



# SPEC<sup>®</sup> CFP2006 Result

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## ASUSTeK Computer Inc.

SPECfp<sup>®</sup>2006 = **61.1**

ASUS RS100-E7(P8B-M) Server System  
(Intel Xeon E3-1280, 3.50 GHz)

SPECfp\_base2006 = **58.8**

CPU2006 license: 9016

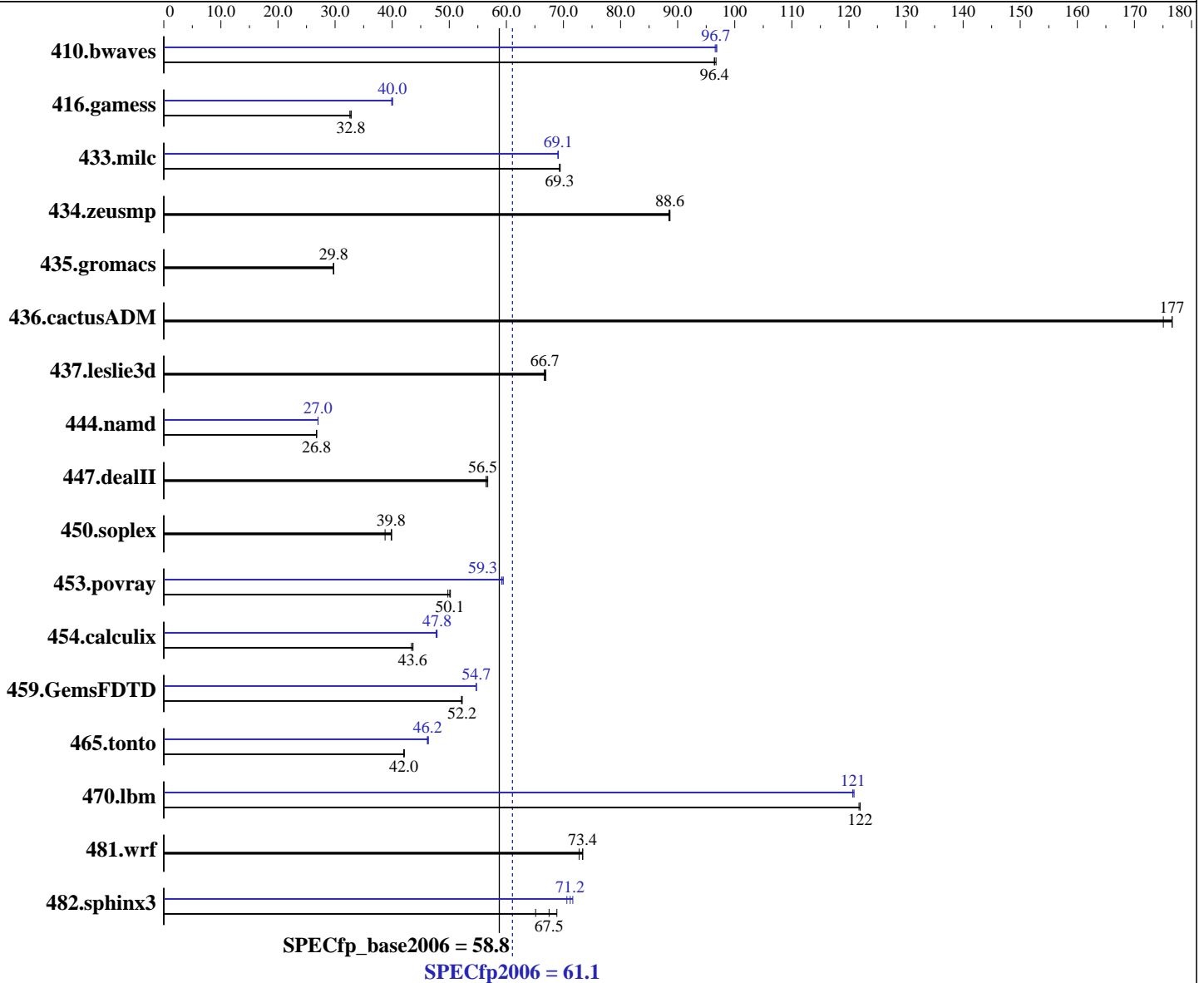
Test date: Jun-2011

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Apr-2011

Tested by: ASUSTeK Computer Inc.

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Xeon E3-1280  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.9 GHz  
 CPU MHz: 3500  
 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: SUSE Linux Enterprise Server 11 SP1 (x86\_64),  
Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64  
Version 12.0 Update 3  
 Auto Parallel: Yes  
 File System: ReiserFS  
 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: 8 GB (2 x 4 GB 2Rx8 PC3L-10600E-9, ECC)  
Disk Subsystem: Seagate ST3500320AS 1 x 500 GB SATA, 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	141	96.7	141	96.4	<u>141</u>	<u>96.4</u>	140	96.9	<u>141</u>	<u>96.7</u>	141	96.6
416.gamess	597	32.8	601	32.6	<u>597</u>	<u>32.8</u>	491	39.9	<u>489</u>	<u>40.0</u>	489	40.1
433.milc	132	69.3	132	69.4	<u>132</u>	<u>69.3</u>	133	69.0	133	69.1	<u>133</u>	<u>69.1</u>
434.zeusmp	103	88.6	103	88.5	<u>103</u>	<u>88.6</u>	103	88.6	103	88.5	<u>103</u>	<u>88.6</u>
435.gromacs	240	29.8	<u>240</u>	<u>29.8</u>	241	29.7	240	29.8	<u>240</u>	<u>29.8</u>	241	29.7
436.cactusADM	<u>67.7</u>	<u>177</u>	67.7	177	68.3	175	<u>67.7</u>	<u>177</u>	67.7	177	68.3	175
437.leslie3d	140	66.9	141	66.6	<u>141</u>	<u>66.7</u>	140	66.9	141	66.6	<u>141</u>	<u>66.7</u>
444.namd	300	26.7	<u>300</u>	<u>26.8</u>	300	26.8	<u>297</u>	<u>27.0</u>	297	27.0	297	27.0
447.dealII	202	56.7	203	56.5	<u>203</u>	<u>56.5</u>	202	56.7	203	56.5	<u>203</u>	<u>56.5</u>
450.soplex	215	38.8	209	39.9	<u>209</u>	<u>39.8</u>	215	38.8	209	39.9	<u>209</u>	<u>39.8</u>
453.povray	<u>106</u>	<u>50.1</u>	107	49.8	106	50.2	89.9	59.2	89.5	59.5	<u>89.8</u>	<u>59.3</u>
454.calculix	<u>189</u>	<u>43.6</u>	190	43.4	189	43.7	173	47.7	<u>172</u>	<u>47.8</u>	172	47.9
459.GemsFDTD	204	52.1	203	52.3	<u>203</u>	<u>52.2</u>	194	54.7	194	54.8	<u>194</u>	<u>54.7</u>
465.tonto	234	42.1	234	42.0	<u>234</u>	<u>42.0</u>	<u>213</u>	<u>46.2</u>	212	46.3	213	46.2
470.lbm	113	122	113	122	<u>113</u>	<u>122</u>	114	121	114	121	<u>114</u>	<u>121</u>
481.wrf	154	72.7	152	73.4	<u>152</u>	<u>73.4</u>	154	72.7	152	73.4	<u>152</u>	<u>73.4</u>
482.sphinx3	283	68.8	299	65.1	<u>289</u>	<u>67.5</u>	<u>274</u>	<u>71.2</u>	276	70.6	272	71.6

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  
Hugepages was not enabled

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
KMP\_STACKSIZE set to 200M  
Binaries compiled on RHEL5.5 with  
binutils-2.17.50.0.6-14.el5



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## 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

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



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

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

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.dealII: 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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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## Peak Optimization Flags (Continued)

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/ASUSTekPlatform.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

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