SPEC® CFP2006 Result

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Bull SAS

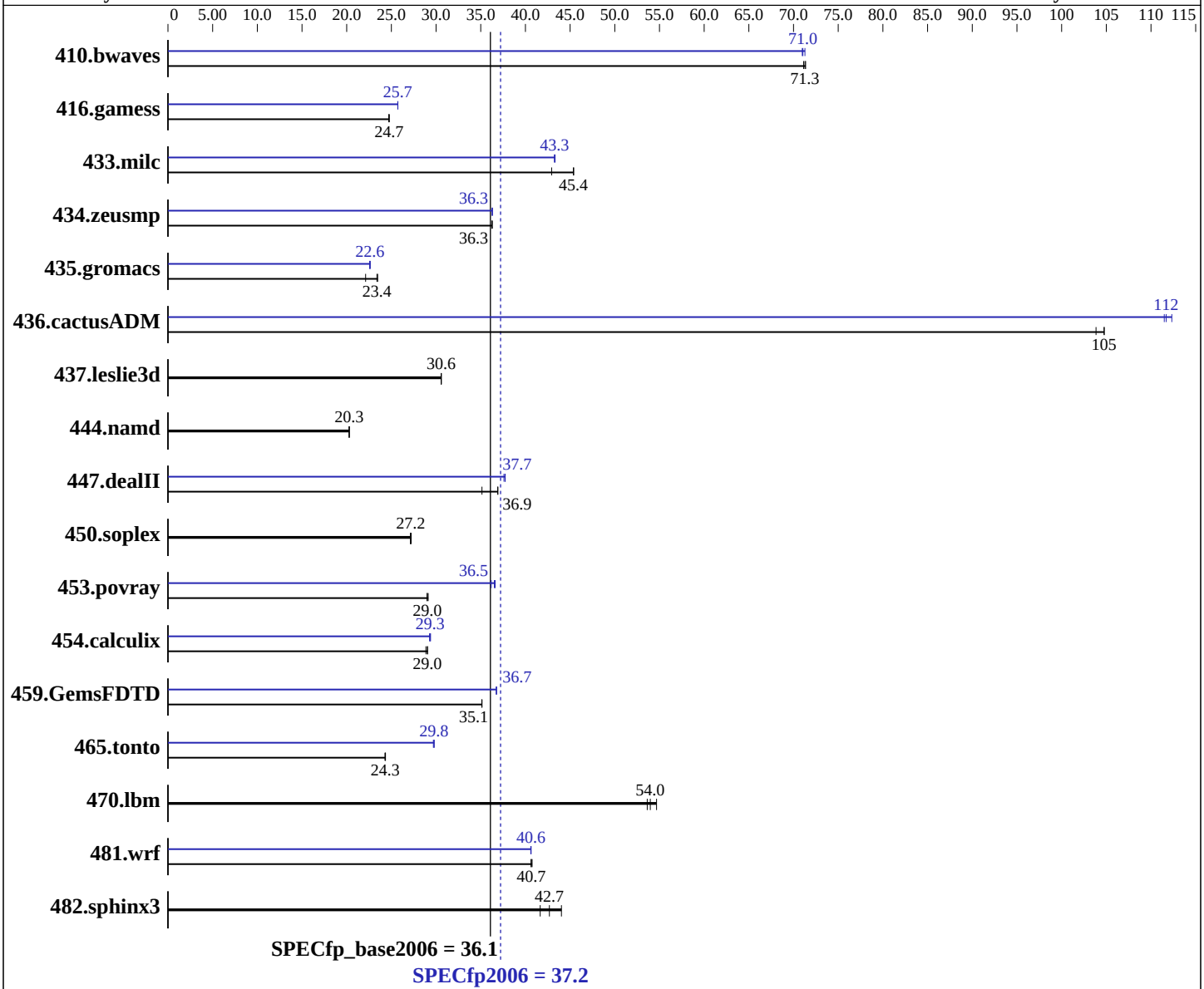
NovaScale T810 F2 (Intel Xeon X3470, 2.93 GHz)

SPECfp®2006 = 37.2

SPECfp_base2006 = 36.1

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

Test date: Sep-2009
Hardware Availability: Dec-2009
Software Availability: Jul-2009



Hardware

CPU Name:	Intel Xeon X3470
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
Compiler:	Intel Fortran Compiler and Intel C++ Compiler Professional Edition 11.1 For Linux Build 20090511 Package ID: l_cproc_p_11.1.040, l_cprof_p_11.1.040
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (4 x 2 GB DDR3-1333 DR UDIMM)
Disk Subsystem: 1 x 160 GB 7200 RPM SATA
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	190	71.4	191	71.1	**191**	**71.3**	191	71.3	191	71.0	**191**	**71.0**
416.gamess	**791**	**24.7**	793	24.7	791	24.8	761	25.7	761	25.7	**761**	**25.7**
433.milc	**202**	**45.4**	202	45.4	214	42.9	212	43.3	212	43.2	**212**	**43.3**
434.zeusmp	251	36.3	**251**	**36.3**	251	36.3	251	36.3	**251**	**36.3**	251	36.3
435.gromacs	304	23.5	**305**	**23.4**	323	22.1	**316**	**22.6**	316	22.6	315	22.6
436.cactusADM	115	104	114	105	**114**	**105**	107	111	106	112	**107**	**112**
437.leslie3d	307	30.6	**307**	**30.6**	307	30.6	307	30.6	**307**	**30.6**	307	30.6
444.namd	395	20.3	**395**	**20.3**	396	20.3	395	20.3	**395**	**20.3**	396	20.3
447.dealII	326	35.1	310	36.9	**310**	**36.9**	**303**	**37.7**	303	37.7	304	37.6
450.soplex	306	27.2	**307**	**27.2**	307	27.1	306	27.2	**307**	**27.2**	307	27.1
453.povray	183	29.1	184	29.0	**183**	**29.0**	**146**	**36.5**	145	36.6	147	36.2
454.calculix	**284**	**29.0**	284	29.0	286	28.9	282	29.3	281	29.4	**281**	**29.3**
459.GemsFDTD	**302**	**35.1**	302	35.1	302	35.1	289	36.7	289	36.8	**289**	**36.7**
465.tonto	**404**	**24.3**	404	24.3	405	24.3	330	29.8	**331**	**29.8**	331	29.7
470.lbm	251	54.7	**255**	**54.0**	256	53.6	251	54.7	**255**	**54.0**	256	53.6
481.wrf	274	40.7	**275**	**40.7**	275	40.6	275	40.6	275	40.6	**275**	**40.6**
482.sphinx3	**457**	**42.7**	468	41.7	443	44.0	**457**	**42.7**	468	41.7	443	44.0

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.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Platform Notes

```
BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
```

General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
The Dell PowerEdge T110 (Intel Xeon X3470, 2.93 GHz) and
the Bull NovaScale T810 F2 (Intel Xeon X3470, 2.93 GHz) models are electronically equivalent.
The results have been measured on a Dell PowerEdge T110 (Intel Xeon X3470, 2.93 GHz) model.
```

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
```

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

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Base Optimization Flags (Continued)

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

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

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel`

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

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

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

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) `-static`(pass 2) `-prof-use`(pass 2) `-unroll4 -ansi-alias`

Fortran benchmarks:

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

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

434.zeusmp: `Same as 410.bwaves`

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) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -Ob0 -opt-prefetch -parallel`

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

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) `-static`(pass 2) `-prof-use`(pass 2) `-opt-prefetch -auto-ilp32`

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

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revA.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revA.xml`

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