



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

**SPECfp<sup>®</sup>2006 = 53.0**

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

**SPECfp\_base2006 = 48.0**

CPU2006 license: 20

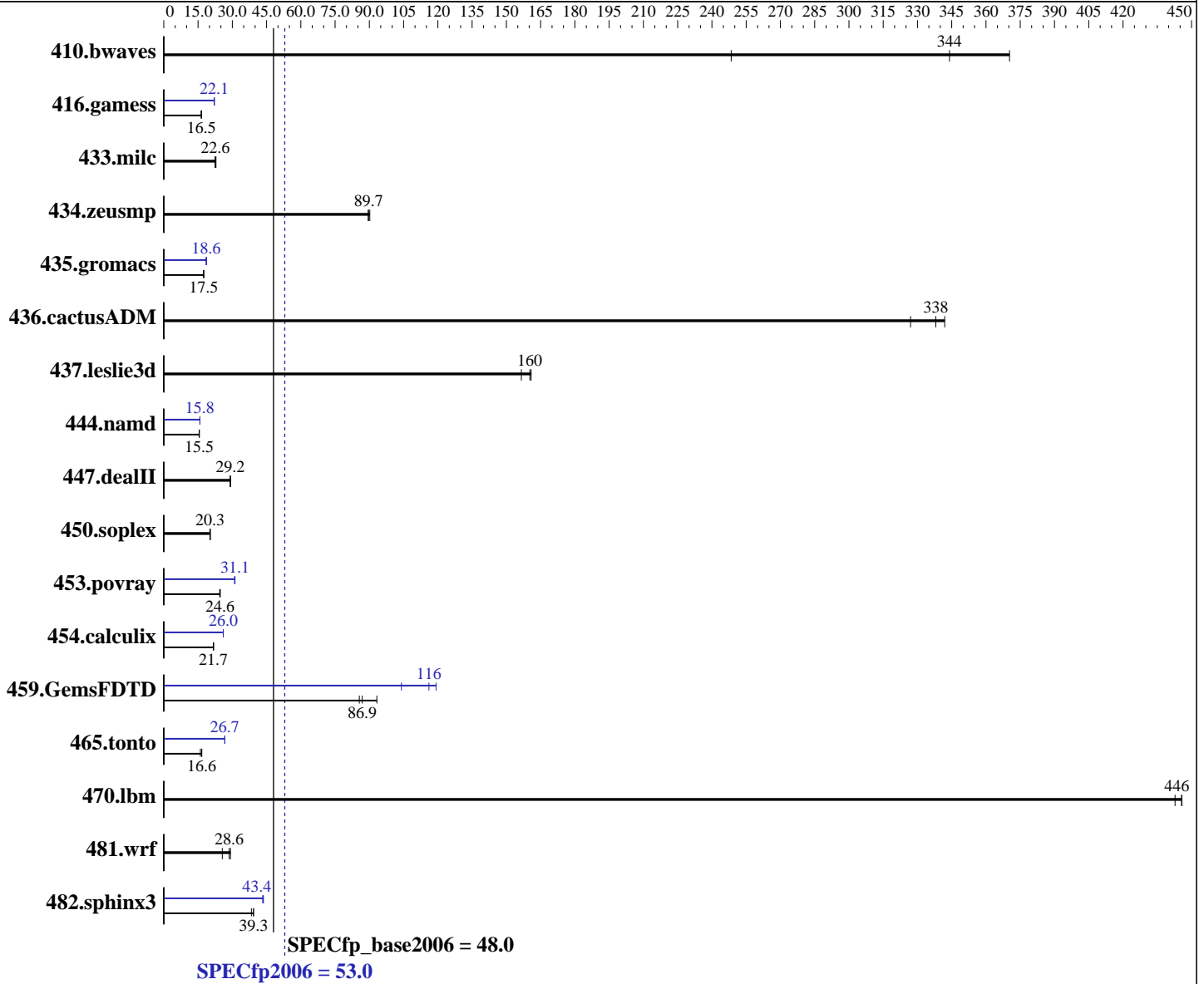
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Mar-2011

Hardware Availability: Apr-2011

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Xeon E7-4860  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz  
 CPU MHz: 2267  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip  
 CPU(s) orderable: 2,4 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 Update 3  
 Auto Parallel: Yes  
 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

SPECfp2006 = **53.0**

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

SPECfp\_base2006 = **48.0**

CPU2006 license: 20

Test date: Mar-2011

Test sponsor: Bull SAS

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

L3 Cache: 24 MB I+D on chip per chip  
Other Cache: None  
Memory: 512 GB (64 x 8 GB 4Rx8 PC3-8500R-7, ECC)  
Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	54.7	248	36.7	370	<b>39.5</b>	<b>344</b>	54.7	248	36.7	370	<b>39.5</b>	<b>344</b>
416.gamess	1185	16.5	<b>1186</b>	<b>16.5</b>	1199	16.3	<b>886</b>	<b>22.1</b>	885	22.1	888	22.1
433.milc	<b>406</b>	<b>22.6</b>	402	22.8	409	22.5	<b>406</b>	<b>22.6</b>	402	22.8	409	22.5
434.zeusmp	102	89.5	<b>101</b>	<b>89.7</b>	101	90.2	102	89.5	<b>101</b>	<b>89.7</b>	101	90.2
435.gromacs	409	17.5	409	17.5	<b>409</b>	<b>17.5</b>	<b>384</b>	<b>18.6</b>	383	18.6	384	18.6
436.cactusADM	36.5	327	34.9	342	<b>35.4</b>	<b>338</b>	36.5	327	34.9	342	<b>35.4</b>	<b>338</b>
437.leslie3d	<b>58.6</b>	<b>160</b>	60.0	157	58.4	161	<b>58.6</b>	<b>160</b>	60.0	157	58.4	161
444.namd	<b>517</b>	<b>15.5</b>	517	15.5	516	15.5	507	15.8	<b>507</b>	<b>15.8</b>	507	15.8
447.dealII	393	29.1	<b>392</b>	<b>29.2</b>	392	29.2	393	29.1	<b>392</b>	<b>29.2</b>	392	29.2
450.soplex	410	20.3	412	20.3	<b>411</b>	<b>20.3</b>	410	20.3	412	20.3	<b>411</b>	<b>20.3</b>
453.povray	217	24.5	215	24.7	<b>216</b>	<b>24.6</b>	<b>171</b>	<b>31.1</b>	172	31.0	171	31.2
454.calculix	380	21.7	378	21.8	<b>380</b>	<b>21.7</b>	317	26.1	<b>317</b>	<b>26.0</b>	317	26.0
459.GemsFDTD	<b>122</b>	<b>86.9</b>	114	93.3	124	85.6	102	104	89.0	119	<b>91.4</b>	<b>116</b>
465.tonto	591	16.6	614	16.0	<b>594</b>	<b>16.6</b>	369	26.7	368	26.8	<b>368</b>	<b>26.7</b>
470.lbm	31.0	443	<b>30.8</b>	<b>446</b>	30.8	446	31.0	443	<b>30.8</b>	<b>446</b>	30.8	446
481.wrf	382	29.2	<b>390</b>	<b>28.6</b>	436	25.6	382	29.2	<b>390</b>	<b>28.6</b>	436	25.6
482.sphinx3	496	39.3	<b>496</b>	<b>39.3</b>	508	38.3	450	43.3	<b>449</b>	<b>43.4</b>	447	43.6

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)  
Node Interleaving = Enabled (Default = Disabled)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp2006 = 53.0

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

SPECfp\_base2006 = 48.0

CPU2006 license: 20

Test date: Mar-2011

Test sponsor: Bull SAS

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

## General Notes

The Dell PowerEdge R910 and the Bull NovaScale R480 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R910 model. OMP\_NUM\_THREADS set to number of cores  
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.deallI: -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:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 53.0**

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

**SPECfp\_base2006 = 48.0**

**CPU2006 license:** 20

**Test date:** Mar-2011

**Test sponsor:** Bull SAS

**Hardware Availability:** Apr-2011

**Tested by:** Dell Inc.

**Software Availability:** Apr-2011

## Base Optimization Flags (Continued)

C++ benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias`

## Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

`433.milc: basepeak = yes`

`470.lbm: basepeak = yes`

`482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

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`

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp2006 = 53.0

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

SPECfp\_base2006 = 48.0

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Mar-2011

Hardware Availability: Apr-2011

Software Availability: Apr-2011

## Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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: basepeak = yes

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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

### Benchmarks using both Fortran and C:

435.gromacs: -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  
-ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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.20110524.00.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.20110524.00.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 53.0**

NovaScale R480 F2 (Intel Xeon E7-4860, 2.27 GHz)

**SPECfp\_base2006 = 48.0**

**CPU2006 license:** 20

**Test sponsor:** Bull SAS

**Tested by:** Dell Inc.

**Test date:** Mar-2011

**Hardware Availability:** Apr-2011

**Software Availability:** Apr-2011

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 20:40:00 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 24 May 2011.