



# SPEC® CFP2006 Result

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## Bull SAS

NovaScale R460  
(Intel Xeon processor E5310,1.60GHz)

SPECfp®\_rate2006 = 38.8

SPECfp\_rate\_base2006 = 38.2

CPU2006 license: 20

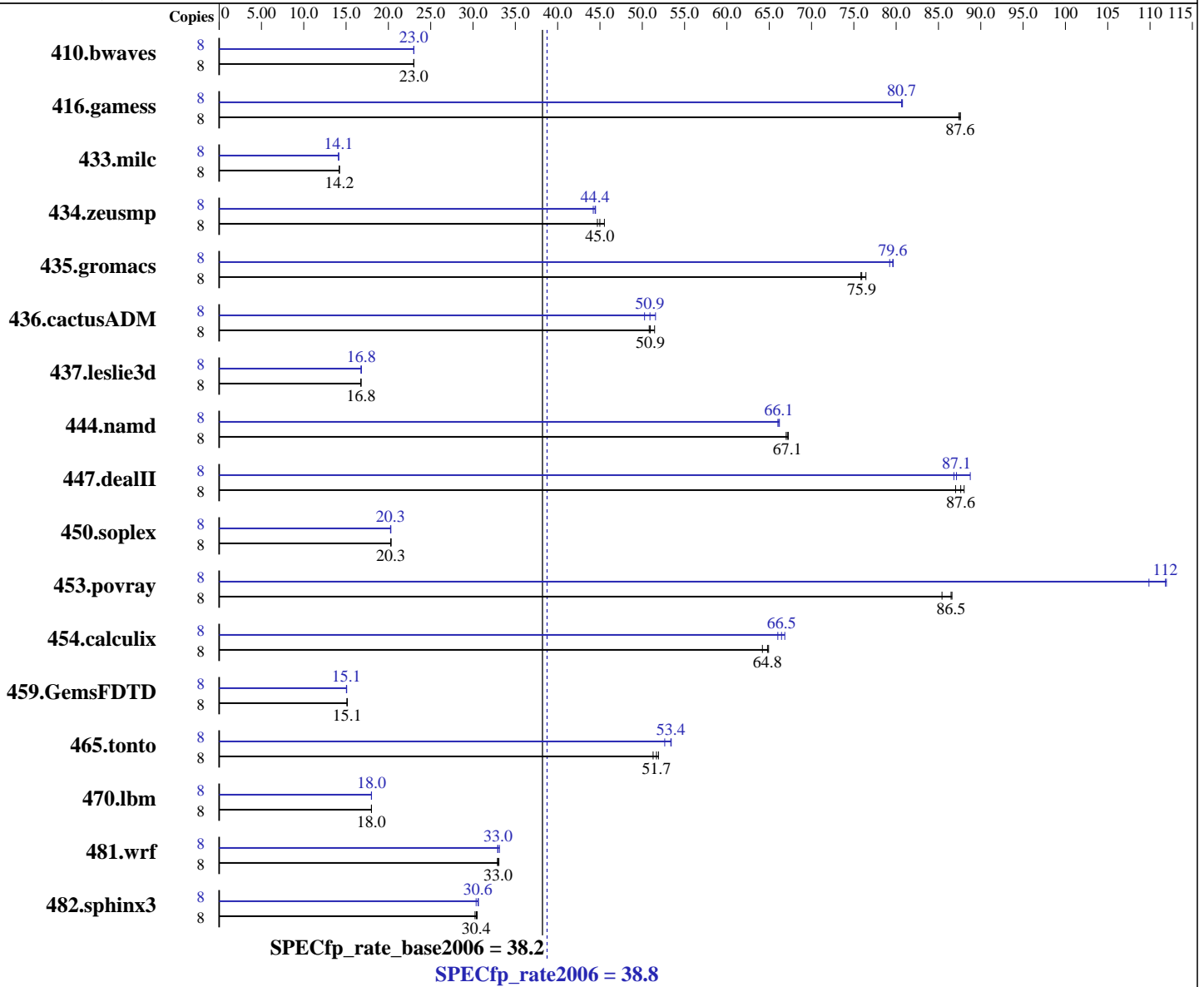
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Apr-2007

Hardware Availability: Mar-2007

Software Availability: Dec-2006



### Hardware

CPU Name: Intel Xeon E5310  
 CPU Characteristics: 1.6 GHz, 8 MB L2, 1066 MHz system bus  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1 to 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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### Software

Operating System: SuSE Linux Enterprise Server 10 (EM64T)  
 kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ Compiler for Intel EM64T-based applications, Version 9.1  
 Package ID l\_cc\_c\_9.1.045 Build no 20061101  
 Intel Fortran Compiler for Intel EM64T-based applications, Version 9.1  
 Package ID l\_fc\_c\_9.1.040 Build no 20061101  
 Auto Parallel: No

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L3 Cache: None  
Other Cache: None  
Memory: 12 GB (1GB DIMMx12, FB-DIMM PC2-5300F ECC CL5)  
Disk Subsystem: 73 GB SAS, 10000RPM  
Other Hardware: None

File System: ext2  
System State: Multi-user run level 3  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

| Benchmark     | Base   |             |             |             |             |             |             | Peak   |             |             |             |             |             |             |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
|               | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       |
| 410.bwaves    | 8      | 4729        | 23.0        | 4723        | 23.0        | <b>4724</b> | <b>23.0</b> | 8      | <b>4726</b> | <b>23.0</b> | 4726        | 23.0        | 4725        | 23.0        |
| 416.gamess    | 8      | <b>1789</b> | <b>87.6</b> | 1792        | 87.4        | 1789        | 87.6        | 8      | <b>1942</b> | <b>80.7</b> | 1940        | 80.8        | 1942        | 80.6        |
| 433.milc      | 8      | 5167        | 14.2        | 5182        | 14.2        | <b>5169</b> | <b>14.2</b> | 8      | <b>5203</b> | <b>14.1</b> | 5204        | 14.1        | 5202        | 14.1        |
| 434.zeusmp    | 8      | 1629        | 44.7        | <b>1618</b> | <b>45.0</b> | 1599        | 45.5        | 8      | 1637        | 44.5        | <b>1639</b> | <b>44.4</b> | 1647        | 44.2        |
| 435.gromacs   | 8      | 753         | 75.8        | <b>752</b>  | <b>75.9</b> | 747         | 76.4        | 8      | <b>718</b>  | <b>79.6</b> | 717         | 79.7        | 721         | 79.2        |
| 436.cactusADM | 8      | 1858        | 51.5        | <b>1876</b> | <b>50.9</b> | 1881        | 50.8        | 8      | 1854        | 51.6        | <b>1878</b> | <b>50.9</b> | 1902        | 50.3        |
| 437.leslie3d  | 8      | <b>4486</b> | <b>16.8</b> | 4494        | 16.7        | 4484        | 16.8        | 8      | 4484        | 16.8        | <b>4478</b> | <b>16.8</b> | 4476        | 16.8        |
| 444.namd      | 8      | 954         | 67.3        | 958         | 67.0        | <b>956</b>  | <b>67.1</b> | 8      | <b>970</b>  | <b>66.1</b> | 972         | 66.0        | 969         | 66.2        |
| 447.dealII    | 8      | 1040        | 88.0        | 1052        | 87.0        | <b>1044</b> | <b>87.6</b> | 8      | <b>1050</b> | <b>87.1</b> | 1054        | 86.8        | 1031        | 88.8        |
| 450.soplex    | 8      | 3290        | 20.3        | <b>3288</b> | <b>20.3</b> | 3284        | 20.3        | 8      | <b>3294</b> | <b>20.3</b> | 3294        | 20.3        | 3288        | 20.3        |
| 453.povray    | 8      | 498         | 85.4        | <b>492</b>  | <b>86.5</b> | 491         | 86.6        | 8      | 387         | 110         | 380         | 112         | <b>381</b>  | <b>112</b>  |
| 454.calculix  | 8      | 1017        | 64.9        | <b>1019</b> | <b>64.8</b> | 1028        | 64.2        | 8      | 1000        | 66.0        | 987         | 66.8        | <b>993</b>  | <b>66.5</b> |
| 459.GemsFDTD  | 8      | 5618        | 15.1        | <b>5610</b> | <b>15.1</b> | 5609        | 15.1        | 8      | 5644        | 15.0        | <b>5638</b> | <b>15.1</b> | 5630        | 15.1        |
| 465.tonto     | 8      | 1535        | 51.3        | <b>1523</b> | <b>51.7</b> | 1516        | 51.9        | 8      | 1495        | 52.7        | <b>1475</b> | <b>53.4</b> | 1473        | 53.4        |
| 470.lbm       | 8      | 6105        | 18.0        | 6108        | 18.0        | <b>6107</b> | <b>18.0</b> | 8      | <b>6105</b> | <b>18.0</b> | 6111        | 18.0        | 6104        | 18.0        |
| 481.wrf       | 8      | <b>2712</b> | <b>33.0</b> | 2717        | 32.9        | 2703        | 33.1        | 8      | <b>2711</b> | <b>33.0</b> | 2698        | 33.1        | 2715        | 32.9        |
| 482.sphinx3   | 8      | 5156        | 30.2        | 5112        | 30.5        | <b>5131</b> | <b>30.4</b> | 8      | 5134        | 30.4        | 5088        | 30.6        | <b>5097</b> | <b>30.6</b> |

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

## Operating System Notes

Environment stack size set to 'unlimited'

## General Notes

The NovaScale R440 and the NovaScale R460 models are electronically equivalent.  
The results have been measured on a NovaScale R460 model.



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**CPU2006 license:** 20  
**Test sponsor:** Bull SAS  
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**Test date:** Apr-2007  
**Hardware Availability:** Mar-2007  
**Software Availability:** Dec-2006

## 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:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:  
-prof\_gen(pass 1) -prof\_use(pass 2) -fast -auto\_ilp32

C++ benchmarks:  
-prof\_gen(pass 1) -prof\_use(pass 2) -fast -auto\_ilp32

Fortran benchmarks:  
-prof\_gen(pass 1) -prof\_use(pass 2) -fast

Benchmarks using both Fortran and C:  
-prof\_gen(pass 1) -prof\_use(pass 2) -fast -auto\_ilp32

The flags file that was used to format this result can be browsed at  
[http://www.spec.org/cpu2006/flags/EM64T\\_Intel91\\_flags.html](http://www.spec.org/cpu2006/flags/EM64T_Intel91_flags.html)

You can also download the XML flags source by saving the following link:  
[http://www.spec.org/cpu2006/flags/EM64T\\_Intel91\\_flags.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel91_flags.xml)



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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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