



# SPEC<sup>®</sup> CFP2006 Result

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## Bull SAS

NovaScale R460  
(Intel Xeon processor E5310,1.60GHz)

SPECfp<sup>®</sup>2006 = 11.3

SPECfp\_base2006 = 10.9

CPU2006 license: 20

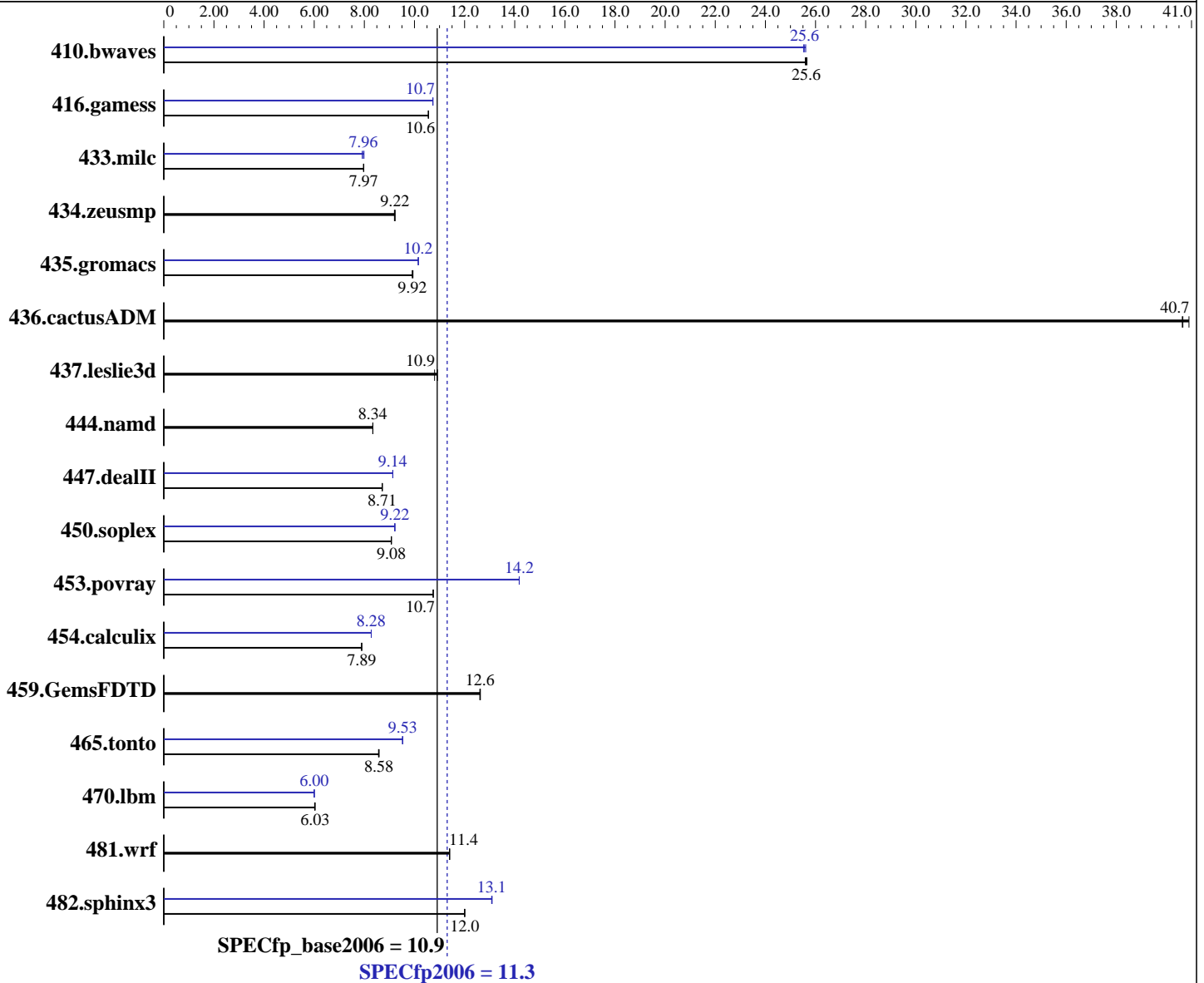
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2007

Hardware Availability: Feb-2007

Software Availability: Dec-2006



### Hardware

CPU Name: Intel Xeon E5310  
 CPU Characteristics: 1.60 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

Continued on next page

### Software

Operating System: Windows Server 2003 Enterprise Edition X64 Edition Service Pack 1  
 Compiler: Intel C++ Compiler for EM64T version 9.1  
 Package ID W\_CC\_C\_9.1.033 Build no 20061104  
 Intel Fortran Compiler for EM64T version 9.1  
 Package ID W\_FC\_C\_9.1.033 Build no 20061104  
 Microsoft Visual Studio 2005 (lib & linker)  
 Auto Parallel: Yes  
 File System: NTFS  
 System State: Default

Continued on next page



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L3 Cache: None  
Other Cache: None  
Memory: 12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4  
Disk Subsystem: 1x73 GB SAS, 15000 RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b><u>530</u></b>	<b><u>25.6</u></b>	530	25.7	531	25.6	532	25.5	531	25.6	<b><u>532</u></b>	<b><u>25.6</u></b>
416.gamess	<b><u>1855</u></b>	<b><u>10.6</u></b>	1855	10.6	1855	10.6	<b><u>1824</u></b>	<b><u>10.7</u></b>	1824	10.7	1824	10.7
433.milc	<b><u>1152</u></b>	<b><u>7.97</u></b>	1150	7.98	1152	7.97	<b><u>1153</u></b>	<b><u>7.96</u></b>	1149	7.99	1160	7.92
434.zeusmp	989	9.20	986	9.23	<b><u>987</u></b>	<b><u>9.22</u></b>	989	9.20	986	9.23	<b><u>987</u></b>	<b><u>9.22</u></b>
435.gromacs	718	9.94	<b><u>720</u></b>	<b><u>9.92</u></b>	720	9.91	703	10.2	<b><u>703</u></b>	<b><u>10.2</u></b>	703	10.2
436.cactusADM	292	40.9	294	40.6	<b><u>294</u></b>	<b><u>40.7</u></b>	292	40.9	294	40.6	<b><u>294</u></b>	<b><u>40.7</u></b>
437.leslie3d	870	10.8	<b><u>862</u></b>	<b><u>10.9</u></b>	862	10.9	870	10.8	<b><u>862</u></b>	<b><u>10.9</u></b>	862	10.9
444.namd	<b><u>962</u></b>	<b><u>8.34</u></b>	962	8.34	962	8.34	<b><u>962</u></b>	<b><u>8.34</u></b>	962	8.34	962	8.34
447.dealII	<b><u>1313</u></b>	<b><u>8.71</u></b>	1312	8.72	1313	8.71	<b><u>1252</u></b>	<b><u>9.14</u></b>	1252	9.14	1252	9.14
450.soplex	919	9.08	<b><u>919</u></b>	<b><u>9.08</u></b>	918	9.08	905	9.21	<b><u>905</u></b>	<b><u>9.22</u></b>	905	9.22
453.povray	<b><u>495</u></b>	<b><u>10.7</u></b>	495	10.7	495	10.7	375	14.2	375	14.2	<b><u>375</u></b>	<b><u>14.2</u></b>
454.calculix	<b><u>1045</u></b>	<b><u>7.89</u></b>	1045	7.89	1045	7.90	997	8.28	<b><u>997</u></b>	<b><u>8.28</u></b>	997	8.28
459.GemsFDTD	841	12.6	<b><u>841</u></b>	<b><u>12.6</u></b>	840	12.6	841	12.6	<b><u>841</u></b>	<b><u>12.6</u></b>	840	12.6
465.tonto	1145	8.59	1149	8.57	<b><u>1147</u></b>	<b><u>8.58</u></b>	1033	9.53	<b><u>1033</u></b>	<b><u>9.53</u></b>	1033	9.52
470.lbm	2284	6.02	<b><u>2277</u></b>	<b><u>6.03</u></b>	2277	6.03	<b><u>2289</u></b>	<b><u>6.00</u></b>	2289	6.00	2289	6.00
481.wrf	980	11.4	<b><u>980</u></b>	<b><u>11.4</u></b>	979	11.4	980	11.4	<b><u>980</u></b>	<b><u>11.4</u></b>	979	11.4
482.sphinx3	1624	12.0	1623	12.0	<b><u>1623</u></b>	<b><u>12.0</u></b>	1490	13.1	1488	13.1	<b><u>1490</u></b>	<b><u>13.1</u></b>

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

## General Notes

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

## Base Compiler Invocation

C benchmarks:  
icl -Qvc8 -Qc99

C++ benchmarks:  
icl -Qvc8

Continued on next page



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## Base Compiler Invocation (Continued)

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icl -Qvc8 -Qc99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64  
416.gamess: -DSPEC\_CPU\_P64  
433.milc: -D\_Complex= -DSPEC\_CPU\_P64  
434.zeusmp: -DSPEC\_CPU\_P64  
435.gromacs: -D\_Complex= -DSPEC\_CPU\_P64  
436.cactusADM: -D\_Complex= -DSPEC\_CPU\_P64 -Qlowercase /assume:underscore  
437.leslie3d: -DSPEC\_CPU\_P64  
444.namd: -DSPEC\_CPU\_P64 /TP  
447.dealII: -D\_Complex= -DSPEC\_CPU\_P64 -DBOOST\_NO\_INTRINSIC\_WCHAR\_T  
-DDEAL\_II\_MEMBER\_VAR\_SPECIALIZATION\_BUG  
450.soplex: -DSPEC\_CPU\_P64  
453.povray: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
454.calculix: -D\_Complex= -DSPEC\_CPU\_P64 -DSPEC\_CPU\_NOZMODIFIER  
-Qlowercase  
459.GemsFDTD: -DSPEC\_CPU\_P64  
465.tonto: -DSPEC\_CPU\_P64  
470.lbm: -D\_Complex= -DSPEC\_CPU\_P64  
481.wrf: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
482.sphinx3: -D\_Complex= -DSPEC\_CPU\_P64

## Base Optimization Flags

C benchmarks:  
-fast -Qparallel

C++ benchmarks:  
-fast -Qparallel -Qcxx-features

Fortran benchmarks:  
-fast -Qparallel

Benchmarks using both Fortran and C:  
-fast -Qparallel



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## Base Other Flags

C benchmarks:  
-F950000000

C++ benchmarks:  
-F950000000

Fortran benchmarks:  
-F950000000

Benchmarks using both Fortran and C:  
-F950000000

## Peak Compiler Invocation

C benchmarks:  
icl -Qvc8 -Qc99

C++ benchmarks:  
icl -Qvc8

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icl -Qvc8 -Qc99 ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:  
-Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qcxx-features

450.soplex: Same as 447.dealII

Continued on next page



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## Peak Optimization Flags (Continued)

453.povray: Same as 447.dealII

### Fortran benchmarks:

410.bwaves: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qparallel

416.gamess: -fast

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: Same as 410.bwaves

### Benchmarks using both Fortran and C:

435.gromacs: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast

436.cactusADM: basepeak = yes

454.calculix: Same as 435.gromacs

481.wrf: basepeak = yes

## Peak Other Flags

C benchmarks:  
-F950000000

C++ benchmarks:  
-F950000000

Fortran benchmarks:  
-F950000000

Benchmarks using both Fortran and C:  
-F950000000

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/flags.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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