



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp®2006 = 18.1

## Bull Escala PL160 (4.2 GHz, 1 core)

SPECfp\_base2006 = 15.0

CPU2006 license: 20

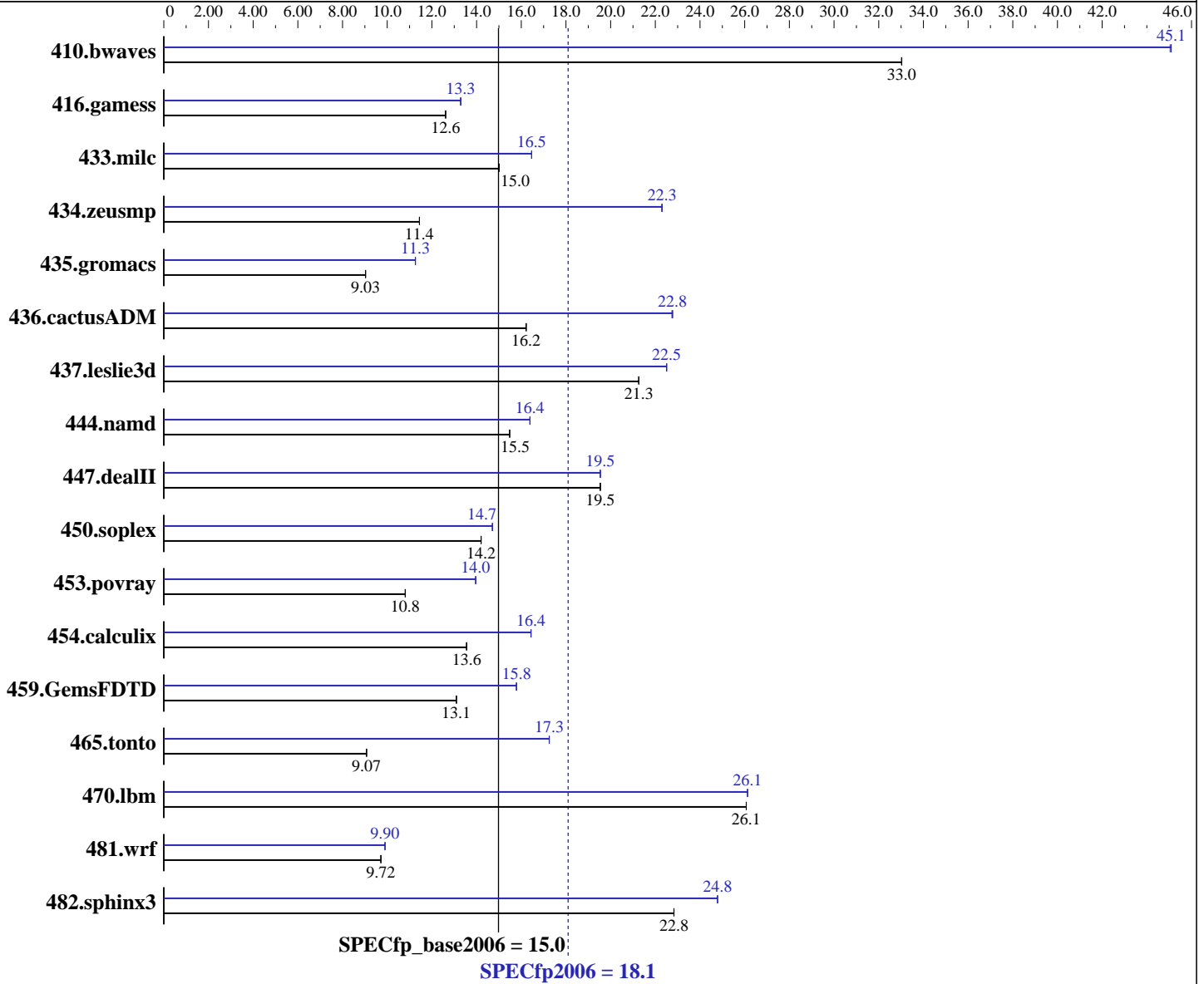
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Feb-2008

Hardware Availability: Mar-2008

Software Availability: Feb-2008



### Hardware

CPU Name: POWER6  
 CPU Characteristics:  
 CPU MHz: 4200  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
 CPU(s) orderable: 1 core  
 Primary Cache: 64 KB I + 64 KB D on chip per chip  
 Secondary Cache: 4 MB I+D on chip per chip

Continued on next page

### Software

Operating System: IBM AIX V6.1 Updated to SP3  
 Compiler: XL C/C++ Enterprise Edition V9 for AIX Updated with the Oct2007 PTF.  
 XL Fortran Enterprise Edition V11.1 for AIX Updated with the Oct2007 PTF.  
 Auto Parallel: No  
 File System: AIX/JFS2  
 System State: Multi-user  
 Base Pointers: 32-bit

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECfp2006 = **18.1**

## Bull Escala PL160 (4.2 GHz, 1 core)

SPECfp\_base2006 = **15.0**

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Feb-2008

Hardware Availability: Mar-2008

Software Availability: Feb-2008

L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB) DDR2 667 MHz  
Disk Subsystem: 2x73 GB SAS 15K RPM  
Other Hardware: None

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

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	411	33.0	<b>412</b>	<b>33.0</b>	412	33.0	302	45.0	301	45.1	<b>301</b>	<b>45.1</b>
416.gamess	1552	12.6	1552	12.6	<b>1552</b>	<b>12.6</b>	<b>1474</b>	<b>13.3</b>	1472	13.3	1474	13.3
433.milc	611	15.0	<b>612</b>	<b>15.0</b>	612	15.0	558	16.5	<b>558</b>	<b>16.5</b>	558	16.5
434.zeusmp	795	11.4	<b>795</b>	<b>11.4</b>	795	11.4	408	22.3	408	22.3	<b>408</b>	<b>22.3</b>
435.gromacs	791	9.03	<b>791</b>	<b>9.03</b>	791	9.03	634	11.3	<b>634</b>	<b>11.3</b>	634	11.3
436.cactusADM	<b>737</b>	<b>16.2</b>	737	16.2	737	16.2	525	22.8	<b>525</b>	<b>22.8</b>	525	22.7
437.leslie3d	442	21.3	442	21.3	<b>442</b>	<b>21.3</b>	<b>418</b>	<b>22.5</b>	418	22.5	418	22.5
444.namd	518	15.5	518	15.5	<b>518</b>	<b>15.5</b>	489	16.4	<b>489</b>	<b>16.4</b>	489	16.4
447.dealII	586	19.5	<b>585</b>	<b>19.5</b>	585	19.5	585	19.5	<b>585</b>	<b>19.5</b>	586	19.5
450.soplex	587	14.2	587	14.2	<b>587</b>	<b>14.2</b>	567	14.7	<b>567</b>	<b>14.7</b>	567	14.7
453.povray	<b>492</b>	<b>10.8</b>	492	10.8	492	10.8	381	14.0	<b>381</b>	<b>14.0</b>	381	14.0
454.calculix	<b>609</b>	<b>13.6</b>	609	13.6	609	13.6	502	16.4	<b>502</b>	<b>16.4</b>	502	16.4
459.GemsFDTD	810	13.1	<b>810</b>	<b>13.1</b>	811	13.1	672	15.8	<b>672</b>	<b>15.8</b>	672	15.8
465.tonto	1084	9.07	<b>1084</b>	<b>9.07</b>	1084	9.07	<b>570</b>	<b>17.3</b>	570	17.3	570	17.2
470.lbm	527	26.1	<b>527</b>	<b>26.1</b>	527	26.1	526	26.1	<b>526</b>	<b>26.1</b>	526	26.1
481.wrf	1149	9.72	<b>1149</b>	<b>9.72</b>	1150	9.72	1128	9.91	1128	9.90	<b>1128</b>	<b>9.90</b>
482.sphinx3	853	22.8	<b>854</b>	<b>22.8</b>	854	22.8	786	24.8	<b>786</b>	<b>24.8</b>	786	24.8

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

## General Notes

See flags file of details on following settings.

all ulimits set to unlimited.

Environment variables set before executing benchmarks:

MALLOCOPTIONS=pool

MEMORY\_AFFINITY=MCM

XLFRTEOPTS=intrinths=1

System set to "Enhanced" mode when defining partition on HMC.

500 16M large pages defined with vmo command

Remote console disabled in /etc/inittab.

fdpr binary optimization tool used for:

410.bwaves 433.milc 435.gromacs 436.cactusADM

453.povray 470.lbm 482.sphinx3

Measurement has been done on a PL260 with one core disabled by HMC;

PL260 and PL160 are identical machines; the only difference is that

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 2



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 18.1**

**Bull Escala PL160 (4.2 GHz, 1 core)**

**SPECfp\_base2006 = 15.0**

**CPU2006 license:** 20

**Test sponsor:** Bull SAS

**Tested by:** Bull SAS

**Test date:** Feb-2008

**Hardware Availability:** Mar-2008

**Software Availability:** Feb-2008

## General Notes (Continued)

PL160 uses a single core POWER6 chip instead a dual core chip.

## Base Compiler Invocation

C benchmarks:

```
/usr/vac/bin/xlc -qlanglvl=extc99
```

C++ benchmarks:

```
/usr/vacpp/bin/xlC
```

Fortran benchmarks:

```
/usr/bin/xlf95
```

Benchmarks using both Fortran and C:

```
/usr/vac/bin/xlc -qlanglvl=extc99 /usr/bin/xlf95
```

## Base Portability Flags

```
410.bwaves: -qfixed
416.gamess: -qfixed
434.zeusmp: -qfixed
435.gromacs: -qfixed -qextname
436.cactusADM: -qfixed -qextname
437.leslie3d: -qfixed
454.calculix: -qfixed -qextname
481.wrf: -DSPEC_CPU_AIX -DNOUNDERSCORE
482.sphinx3: -qchars=signed
```

## Base Optimization Flags

C benchmarks:

```
-bmaxdata:0x40000000 -O5 -qlargepage -D_ILS_MACROS -blpdata
```

C++ benchmarks:

```
-bmaxdata:0x50000000 -O5 -qlargepage -D_ILS_MACROS -qrtti=all
-D__IBM_FAST_VECTOR -blpdata
```

Fortran benchmarks:

```
-bmaxdata:0x60000000 -O5 -qlargepage -qsmallstack=dynlenonheap
-qalias=nostd -blpdata
```

Benchmarks using both Fortran and C:

```
-bmaxdata:0x60000000 -O5 -qlargepage -D_ILS_MACROS
-qsmallstack=dynlenonheap -qalias=nostd -blpdata
```



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 18.1**

**Bull Escala PL160 (4.2 GHz, 1 core)**

**SPECfp\_base2006 = 15.0**

**CPU2006 license:** 20  
**Test sponsor:** Bull SAS  
**Tested by:** Bull SAS

**Test date:** Feb-2008  
**Hardware Availability:** Mar-2008  
**Software Availability:** Feb-2008

## Base Other Flags

C benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

C++ benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

Fortran benchmarks:

-qipa=noobject -qsuppress=1500-010 -qsuppress=cmpmsg -qipa=threads  
-qsuppress=1500-036

Benchmarks using both Fortran and C:

-qipa=noobject -qsuppress=1500-010 -qsuppress=cmpmsg -qipa=threads  
-qsuppress=1500-036

## Peak Compiler Invocation

C benchmarks:

/usr/vac/bin/xlc -qlanglvl=extc99

C++ benchmarks:

/usr/vacpp/bin/xlC

Fortran benchmarks:

/usr/bin/xlf95

Benchmarks using both Fortran and C:

/usr/vac/bin/xlc -qlanglvl=extc99 /usr/bin/xlf95

## Peak Portability Flags

410.bwaves: -qfixed  
416.gamess: -qfixed  
434.zeusmp: -qfixed  
435.gromacs: -qfixed -qextname  
436.cactusADM: -qfixed -qextname  
437.leslie3d: -qfixed  
454.calculix: -qfixed -qextname  
481.wrf: -DSPEC\_CPU\_AIX -DNOUNDERSCORE  
482.sphinx3: -qchars=signed

## Peak Optimization Flags

C benchmarks:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 18.1**

**Bull Escala PL160 (4.2 GHz, 1 core)**

**SPECfp\_base2006 = 15.0**

**CPU2006 license:** 20

**Test sponsor:** Bull SAS

**Tested by:** Bull SAS

**Test date:** Feb-2008

**Hardware Availability:** Mar-2008

**Software Availability:** Feb-2008

## Peak Optimization Flags (Continued)

433.milc: -bmaxdata:0x40000000 -O5 -qlargepage -D\_ILS\_MACROS  
-qalign=natural -qfdpr -blpdata

470.lbm: -O5 -qlargepage -D\_ILS\_MACROS -qfdpr -q64 -blpdata

482.sphinx3: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage -qenablevmx  
-qvecnv1 -D\_ILS\_MACROS -qfdpr -blpdata

### C++ benchmarks:

444.namd: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -D\_ILS\_MACROS

447.dealIII: -bmaxdata:0x50000000 -O5 -qlargepage -D\_ILS\_MACROS  
-qrtti=all -D\_\_IBM\_FAST\_VECTOR -blpdata

450.soplex: -bmaxdata:0x40000000 -qpdf1(pass 1) -qpdf2(pass 2) -O4  
-qlargepage -qenablevmx -qvecnv1 -qstrict -D\_ILS\_MACROS  
-blpdata

453.povray: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx  
-qvecnv1 -D\_ILS\_MACROS -qalign=natural -qfdpr -blpdata

### Fortran benchmarks:

410.bwaves: -bmaxdata:0x50000000 -O5 -qlargepage -qenablevmx -qvecnv1  
-qfdpr -qsmallstack=dynlenonheap -blpdata

416.gamess: -bmaxdata:0x40000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qalias=nostd

434.zeusmp: -bmaxdata:0x40000000 -qpdf1(pass 1) -qpdf2(pass 2) -O3  
-qarch=auto -qtune=auto -qlargepage -qenablevmx -qvecnv1  
-qxl90=nosignedzero -blpdata

437.leslie3d: -O4 -qlargepage -q64 -blpdata

459.GemsFDTD: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx  
-qvecnv1 -q64 -blpdata

465.tonto: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -blpdata

### Benchmarks using both Fortran and C:

435.gromacs: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx  
-qvecnv1 -qfdpr -D\_ILS\_MACROS -blpdata

436.cactusADM: -bmaxdata:0x60000000 -qpdf1(pass 1) -qpdf2(pass 2) -O2  
-qarch=auto -qtune=auto -qlargepage -qenablevmx -qvecnv1  
-qfdpr -qnostrict -D\_ILS\_MACROS -blpdata

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECfp2006 = 18.1**

**Bull Escala PL160 (4.2 GHz, 1 core)**

**SPECfp\_base2006 = 15.0**

**CPU2006 license:** 20

**Test sponsor:** Bull SAS

**Tested by:** Bull SAS

**Test date:** Feb-2008

**Hardware Availability:** Mar-2008

**Software Availability:** Feb-2008

## Peak Optimization Flags (Continued)

454.calculix: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage  
-D\_ILS\_MACROS -blpdata

481.wrf: -bmaxdata:0x30000000 -O5 -qlargepage -qalias=nostd  
-D\_ILS\_MACROS -blpdata

## Peak Other Flags

C benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

C++ benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

Fortran benchmarks:

-qipa=noobject -qsuppress=1500-010 -qsuppress=cmpmsg -qipa=threads  
-qsuppress=1500-036

Benchmarks using both Fortran and C:

-qipa=noobject -qsuppress=1500-010 -qsuppress=cmpmsg -qipa=threads  
-qsuppress=1500-036

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090713.06.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090713.06.html)

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090713.06.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090713.06.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 v1.0.  
Report generated on Tue Jul 22 18:29:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 15 April 2008.