SPEC® CFP2006 Result

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Bull SAS

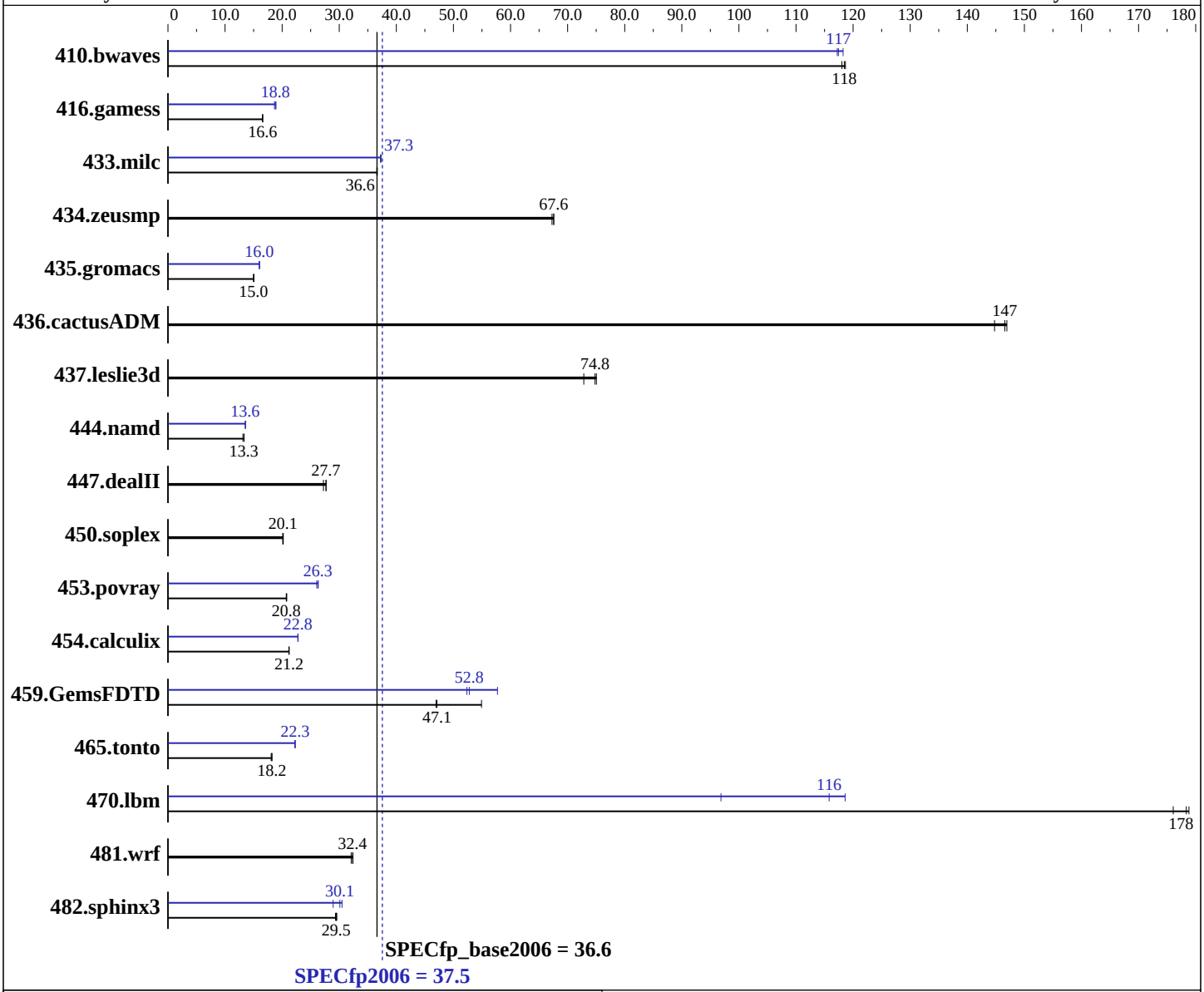
BL265 (Intel Xeon E5507, 2.26 GHz)

SPECfp®2006 = 37.5

SPECfp_base2006 = 36.6

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

Test date: Feb-2011
Hardware Availability: Mar-2010
Software Availability: Jan-2011



Hardware

CPU Name:	Intel Xeon E5507
CPU Characteristics:	
CPU MHz:	2267
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) SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem: 2 x 50 GB SATA, SSD
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**115**	**118**	115	119	115	118	115	118	**116**	**117**	116	117
416.gamess	1180	16.6	**1180**	**16.6**	1184	16.5	1050	18.7	**1040**	**18.8**	1035	18.9
433.milc	251	36.6	250	36.7	**251**	**36.6**	247	37.2	**246**	**37.3**	246	37.3
434.zeusmp	135	67.3	135	67.6	**135**	**67.6**	135	67.3	135	67.6	**135**	**67.6**
435.gromacs	**475**	**15.0**	476	15.0	475	15.0	**446**	**16.0**	445	16.0	446	16.0
436.cactusADM	82.5	145	81.3	147	**81.5**	**147**	82.5	145	81.3	147	**81.5**	**147**
437.leslie3d	**126**	**74.8**	125	75.0	129	72.8	**126**	**74.8**	125	75.0	129	72.8
444.namd	601	13.3	**602**	**13.3**	611	13.1	591	13.6	591	13.6	**591**	**13.6**
447.dealII	**413**	**27.7**	413	27.7	420	27.2	**413**	**27.7**	413	27.7	420	27.2
450.soplex	413	20.2	**414**	**20.1**	415	20.1	413	20.2	**414**	**20.1**	415	20.1
453.povray	**256**	**20.8**	256	20.8	257	20.7	204	26.1	**203**	**26.3**	202	26.3
454.calculix	389	21.2	**389**	**21.2**	390	21.2	362	22.8	362	22.8	**362**	**22.8**
459.GemsFDTD	**225**	**47.1**	226	46.9	193	54.9	203	52.4	184	57.7	**201**	**52.8**
465.tonto	**541**	**18.2**	544	18.1	540	18.2	**442**	**22.3**	441	22.3	443	22.2
470.lbm	**77.0**	**178**	76.8	179	78.0	176	**119**	**116**	142	96.9	116	119
481.wrf	345	32.4	348	32.1	**345**	**32.4**	345	32.4	348	32.1	**345**	**32.4**
482.sphinx3	659	29.6	**661**	**29.5**	664	29.3	**647**	**30.1**	674	28.9	639	30.5

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
Hugepages was enabled with the following:
  'nodev   /mnt/hugepages   hugetlbfs  defaults   0 0' added to /etc/fstab
   echo 900 > /proc/sys/vm/nr_hugepages
   export HUGETLB_MORECORE=yes
   export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
Power C-states enabled in BIOS
Demand Scrub disabled in BIOS
```

General Notes

```
OMP_NUM_THREADS set to number of cores
```

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 -parallel -opt-prefetch
-ansi-alias
```

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

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Base Optimization Flags (Continued)

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

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

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) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -parallel -ansi-alias -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

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) -prof-use(pass 2) -unroll4 -ansi-alias -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

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

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

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) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic12.0-linux64-revA.html

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.xml`

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 16:37:25 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 March 2011.