



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]_rate2006 = 222

PRIMERGY RX300 S6, Intel Xeon X5677, 3.46 GHz

SPECfp_rate_base2006 = 214

CPU2006 license: 19

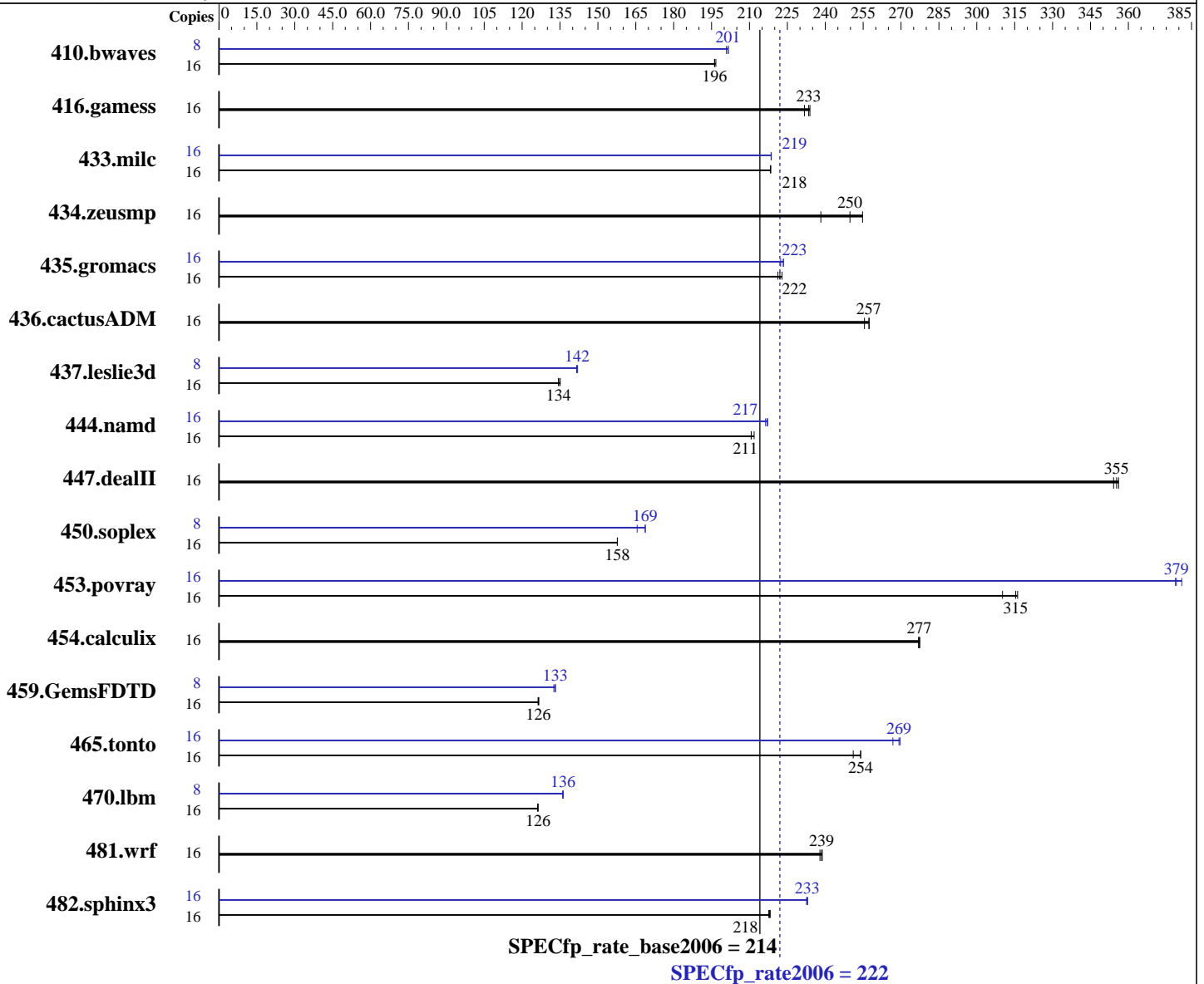
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Feb-2010

Hardware Availability: Apr-2010

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon X5677
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz
 CPU MHz: 3467
 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

Continued on next page

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: Multi-User Run Level 3

Continued on next page



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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)
Disk Subsystem: 1 x SATA, 160 GB, 5.4 krpm
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 16 | 1105 | 197 | <u>1108</u> | <u>196</u> | 1109 | 196 | 8 | 541 | 201 | 539 | 202 | <u>540</u> | <u>201</u> |
| 416.gamess | 16 | 1352 | 232 | 1339 | 234 | <u>1342</u> | <u>233</u> | 16 | 1352 | 232 | 1339 | 234 | <u>1342</u> | <u>233</u> |
| 433.milc | 16 | 673 | 218 | 673 | 218 | <u>673</u> | <u>218</u> | 16 | 672 | 219 | 672 | 219 | <u>672</u> | <u>219</u> |
| 434.zeusmp | 16 | 572 | 255 | 611 | 238 | <u>583</u> | <u>250</u> | 16 | 572 | 255 | 611 | 238 | <u>583</u> | <u>250</u> |
| 435.gromacs | 16 | 516 | 221 | 513 | 223 | <u>514</u> | <u>222</u> | 16 | <u>511</u> | <u>223</u> | 511 | 223 | 514 | 222 |
| 436.cactusADM | 16 | 748 | 256 | 743 | 257 | <u>743</u> | <u>257</u> | 16 | 748 | 256 | 743 | 257 | <u>743</u> | <u>257</u> |
| 437.leslie3d | 16 | 1113 | 135 | <u>1118</u> | <u>134</u> | 1119 | 134 | 8 | <u>530</u> | <u>142</u> | 530 | 142 | 531 | 142 |
| 444.namd | 16 | 606 | 212 | 609 | 211 | <u>609</u> | <u>211</u> | 16 | 593 | 216 | 591 | 217 | <u>591</u> | <u>217</u> |
| 447.dealII | 16 | 514 | 356 | 517 | 354 | <u>515</u> | <u>355</u> | 16 | 514 | 356 | 517 | 354 | <u>515</u> | <u>355</u> |
| 450.soplex | 16 | <u>846</u> | <u>158</u> | 846 | 158 | 846 | 158 | 8 | 403 | 166 | <u>395</u> | <u>169</u> | 395 | 169 |
| 453.povray | 16 | <u>270</u> | <u>315</u> | 269 | 316 | 274 | 310 | 16 | <u>225</u> | <u>379</u> | 225 | 379 | 223 | 381 |
| 454.calculix | 16 | <u>476</u> | <u>277</u> | 477 | 277 | 476 | 277 | 16 | <u>476</u> | <u>277</u> | 477 | 277 | 476 | 277 |
| 459.GemsFDTD | 16 | 1341 | 127 | <u>1342</u> | <u>126</u> | 1344 | 126 | 8 | 637 | 133 | 640 | 133 | <u>638</u> | <u>133</u> |
| 465.tonto | 16 | <u>620</u> | <u>254</u> | 627 | 251 | 620 | 254 | 16 | <u>585</u> | <u>269</u> | 584 | 270 | 590 | 267 |
| 470.lbm | 16 | 1741 | 126 | <u>1741</u> | <u>126</u> | 1742 | 126 | 8 | 807 | 136 | <u>807</u> | <u>136</u> | 808 | 136 |
| 481.wrf | 16 | 751 | 238 | 748 | 239 | <u>749</u> | <u>239</u> | 16 | 751 | 238 | 748 | 239 | <u>749</u> | <u>239</u> |
| 482.sphinx3 | 16 | 1433 | 218 | 1429 | 218 | <u>1431</u> | <u>218</u> | 16 | 1338 | 233 | <u>1339</u> | <u>233</u> | 1341 | 233 |

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 = Disabled



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General Notes

This result was measured on the PRIMERGY RX300 S6. The PRIMERGY RX300 S6 and the PRIMERGY TX300 S6 are electronically equivalent.

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:

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

C++ benchmarks:

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

Continued on next page



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Base Optimization Flags (Continued)

Fortran benchmarks:

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

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.dealII: -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: -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.dealIII: 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: basepeak = yes
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

Continued on next page



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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.20100330.01.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.20100330.01.xml>

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

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