



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

### SPECfp<sup>®</sup>\_rate2006 = 133

### PRIMERGY TX300 S6, Intel Xeon E5606, 2.13 GHz

### SPECfp\_rate\_base2006 = 127

CPU2006 license: 19

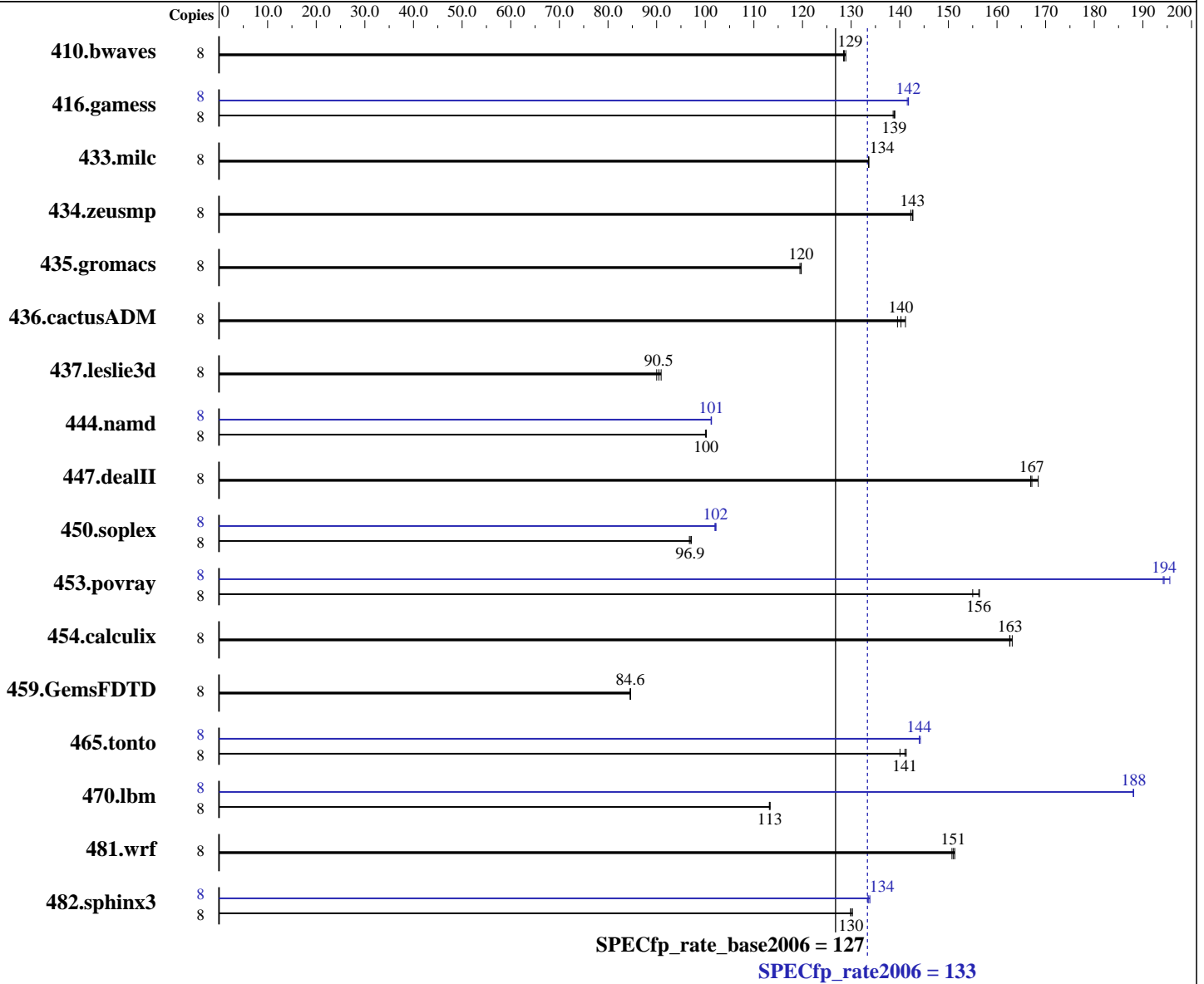
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2010

Hardware Availability: Feb-2011

Software Availability: Nov-2010



#### Hardware

CPU Name: Intel Xeon E5606  
 CPU Characteristics: 2133  
 CPU MHz: 2133  
 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: SUSE Linux Enterprise Server 11 (x86\_64) with 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 12.0.0.082 Build 20101006  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1067 MHz and CL7)  
 Disk Subsystem: 1 x SAS, 300 GB, 10000 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    | 8      | 847        | 128        | <b>845</b>  | <b>129</b>  | 843         | 129         | 8      | 847        | 128        | <b>845</b>  | <b>129</b>  | 843        | 129        |
| 416.gamess    | 8      | 1127       | 139        | 1130        | 139         | <b>1128</b> | <b>139</b>  | 8      | 1107       | 142        | <b>1105</b> | <b>142</b>  | 1105       | 142        |
| 433.milc      | 8      | 549        | 134        | <b>550</b>  | <b>134</b>  | 550         | 134         | 8      | 549        | 134        | <b>550</b>  | <b>134</b>  | 550        | 134        |
| 434.zeusmp    | 8      | 512        | 142        | 510         | 143         | <b>510</b>  | <b>143</b>  | 8      | 512        | 142        | 510         | 143         | <b>510</b> | <b>143</b> |
| 435.gromacs   | 8      | <b>477</b> | <b>120</b> | 477         | 120         | 478         | 119         | 8      | <b>477</b> | <b>120</b> | 477         | 120         | 478        | 119        |
| 436.cactusADM | 8      | <b>682</b> | <b>140</b> | 677         | 141         | 685         | 140         | 8      | <b>682</b> | <b>140</b> | 677         | 141         | 685        | 140        |
| 437.leslie3d  | 8      | 835        | 90.0       | <b>831</b>  | <b>90.5</b> | 827         | 90.9        | 8      | 835        | 90.0       | <b>831</b>  | <b>90.5</b> | 827        | 90.9       |
| 444.namd      | 8      | <b>640</b> | <b>100</b> | 641         | 100         | 640         | 100         | 8      | 634        | 101        | 634         | 101         | <b>634</b> | <b>101</b> |
| 447.dealII    | 8      | 543        | 168        | 548         | 167         | <b>547</b>  | <b>167</b>  | 8      | 543        | 168        | 548         | 167         | <b>547</b> | <b>167</b> |
| 450.soplex    | 8      | 687        | 97.1       | 690         | 96.7        | <b>688</b>  | <b>96.9</b> | 8      | 653        | 102        | <b>654</b>  | <b>102</b>  | 654        | 102        |
| 453.povray    | 8      | 275        | 155        | <b>272</b>  | <b>156</b>  | 272         | 156         | 8      | <b>219</b> | <b>194</b> | 218         | 196         | 219        | 194        |
| 454.calculix  | 8      | 406        | 163        | 405         | 163         | <b>406</b>  | <b>163</b>  | 8      | 406        | 163        | 405         | 163         | <b>406</b> | <b>163</b> |
| 459.GemsFDTD  | 8      | 1004       | 84.6       | <b>1003</b> | <b>84.6</b> | 1003        | 84.7        | 8      | 1004       | 84.6       | <b>1003</b> | <b>84.6</b> | 1003       | 84.7       |
| 465.tonto     | 8      | 562        | 140        | 557         | 141         | <b>558</b>  | <b>141</b>  | 8      | 547        | 144        | <b>547</b>  | <b>144</b>  | 546        | 144        |
| 470.lbm       | 8      | 971        | 113        | 970         | 113         | <b>971</b>  | <b>113</b>  | 8      | 585        | 188        | <b>584</b>  | <b>188</b>  | 584        | 188        |
| 481.wrf       | 8      | 593        | 151        | 591         | 151         | <b>592</b>  | <b>151</b>  | 8      | 593        | 151        | 591         | 151         | <b>592</b> | <b>151</b> |
| 482.sphinx3   | 8      | 1197       | 130        | 1201        | 130         | <b>1199</b> | <b>130</b>  | 8      | 1165       | 134        | <b>1167</b> | <b>134</b>  | 1168       | 133        |

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

## Platform Notes

BIOS configuration:  
 Data Reuse Optimization = Disable



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## General Notes

This result was measured on the PRIMERGY TX300 S6. The PRIMERGY TX300 S6 and the PRIMERGY TX300 S6 are electronically equivalent.

For information about Fujitsu please visit: <http://www.fujitsu.com>  
Binaries were compiled on SLES 10 SP1 with Binutils 2.18.50.0.7.20080502

## 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

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -ansi-alias

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -ansi-alias

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):  
icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## Peak 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  
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



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## Peak Optimization Flags

### C benchmarks:

433.milc: basepeak = yes

470.lbm: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

### C++ benchmarks:

444.namd: -xSSE4.2(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: -xSSE4.2(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

453.povray: -xSSE4.2(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: basepeak = yes

416.gamess: -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 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(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

### Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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## Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 17:00:54 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 21 February 2011.