SPEC® CFP2006 Result

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Bull SAS

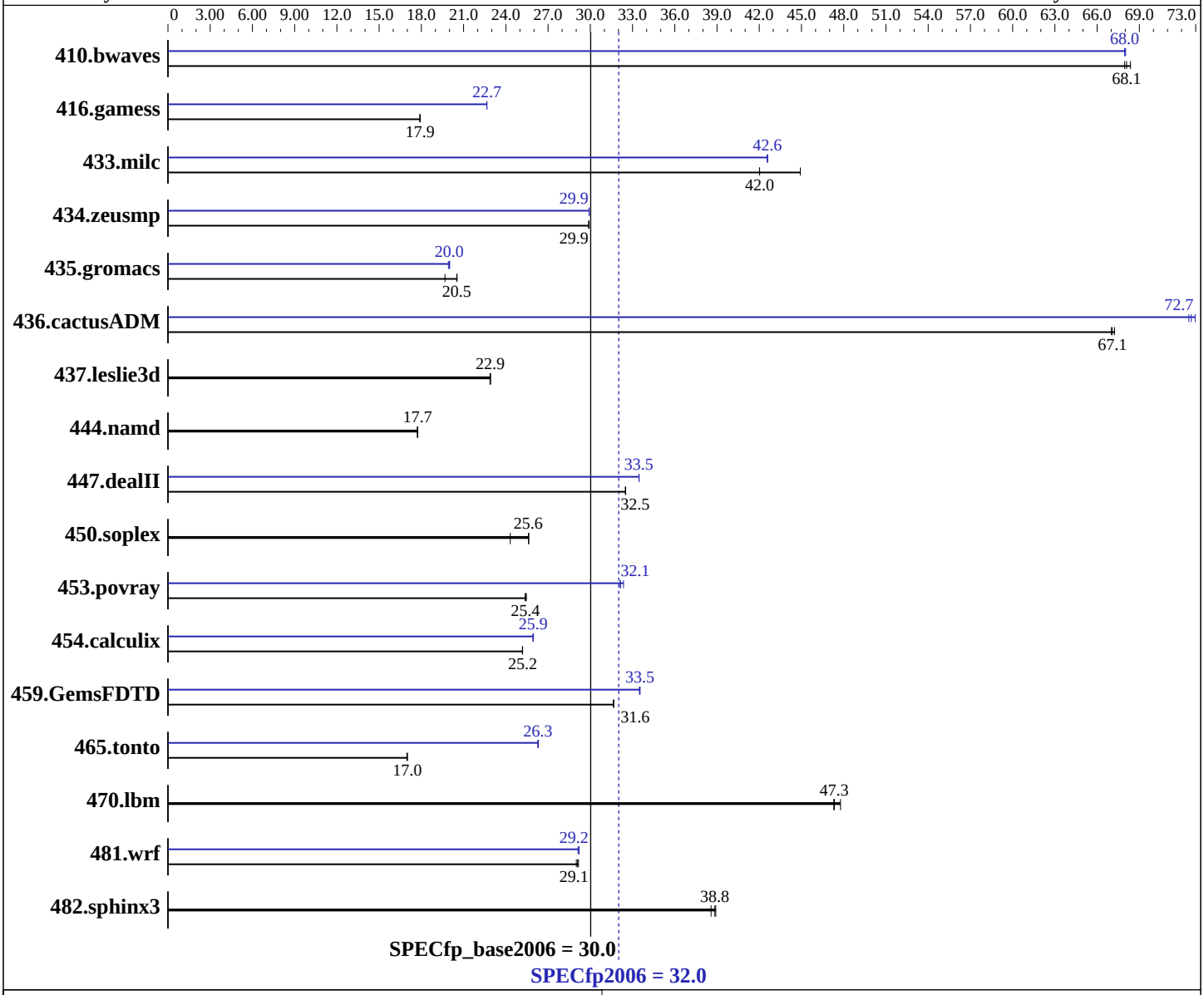
NovaScale R410 F2 (Intel Xeon L3426, 1.86 GHz)

SPECfp®2006 = 32.0

SPECfp_base2006 = 30.0

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 L3426
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	1867
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	**200**	**68.1**	199	68.4	200	68.0	200	68.0	**200**	**68.0**	200	68.0
416.gamess	1094	17.9	1093	17.9	**1093**	**17.9**	865	22.6	864	22.7	**864**	**22.7**
433.milc	204	44.9	218	42.0	**218**	**42.0**	216	42.6	**216**	**42.6**	216	42.6
434.zeusmp	304	29.9	**304**	**29.9**	304	29.9	**304**	**29.9**	304	29.9	304	29.9
435.gromacs	**348**	**20.5**	348	20.5	363	19.7	357	20.0	**357**	**20.0**	358	19.9
436.cactusADM	178	67.0	178	67.2	**178**	**67.1**	165	72.5	**164**	**72.7**	164	73.0
437.leslie3d	**411**	**22.9**	411	22.9	410	22.9	**411**	**22.9**	411	22.9	410	22.9
444.namd	452	17.7	453	17.7	**452**	**17.7**	452	17.7	453	17.7	**452**	**17.7**
447.dealII	352	32.5	**352**	**32.5**	352	32.5	342	33.5	342	33.5	**342**	**33.5**
450.soplex	**326**	**25.6**	343	24.3	325	25.6	**326**	**25.6**	343	24.3	325	25.6
453.povray	**209**	**25.4**	210	25.4	209	25.5	164	32.4	166	32.1	**166**	**32.1**
454.calculix	328	25.2	327	25.2	**327**	**25.2**	**318**	**25.9**	318	26.0	318	25.9
459.GemsFDTD	335	31.6	**335**	**31.6**	335	31.7	**316**	**33.5**	317	33.5	316	33.5
465.tonto	580	17.0	**579**	**17.0**	579	17.0	374	26.3	**374**	**26.3**	374	26.3
470.lbm	288	47.8	**290**	**47.3**	291	47.3	288	47.8	**290**	**47.3**	291	47.3
481.wrf	385	29.0	**384**	**29.1**	383	29.2	383	29.1	**383**	**29.2**	383	29.2
482.sphinx3	**502**	**38.8**	501	38.9	505	38.6	**502**	**38.8**	501	38.9	505	38.6

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 R210 (Intel Xeon L3426, 1.86 GHz) and
the Bull NovaScale R410 F2 (Intel Xeon L3426, 1.86 GHz) models are electronically equivalent.
The results have been measured on a Dell PowerEdge R210 (Intel Xeon L3426, 1.86 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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