



# 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

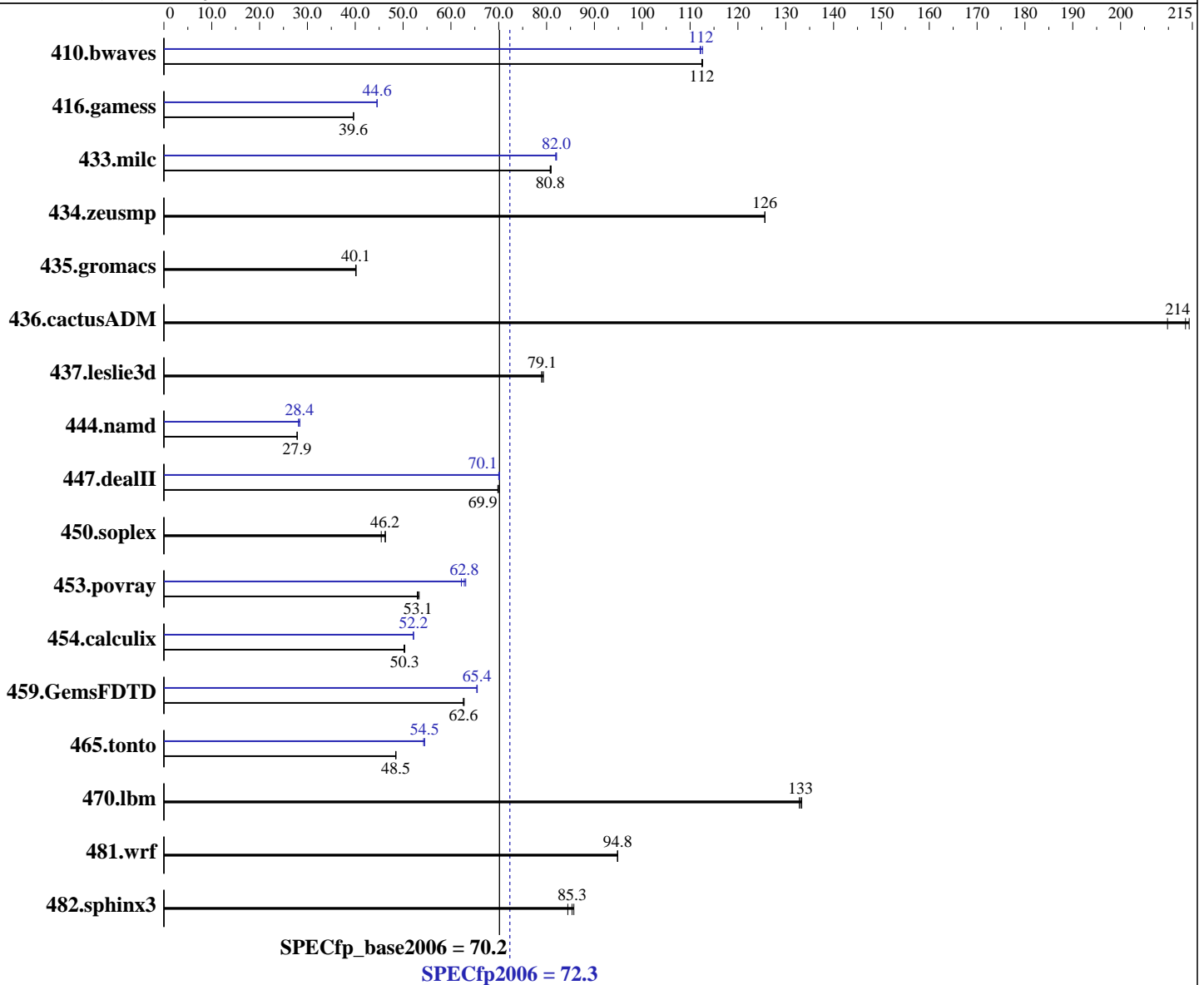
Test sponsor: Fujitsu

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)  
 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: 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         | <u>121</u>  | <u>112</u>  | 121         | 112         | 121        | 113         | <u>121</u>  | <u>112</u>  |
| 416.gamess    | 494         | 39.6        | 494        | 39.7        | <u>494</u>  | <u>39.6</u> | 439         | 44.6        | 439        | 44.6        | <u>439</u>  | <u>44.6</u> |
| 433.milc      | <u>114</u>  | <u>80.8</u> | 113        | 81.0        | 114         | 80.8        | 112         | 82.1        | <u>112</u> | <u>82.0</u> | 112         | 81.9        |
| 434.zeusmp    | <u>72.4</u> | <u>126</u>  | 72.4       | 126         | 72.4        | 126         | <u>72.4</u> | <u>126</u>  | 72.4       | 126         | 72.4        | 126         |
| 435.gromacs   | 178         | 40.1        | 178        | 40.2        | <u>178</u>  | <u>40.1</u> | 178         | 40.1        | 178        | 40.2        | <u>178</u>  | <u>40.1</u> |
| 436.cactusADM | 55.8        | 214         | 57.0       | 210         | <u>56.0</u> | <u>214</u>  | 55.8        | 214         | 57.0       | 210         | <u>56.0</u> | <u>214</u>  |
| 437.leslie3d  | 118         | 79.4        | <u>119</u> | <u>79.1</u> | 119         | 79.0        | 118         | 79.4        | <u>119</u> | <u>79.1</u> | 119         | 79.0        |
| 444.namd      | 288         | 27.9        | 288        | 27.9        | <u>288</u>  | <u>27.9</u> | 283         | 28.4        | 285        | 28.1        | <u>283</u>  | <u>28.4</u> |
| 447.dealII    | 164         | 69.9        | <u>164</u> | <u>69.9</u> | 164         | 69.8        | 163         | 70.2        | <u>163</u> | <u>70.1</u> | 163         | 70.0        |
| 450.soplex    | <u>180</u>  | <u>46.2</u> | 180        | 46.3        | 184         | 45.4        | <u>180</u>  | <u>46.2</u> | 180        | 46.3        | 184         | 45.4        |
| 453.povray    | 99.7        | 53.4        | 100        | 53.0        | <u>100</u>  | <u>53.1</u> | <u>84.7</u> | <u>62.8</u> | 84.3       | 63.1        | 85.5        | 62.2        |
| 454.calculix  | <u>164</u>  | <u>50.3</u> | 164        | 50.4        | 164         | 50.2        | 158         | 52.2        | 158        | 52.2        | <u>158</u>  | <u>52.2</u> |
| 459.GemsFDTD  | <u>169</u>  | <u>62.6</u> | 169        | 62.6        | 169         | 62.8        | 162         | 65.5        | <u>162</u> | <u>65.4</u> | 162         | 65.4        |
| 465.tonto     | 203         | 48.5        | 203        | 48.4        | <u>203</u>  | <u>48.5</u> | 181         | 54.3        | <u>181</u> | <u>54.5</u> | 180         | 54.5        |
| 470.lbm       | 103         | 133         | 103        | 133         | <u>103</u>  | <u>133</u>  | 103         | 133         | 103        | 133         | <u>103</u>  | <u>133</u>  |
| 481.wrf       | 118         | 94.8        | 118        | 94.8        | <u>118</u>  | <u>94.8</u> | 118         | 94.8        | 118        | 94.8        | <u>118</u>  | <u>94.8</u> |
| 482.sphinx3   | 227         | 85.7        | <u>228</u> | <u>85.3</u> | 231         | 84.4        | 227         | 85.7        | <u>228</u> | <u>85.3</u> | 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.deallI: -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>

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