



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp®\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20

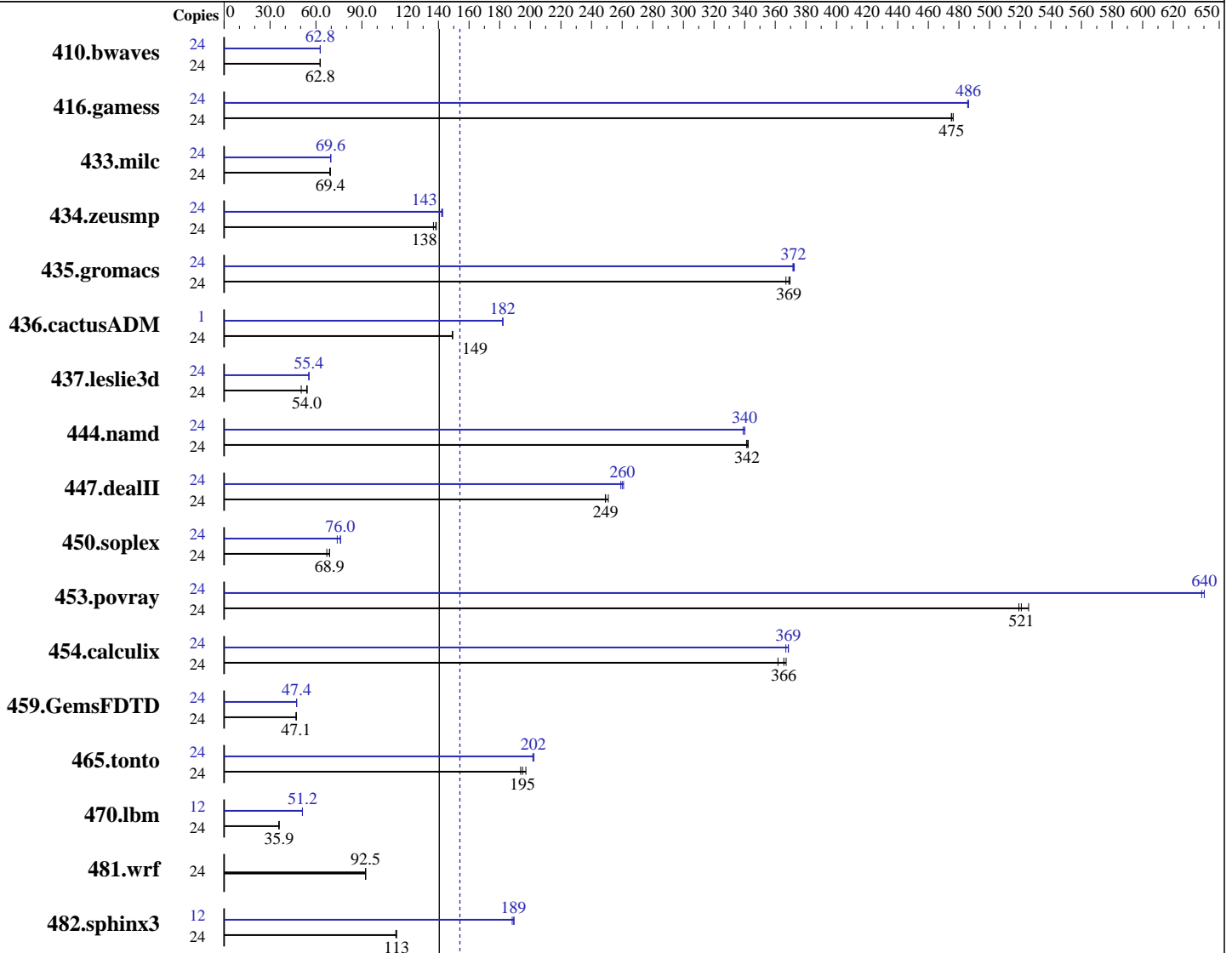
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Nov-2008

Software Availability: Nov-2008



SPECfp\_rate\_base2006 = 141

SPECfp\_rate2006 = 154

### Hardware

CPU Name: Intel Xeon X7460  
 CPU Characteristics: 1066 MHz system bus  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip  
 CPU(s) orderable: 1,2,3,4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 9 MB I+D on chip per chip, 3 MB shared / 2 cores

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l\_cproc\_p\_11.0.069, l\_cprof\_p\_11.0.069  
 Auto Parallel: Yes  
 File System: ext2  
 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

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Nov-2008

Software Availability: Nov-2008

L3 Cache: 16 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (16x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 15000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	5203	62.7	<b><u>5194</u></b>	<b><u>62.8</u></b>	5194	62.8	24	5192	62.8	5194	62.8	<b><u>5193</u></b>	<b><u>62.8</u></b>
416.gamess	24	987	476	989	475	<b><u>989</u></b>	<b><u>475</u></b>	24	<b><u>967</u></b>	<b><u>486</u></b>	968	486	966	486
433.milc	24	3189	69.1	3174	69.4	<b><u>3175</u></b>	<b><u>69.4</u></b>	24	3162	69.7	3164	69.6	<b><u>3164</u></b>	<b><u>69.6</u></b>
434.zeusmp	24	1597	137	1576	139	<b><u>1580</u></b>	<b><u>138</u></b>	24	<b><u>1532</u></b>	<b><u>143</u></b>	1530	143	1537	142
435.gromacs	24	<b><u>465</u></b>	<b><u>369</u></b>	467	367	464	370	24	<b><u>461</u></b>	<b><u>372</u></b>	461	372	460	372
436.cactusADM	24	1921	149	1923	149	<b><u>1923</u></b>	<b><u>149</u></b>	1	<b><u>65.6</u></b>	<b><u>182</u></b>	65.7	182	65.6	182
437.leslie3d	24	4476	50.4	<b><u>4180</u></b>	<b><u>54.0</u></b>	4153	54.3	24	<b><u>4072</u></b>	<b><u>55.4</u></b>	4073	55.4	4071	55.4
444.namd	24	564	341	562	342	<b><u>563</u></b>	<b><u>342</u></b>	24	566	340	568	339	<b><u>566</u></b>	<b><u>340</u></b>
447.dealII	24	1103	249	1094	251	<b><u>1102</u></b>	<b><u>249</u></b>	24	1052	261	<b><u>1056</u></b>	<b><u>260</u></b>	1060	259
450.soplex	24	2983	67.1	2904	68.9	<b><u>2906</u></b>	<b><u>68.9</u></b>	24	2708	73.9	<b><u>2635</u></b>	<b><u>76.0</u></b>	2632	76.1
453.povray	24	246	519	<b><u>245</u></b>	<b><u>521</u></b>	243	526	24	200	639	<b><u>199</u></b>	<b><u>640</u></b>	199	640
454.calculix	24	539	367	<b><u>542</u></b>	<b><u>366</u></b>	547	362	24	537	369	540	367	<b><u>537</u></b>	<b><u>369</u></b>
459.GemsFDTD	24	5411	47.1	<b><u>5406</u></b>	<b><u>47.1</u></b>	5398	47.2	24	5372	47.4	<b><u>5373</u></b>	<b><u>47.4</u></b>	5378	47.4
465.tonto	24	<b><u>1211</u></b>	<b><u>195</u></b>	1198	197	1219	194	24	<b><u>1169</u></b>	<b><u>202</u></b>	1167	202	1171	202
470.lbm	24	9208	35.8	9178	35.9	<b><u>9184</u></b>	<b><u>35.9</u></b>	12	3226	51.1	<b><u>3221</u></b>	<b><u>51.2</u></b>	3219	51.2
481.wrf	24	2899	92.5	<b><u>2899</u></b>	<b><u>92.5</u></b>	2903	92.3	24	2899	92.5	<b><u>2899</u></b>	<b><u>92.5</u></b>	2903	92.3
482.sphinx3	24	<b><u>4154</u></b>	<b><u>113</u></b>	4170	112	4153	113	12	1235	189	1243	188	<b><u>1237</u></b>	<b><u>189</u></b>

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.  
taskset was used to bind processes to cores except for 436.cactusADM peak  
For peak modules using 1/2 the number of available cores, copies were each assigned to a single L2 cache using mysubmit.pl script.  
See the flags description file for mysubmit.pl details.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: NEC Corporation

Test date: Nov-2008  
Hardware Availability: Nov-2008  
Software Availability: Nov-2008

### Platform Notes

Bios settings:  
Hardware Prefetcher: Disabled  
Adjacent Cache Line Prefetch: Disabled  
FSB High Bandwidth Optimization: Enabled

### General Notes

The NEC Express5800/R140a-4(Intel Xeon X7460) and the Bull NovaScale R480 E1(Intel Xeon X7460, 2.66 GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/R140a-4(Intel Xeon X7460) 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: NEC Corporation

Test date: Nov-2008  
Hardware Availability: Nov-2008  
Software Availability: Nov-2008

## Base Optimization Flags

C benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc

482.sphinx3: /opt/intel/Compiler/11.0/069/bin/ia32/icc  
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/069/ipp/ia32/include

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

450.soplex: /opt/intel/Compiler/11.0/069/bin/ia32/icpc  
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/069/ipp/ia32/include

Fortran benchmarks (except as noted below):  
ifort

437.leslie3d: /opt/intel/Compiler/11.0/069/bin/ia32/ifort  
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/069/ipp/ia32/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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Nov-2008

Software Availability: Nov-2008

## Peak Portability Flags (Continued)

```

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
465.tonto: -DSPEC_CPU_LP64
470.lbm: -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) -xSSE4.1 -ipo -O3
         -no-prec-div -static -fno-alias

```

```

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
        -auto-ilp32

```

```

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

```

### C++ benchmarks:

```

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

```

```

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
          -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

```

```

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
          -no-prec-div -static -opt-malloc-options=3

```

```

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
          -no-prec-div -static -unroll4 -ansi-alias

```

### Fortran benchmarks:

```

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

```

```

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
          -no-prec-div -static -unroll2 -Ob0 -ansi-alias
          -scalar-rep-

```

```

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

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

NovaScale R480 E1  
(2.66 GHz, Intel Xeon X7460)

SPECfp\_rate2006 = 154

SPECfp\_rate\_base2006 = 141

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Nov-2008

Software Availability: Nov-2008

## Peak Optimization Flags (Continued)

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -opt-prefetch -parallel  
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

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-ic11.0-fp-linux64-revD.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.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 Tue Jul 22 21:37:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 24 December 2008.