SPEC® CFP2006 Result

Fujitsu

Fujitsu CELSIUS M720 (Intel Xeon E5-1620)

$SPECfp®2006 =$ 76.4
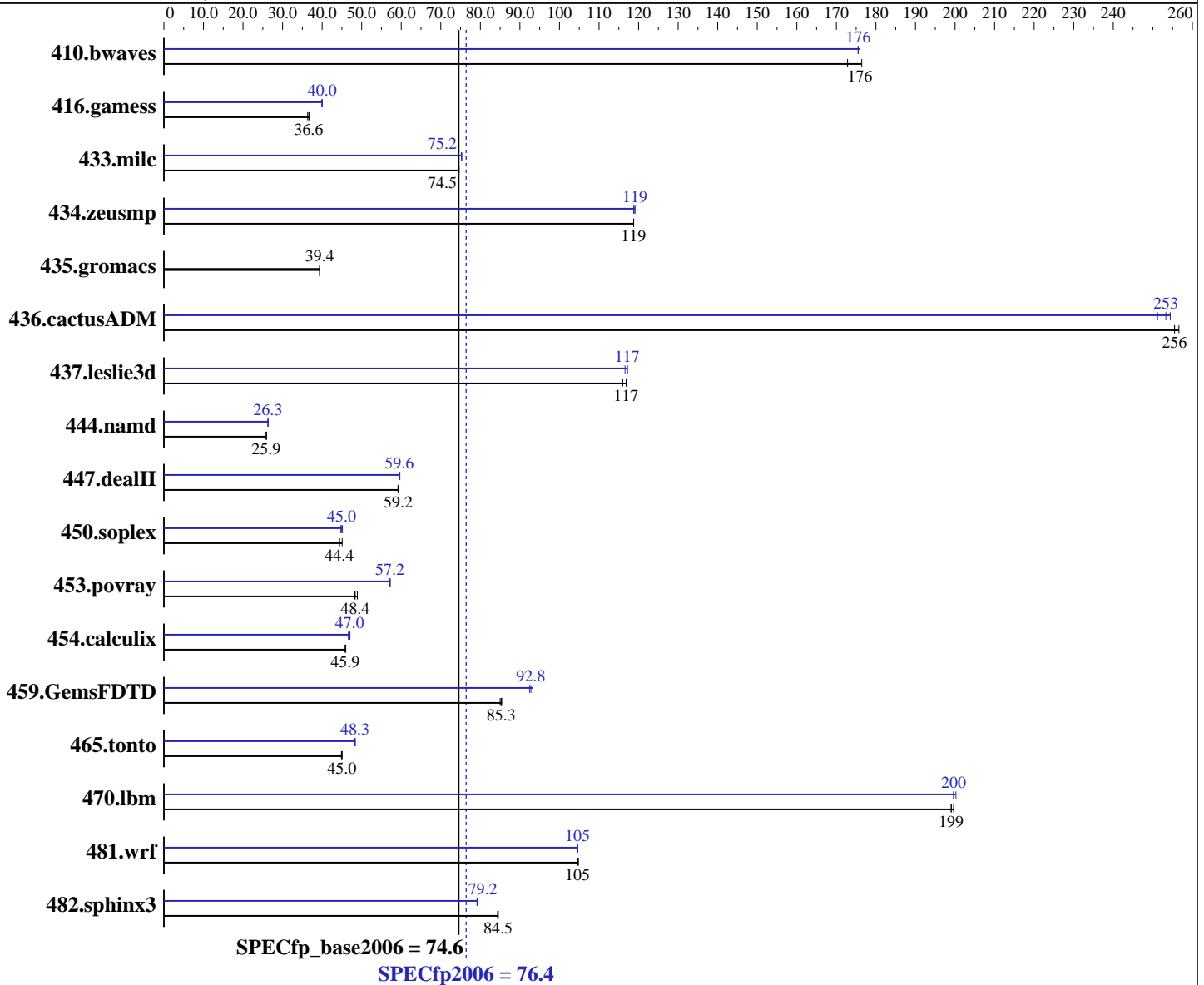
$SPECfp\_base2006 =$ 74.6

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Feb-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011

Benchmark	Peak	Base
410.bwaves	176	176
416.gamess	40.0	36.6
433.milc	75.2	74.5
434.zeusmp	119	119
435.gromacs		39.4
436.cactusADM	253	256
437.leslie3d	117	117
444.namd	26.3	25.9
447.dealII	59.6	59.2
450.soplex	45.0	44.4
453.povray	57.2	48.4
454.calculix	47.0	45.9
459.GemsFDTD	92.8	85.3
465.tonto	48.3	45.0
470.lbm	200	199
481.wrf	105	105
482.sphinx3	79.2	84.5

SPECfp_base2006 = 74.6
SPECfp2006 = 76.4

Hardware

CPU Name: Intel Xeon E5-1620
CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz: 3600
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 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: Red Hat Enterprise Linux Server release 6.1, 2.6.32-131.0.15.el6.x86_64
Compiler: C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.2.273 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ReiserFS
System State: Run level 3 (multi - user)

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L3 Cache:	10 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	32 GB (8 x 4 GB 2Rx8 PC3-12800E-11, ECC)	Other Software:	None
Disk Subsystem:	1 x SATA II, 500 GB, 7200 rpm		
Other Hardware:	None		

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	78.6	173	77.0	176	**77.2**	**176**	77.4	176	77.2	176	**77.4**	**176**
416.gamess	533	36.8	539	36.3	**535**	**36.6**	**489**	**40.0**	489	40.0	491	39.9
433.milc	123	74.6	**123**	**74.5**	123	74.4	122	75.2	122	75.3	**122**	**75.2**
434.zeusmp	76.6	119	**76.6**	**119**	76.6	119	76.6	119	76.4	119	**76.4**	**119**
435.gromacs	181	39.4	181	39.4	**181**	**39.4**	181	39.4	181	39.4	**181**	**39.4**
436.cactusADM	46.6	257	**46.8**	**256**	46.8	255	47.0	254	47.6	251	**47.2**	**253**
437.leslie3d	80.4	117	**80.4**	**117**	81.0	116	**80.2**	**117**	80.2	117	80.6	117
444.namd	310	25.9	310	25.9	**310**	**25.9**	305	26.3	**305**	**26.3**	305	26.3
447.dealII	193	59.2	193	59.2	**193**	**59.2**	**192**	**59.6**	192	59.7	192	59.6
450.soplex	188	44.3	185	45.1	**188**	**44.4**	**186**	**45.0**	186	44.7	185	45.1
453.povray	109	48.9	110	48.3	**110**	**48.4**	93.1	57.1	**93.0**	**57.2**	93.0	57.2
454.calculix	**180**	**45.9**	181	45.7	179	46.0	177	46.6	**175**	**47.0**	175	47.0
459.GemsFDTD	125	85.0	124	85.4	**124**	**85.3**	115	92.5	**114**	**92.8**	114	93.3
465.tonto	219	44.9	219	45.0	**219**	**45.0**	203	48.4	**204**	**48.3**	204	48.3
470.lbm	68.8	200	69.0	199	**69.0**	**199**	**68.8**	**200**	68.8	200	68.6	200
481.wrf	**107**	**105**	107	105	107	105	107	105	**107**	**105**	107	105
482.sphinx3	**231**	**84.5**	231	84.4	231	84.5	246	79.3	**246**	**79.2**	246	79.2

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

Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

    BIOS settings:
    Frequency Floor Override = Enabled
    Hyper-Threading Technology = Disabled

General Notes

    Environment variables set by runspec before the start of the run:
    KMP_AFFINITY = "granularity=fine,scatter"
    LD_LIBRARY_PATH = "/work/cpu2006/libs/32:/work/cpu2006/libs/64"

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General Notes (Continued)

```
OMP_NUM_THREADS = "4"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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

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

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Base Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -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) -auto-ilp32
          -ansi-alias

470.lbm: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
         -ansi-alias

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: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

450.soplex: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel

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-

434.zeusmp: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

437.leslie3d: Same as 434.zeusmp

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

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

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

481.wrf: Same as 436.cactusADM

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.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-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.xml

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

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