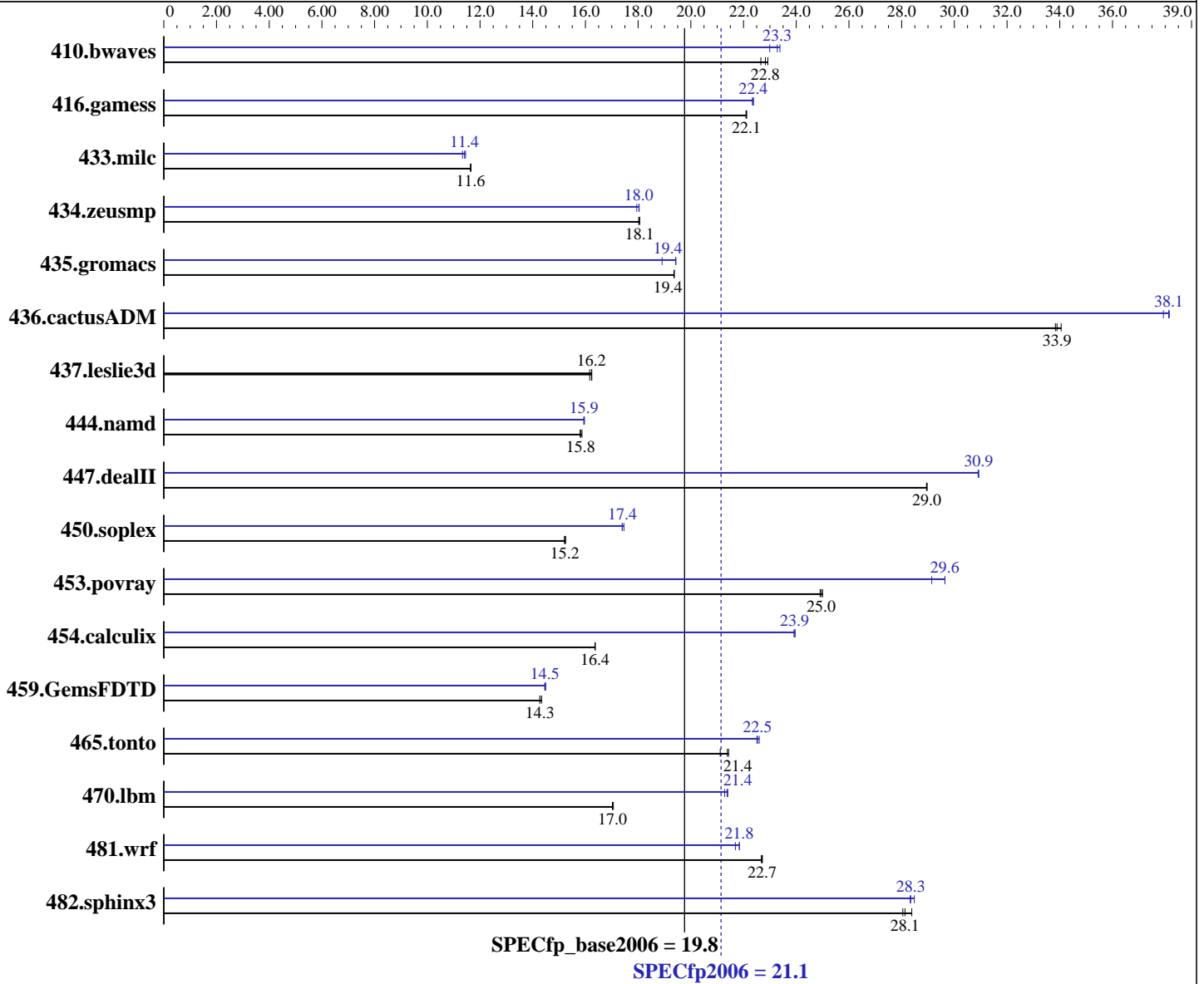
Test sponsor: Bull SAS

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	593	22.9	<u>595</u>	<u>22.8</u>	600	22.7	591	23.0	581	23.4	<u>584</u>	<u>23.3</u>
416.gamess	<u>886</u>	<u>22.1</u>	885	22.1	886	22.1	<u>875</u>	<u>22.4</u>	877	22.3	875	22.4
433.milc	787	11.7	<u>788</u>	<u>11.6</u>	789	11.6	810	11.3	<u>804</u>	<u>11.4</u>	802	11.5
434.zeusmp	<u>504</u>	<u>18.1</u>	504	18.1	505	18.0	507	17.9	<u>505</u>	<u>18.0</u>	504	18.0
435.gromacs	<u>369</u>	<u>19.4</u>	369	19.4	369	19.4	<u>368</u>	<u>19.4</u>	367	19.4	378	18.9
436.cactusADM	353	33.8	<u>353</u>	<u>33.9</u>	351	34.1	315	37.9	<u>313</u>	<u>38.1</u>	313	38.2
437.leslie3d	582	16.2	<u>579</u>	<u>16.2</u>	579	16.2	582	16.2	<u>579</u>	<u>16.2</u>	579	16.2
444.namd	505	15.9	<u>507</u>	<u>15.8</u>	508	15.8	503	15.9	<u>503</u>	<u>15.9</u>	502	16.0
447.dealII	395	28.9	<u>395</u>	<u>29.0</u>	395	29.0	370	30.9	<u>370</u>	<u>30.9</u>	370	30.9
450.soplex	<u>548</u>	<u>15.2</u>	549	15.2	547	15.2	<u>479</u>	<u>17.4</u>	479	17.4	478	17.5
453.povray	213	25.0	214	24.9	<u>213</u>	<u>25.0</u>	179	29.6	<u>179</u>	<u>29.6</u>	183	29.1
454.calculix	504	16.4	504	16.4	<u>504</u>	<u>16.4</u>	345	23.9	<u>345</u>	<u>23.9</u>	344	24.0
459.GemsFDTD	740	14.3	743	14.3	<u>743</u>	<u>14.3</u>	734	14.5	732	14.5	<u>733</u>	<u>14.5</u>
465.tonto	466	21.1	<u>460</u>	<u>21.4</u>	459	21.4	435	22.6	437	22.5	<u>437</u>	<u>22.5</u>
470.lbm	<u>807</u>	<u>17.0</u>	807	17.0	805	17.1	646	21.3	642	21.4	<u>643</u>	<u>21.4</u>
481.wrf	492	22.7	493	22.7	<u>492</u>	<u>22.7</u>	515	21.7	<u>511</u>	<u>21.8</u>	511	21.8
482.sphinx3	<u>693</u>	<u>28.1</u>	687	28.4	695	28.0	688	28.3	<u>688</u>	<u>28.3</u>	684	28.5

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
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M

Platform Notes

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



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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 -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel



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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:

ifort

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  
437.leslie3d: -DSPEC_CPU_LP64  
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
```

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 -parallel

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: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch -parallel

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 -parallel -prefetch -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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Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 20:17:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 November 2008.