



SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

ASUS Z8PE-D12X server motherboard (Intel Xeon X5570)

SPECfp®_rate2006 = 200

SPECfp_rate_base2006 = 194

CPU2006 license: 9016

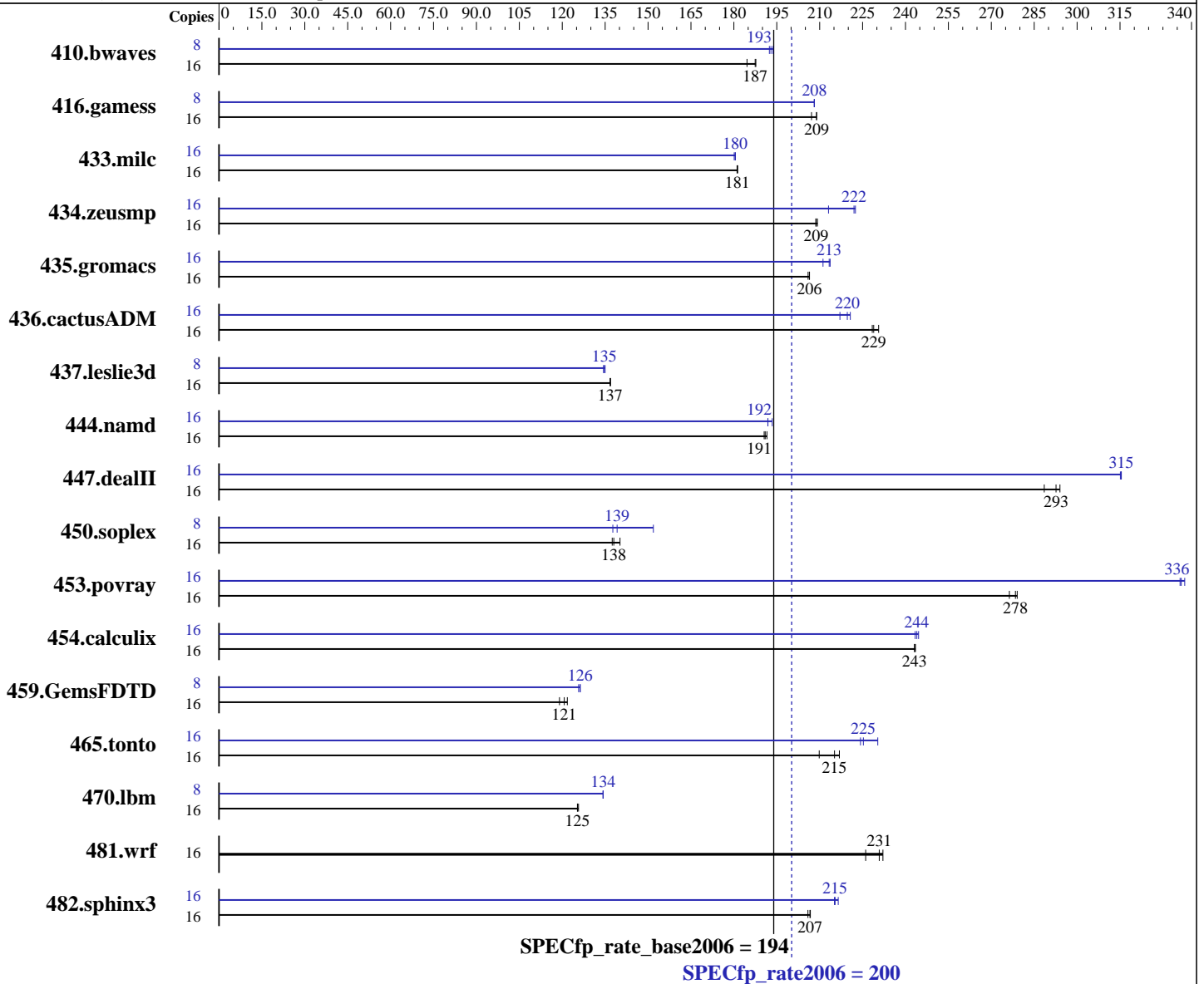
Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Mar-2009

Hardware Availability: Mar-2009

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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 SP2
 Kernel 2.6.16.60-0.34-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux
 Build 20090131 Package ID: L_cproc_p_11.0.080,
 L_cprof_p_11.0.080
 Auto Parallel: No
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



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Hardware (Continued)

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 HDT72505VLA360 500GB SATAII, 7200RPM
Other Hardware: None

Software (Continued)

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	1178	185	<u>1160</u>	<u>187</u>	1159	188	8	<u>563</u>	<u>193</u>	565	192	561	194		
416.gamess	16	1512	207	1499	209	<u>1500</u>	<u>209</u>	8	752	208	<u>753</u>	<u>208</u>	753	208		
433.milc	16	811	181	810	181	<u>811</u>	<u>181</u>	16	814	181	815	180	<u>814</u>	<u>180</u>		
434.zeusmp	16	698	209	<u>697</u>	<u>209</u>	696	209	16	<u>656</u>	<u>222</u>	654	223	683	213		
435.gromacs	16	555	206	<u>553</u>	<u>206</u>	553	206	16	535	214	<u>536</u>	<u>213</u>	541	211		
436.cactusADM	16	<u>835</u>	<u>229</u>	829	231	837	228	16	<u>870</u>	<u>220</u>	881	217	866	221		
437.leslie3d	16	<u>1099</u>	<u>137</u>	1099	137	1100	137	8	<u>558</u>	<u>135</u>	557	135	559	134		
444.namd	16	673	191	<u>672</u>	<u>191</u>	670	192	16	663	193	669	192	<u>669</u>	<u>192</u>		
447.dealII	16	623	294	634	289	<u>625</u>	<u>293</u>	16	<u>580</u>	<u>315</u>	581	315	580	315		
450.soplex	16	971	137	952	140	<u>967</u>	<u>138</u>	8	485	138	<u>479</u>	<u>139</u>	439	152		
453.povray	16	308	276	305	279	<u>306</u>	<u>278</u>	16	252	338	253	336	<u>253</u>	<u>336</u>		
454.calculix	16	543	243	<u>543</u>	<u>243</u>	542	243	16	<u>541</u>	<u>244</u>	540	245	542	243		
459.GemsFDTD	16	1426	119	<u>1406</u>	<u>121</u>	1394	122	8	672	126	<u>672</u>	<u>126</u>	675	126		
465.tonto	16	<u>732</u>	<u>215</u>	750	210	726	217	16	702	224	<u>699</u>	<u>225</u>	684	230		
470.lbm	16	<u>1754</u>	<u>125</u>	1755	125	1749	126	8	<u>818</u>	<u>134</u>	818	134	819	134		
481.wrf	16	770	232	791	226	<u>774</u>	<u>231</u>	16	770	232	791	226	<u>774</u>	<u>231</u>		
482.sphinx3	16	1515	206	1508	207	<u>1510</u>	<u>207</u>	16	1449	215	<u>1448</u>	<u>215</u>	1440	216		

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 setting:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled

Continued on next page



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Platform Notes (Continued)

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)

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

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`

`482.sphinx3: icc -m32`

C++ benchmarks (except as noted below):

`icpc`

`450.soplex: icpc -m32`

Fortran benchmarks (except as noted below):

`ifort`

`437.leslie3d: ifort -m32`

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`

`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

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-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: -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-

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: -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)

437.leslie3d: -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 -opt-prefetch

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

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

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Peak Optimization Flags (Continued)

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 -auto-ilp32

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

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-ic11.0-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 other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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