



SPEC® CFP2006 Result

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Fujitsu

SPECfp®_rate2006 = 134

PRIMERGY BX920 S2, Intel Xeon X5675, 3.07 GHz

SPECfp_rate_base2006 = 130

CPU2006 license: 19

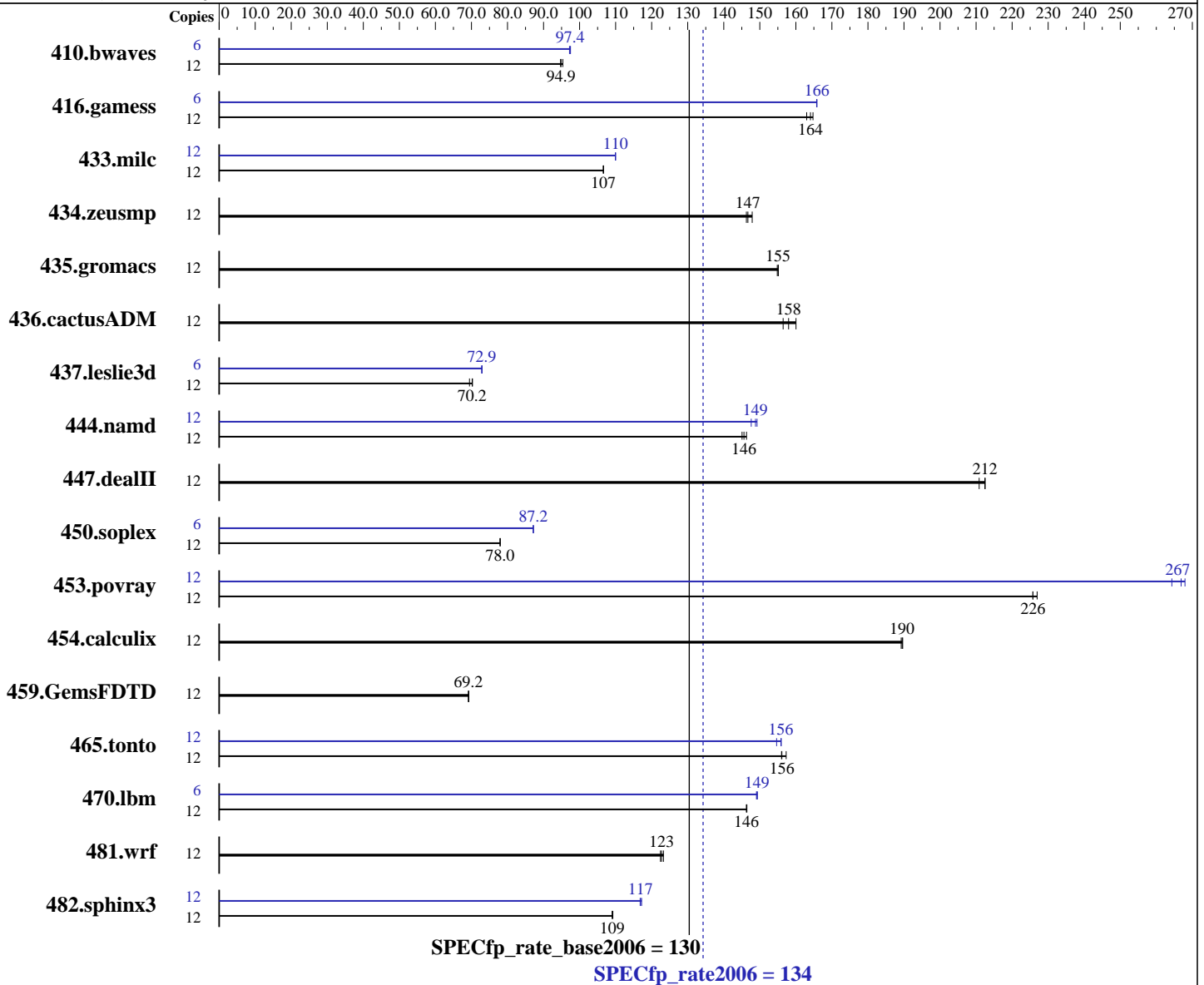
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011



Hardware

CPU Name: Intel Xeon X5675
 CPU Characteristics: Intel Turbo Boost Technology up to 3.47 GHz
 CPU MHz: 3067
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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) 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 12.0.1.116 Build 20101116
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (3 x 8 GB 2Rx4 PC3-10600R-9, ECC)
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 | 12 | 1710 | 95.4 | <u>1719</u> | <u>94.9</u> | 1722 | 94.7 | 6 | <u>837</u> | <u>97.4</u> | 837 | 97.5 | 839 | 97.2 |
| 416.gamess | 12 | 1441 | 163 | 1426 | 165 | <u>1432</u> | <u>164</u> | 6 | 708 | 166 | 709 | 166 | <u>708</u> | <u>166</u> |
| 433.milc | 12 | 1033 | 107 | 1033 | 107 | <u>1033</u> | <u>107</u> | 12 | 1002 | 110 | 1002 | 110 | <u>1002</u> | <u>110</u> |
| 434.zeusmp | 12 | 738 | 148 | 747 | 146 | <u>744</u> | <u>147</u> | 12 | 738 | 148 | 747 | 146 | <u>744</u> | <u>147</u> |
| 435.gromacs | 12 | 553 | 155 | 552 | 155 | <u>552</u> | <u>155</u> | 12 | 553 | 155 | 552 | 155 | <u>552</u> | <u>155</u> |
| 436.cactusADM | 12 | 916 | 156 | 896 | 160 | <u>908</u> | <u>158</u> | 12 | 916 | 156 | 896 | 160 | <u>908</u> | <u>158</u> |
| 437.leslie3d | 12 | 1624 | 69.5 | <u>1607</u> | <u>70.2</u> | 1605 | 70.3 | 6 | 773 | 73.0 | 774 | 72.8 | <u>774</u> | <u>72.9</u> |
| 444.namd | 12 | 663 | 145 | <u>661</u> | <u>146</u> | 658 | 146 | 12 | <u>647</u> | <u>149</u> | 652 | 148 | 645 | 149 |
| 447.dealII | 12 | 651 | 211 | 646 | 213 | <u>646</u> | <u>212</u> | 12 | 651 | 211 | 646 | 213 | <u>646</u> | <u>212</u> |
| 450.soplex | 12 | 1284 | 78.0 | 1284 | 78.0 | <u>1284</u> | <u>78.0</u> | 6 | <u>574</u> | <u>87.2</u> | 574 | 87.1 | 574 | 87.2 |
| 453.povray | 12 | 283 | 226 | <u>283</u> | <u>226</u> | 281 | 227 | 12 | <u>239</u> | <u>267</u> | 238 | 268 | 242 | 264 |
| 454.calculix | 12 | 522 | 190 | <u>522</u> | <u>190</u> | 523 | 189 | 12 | 522 | 190 | <u>522</u> | <u>190</u> | 523 | 189 |
| 459.GemsFDTD | 12 | 1838 | 69.3 | 1841 | 69.2 | <u>1841</u> | <u>69.2</u> | 12 | 1838 | 69.3 | 1841 | 69.2 | <u>1841</u> | <u>69.2</u> |
| 465.tonto | 12 | 757 | 156 | <u>756</u> | <u>156</u> | 751 | 157 | 12 | 757 | 156 | <u>758</u> | <u>156</u> | 763 | 155 |
| 470.lbm | 12 | 1126 | 146 | <u>1127</u> | <u>146</u> | 1127 | 146 | 6 | 552 | 149 | <u>553</u> | <u>149</u> | 553 | 149 |
| 481.wrf | 12 | <u>1092</u> | <u>123</u> | 1087 | 123 | 1095 | 122 | 12 | <u>1092</u> | <u>123</u> | 1087 | 123 | 1095 | 122 |
| 482.sphinx3 | 12 | 2141 | 109 | <u>2144</u> | <u>109</u> | 2144 | 109 | 12 | 1995 | 117 | <u>2000</u> | <u>117</u> | 2002 | 117 |

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
Hugepages were not configured on the system

Platform Notes

BIOS configuration:
Data Reuse Optimization = Disable
Performance/Power Setting = Traditional



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General Notes

For information about Fujitsu please visit: <http://www.fujitsu.com>
Binaries were compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

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 -ansi-alias

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

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 -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.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) -prof-use(pass 2) -static -auto-ilp32

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 -static -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
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static

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- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

Continued on next page



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Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes

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-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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