



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = **52.1**

PRIMERGY TX200 S7, Intel Xeon E5-2407, 2.20 GHz

SPECfp_base2006 = **50.3**

CPU2006 license: 19

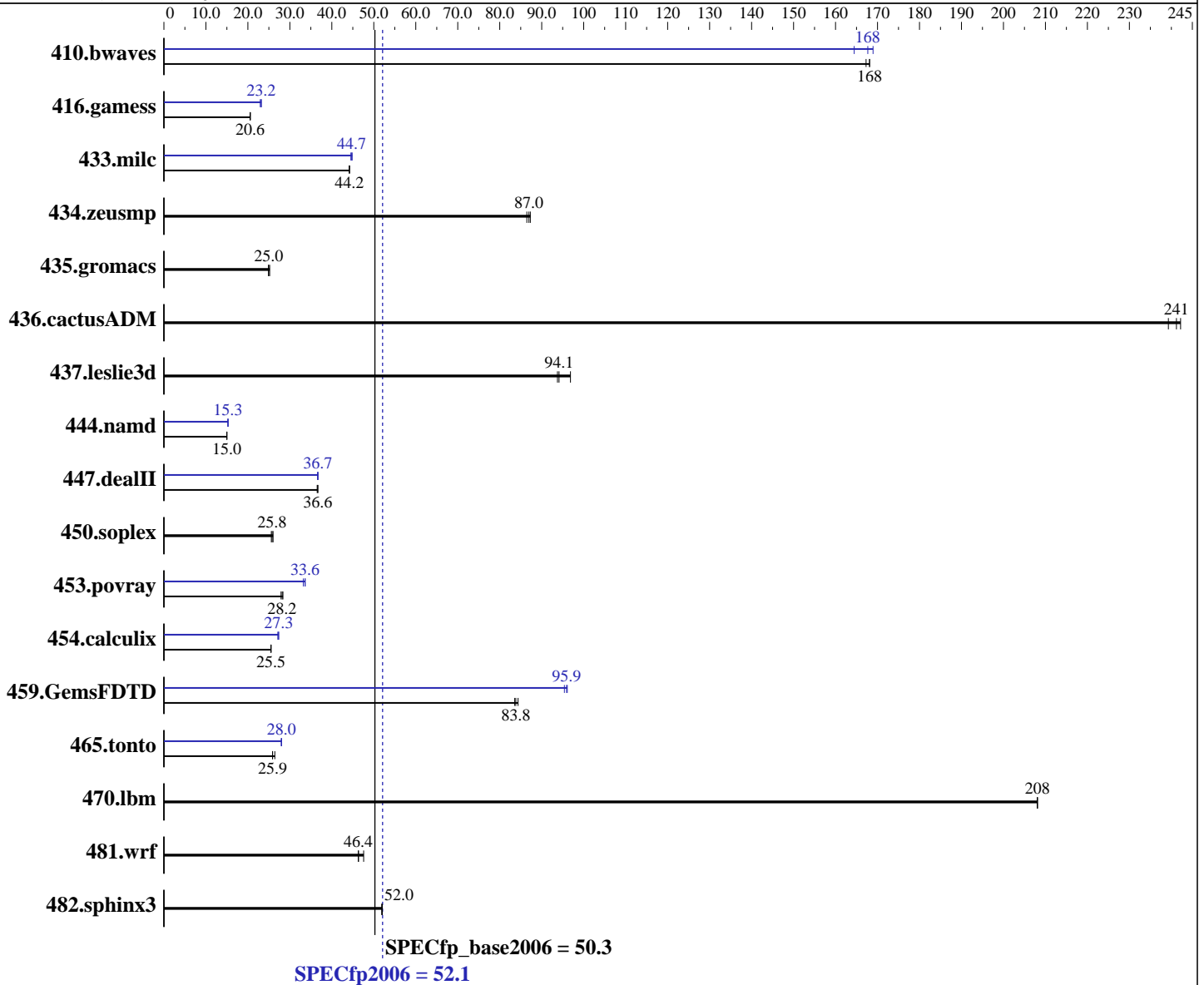
Test date: Jun-2012

Test sponsor: Fujitsu

Hardware Availability: Jul-2012

Tested by: Fujitsu

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2407
 CPU Characteristics:
 CPU MHz: 2200
 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: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;
 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: 96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 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 | 80.8 | 168 | 80.8 | 168 | 81.2 | 167 | 80.4 | 169 | 81.0 | 168 | 82.6 | 164 |
| 416.gamess | 952 | 20.6 | 954 | 20.5 | 952 | 20.6 | 844 | 23.2 | 853 | 22.9 | 844 | 23.2 |
| 433.milc | 208 | 44.2 | 208 | 44.2 | 208 | 44.2 | 205 | 44.7 | 205 | 44.8 | 206 | 44.5 |
| 434.zeusmp | 105 | 86.5 | 104 | 87.3 | 105 | 87.0 | 105 | 86.5 | 104 | 87.3 | 105 | 87.0 |
| 435.gromacs | 287 | 24.9 | 286 | 25.0 | 283 | 25.2 | 287 | 24.9 | 286 | 25.0 | 283 | 25.2 |
| 436.cactusADM | 49.5 | 241 | 49.3 | 242 | 49.9 | 239 | 49.5 | 241 | 49.3 | 242 | 49.9 | 239 |
| 437.leslie3d | 99.9 | 94.1 | 100 | 93.8 | 97.1 | 96.9 | 99.9 | 94.1 | 100 | 93.8 | 97.1 | 96.9 |
| 444.namd | 535 | 15.0 | 535 | 15.0 | 535 | 15.0 | 526 | 15.3 | 525 | 15.3 | 526 | 15.3 |
| 447.dealII | 312 | 36.7 | 312 | 36.6 | 313 | 36.5 | 313 | 36.6 | 312 | 36.7 | 312 | 36.7 |
| 450.soplex | 326 | 25.6 | 321 | 26.0 | 323 | 25.8 | 326 | 25.6 | 321 | 26.0 | 323 | 25.8 |
| 453.povray | 191 | 27.9 | 188 | 28.4 | 189 | 28.2 | 160 | 33.2 | 158 | 33.6 | 158 | 33.7 |
| 454.calculix | 323 | 25.6 | 324 | 25.5 | 324 | 25.5 | 302 | 27.3 | 304 | 27.1 | 302 | 27.3 |
| 459.GemsFDTD | 127 | 83.8 | 127 | 83.6 | 126 | 84.4 | 110 | 96.1 | 111 | 95.4 | 111 | 95.9 |
| 465.tonto | 372 | 26.4 | 380 | 25.9 | 380 | 25.9 | 352 | 28.0 | 351 | 28.0 | 351 | 28.0 |
| 470.lbm | 66.0 | 208 | 66.0 | 208 | 66.0 | 208 | 66.0 | 208 | 66.0 | 208 | 66.0 | 208 |
| 481.wrf | 235 | 47.6 | 241 | 46.4 | 241 | 46.3 | 235 | 47.6 | 241 | 46.4 | 241 | 46.3 |
| 482.sphinx3 | 376 | 51.9 | 375 | 52.0 | 375 | 52.0 | 376 | 51.9 | 375 | 52.0 | 375 | 52.0 |

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:
Frequency Floor Override = Enable



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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 = "8"
```

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.deallI: -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
```



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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.dealIII: -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>



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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.20120320.xml>

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

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