



SPEC® CFP2006 Result

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Bull SAS

SPECfp®_rate2006 = 120

NovaScale R440 F2 (Intel Xeon L5609, 1.86 GHz)

SPECfp_rate_base2006 = 116

CPU2006 license: 20

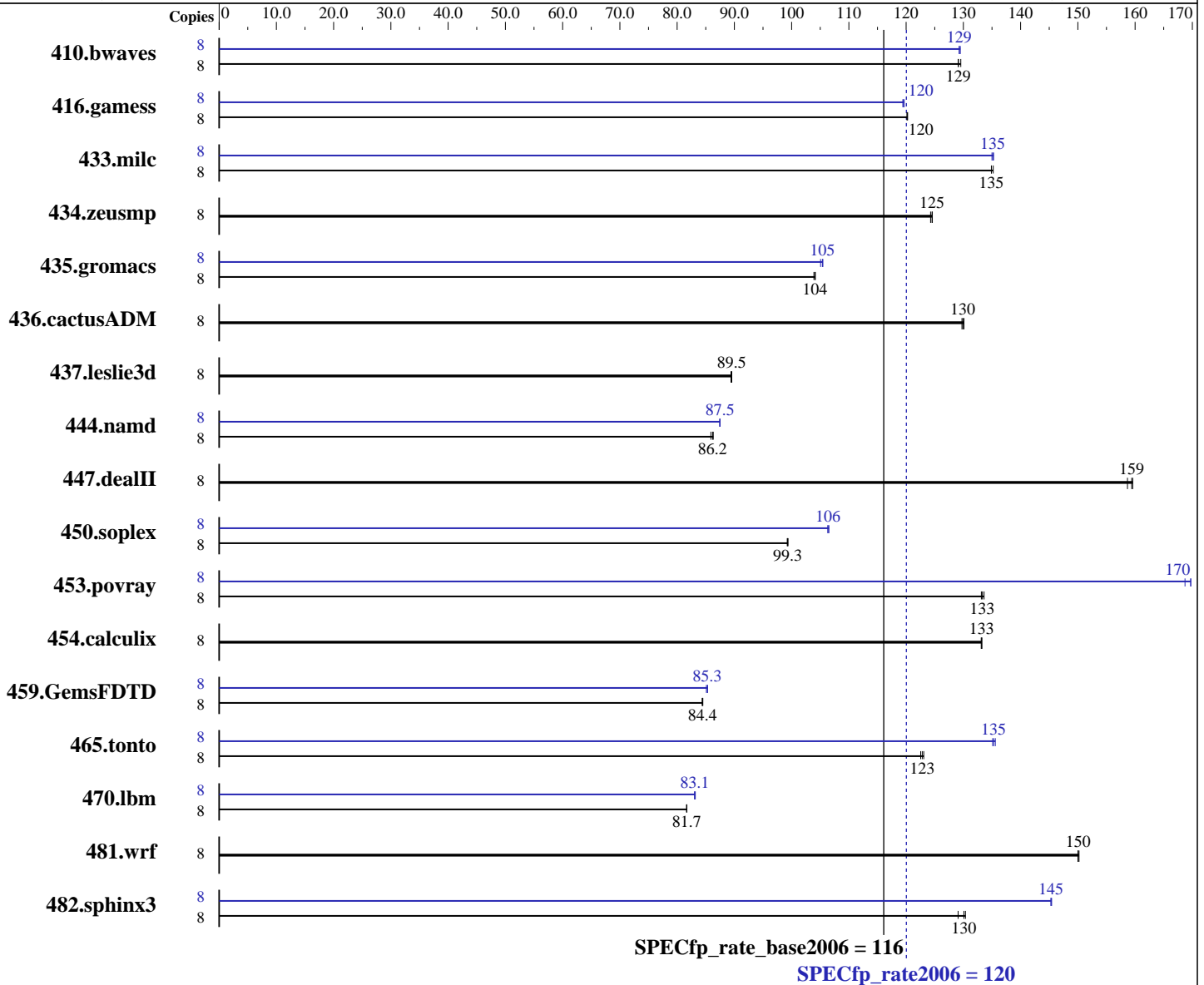
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Mar-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon L5609
 CPU Characteristics:
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 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: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM downclocked to 1066 MHz)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	842	129	839	130	842	129	8	840	129	841	129	841	129		
416.gamess	8	1304	120	1302	120	1303	120	8	1312	119	1309	120	1311	120		
433.milc	8	544	135	543	135	544	135	8	543	135	543	135	544	135		
434.zeusmp	8	585	125	584	125	586	124	8	585	125	584	125	586	124		
435.gromacs	8	550	104	549	104	549	104	8	542	105	542	105	544	105		
436.cactusADM	8	736	130	735	130	737	130	8	736	130	735	130	737	130		
437.leslie3d	8	840	89.5	840	89.5	841	89.4	8	840	89.5	840	89.5	841	89.4		
444.namd	8	747	85.9	743	86.3	744	86.2	8	734	87.4	734	87.5	733	87.5		
447.dealII	8	573	160	577	159	574	159	8	573	160	577	159	574	159		
450.soplex	8	671	99.4	672	99.2	672	99.3	8	627	106	627	106	626	107		
453.povray	8	319	133	320	133	319	134	8	251	170	251	170	252	169		
454.calculix	8	495	133	495	133	496	133	8	495	133	495	133	496	133		
459.GemsFDTD	8	1005	84.4	1006	84.4	1005	84.5	8	995	85.3	997	85.1	995	85.3		
465.tonto	8	641	123	640	123	642	123	8	581	136	583	135	582	135		
470.lbm	8	1345	81.7	1346	81.7	1346	81.7	8	1322	83.2	1323	83.1	1323	83.1		
481.wrf	8	596	150	595	150	596	150	8	596	150	595	150	596	150		
482.sphinx3	8	1208	129	1199	130	1196	130	8	1073	145	1072	145	1073	145		

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.
numactl was used to bind copies to the cores

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)



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General Notes

The Dell PowerEdge R610 and the Bull NovaScale R440 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R610 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

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

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Base Optimization Flags (Continued)

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static`

Peak Compiler Invocation

C benchmarks (except as noted below):

`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak 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`
 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`



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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 -opt-prefetch

470.lbm: -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-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -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 -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -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-malloc-options=3

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

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: basepeak = yes

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

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 -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml>

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For other inquiries, please contact webmaster@spec.org.

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