



# SPEC® CFP2006 Result

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## Bull SAS

NovaScale T860 E1  
(Intel Xeon E5205, 1.86GHz)

SPECfp®\_rate2006 = 38.0

SPECfp\_rate\_base2006 = 34.5

CPU2006 license: 20

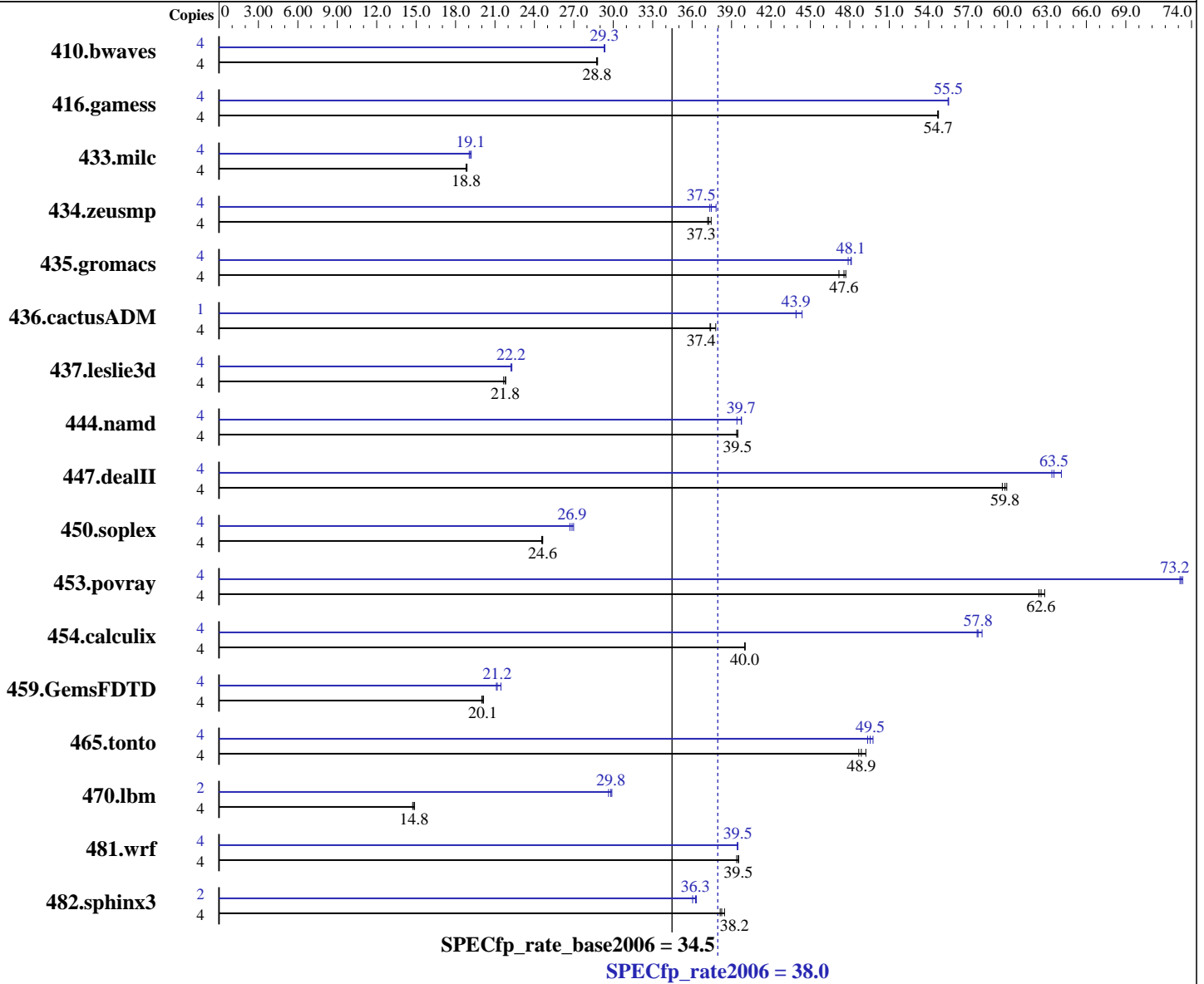
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5205  
 CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus  
 CPU MHz: 1867  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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-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	4	1887	28.8	1892	28.7	<b><u>1889</u></b>	<b><u>28.8</u></b>	4	1851	29.4	1855	29.3	<b><u>1853</u></b>	<b><u>29.3</u></b>
416.gamess	4	1432	54.7	<b><u>1431</u></b>	<b><u>54.7</u></b>	1431	54.7	4	1411	55.5	1412	55.5	<b><u>1411</u></b>	<b><u>55.5</u></b>
433.milc	4	1952	18.8	<b><u>1951</u></b>	<b><u>18.8</u></b>	1946	18.9	4	1913	19.2	1929	19.0	<b><u>1919</u></b>	<b><u>19.1</u></b>
434.zeusmp	4	979	37.2	<b><u>977</u></b>	<b><u>37.3</u></b>	972	37.5	4	962	37.8	<b><u>972</u></b>	<b><u>37.5</u></b>	975	37.3
435.gromacs	4	605	47.2	<b><u>601</u></b>	<b><u>47.6</u></b>	599	47.7	4	<b><u>594</u></b>	<b><u>48.1</u></b>	597	47.9	594	48.1
436.cactusADM	4	1279	37.4	<b><u>1278</u></b>	<b><u>37.4</u></b>	1265	37.8	1	269	44.4	<b><u>272</u></b>	<b><u>43.9</u></b>	272	43.9
437.leslie3d	4	<b><u>1726</u></b>	<b><u>21.8</u></b>	1736	21.7	1724	21.8	4	1687	22.3	<b><u>1692</u></b>	<b><u>22.2</u></b>	1692	22.2
444.namd	4	813	39.5	<b><u>813</u></b>	<b><u>39.5</u></b>	815	39.4	4	807	39.8	814	39.4	<b><u>807</u></b>	<b><u>39.7</u></b>
447.dealII	4	768	59.6	<b><u>765</u></b>	<b><u>59.8</u></b>	763	59.9	4	714	64.1	<b><u>720</u></b>	<b><u>63.5</u></b>	722	63.4
450.soplex	4	1359	24.6	1354	24.6	<b><u>1355</u></b>	<b><u>24.6</u></b>	4	1236	27.0	1249	26.7	<b><u>1242</u></b>	<b><u>26.9</u></b>
453.povray	4	341	62.4	339	62.8	<b><u>340</u></b>	<b><u>62.6</u></b>	4	<b><u>291</u></b>	<b><u>73.2</u></b>	290	73.3	291	73.1
454.calculix	4	<b><u>825</u></b>	<b><u>40.0</u></b>	824	40.0	825	40.0	4	572	57.7	568	58.1	<b><u>571</u></b>	<b><u>57.8</u></b>
459.GemsFDTD	4	2108	20.1	2123	20.0	<b><u>2113</u></b>	<b><u>20.1</u></b>	4	1978	21.5	<b><u>2005</u></b>	<b><u>21.2</u></b>	2011	21.1
465.tonto	4	809	48.7	800	49.2	<b><u>805</u></b>	<b><u>48.9</u></b>	4	797	49.4	<b><u>794</u></b>	<b><u>49.5</u></b>	791	49.8
470.lbm	4	3730	14.7	<b><u>3704</u></b>	<b><u>14.8</u></b>	3693	14.9	2	919	29.9	927	29.6	<b><u>922</u></b>	<b><u>29.8</u></b>
481.wrf	4	1130	39.5	<b><u>1131</u></b>	<b><u>39.5</u></b>	1134	39.4	4	1132	39.5	1133	39.4	<b><u>1132</u></b>	<b><u>39.5</u></b>
482.sphinx3	4	<b><u>2038</u></b>	<b><u>38.2</u></b>	2027	38.5	2044	38.1	2	1073	36.3	1082	36.0	<b><u>1075</u></b>	<b><u>36.3</u></b>

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

## Platform Notes

Bios settings:  
Intel SpeedStep Technology: Disabled



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**CPU2006 license:** 20  
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**Test date:** Feb-2008  
**Hardware Availability:** Feb-2008  
**Software Availability:** Nov-2007

## 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 Express5800/120Lj(Intel Xeon E5205) and the Bull NovaScale T860 E1(Intel Xeon E5205,1.86GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Lj(Intel Xeon E5205) 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.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

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## Base Optimization Flags (Continued)

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  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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  
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

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## Peak Optimization Flags (Continued)

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.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.xml>

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