



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]_rate2006 = 168

PRIMERGY TX200 S6, Intel Xeon E5620, 2.40 GHz

SPECfp_rate_base2006 = 161

CPU2006 license: 19

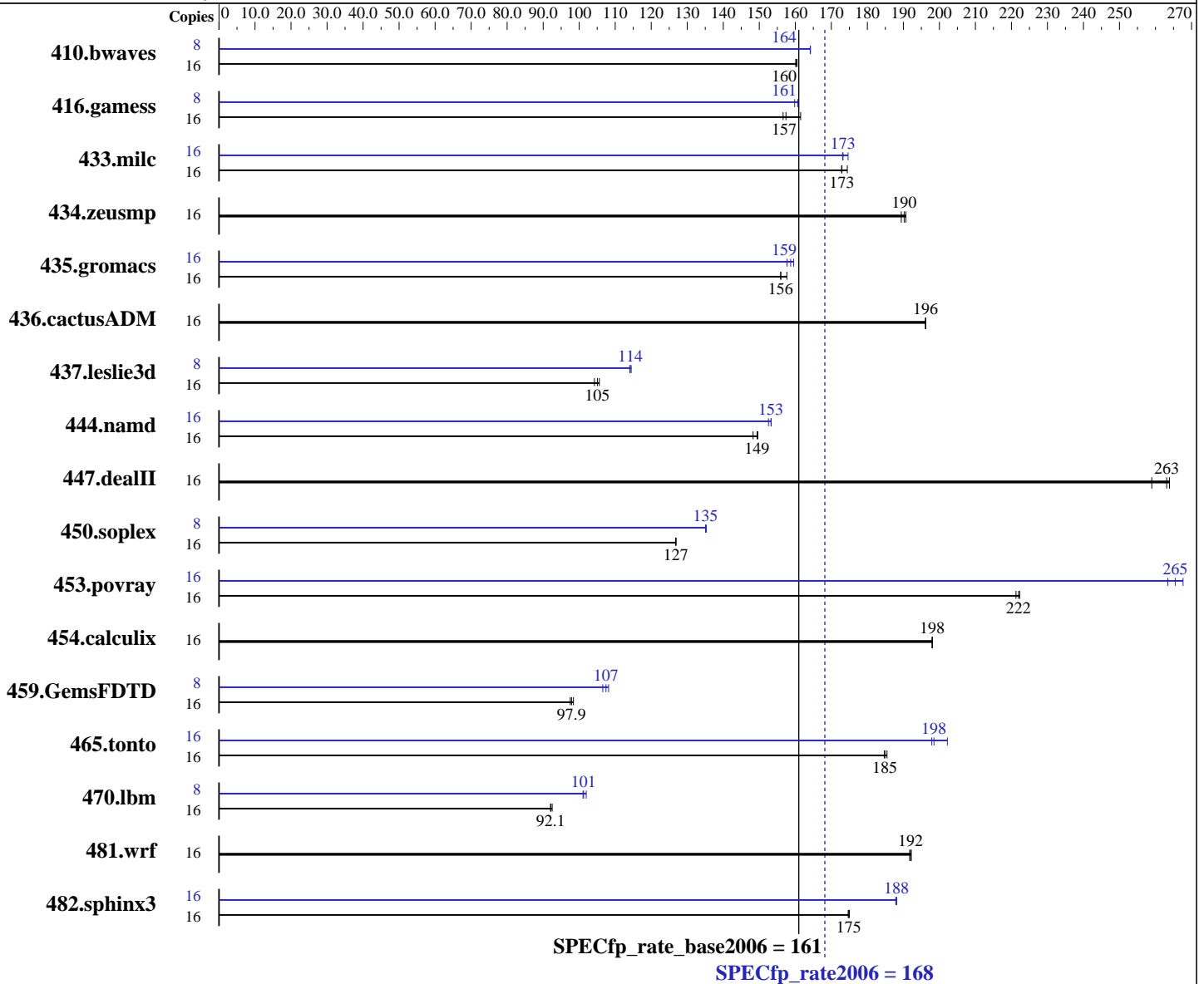
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2010

Hardware Availability: Jul-2010

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon E5620
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 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), Kernel 2.6.27.19-5-default
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem: 1 x SATA, 160 GB, 5400 RPM
Other Hardware: None

Base Pointers: 64-bit
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 | 16 | 1355 | 160 | <u>1356</u> | <u>160</u> | 1358 | 160 | 8 | 662 | 164 | 662 | 164 | <u>662</u> | <u>164</u> | | |
| 416.gamess | 16 | 2000 | 157 | <u>1990</u> | <u>157</u> | 1940 | 161 | 8 | <u>975</u> | <u>161</u> | 974 | 161 | 980 | 160 | | |
| 433.milc | 16 | <u>849</u> | <u>173</u> | 842 | 174 | 850 | 173 | 16 | 848 | 173 | 841 | 175 | <u>848</u> | <u>173</u> | | |
| 434.zeusmp | 16 | <u>765</u> | <u>190</u> | 764 | 191 | 769 | 189 | 16 | <u>765</u> | <u>190</u> | 764 | 191 | 769 | 189 | | |
| 435.gromacs | 16 | 733 | 156 | <u>733</u> | <u>156</u> | 725 | 158 | 16 | <u>720</u> | <u>159</u> | 724 | 158 | 716 | 160 | | |
| 436.cactusADM | 16 | <u>975</u> | <u>196</u> | 975 | 196 | 974 | 196 | 16 | <u>975</u> | <u>196</u> | 975 | 196 | 974 | 196 | | |
| 437.leslie3d | 16 | 1424 | 106 | <u>1432</u> | <u>105</u> | 1443 | 104 | 8 | 657 | 114 | <u>659</u> | <u>114</u> | 659 | 114 | | |
| 444.namd | 16 | 858 | 150 | 865 | 148 | <u>859</u> | <u>149</u> | 16 | 841 | 153 | 837 | 153 | <u>837</u> | <u>153</u> | | |
| 447.dealII | 16 | <u>696</u> | <u>263</u> | 707 | 259 | 694 | 264 | 16 | <u>696</u> | <u>263</u> | 707 | 259 | 694 | 264 | | |
| 450.soplex | 16 | <u>1052</u> | <u>127</u> | 1052 | 127 | 1052 | 127 | 8 | <u>494</u> | <u>135</u> | 494 | 135 | 493 | 135 | | |
| 453.povray | 16 | 383 | 222 | 385 | 221 | <u>383</u> | <u>222</u> | 16 | 318 | 268 | <u>321</u> | <u>265</u> | 323 | 263 | | |
| 454.calculix | 16 | <u>667</u> | <u>198</u> | 667 | 198 | 666 | 198 | 16 | <u>667</u> | <u>198</u> | 667 | 198 | 666 | 198 | | |
| 459.GemsFDTD | 16 | 1741 | 97.5 | 1725 | 98.4 | <u>1734</u> | <u>97.9</u> | 8 | <u>790</u> | <u>107</u> | 797 | 107 | 785 | 108 | | |
| 465.tonto | 16 | 849 | 185 | 852 | 185 | <u>852</u> | <u>185</u> | 16 | <u>793</u> | <u>198</u> | 796 | 198 | 779 | 202 | | |
| 470.lbm | 16 | 2388 | 92.1 | 2377 | 92.5 | <u>2387</u> | <u>92.1</u> | 8 | 1078 | 102 | <u>1086</u> | <u>101</u> | 1088 | 101 | | |
| 481.wrf | 16 | 930 | 192 | 932 | 192 | <u>931</u> | <u>192</u> | 16 | 930 | 192 | 932 | 192 | <u>931</u> | <u>192</u> | | |
| 482.sphinx3 | 16 | <u>1784</u> | <u>175</u> | 1782 | 175 | 1785 | 175 | 16 | <u>1658</u> | <u>188</u> | 1657 | 188 | 1660 | 188 | | |

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

The system automatically configures the memory to run at 1066 MHz.
BIOS configuration:
Data Reuse Optimization = Disable



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General Notes

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.lelie3d: -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:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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

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

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Base Optimization Flags (Continued)

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

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

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -opt-prefetch

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(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) -static(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) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-ic11.1-linux64-revE.20100316.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml>

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