



SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

SPECfp®2006 = 40.8

ASUS RS500-E6/RS520-E6 (Z8NR-D12) server system
(Intel Xeon X5570)

SPECfp_base2006 = 38.4

CPU2006 license: 9016

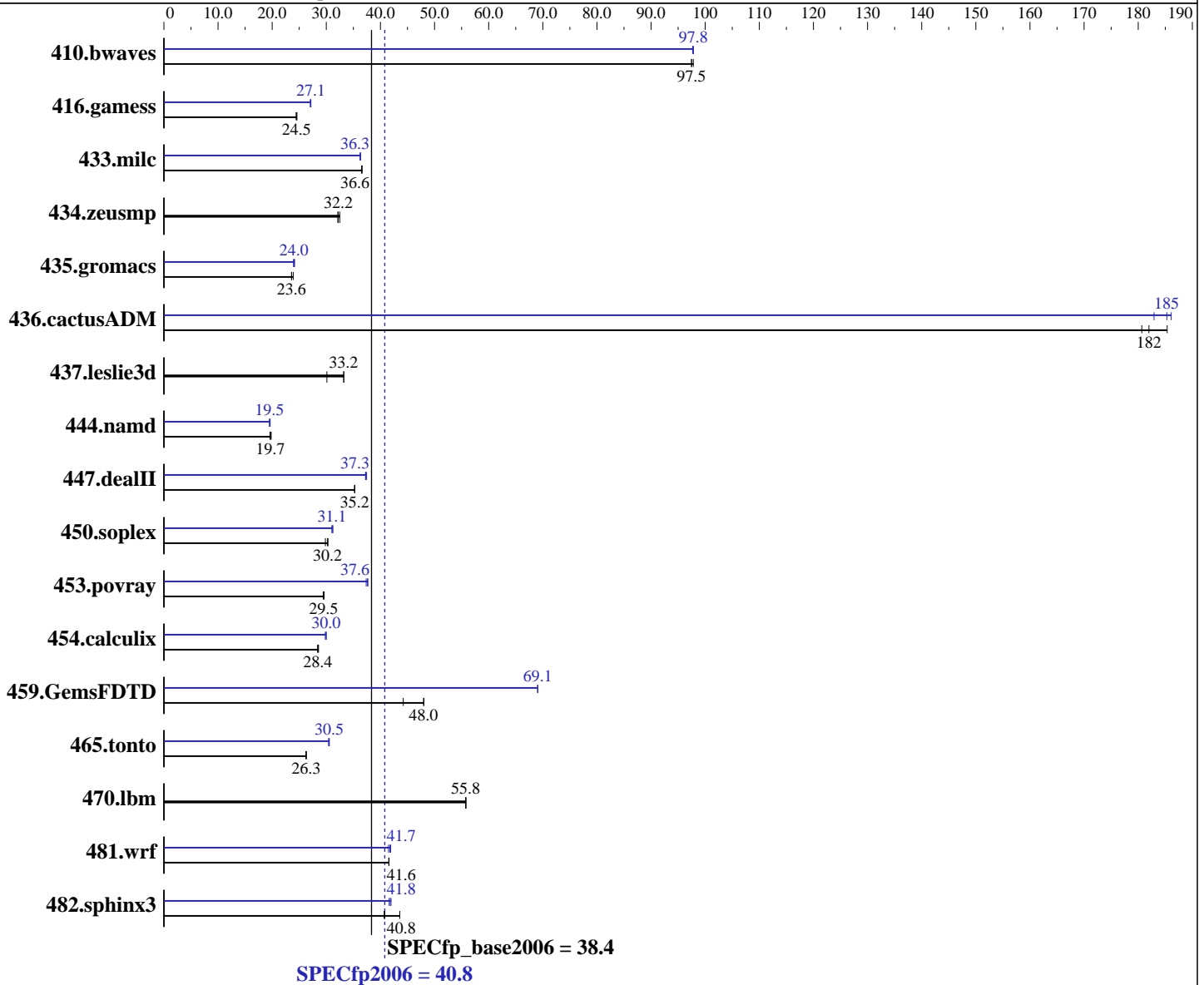
Test date: Mar-2009

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Mar-2009

Tested by: ASUSTeK Computer Inc.

Software Availability: Feb-2009



Hardware	
CPU Name:	Intel Xeon X5570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
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

Software	
Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cprof_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel:	Yes
File System:	ReiserFS
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: 24 GB (6 X 4 GB PC3-10600R, CL=9)
Disk Subsystem: HITACHI HDT725050VLA360 500GB SATAII, 7200RPM
Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>139</u>	<u>97.5</u>	139	97.8	139	97.5	139	97.7	139	97.8	<u>139</u>	<u>97.8</u>
416.gamess	797	24.6	801	24.4	<u>800</u>	<u>24.5</u>	724	27.0	721	27.1	<u>721</u>	<u>27.1</u>
433.milc	251	36.6	<u>251</u>	<u>36.6</u>	251	36.5	253	36.3	253	36.2	<u>253</u>	<u>36.3</u>
434.zeusmp	<u>283</u>	<u>32.2</u>	283	32.1	280	32.5	<u>283</u>	<u>32.2</u>	283	32.1	280	32.5
435.gromacs	299	23.9	<u>303</u>	<u>23.6</u>	303	23.6	296	24.1	298	23.9	<u>297</u>	<u>24.0</u>
436.cactusADM	64.5	185	66.1	181	<u>65.7</u>	<u>182</u>	64.2	186	65.3	183	<u>64.5</u>	<u>185</u>
437.leslie3d	312	30.1	<u>283</u>	<u>33.2</u>	283	33.2	312	30.1	<u>283</u>	<u>33.2</u>	283	33.2
444.namd	409	19.6	<u>407</u>	<u>19.7</u>	405	19.8	411	19.5	<u>411</u>	<u>19.5</u>	409	19.6
447.dealII	<u>325</u>	<u>35.2</u>	324	35.3	325	35.2	307	37.3	<u>307</u>	<u>37.3</u>	306	37.4
450.soplex	275	30.3	280	29.8	<u>276</u>	<u>30.2</u>	267	31.2	<u>268</u>	<u>31.1</u>	269	31.1
453.povray	180	29.6	181	29.4	<u>180</u>	<u>29.5</u>	<u>141</u>	<u>37.6</u>	142	37.4	141	37.7
454.calculix	<u>290</u>	<u>28.4</u>	290	28.4	289	28.6	<u>275</u>	<u>30.0</u>	275	30.0	277	29.8
459.GemsFDTD	240	44.2	221	48.0	<u>221</u>	<u>48.0</u>	154	69.1	154	69.1	<u>154</u>	<u>69.1</u>
465.tonto	375	26.3	374	26.3	<u>374</u>	<u>26.3</u>	323	30.4	322	30.5	<u>322</u>	<u>30.5</u>
470.lbm	<u>246</u>	<u>55.8</u>	246	55.8	246	55.8	<u>246</u>	<u>55.8</u>	246	55.8	246	55.8
481.wrf	269	41.6	269	41.5	<u>269</u>	<u>41.6</u>	269	41.5	267	41.9	<u>268</u>	<u>41.7</u>
482.sphinx3	447	43.6	<u>478</u>	<u>40.8</u>	479	40.7	468	41.6	464	42.0	<u>466</u>	<u>41.8</u>

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
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

Platform Notes

BIOS setting:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled
Tested system case compliance with Intel EEB 3.61 spec
SSI Server Power Supply 650W or higher
System was configured with ASPEED AST2050 VGA (on board VGA)



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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.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 -parallel -opt-prefetch

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

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

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



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks:

ifort

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
 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

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

470.lbm: basepeak = yes

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

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Peak Optimization Flags (Continued)

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: -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 -ansi-alias -scalar-rep- -opt-prefetch

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
-parallel

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: basepeak = yes

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 -opt-prefetch -parallel

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

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

436.cactusADM: -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 -opt-prefetch -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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