



SPEC[®] CFP2006 Result

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Fujitsu Siemens Computers

SPECfp[®]_rate2006 = 39.9

PRIMERGY RX200 S4, Intel Xeon E5420, 2.50 GHz

SPECfp_rate_base2006 = 35.4

CPU2006 license: 22

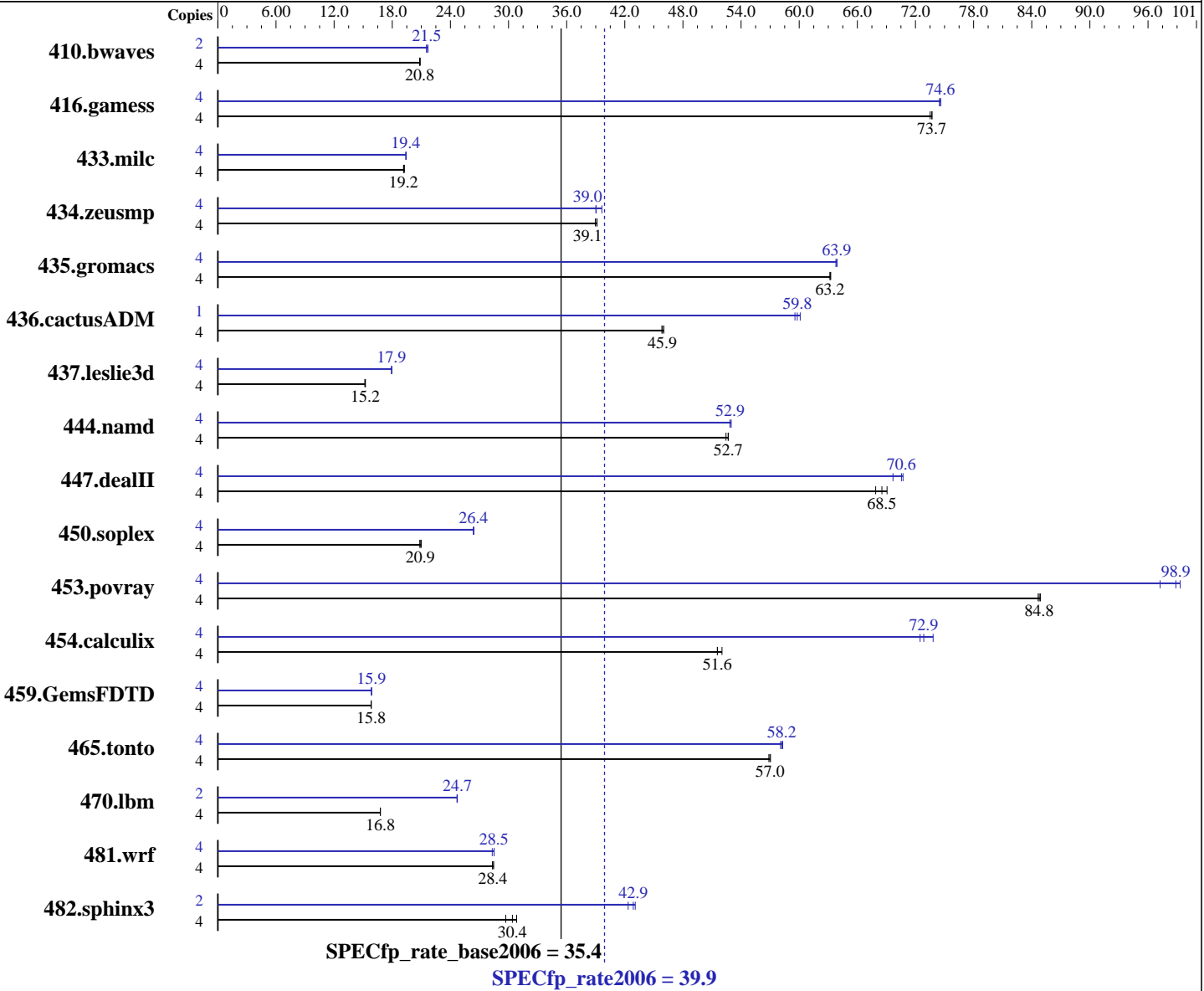
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: May-2008

Hardware Availability: Dec-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 - Build 20070725
 Auto Parallel: Yes
 File System: ext2
 System State: Multi-User Run Level 3
 Base Pointers: 64-bit

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL 5-5-5, ECC)
Disk Subsystem: 1x SAS, 73 GB, 15000 rpm
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50.0.5-0.1.x86_64

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 2610 | 20.8 | 2610 | 20.8 | 2602 | 20.9 | 2 | 1262 | 21.5 | 1262 | 21.5 | 1253 | 21.7 |
| 416.gamess | 4 | 1063 | 73.7 | 1065 | 73.5 | 1063 | 73.7 | 4 | 1050 | 74.6 | 1052 | 74.5 | 1050 | 74.6 |
| 433.milc | 4 | 1916 | 19.2 | 1907 | 19.3 | 1915 | 19.2 | 4 | 1888 | 19.4 | 1892 | 19.4 | 1893 | 19.4 |
| 434.zeusmp | 4 | 930 | 39.1 | 931 | 39.1 | 934 | 39.0 | 4 | 932 | 39.0 | 918 | 39.6 | 933 | 39.0 |
| 435.gromacs | 4 | 452 | 63.3 | 452 | 63.2 | 452 | 63.2 | 4 | 447 | 63.9 | 447 | 63.9 | 448 | 63.8 |
| 436.cactusADM | 4 | 1043 | 45.8 | 1038 | 46.0 | 1042 | 45.9 | 1 | 200 | 59.8 | 201 | 59.6 | 199 | 60.1 |
| 437.leslie3d | 4 | 2469 | 15.2 | 2479 | 15.2 | 2472 | 15.2 | 4 | 2096 | 17.9 | 2097 | 17.9 | 2095 | 18.0 |
| 444.namd | 4 | 612 | 52.4 | 609 | 52.7 | 609 | 52.7 | 4 | 607 | 52.9 | 605 | 53.0 | 607 | 52.9 |
| 447.dealII | 4 | 668 | 68.5 | 663 | 69.1 | 674 | 67.9 | 4 | 649 | 70.6 | 657 | 69.7 | 647 | 70.7 |
| 450.soplex | 4 | 1589 | 21.0 | 1598 | 20.9 | 1600 | 20.8 | 4 | 1262 | 26.4 | 1264 | 26.4 | 1265 | 26.4 |
| 453.povray | 4 | 251 | 84.7 | 251 | 84.8 | 251 | 84.9 | 4 | 219 | 97.2 | 214 | 99.3 | 215 | 98.9 |
| 454.calculix | 4 | 640 | 51.5 | 640 | 51.6 | 634 | 52.0 | 4 | 455 | 72.5 | 453 | 72.9 | 447 | 73.8 |
| 459.GemsFDTD | 4 | 2683 | 15.8 | 2682 | 15.8 | 2681 | 15.8 | 4 | 2679 | 15.8 | 2675 | 15.9 | 2675 | 15.9 |
| 465.tonto | 4 | 690 | 57.0 | 692 | 56.9 | 691 | 57.0 | 4 | 676 | 58.2 | 675 | 58.3 | 678 | 58.1 |
| 470.lbm | 4 | 3278 | 16.8 | 3278 | 16.8 | 3277 | 16.8 | 2 | 1112 | 24.7 | 1112 | 24.7 | 1114 | 24.7 |
| 481.wrf | 4 | 1576 | 28.4 | 1575 | 28.4 | 1569 | 28.5 | 4 | 1567 | 28.5 | 1578 | 28.3 | 1567 | 28.5 |
| 482.sphinx3 | 4 | 2565 | 30.4 | 2528 | 30.8 | 2623 | 29.7 | 2 | 905 | 43.1 | 909 | 42.9 | 921 | 42.3 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores (default)

Platform Notes

BIOS configuration:
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable

General Notes

All binaries were built with 64-bit Intel compiler except:
437.leslie3d, 450.soplex, 470.lbm, and 482.sphinx3 in peak
were built with 32-bit Intel compiler by changing

Continued on next page



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General Notes (Continued)

the path for include and library files.

For information about Fujitsu Siemens Computers please see:
<http://www.fujitsu-siemens.com>

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

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:

-fast

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include

Benchmarks using both Fortran and C:

icc ifort

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
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

Continued on next page



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Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

Continued on next page



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Peak Optimization Flags (Continued)

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090713.html>

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090713.xml>

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

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