SPEC® CFP2006 Result
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Fujitsu

CELSIUS W410, Intel Core i3-2100

$SPECfp^{®}2006 =$ 47.3

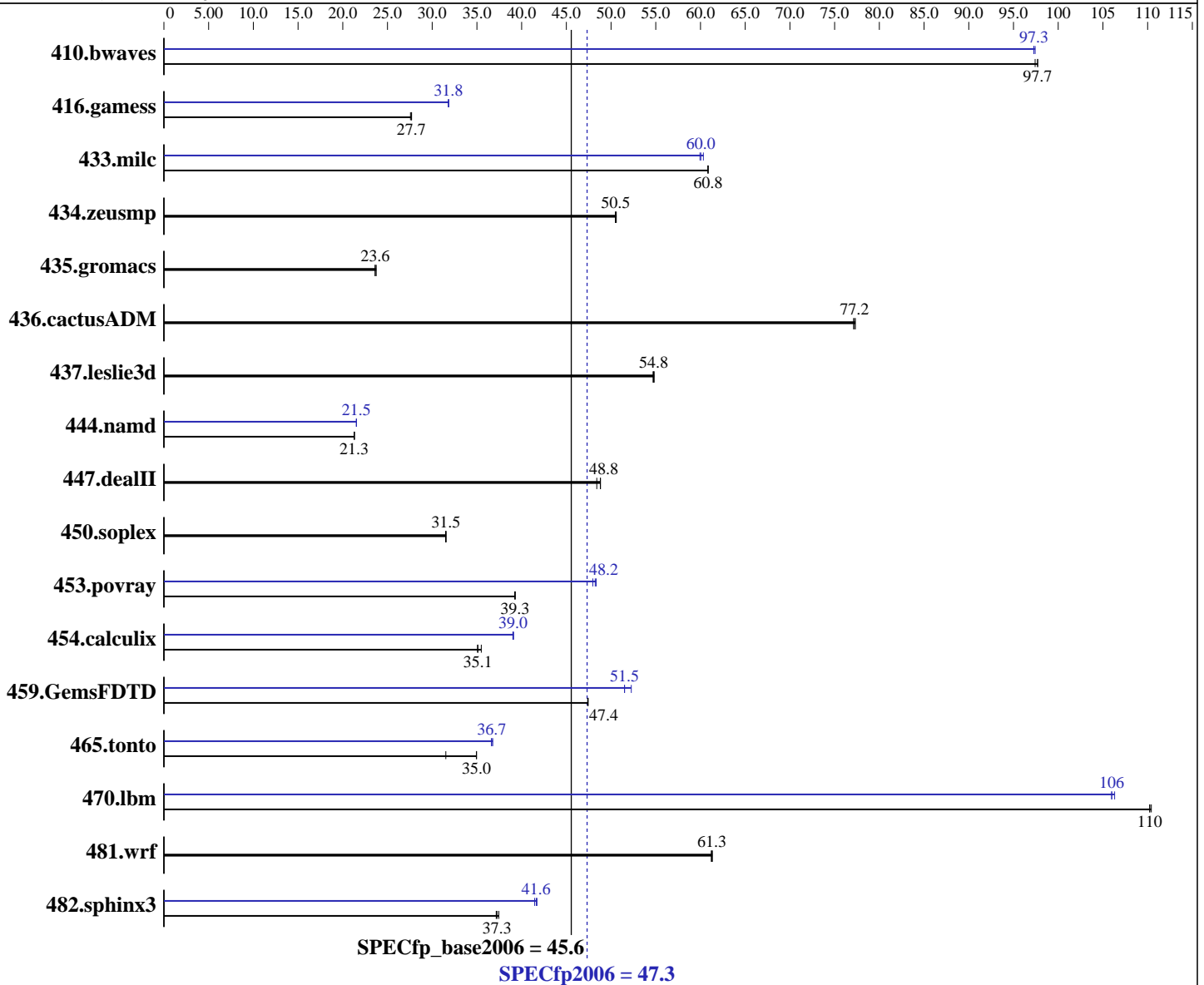$SPECfp\_base2006 =$ 45.6

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: May-2011

Hardware Availability: Mar-2011

Software Availability: Jan-2011

Benchmark	Peak	Base
410.bwaves	97.3	97.7
416.gamess	31.8	27.7
433.milc	60.0	60.8
434.zeusmp		50.5
435.gromacs		23.6
436.cactusADM		77.2
437.leslie3d		54.8
444.namd	21.5	21.3
447.dealII		48.8
450.soplex		31.5
453.povray	48.2	39.3
454.calculix	39.0	35.1
459.GemsFDTD	51.5	47.4
465.tonto	36.7	35.0
470.lbm	106	110
481.wrf		61.3
482.sphinx3	41.6	37.3

SPECfp_base2006 = 45.6

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Hardware

CPU Name: Intel Core i3-2100

CPU Characteristics:

CPU MHz: 3100

FPU: Integrated

CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip

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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) SP1, kernel 2.6.32.12-0.6-default

Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64
Version 12.0.2.137 Build 20110112

Auto Parallel: Yes

File System: ext3

System State: Run Level 3 (multi-user)

Base Pointers: 64-bit

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L3 Cache:	3 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	None
Memory:	8 GB (2 x 4 GB 2Rx8 PC3-10600U-9)		
Disk Subsystem:	1 x SATA II, 400 GB, 7200 rpm		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	139	97.7	**139**	**97.7**	139	97.4	139	97.4	140	97.3	**140**	**97.3**
416.gamess	707	27.7	**707**	**27.7**	710	27.6	**615**	**31.8**	615	31.9	616	31.8
433.milc	151	60.9	**151**	**60.8**	151	60.8	**153**	**60.0**	153	59.9	152	60.3
434.zeusmp	**180**	**50.5**	180	50.5	180	50.6	**180**	**50.5**	180	50.5	180	50.6
435.gromacs	**302**	**23.6**	302	23.6	301	23.7	**302**	**23.6**	302	23.6	301	23.7
436.cactusADM	155	77.3	155	77.1	**155**	**77.2**	155	77.3	155	77.1	**155**	**77.2**
437.leslie3d	**172**	**54.8**	172	54.7	171	54.8	**172**	**54.8**	172	54.7	171	54.8
444.namd	376	21.3	377	21.3	**377**	**21.3**	373	21.5	**373**	**21.5**	373	21.5
447.dealII	234	48.8	236	48.4	**234**	**48.8**	234	48.8	236	48.4	**234**	**48.8**
450.soplex	264	31.6	265	31.5	**264**	**31.5**	264	31.6	265	31.5	**264**	**31.5**
453.povray	136	39.2	135	39.3	**136**	**39.3**	110	48.3	111	48.0	**110**	**48.2**
454.calculix	**235**	**35.1**	232	35.5	235	35.1	**211**	**39.0**	211	39.0	211	39.1
459.GemsFDTD	**224**	**47.4**	224	47.4	224	47.4	203	52.3	**206**	**51.5**	206	51.5
465.tonto	312	31.5	**282**	**35.0**	282	35.0	268	36.8	**268**	**36.7**	269	36.6
470.lbm	124	110	125	110	**125**	**110**	129	106	130	106	**130**	**106**
481.wrf	182	61.3	**182**	**61.3**	183	61.2	182	61.3	**182**	**61.3**	183	61.2
482.sphinx3	520	37.5	**523**	**37.3**	525	37.2	467	41.7	470	41.5	**468**	**41.6**

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 stack size to unlimited prior to run
Hugepages were enabled by:
mount -t hugetlbfs nodev /mnt/hugepages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS settings:
Hyper-Threading Technology = Disabled
```

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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:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

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

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
             -parallel
```

C++ benchmarks:

```
   444.namd: -xAVX(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
```

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(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: -xAVX(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: -xAVX(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: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Fujitsu_CELSIUS_Platform.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Fujitsu_CELSIUS_Platform.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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