



SPEC® CFP2006 Result

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Supermicro

SPECfp®2006 = 46.1

Motherboard X8DTN+-F (Intel Xeon X5667, 3.06 GHz)

SPECfp_base2006 = 43.2

CPU2006 license: 001176

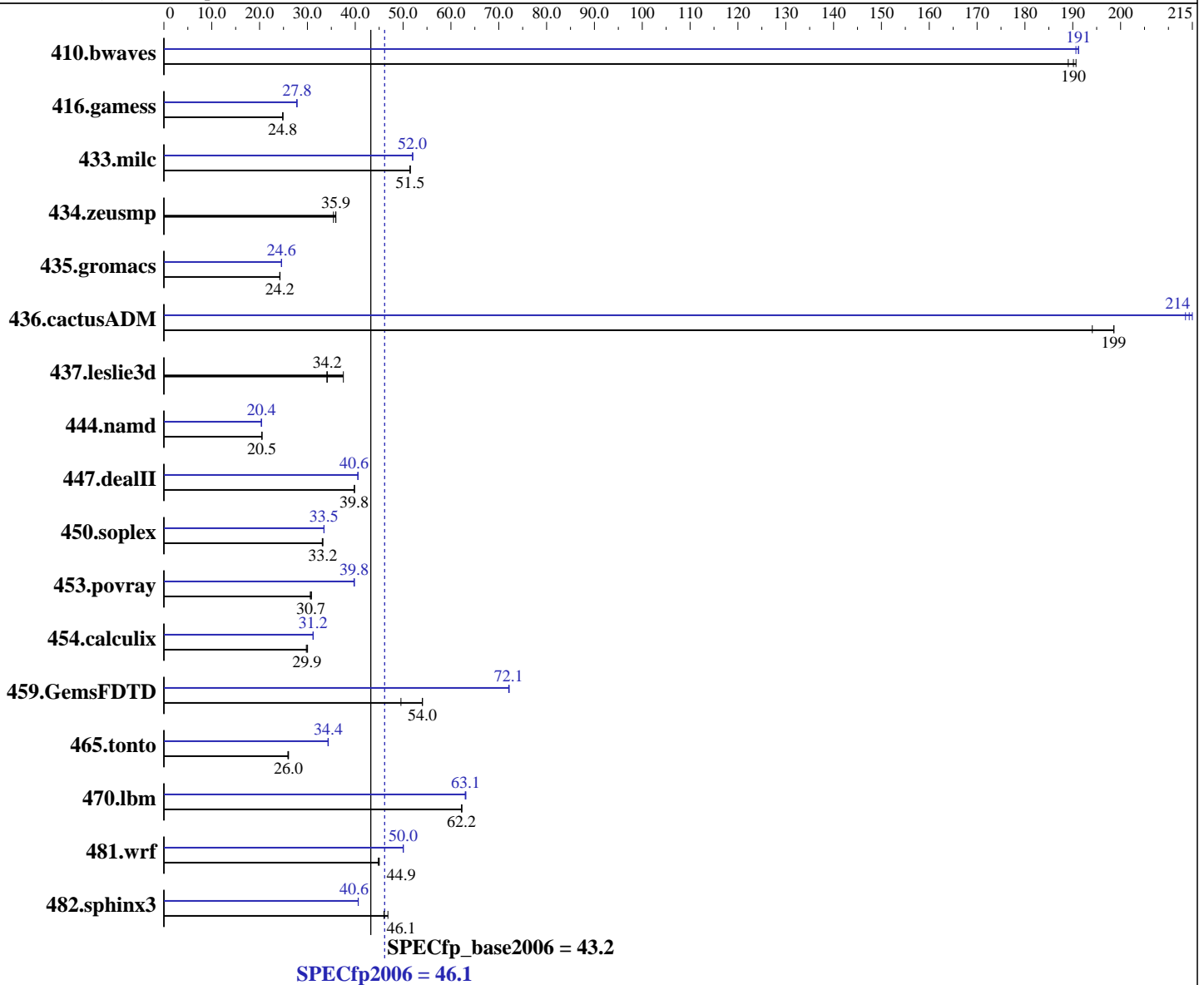
Test date: Jun-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon X5667
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3067
 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

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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: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB 2Rx4 DDR3-1333 RDIMM, ECC, CL9)
 Disk Subsystem: 1 x 500 GB SATA II, 7200 RPM
 Other Hardware: None

Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 71.9 | 189 | 71.3 | 191 | <u>71.5</u> | <u>190</u> | 71.1 | 191 | <u>71.1</u> | <u>191</u> | 71.3 | 191 |
| 416.gamess | 788 | 24.8 | 787 | 24.9 | <u>788</u> | <u>24.8</u> | 703 | 27.8 | 706 | 27.7 | <u>704</u> | <u>27.8</u> |
| 433.milc | 178 | 51.5 | 178 | 51.4 | <u>178</u> | <u>51.5</u> | <u>177</u> | <u>52.0</u> | 176 | 52.0 | 177 | 52.0 |
| 434.zeusmp | <u>253</u> | <u>35.9</u> | 257 | 35.5 | 253 | 36.0 | <u>253</u> | <u>35.9</u> | 257 | 35.5 | 253 | 36.0 |
| 435.gromacs | <u>295</u> | <u>24.2</u> | 295 | 24.2 | 294 | 24.3 | 290 | 24.6 | 290 | 24.6 | <u>290</u> | <u>24.6</u> |
| 436.cactusADM | 60.2 | 199 | 61.6 | 194 | <u>60.2</u> | <u>199</u> | 56.0 | 214 | <u>55.8</u> | <u>214</u> | 55.6 | 215 |
| 437.leslie3d | 276 | 34.1 | 251 | 37.5 | <u>275</u> | <u>34.2</u> | 276 | 34.1 | 251 | 37.5 | <u>275</u> | <u>34.2</u> |
| 444.namd | 391 | 20.5 | <u>391</u> | <u>20.5</u> | 392 | 20.5 | 393 | 20.4 | <u>393</u> | <u>20.4</u> | 393 | 20.4 |
| 447.dealII | 287 | 39.8 | 287 | 39.8 | <u>287</u> | <u>39.8</u> | 282 | 40.5 | 282 | 40.6 | <u>282</u> | <u>40.6</u> |
| 450.soplex | <u>251</u> | <u>33.2</u> | 252 | 33.1 | 251 | 33.2 | 249 | 33.5 | 249 | 33.5 | <u>249</u> | <u>33.5</u> |
| 453.povray | 172 | 30.8 | 174 | 30.6 | <u>173</u> | <u>30.7</u> | 134 | 39.8 | 134 | 39.7 | <u>134</u> | <u>39.8</u> |
| 454.calculix | 275 | 30.0 | <u>276</u> | <u>29.9</u> | 277 | 29.8 | 264 | 31.2 | <u>264</u> | <u>31.2</u> | 264 | 31.2 |
| 459.GemsFDTD | 196 | 54.1 | <u>196</u> | <u>54.0</u> | 214 | 49.6 | <u>147</u> | <u>72.1</u> | 147 | 72.1 | 147 | 72.2 |
| 465.tonto | <u>378</u> | <u>26.0</u> | 378 | 26.1 | 380 | 25.9 | 287 | 34.3 | <u>286</u> | <u>34.4</u> | 286 | 34.4 |
| 470.lbm | <u>221</u> | <u>62.2</u> | 221 | 62.2 | 221 | 62.3 | <u>218</u> | <u>63.1</u> | 218 | 63.0 | 218 | 63.1 |
| 481.wrf | 248 | 45.0 | <u>249</u> | <u>44.9</u> | 249 | 44.8 | 223 | 50.0 | <u>223</u> | <u>50.0</u> | 223 | 50.1 |
| 482.sphinx3 | 424 | 46.0 | 416 | 46.8 | <u>423</u> | <u>46.1</u> | 480 | 40.6 | 479 | 40.6 | <u>480</u> | <u>40.6</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 stack size 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

Fan speed set to Full Speed in BIOS Setup.
 As tested, the system used a Supermicro CSE-745TQ-920B chassis.
 The chassis is bundled with a PWS-920P-1R power supply, 2 SNK-P0038P heatsinks,
 as well as 2 FAN-0082L4 and 3 FAN-0074L4 cooling fans.



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General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

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 -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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

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)
-ansi-alias`

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)
-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
-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: `-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- -auto-ilp32`

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Peak Optimization Flags (Continued)

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 -auto-ilp32

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

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

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

481.wrf: Same as 454.calculix

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.20100915.html>



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

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