# SPEC® CFP2006 Result

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## Fujitsu

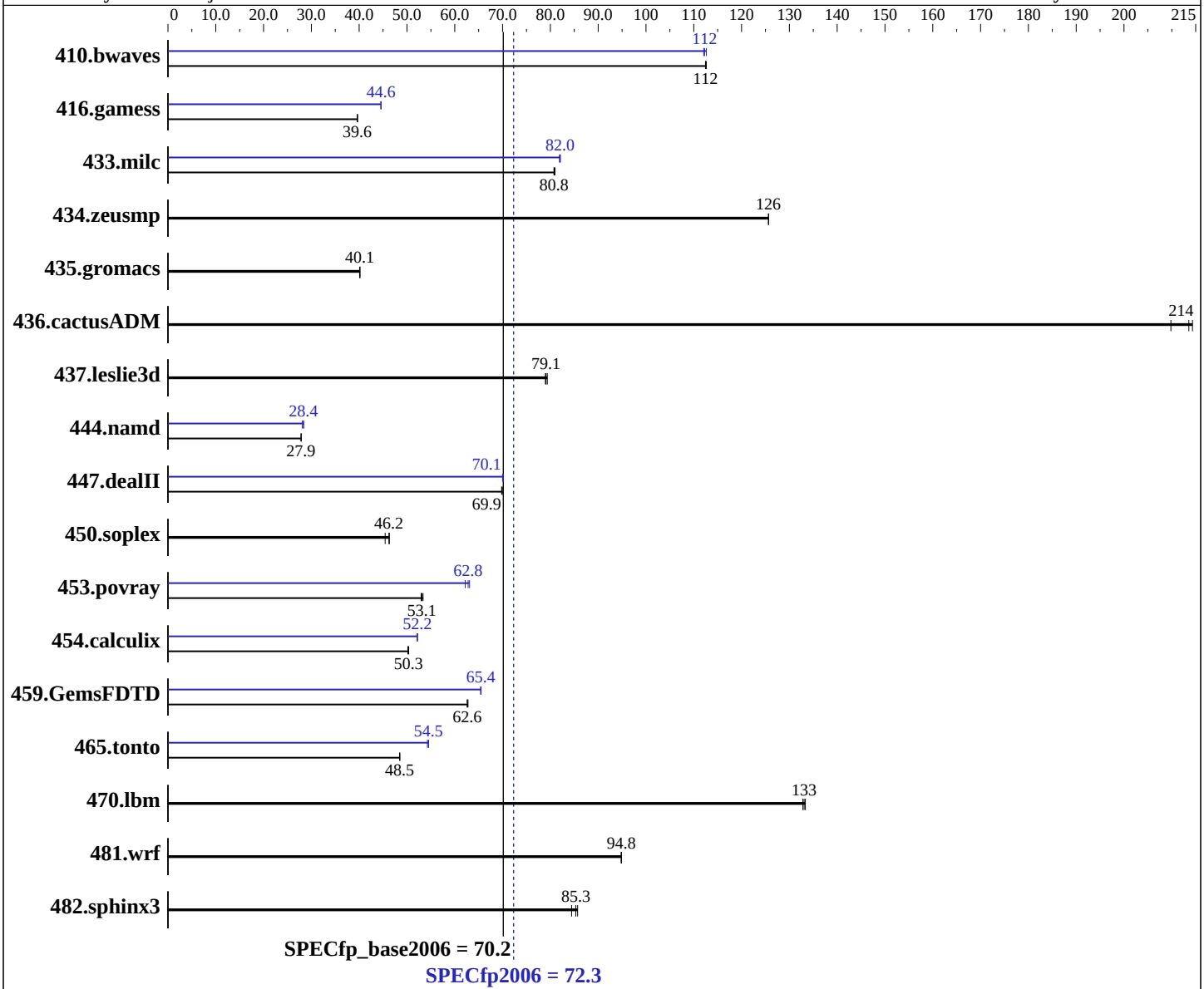
PRIMERGY RX100 S7p, Intel Xeon E3-1280 v2, 3.60 GHz

SPECfp®2006 = 72.3

SPECfp_base2006 = 70.2

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

**Test date:** Apr-2012
**Hardware Availability:** May-2012
**Software Availability:** Feb-2012




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E3-1280 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 4.0 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 |

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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: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC) |
| 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 | 121 | 112 | 121 | 113 | **121** | **112** | 121 | 112 | 121 | 113 | **121** | **112** |
| 416.gamess | 494 | 39.6 | 494 | 39.7 | **494** | **39.6** | 439 | 44.6 | 439 | 44.6 | **439** | **44.6** |
| 433.milc | **114** | **80.8** | 113 | 81.0 | 114 | 80.8 | 112 | 82.1 | **112** | **82.0** | 112 | 81.9 |
| 434.zeusmp | **72.4** | **126** | 72.4 | 126 | 72.4 | 126 | **72.4** | **126** | 72.4 | 126 | 72.4 | 126 |
| 435.gromacs | 178 | 40.1 | 178 | 40.2 | **178** | **40.1** | 178 | 40.1 | 178 | 40.2 | **178** | **40.1** |
| 436.cactusADM | 55.8 | 214 | 57.0 | 210 | **56.0** | **214** | 55.8 | 214 | 57.0 | 210 | **56.0** | **214** |
| 437.leslie3d | 118 | 79.4 | **119** | **79.1** | 119 | 79.0 | 118 | 79.4 | **119** | **79.1** | 119 | 79.0 |
| 444.namd | 288 | 27.9 | 288 | 27.9 | **288** | **27.9** | 283 | 28.4 | 285 | 28.1 | **283** | **28.4** |
| 447.dealII | 164 | 69.9 | **164** | **69.9** | 164 | 69.8 | 163 | 70.2 | **163** | **70.1** | 163 | 70.0 |
| 450.soplex | **180** | **46.2** | 180 | 46.3 | 184 | 45.4 | **180** | **46.2** | 180 | 46.3 | 184 | 45.4 |
| 453.povray | 99.7 | 53.4 | 100 | 53.0 | **100** | **53.1** | **84.7** | **62.8** | 84.3 | 63.1 | 85.5 | 62.2 |
| 454.calculix | **164** | **50.3** | 164 | 50.4 | 164 | 50.2 | 158 | 52.2 | 158 | 52.2 | **158** | **52.2** |
| 459.GemsFDTD | **169** | **62.6** | 169 | 62.6 | 169 | 62.8 | 162 | 65.5 | **162** | **65.4** | 162 | 65.4 |
| 465.tonto | 203 | 48.5 | 203 | 48.4 | **203** | **48.5** | 181 | 54.3 | **181** | **54.5** | 180 | 54.5 |
| 470.lbm | 103 | 133 | 103 | 133 | **103** | **133** | 103 | 133 | 103 | 133 | **103** | **133** |
| 481.wrf | 118 | 94.8 | 118 | 94.8 | **118** | **94.8** | 118 | 94.8 | 118 | 94.8 | **118** | **94.8** |
| 482.sphinx3 | 227 | 85.7 | **228** | **85.3** | 231 | 84.4 | 227 | 85.7 | **228** | **85.3** | 231 | 84.4 |

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 configuration:
Intel HT Technology = Disable
```

## 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"
```

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## General Notes (Continued)

```
Binaries compiled on a system with 1x E3-1270V2 CPU + 32 GB
memory using RHEL6.2
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
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
```

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## Base Optimization Flags (Continued)

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`

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 -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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