# SPEC® CFP2006 Result

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## Fujitsu

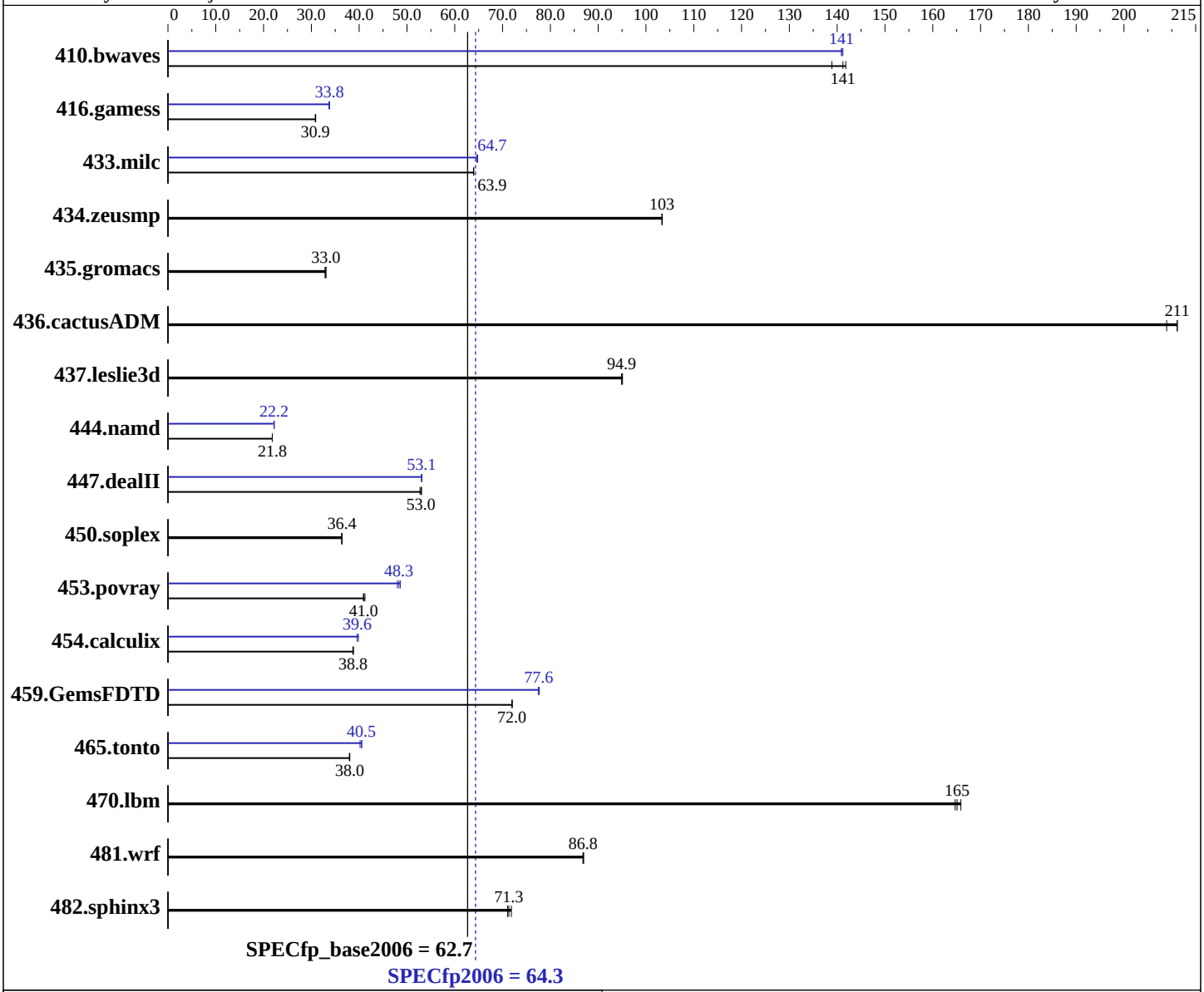
PRIMERGY TX150 S8, Intel Xeon E5-1410, 2.80 GHz

SPECfp®2006 = 64.3

SPECfp_base2006 = 62.7

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

**Test date:** Jul-2012
**Hardware Availability:** Jul-2012
**Software Availability:** Feb-2012




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-1410 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.20 GHz |
| CPU MHz: | 2800 |
| 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 |

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## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.2 (Santiago)<br>2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;<br>Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |

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L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (6 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL7)
Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
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 | 97.8 | 139 | 95.8 | 142 | **96.2** | **141** | 96.4 | 141 | **96.4** | **141** | 96.2 | 141 |
| 416.gamess | 635 | 30.8 | **635** | **30.9** | 633 | 30.9 | 581 | 33.7 | 579 | 33.8 | **580** | **33.8** |
| 433.milc | 144 | 63.9 | **144** | **63.9** | 143 | 64.0 | 142 | 64.6 | 142 | 64.8 | **142** | **64.7** |
| 434.zeusmp | 88.0 | 103 | 88.0 | 103 | **88.0** | **103** | 88.0 | 103 | 88.0 | 103 | **88.0** | **103** |
| 435.gromacs | 216 | 33.0 | **216** | **33.0** | 217 | 32.9 | 216 | 33.0 | **216** | **33.0** | 217 | 32.9 |
| 436.cactusADM | 56.6 | 211 | **56.6** | **211** | 57.2 | 209 | 56.6 | 211 | **56.6** | **211** | 57.2 | 209 |
| 437.leslie3d | **99.0** | **94.9** | 99.0 | 94.9 | 98.8 | 95.1 | **99.0** | **94.9** | 99.0 | 94.9 | 98.8 | 95.1 |
| 444.namd | **367** | **21.8** | 367 | 21.8 | 367 | 21.8 | 361 | 22.2 | **361** | **22.2** | 361 | 22.2 |
| 447.dealII | 217 | 52.7 | **216** | **53.0** | 216 | 53.1 | **216** | **53.1** | 216 | 53.0 | 215 | 53.1 |
| 450.soplex | 230 | 36.3 | **229** | **36.4** | 229 | 36.4 | 230 | 36.3 | **229** | **36.4** | 229 | 36.4 |
| 453.povray | 129 | 41.2 | 130 | 40.9 | **130** | **41.0** | 109 | 48.6 | 111 | 48.0 | **110** | **48.3** |
| 454.calculix | **213** | **38.8** | 213 | 38.7 | 213 | 38.8 | **208** | **39.6** | 208 | 39.6 | 207 | 39.9 |
| 459.GemsFDTD | **147** | **72.0** | 147 | 72.0 | 147 | 72.0 | **137** | **77.6** | 137 | 77.7 | 137 | 77.5 |
| 465.tonto | 259 | 38.0 | 259 | 37.9 | **259** | **38.0** | 243 | 40.6 | 245 | 40.2 | **243** | **40.5** |
| 470.lbm | 82.8 | 166 | **83.2** | **165** | 83.4 | 165 | 82.8 | 166 | **83.2** | **165** | 83.4 | 165 |
| 481.wrf | 128 | 87.0 | 129 | 86.8 | **129** | **86.8** | 128 | 87.0 | 129 | 86.8 | **129** | **86.8** |
| 482.sphinx3 | **273** | **71.3** | 274 | 71.1 | 271 | 71.8 | **273** | **71.3** | 274 | 71.1 | 271 | 71.8 |

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

## Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "4"

 Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 For information about Fujitsu please visit: http://www.fujitsu.com
```

## 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
```

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: basepeak = yes

482.sphinx3: basepeak = yes

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## Peak Optimization Flags (Continued)

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

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

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

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: -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: basepeak = yes

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

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html

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.20120320.xml`


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

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