SPEC® CFP2006 Result

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Bull SAS

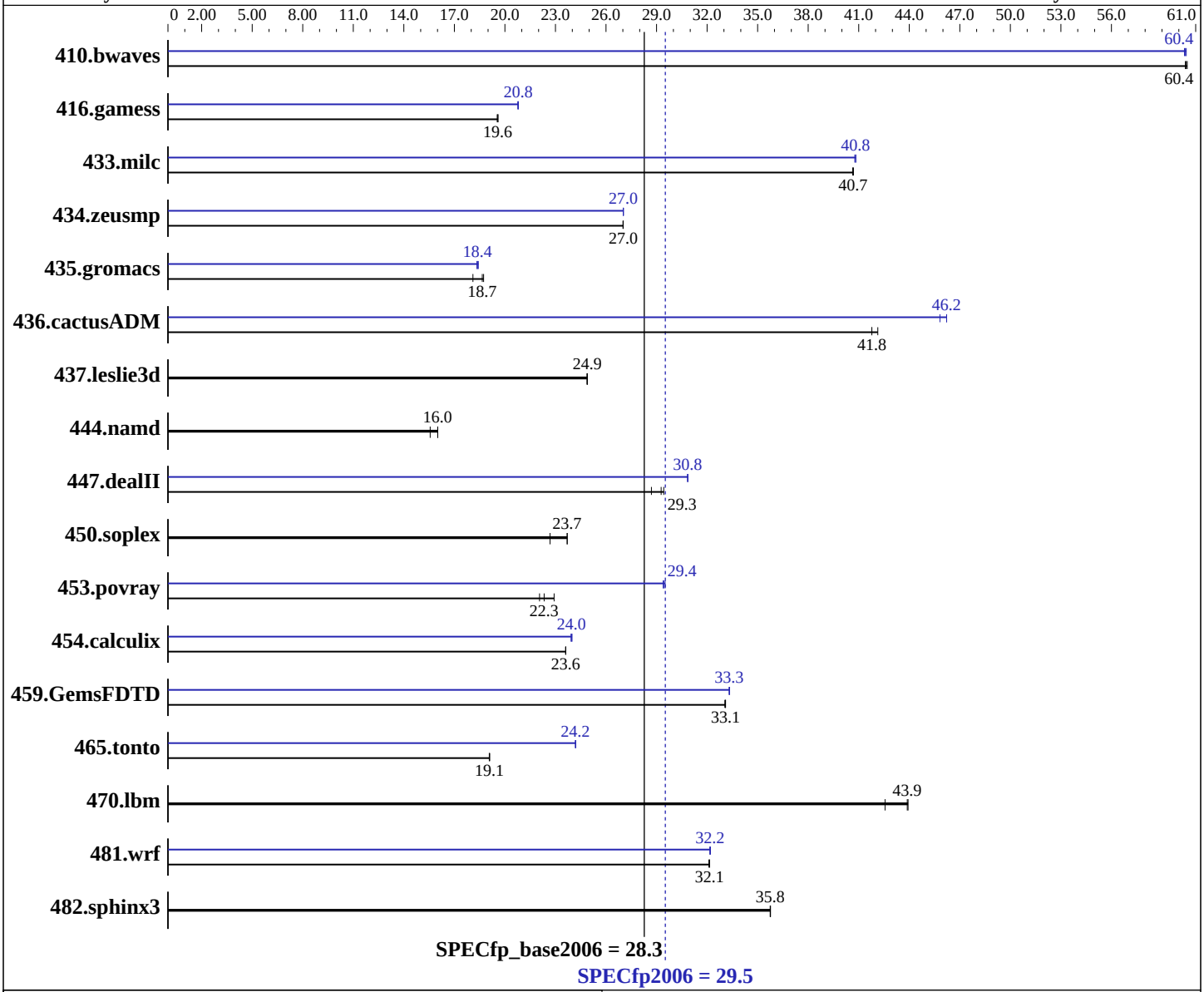
NovaScale T810 F2 (Intel Xeon X3430, 2.40 GHz)

SPECfp®2006 = 29.5

SPECfp_base2006 = 28.3

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

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



Hardware

CPU Name:	Intel Xeon X3430
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
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	225	60.4	225	60.5	**225**	**60.4**	225	60.3	**225**	**60.4**	225	60.4
416.gamess	1000	19.6	**1000**	**19.6**	1002	19.5	942	20.8	943	20.8	**942**	**20.8**
433.milc	**226**	**40.7**	226	40.7	226	40.6	**225**	**40.8**	225	40.8	225	40.8
434.zeusmp	**337**	**27.0**	337	27.0	337	27.0	337	27.0	**337**	**27.0**	337	27.0
435.gromacs	381	18.7	394	18.1	**383**	**18.7**	388	18.4	389	18.3	**389**	**18.4**
436.cactusADM	286	41.8	284	42.1	**286**	**41.8**	259	46.2	**259**	**46.2**	261	45.8
437.leslie3d	378	24.9	378	24.9	**378**	**24.9**	378	24.9	378	24.9	**378**	**24.9**
444.namd	**501**	**16.0**	501	16.0	515	15.6	**501**	**16.0**	501	16.0	515	15.6
447.dealII	389	29.4	399	28.7	**391**	**29.3**	371	30.9	371	30.8	**371**	**30.8**
450.soplex	**352**	**23.7**	368	22.7	352	23.7	**352**	**23.7**	368	22.7	352	23.7
453.povray	232	22.9	**238**	**22.3**	241	22.1	181	29.4	**181**	**29.4**	180	29.5
454.calculix	**349**	**23.6**	350	23.6	349	23.6	344	24.0	**344**	**24.0**	345	23.9
459.GemsFDTD	321	33.1	321	33.1	**321**	**33.1**	318	33.3	**318**	**33.3**	318	33.3
465.tonto	516	19.1	**516**	**19.1**	515	19.1	407	24.2	**407**	**24.2**	407	24.2
470.lbm	313	43.9	323	42.6	**313**	**43.9**	313	43.9	323	42.6	**313**	**43.9**
481.wrf	**348**	**32.1**	348	32.1	348	32.1	**347**	**32.2**	347	32.2	347	32.2
482.sphinx3	**545**	**35.8**	545	35.7	545	35.8	**545**	**35.8**	545	35.7	545	35.8

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 X3430, 2.40 GHz) and
the Bull NovaScale T810 F2 (Intel Xeon X3430, 2.40 GHz) models are electronically equivalent.
The results have been measured on a Dell PowerEdge T110 (Intel Xeon X3430, 2.40 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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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 03:42:43 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 December 2009.