SPEC® CFP2006 Result

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Bull SAS

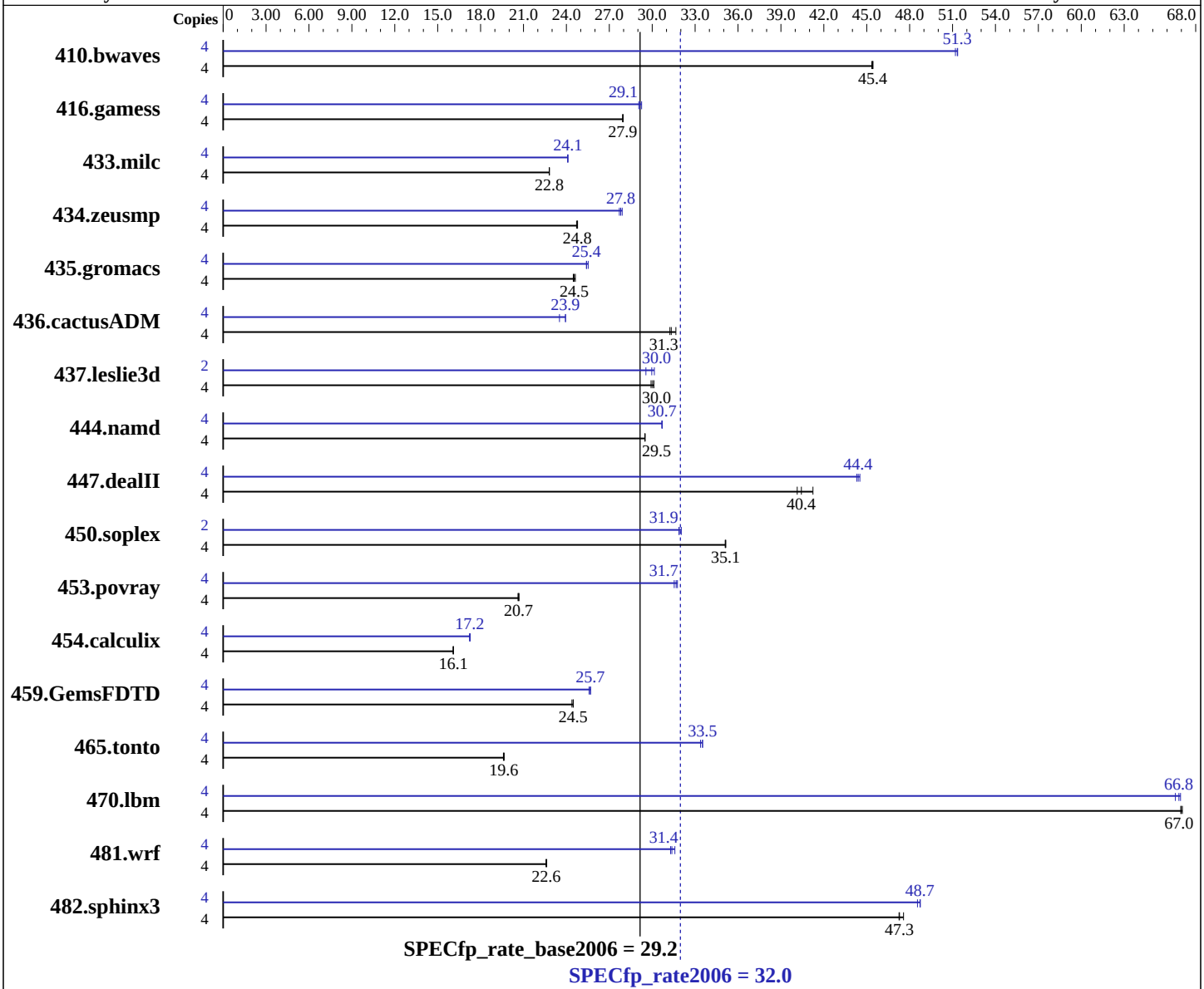
Bull Escala PL250R+ (2100 MHz, 2 CPU)

SPECfp®_rate2006 = 32.0

SPECfp_rate_base2006 = 29.2

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

Test date: Feb-2007
Hardware Availability: Feb-2006
Software Availability: Dec-2006



Hardware

CPU Name:	POWER5+
CPU Characteristics:	
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	64 KB I + 32 KB D on chip per core
Secondary Cache:	1920 KB I+D on chip per chip

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Software

Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 8.0 for AIX with the December 2006 PTF XL Fortran Enterprise Edition Version 10.1 for AIX with the November 2006 PTF
Auto Parallel:	No
File System:	AIX/JFS2
System State:	Multi-user
Base Pointers:	32-bit

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L3 Cache: 36 MB I+D off chip per chip
Other Cache: None
Memory: 32 GB (8x4 GB)
Disk Subsystem: 1x73 GB SCSI, 15K RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: ESSL 4.2.0.4

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	**1197**	**45.4**	1199	45.4	1196	45.4	4	**1059**	**51.3**	1058	51.4	1062	51.2
416.gamess	4	**2803**	**27.9**	2804	27.9	2800	28.0	4	2695	29.1	2677	29.3	**2687**	**29.1**
433.milc	4	1610	22.8	1610	22.8	**1610**	**22.8**	4	1523	24.1	**1524**	**24.1**	1524	24.1
434.zeusmp	4	**1470**	**24.8**	1469	24.8	1473	24.7	4	**1309**	**27.8**	1314	27.7	1305	27.9
435.gromacs	4	**1164**	**24.5**	1160	24.6	1167	24.5	4	1119	25.5	1124	25.4	**1124**	**25.4**
436.cactusADM	4	1530	31.2	1510	31.7	**1526**	**31.3**	4	1997	23.9	2033	23.5	**1997**	**23.9**
437.leslie3d	4	1257	29.9	**1252**	**30.0**	1248	30.1	2	**627**	**30.0**	636	29.6	624	30.1
444.namd	4	1088	29.5	**1088**	**29.5**	1088	29.5	4	1046	30.7	1045	30.7	**1045**	**30.7**
447.dealII	4	1110	41.2	**1132**	**40.4**	1140	40.1	4	1028	44.5	1033	44.3	**1031**	**44.4**
450.soplex	4	950	35.1	**950**	**35.1**	949	35.1	2	521	32.0	523	31.9	**523**	**31.9**
453.povray	4	1029	20.7	**1030**	**20.7**	1032	20.6	4	675	31.5	**672**	**31.7**	670	31.8
454.calculix	4	**2050**	**16.1**	2052	16.1	2050	16.1	4	1915	17.2	1910	17.3	**1914**	**17.2**
459.GemsFDTD	4	1734	24.5	**1734**	**24.5**	1740	24.4	4	1652	25.7	1659	25.6	**1653**	**25.7**
465.tonto	4	2009	19.6	**2006**	**19.6**	2003	19.6	4	**1174**	**33.5**	1174	33.5	1179	33.4
470.lbm	4	819	67.1	**820**	**67.0**	821	67.0	4	821	66.9	825	66.6	**822**	**66.8**
481.wrf	4	1979	22.6	**1977**	**22.6**	1975	22.6	4	**1424**	**31.4**	1415	31.6	1428	31.3
482.sphinx3	4	**1649**	**47.3**	1650	47.3	1639	47.6	4	**1600**	**48.7**	1599	48.7	1606	48.5

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

Operating System Notes

```
ulimits set to unlimited

bindprocessor command used on submit to bind each copy to a
unique processor.

Large page mode was set as follows:
vmo -r -o lgpg_regions=900 -o lgpg_size=16777216
SMT was ebabled using the AIX commands
smtctl -m on -w boot
bosboot -aD
shutdown -rF
```

Base Compiler Invocation

C benchmarks:
/usr/vac/bin/xlc

C++ benchmarks:
/usr/vacpp/bin/xlC

Fortran benchmarks:
/usr/bin/xlf95

Benchmarks using both Fortran and C:
/usr/vac/bin/xlc /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:
-qlanglvl=extc99 -O5 -qlargepage -D_ILS_MACROS -qipa=noobject
-blpdata -qipa=threads

C++ benchmarks:
-O5 -qlargepage -D_ILS_MACROS -qrtti=all -qipa=noobject -blpdata
-qipa=threads

Fortran benchmarks:
-O5 -qlargepage -qsmallstack=dynlenonheap -qipa=noobject -blpdata
-qipa=threads

Benchmarks using both Fortran and C:
-qlanglvl=extc99 -O5 -qlargepage -D_ILS_MACROS
-qsmallstack=dynlenonheap -qipa=noobject -blpdata -qipa=threads

Base Other Flags

C benchmarks:
```
-bmaxdata:0x40000000 -qsuppress=1500-036
```

C++ benchmarks:
```
-bmaxdata:0x50000000 -qsuppress=1500-036
```

Fortran benchmarks:
```
-bmaxdata:0x50000000 -qalias=nostd -qalias_size=200000000
-qsuppress=cmpmsg:1500-010 -qsuppress=1500-036
```

Benchmarks using both Fortran and C:
```
-bmaxdata:0x50000000 -qalias=nostd -qalias_size=200000000
-qsuppress=cmpmsg:1500-010 -qsuppress=1500-036
```

Peak Compiler Invocation

C benchmarks:
```
/usr/vac/bin/xlc
```

C++ benchmarks:
```
/usr/vacpp/bin/xlC
```

Fortran benchmarks:
```
/usr/bin/xlf95
```

Benchmarks using both Fortran and C:
```
/usr/vac/bin/xlc /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

Peak Optimization Flags (Continued)

433.milc: `-qlanglvl=extc99 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qalign=natural -qipa=noobject -blpdata -qipa=threads`

470.lbm: `-qlanglvl=extc99 -O5 -qlargepage -D_ILS_MACROS -qipa=noobject -blpdata -qipa=threads`

482.sphinx3: `-qlanglvl=extc99 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qlargepage -D_ILS_MACROS -qipa=noobject -blpdata -qipa=threads`

C++ benchmarks:

444.namd: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qipa=noobject -blpdata -qipa=threads`

447.dealII: `-O5 -qlargepage -D_ILS_MACROS -qrtti=all -D__IBM_FAST_VECTOR -qipa=noobject -blpdata -qipa=threads`

450.soplex: `-O4 -qlargepage -D_ILS_MACROS -qipa=noobject -blpdata -qipa=threads`

453.povray: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -q64 -qalign=natural -lmass -qipa=noobject -blpdata -qipa=threads`

Fortran benchmarks:

410.bwaves: `-O5 -qlargepage -qsmallstack=dynlenonheap -qipa=noobject -blpdata -qipa=threads`

416.gamess: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -qessl -lessl -qipa=noobject -blpdata -qipa=threads`

434.zeusmp: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -qipa=noobject -blpdata -qipa=threads`

437.leslie3d: `-O5 -qlargepage -qipa=noobject -blpdata -qipa=threads`

459.GemsFDTD: `Same as 437.leslie3d`

465.tonto: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -lmass -qipa=noobject -blpdata -qipa=threads`

Benchmarks using both Fortran and C:

435.gromacs: `-qlanglvl=extc99 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qipa=noobject -blpdata -qipa=threads`

Continued on next page

Peak Optimization Flags (Continued)

436.cactusADM: -qlanglvl=extc99 -O5 -qlargepage -D_ILS_MACROS
-qipa=noobject -blpdata -qipa=threads

454.calculix: Same as 435.gromacs

481.wrf: -qlanglvl=extc99 -O5 -qlargepage -lmass
-qsmallstack=dynlenonheap -D_ILS_MACROS -qipa=noobject
-blpdata -qipa=threads

Peak Other Flags

C benchmarks:

433.milc: -bmaxdata:0x40000000 -qsuppress=1500-036

470.lbm: -bmaxdata:0x30000000 -qsuppress=1500-036

482.sphinx3: -qfdpr -qsuppress=1500-036

C++ benchmarks:

444.namd: -qfdpr -qsuppress=1500-036

447.dealII: -bmaxdata:0x50000000 -qsuppress=1500-036

450.soplex: -bmaxdata:0x40000000 -qfdpr -qsuppress=1500-036

453.povray: -qsuppress=1500-036

Fortran benchmarks (except as noted below):
-bmaxdata:0x50000000 -qsuppress=cmpmsg:1500-010 -qsuppress=1500-036

416.gamess: -bmaxdata:0x40000000 -qalias=nostd
-qsuppress=cmpmsg:1500-010 -qsuppress=1500-036

434.zeusmp: -bmaxdata:0x40000000 -qfdpr -qsuppress=cmpmsg:1500-010
-qsuppress=1500-036

437.leslie3d: -qsuppress=cmpmsg:1500-010 -qsuppress=1500-036

465.tonto: -bmaxdata:0x20000000 -qalias=nostd
-qsuppress=cmpmsg:1500-010 -qsuppress=1500-036

Benchmarks using both Fortran and C (except as noted below):
-qsuppress=cmpmsg:1500-010 -qsuppress=1500-036

436.cactusADM: -bmaxdata:0x50000000 -qsuppress=cmpmsg:1500-010
-qsuppress=1500-036

Continued on next page

Peak Other Flags (Continued)

481.wrf: `-bmaxdata:0x30000000 -qsuppress=cmpmsg:1500-010 -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.20090715.19.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.19.xml`

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