



SPEC® CFP2006 Result

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Supermicro

Supermicro C7P67 motherboard (Intel Core i7-3770, 3.40 GHz)

SPECfp®2006 = 72.2

SPECfp_base2006 = 70.4

CPU2006 license: 001176

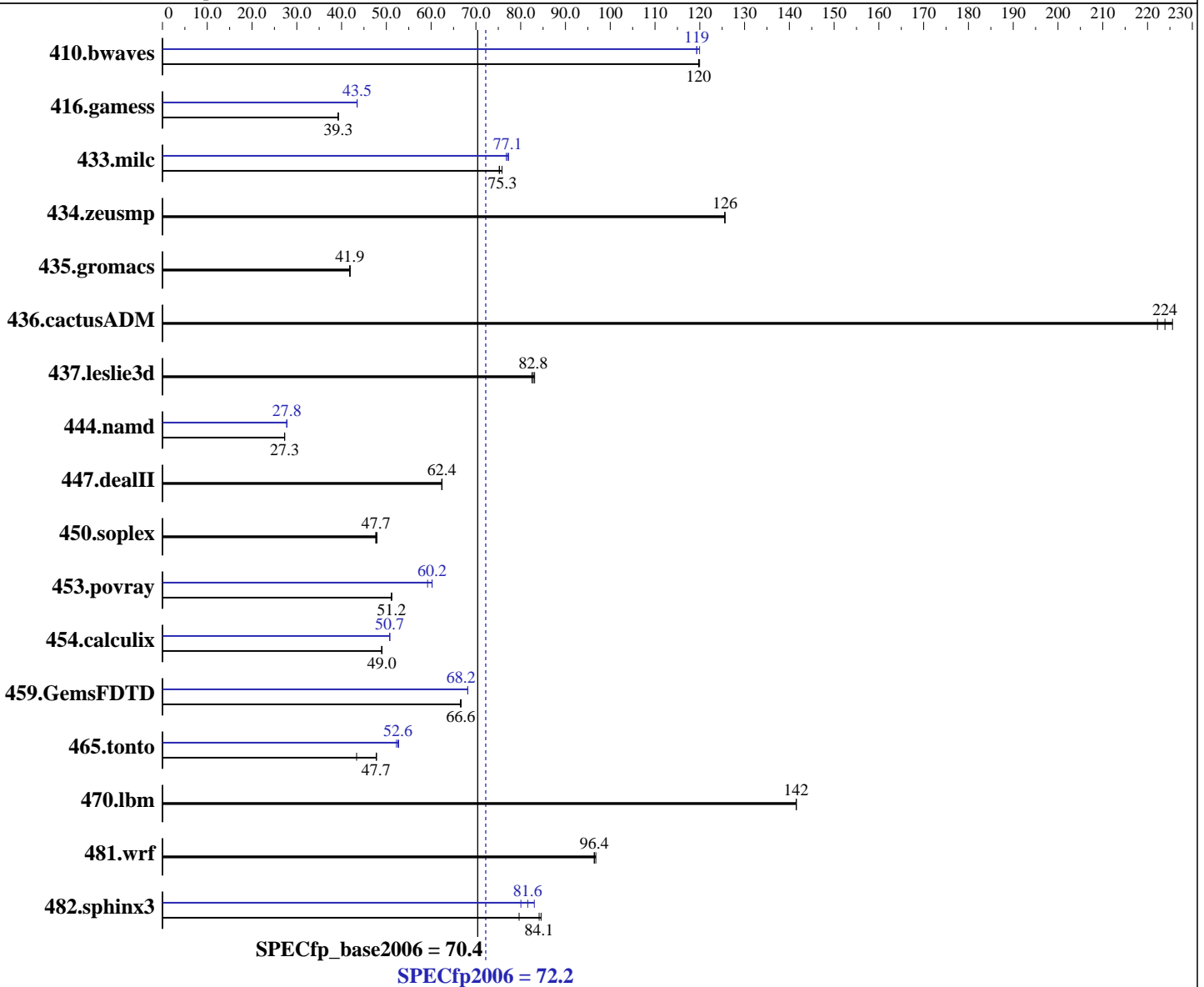
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2012

Hardware Availability: Apr-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Core i7-3770
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 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: Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-14900U-13)
Disk Subsystem: 1 x 120 GB OCZ SSD
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	113	120	<u>113</u>	<u>120</u>	113	120	<u>114</u>	<u>119</u>	114	119	113	120
416.gamess	498	39.3	<u>499</u>	<u>39.3</u>	499	39.2	451	43.5	<u>450</u>	<u>43.5</u>	450	43.5
433.milc	122	75.2	<u>122</u>	<u>75.3</u>	121	75.8	119	77.3	120	76.8	<u>119</u>	<u>77.1</u>
434.zeusmp	72.4	126	72.5	126	<u>72.4</u>	<u>126</u>	72.4	126	72.5	126	<u>72.4</u>	<u>126</u>
435.gromacs	<u>171</u>	<u>41.9</u>	170	41.9	171	41.8	<u>171</u>	<u>41.9</u>	170	41.9	171	41.8
436.cactusADM	53.0	226	53.8	222	<u>53.4</u>	<u>224</u>	53.0	226	53.8	222	<u>53.4</u>	<u>224</u>
437.leslie3d	114	82.5	113	83.1	<u>114</u>	<u>82.8</u>	114	82.5	113	83.1	<u>114</u>	<u>82.8</u>
444.namd	294	27.3	294	27.3	<u>294</u>	<u>27.3</u>	289	27.8	289	27.8	<u>289</u>	<u>27.8</u>
447.dealII	<u>183</u>	<u>62.4</u>	183	62.4	183	62.4	<u>183</u>	<u>62.4</u>	183	62.4	183	62.4
450.soplex	<u>175</u>	<u>47.7</u>	175	47.6	174	47.9	<u>175</u>	<u>47.7</u>	175	47.6	174	47.9
453.povray	<u>104</u>	<u>51.2</u>	104	51.1	104	51.2	89.8	59.2	88.3	60.2	<u>88.4</u>	<u>60.2</u>
454.calculix	168	49.0	169	48.9	<u>168</u>	<u>49.0</u>	<u>163</u>	<u>50.7</u>	162	50.8	163	50.7
459.GemsFDTD	159	66.7	159	66.5	<u>159</u>	<u>66.6</u>	156	68.2	<u>156</u>	<u>68.2</u>	156	68.2
465.tonto	227	43.4	206	47.8	<u>206</u>	<u>47.7</u>	187	52.8	<u>187</u>	<u>52.6</u>	188	52.2
470.lbm	97.1	142	<u>97.1</u>	<u>142</u>	97.1	142	97.1	142	<u>97.1</u>	<u>142</u>	97.1	142
481.wrf	116	96.4	<u>116</u>	<u>96.4</u>	115	96.8	116	96.4	<u>116</u>	<u>96.4</u>	115	96.8
482.sphinx3	245	79.6	230	84.6	<u>232</u>	<u>84.1</u>	235	83.0	<u>239</u>	<u>81.6</u>	244	80.0

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Platform Notes

As tested, the system used a Supermicro CSE-732D2-500B chassis.
The chassis is configured with a PWS-502-PQ power supply, 1 SNK-P0046A4 heatsink, as well as 1 FAN-0124L4 front cooling fan and 1 FAN-0124L4 rear exhaust fan.
BIOS configuration:
Memory Timing Selection = Manual
Memory Frequency = Force DDR-1866MHz



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General Notes

Environment variables set by runspec before the start of the run:

```
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "4"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

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:

```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(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.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(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: basepeak = yes

459.GemsFDTD: -xAVX(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 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.20120625.html>



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You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.20120625.xml>

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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 08:05:47 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 June 2012.