# SPEC® CFP2006 Result

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## Fujitsu

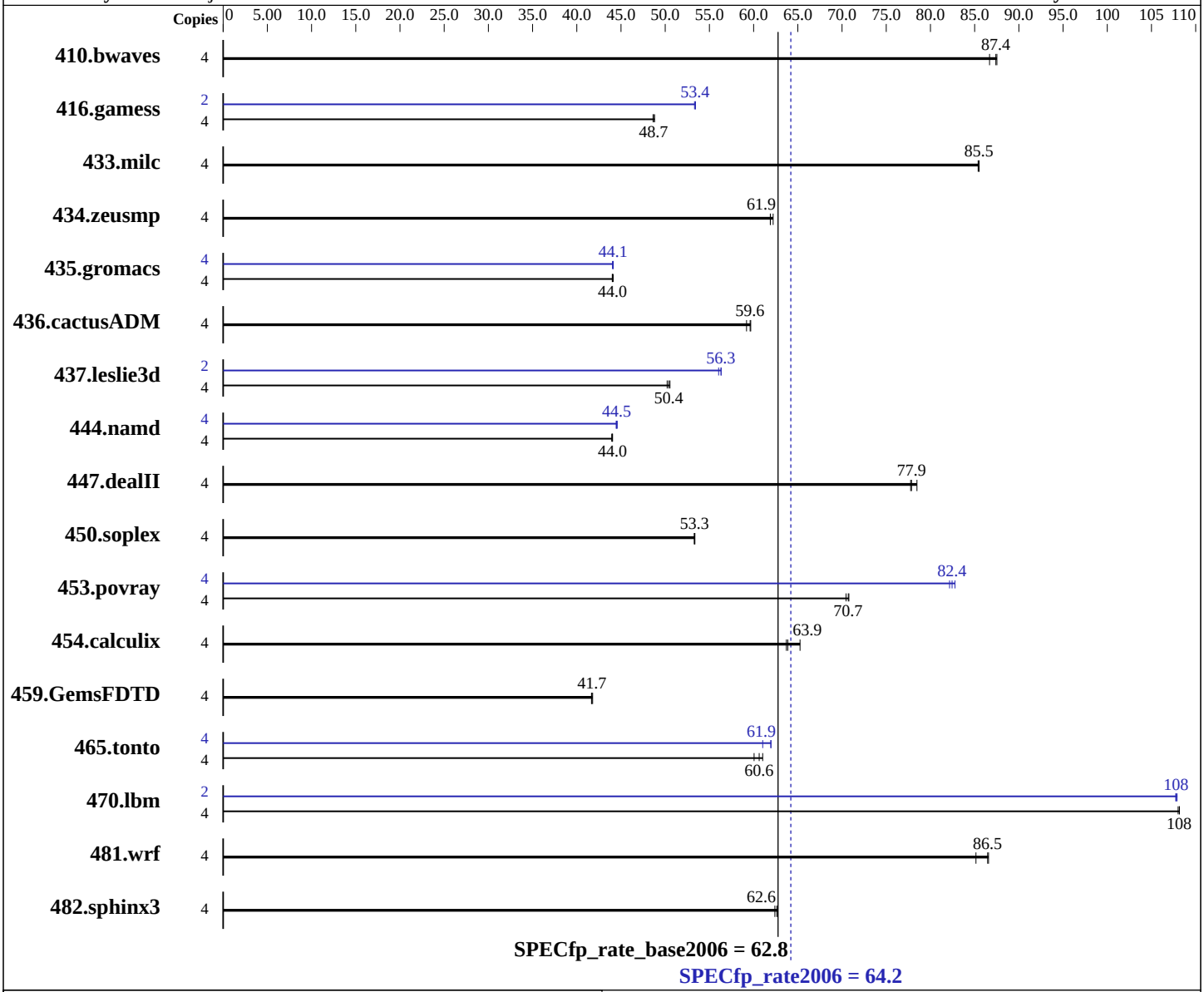
PRIMERGY RX100 S7, Intel Xeon E3-1220L, 2.20 GHz

**SPECfp®_rate2006 = 64.2**

**SPECfp_rate_base2006 = 62.8**

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

**Test date:** May-2011
**Hardware Availability:** Jun-2011
**Software Availability:** Jan-2011




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E3-1220L |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.40 GHz |
| CPU MHz: | 2200 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip, 2 threads/core |
| 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: | SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default |
| Compiler: | Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116 |
| Auto Parallel: | No |
| 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
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x SATA, 300 GB, 7200 RPM
Other Hardware: --

Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 627 | 86.7 | **622** | **87.4** | 621 | 87.5 | 4 | 627 | 86.7 | **622** | **87.4** | 621 | 87.5 |
| 416.gamess | 4 | 1605 | 48.8 | **1609** | **48.7** | 1611 | 48.6 | 2 | **733** | **53.4** | 733 | 53.4 | 734 | 53.3 |
| 433.milc | 4 | 430 | 85.4 | **430** | **85.5** | 429 | 85.5 | 4 | 430 | 85.4 | **430** | **85.5** | 429 | 85.5 |
| 434.zeusmp | 4 | 588 | 61.9 | **588** | **61.9** | 585 | 62.2 | 4 | 588 | 61.9 | **588** | **61.9** | 585 | 62.2 |
| 435.gromacs | 4 | 647 | 44.1 | 649 | 44.0 | **649** | **44.0** | 4 | 647 | 44.1 | 649 | 44.0 | **648** | **44.1** |
| 436.cactusADM | 4 | 801 | 59.7 | **802** | **59.6** | 807 | 59.2 | 4 | 801 | 59.7 | **802** | **59.6** | 807 | 59.2 |
| 437.leslie3d | 4 | 744 | 50.5 | **746** | **50.4** | 749 | 50.2 | 2 | 334 | 56.3 | **334** | **56.3** | 335 | 56.0 |
| 444.namd | 4 | **729** | **44.0** | 730 | 43.9 | 728 | 44.0 | 4 | **721** | **44.5** | 720 | 44.6 | 722 | 44.5 |
| 447.dealII | 4 | 588 | 77.8 | 583 | 78.5 | **588** | **77.9** | 4 | 588 | 77.8 | 583 | 78.5 | **588** | **77.9** |
| 450.soplex | 4 | 625 | 53.4 | 626 | 53.3 | **626** | **53.3** | 4 | 625 | 53.4 | 626 | 53.3 | **626** | **53.3** |
| 453.povray | 4 | 302 | 70.5 | 301 | 70.8 | **301** | **70.7** | 4 | **258** | **82.4** | 257 | 82.8 | 259 | 82.2 |
| 454.calculix | 4 | 506 | 65.2 | 518 | 63.7 | **517** | **63.9** | 4 | 506 | 65.2 | 518 | 63.7 | **517** | **63.9** |
| 459.GemsFDTD | 4 | **1018** | **41.7** | 1016 | 41.8 | 1019 | 41.7 | 4 | **1018** | **41.7** | 1016 | 41.8 | 1019 | 41.7 |
| 465.tonto | 4 | 645 | 61.0 | 655 | 60.1 | **649** | **60.6** | 4 | **635** | **61.9** | 635 | 62.0 | 645 | 61.0 |
| 470.lbm | 4 | 509 | 108 | **508** | **108** | 508 | 108 | 2 | 255 | 108 | **255** | **108** | 255 | 108 |
| 481.wrf | 4 | 516 | 86.6 | **517** | **86.5** | 525 | 85.1 | 4 | 516 | 86.6 | **517** | **86.5** | 525 | 85.1 |
| 482.sphinx3 | 4 | 1243 | 62.7 | **1245** | **62.6** | 1249 | 62.4 | 4 | 1243 | 62.7 | **1245** | **62.6** | 1249 | 62.4 |

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

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
 Large pages were not enabled for this run
```

## General Notes

```
For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on RHEL5.5
```

## 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 -ansi-alias

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

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -static -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: basepeak = yes

470.lbm: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -auto-ilp32

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

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: basepeak = yes

Continued on next page

## Peak Optimization Flags (Continued)

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: -xAVX -ipo -O3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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.20110316.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20110705.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20110705.00.xml


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

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