



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp®\_rate2006 = 113

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

SPECfp\_rate\_base2006 = 107

CPU2006 license: 20

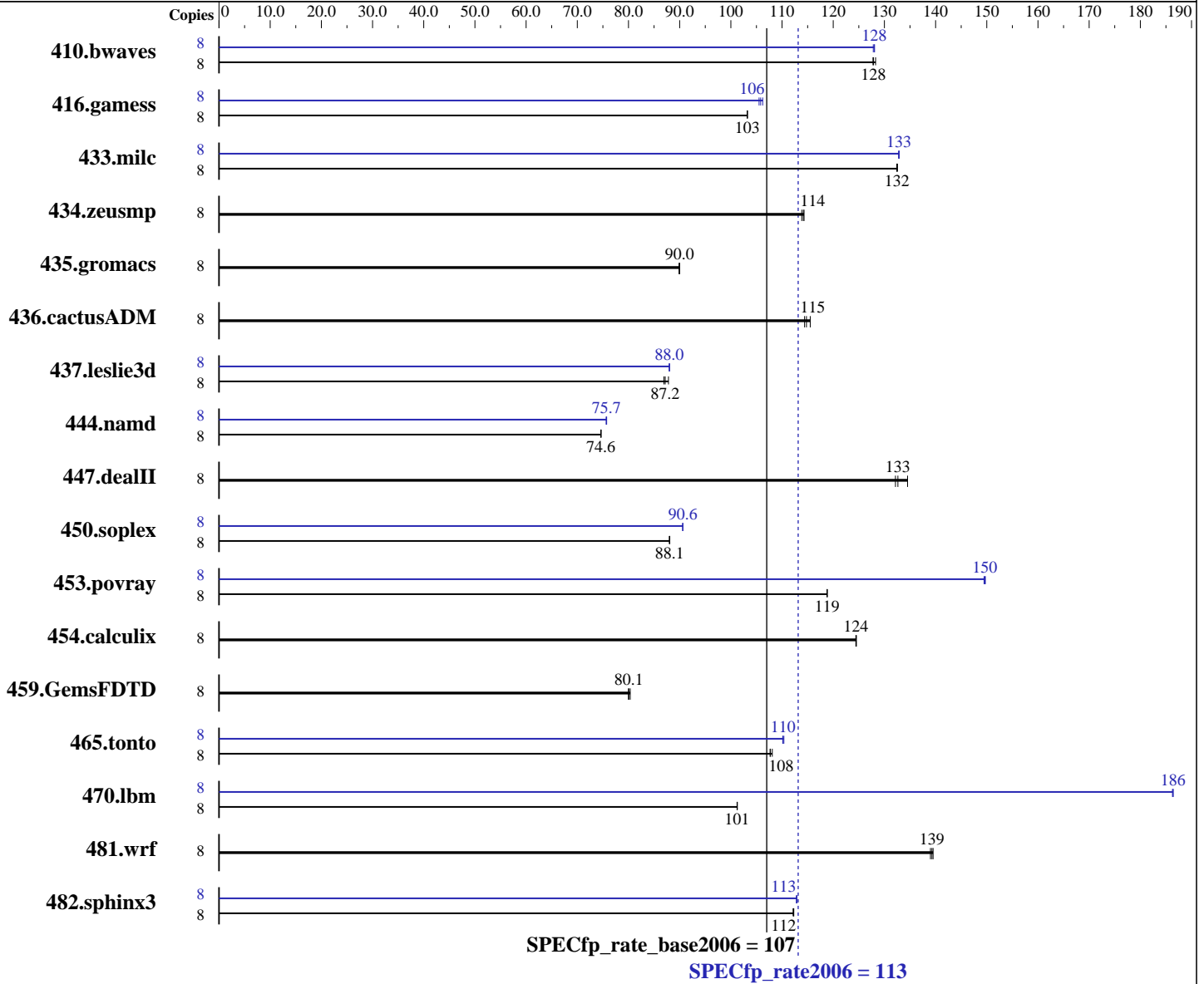
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Xeon E5603  
 CPU Characteristics:  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp\_rate2006 = 113

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

SPECfp\_rate\_base2006 = 107

CPU2006 license: 20

Test date: Feb-2011

Test sponsor: Bull SAS

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

L3 Cache: 4 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)  
Disk Subsystem: 146 GB 10000 RPM SAS  
Other Hardware: None

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	851	128	<b>850</b>	<b>128</b>	848	128	8	851	128	<b>849</b>	<b>128</b>	849	128
416.gamess	8	1517	103	<b>1518</b>	<b>103</b>	1518	103	8	1485	106	1475	106	<b>1480</b>	<b>106</b>
433.milc	8	<b>554</b>	<b>132</b>	554	133	555	132	8	<b>553</b>	<b>133</b>	553	133	553	133
434.zeusmp	8	639	114	637	114	<b>638</b>	<b>114</b>	8	639	114	637	114	<b>638</b>	<b>114</b>
435.gromacs	8	636	89.9	635	90.0	<b>635</b>	<b>90.0</b>	8	636	89.9	635	90.0	<b>635</b>	<b>90.0</b>
436.cactusADM	8	828	116	<b>833</b>	<b>115</b>	836	114	8	828	116	<b>833</b>	<b>115</b>	836	114
437.leslie3d	8	856	87.8	<b>863</b>	<b>87.2</b>	865	86.9	8	854	88.0	<b>855</b>	<b>88.0</b>	855	88.0
444.namd	8	860	74.6	860	74.6	<b>860</b>	<b>74.6</b>	8	848	75.7	847	75.7	<b>848</b>	<b>75.7</b>
447.dealII	8	693	132	<b>690</b>	<b>133</b>	680	135	8	693	132	<b>690</b>	<b>133</b>	680	135
450.soplex	8	758	88.0	758	88.1	<b>758</b>	<b>88.1</b>	8	736	90.6	737	90.6	<b>736</b>	<b>90.6</b>
453.povray	8	<b>358</b>	<b>119</b>	358	119	358	119	8	<b>284</b>	<b>150</b>	284	150	285	149
454.calculix	8	530	125	530	124	<b>530</b>	<b>124</b>	8	530	125	530	124	<b>530</b>	<b>124</b>
459.GemsFDTD	8	1061	80.0	<b>1060</b>	<b>80.1</b>	1056	80.3	8	1061	80.0	<b>1060</b>	<b>80.1</b>	1056	80.3
465.tonto	8	731	108	<b>731</b>	<b>108</b>	728	108	8	<b>714</b>	<b>110</b>	713	110	715	110
470.lbm	8	1086	101	<b>1086</b>	<b>101</b>	1086	101	8	590	186	<b>590</b>	<b>186</b>	590	186
481.wrf	8	641	140	<b>642</b>	<b>139</b>	643	139	8	641	140	<b>642</b>	<b>139</b>	643	139
482.sphinx3	8	<b>1389</b>	<b>112</b>	1390	112	1389	112	8	<b>1382</b>	<b>113</b>	1382	113	1381	113

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.  
numactl was used to bind copies to the cores

## Operating System Notes

```
'ulimit -s unlimited' used to set the stacksize prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 7200 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp\_rate2006 = 113

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

SPECfp\_rate\_base2006 = 107

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: Dell Inc.

Test date: Feb-2011  
Hardware Availability: Feb-2011  
Software Availability: Jan-2011

### Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)  
Data Reuse = Disabled (Default = Enabled)

### General Notes

The Dell PowerEdge R710 and the Bull NovaScale R460 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R710 model. Binaries were compiled on RHEL5.5

### Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

### 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp\_rate2006 = 113

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

SPECfp\_rate\_base2006 = 107

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: Dell Inc.

Test date: Feb-2011  
Hardware Availability: Feb-2011  
Software Availability: Jan-2011

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):  
icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

**SPECfp\_rate2006 = 113**

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

**SPECfp\_rate\_base2006 = 107**

**CPU2006 license:** 20

**Test date:** Feb-2011

**Test sponsor:** Bull SAS

**Hardware Availability:** Feb-2011

**Tested by:** Dell Inc.

**Software Availability:** Jan-2011

## Peak Portability Flags (Continued)

470.lbm: -DSPEC\_CPU\_LP64

481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3  
-ansi-alias -opt-prefetch -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp\_rate2006 = 113

NovaScale R460 F2 (Intel Xeon E5603, 1.60 GHz)

SPECfp\_rate\_base2006 = 107

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

## Peak Optimization Flags (Continued)

```
465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.1.

Report generated on Wed Jul 23 15:46:37 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 29 March 2011.