



# SPEC<sup>®</sup> CFP2006 Result

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## Dell Inc.

**SPECfp<sup>®</sup>2006 = 39.0**

Dell Precision T7500 (Intel Xeon W5590, 3.33 GHz)

**SPECfp\_base2006 = 37.4**

CPU2006 license: 55

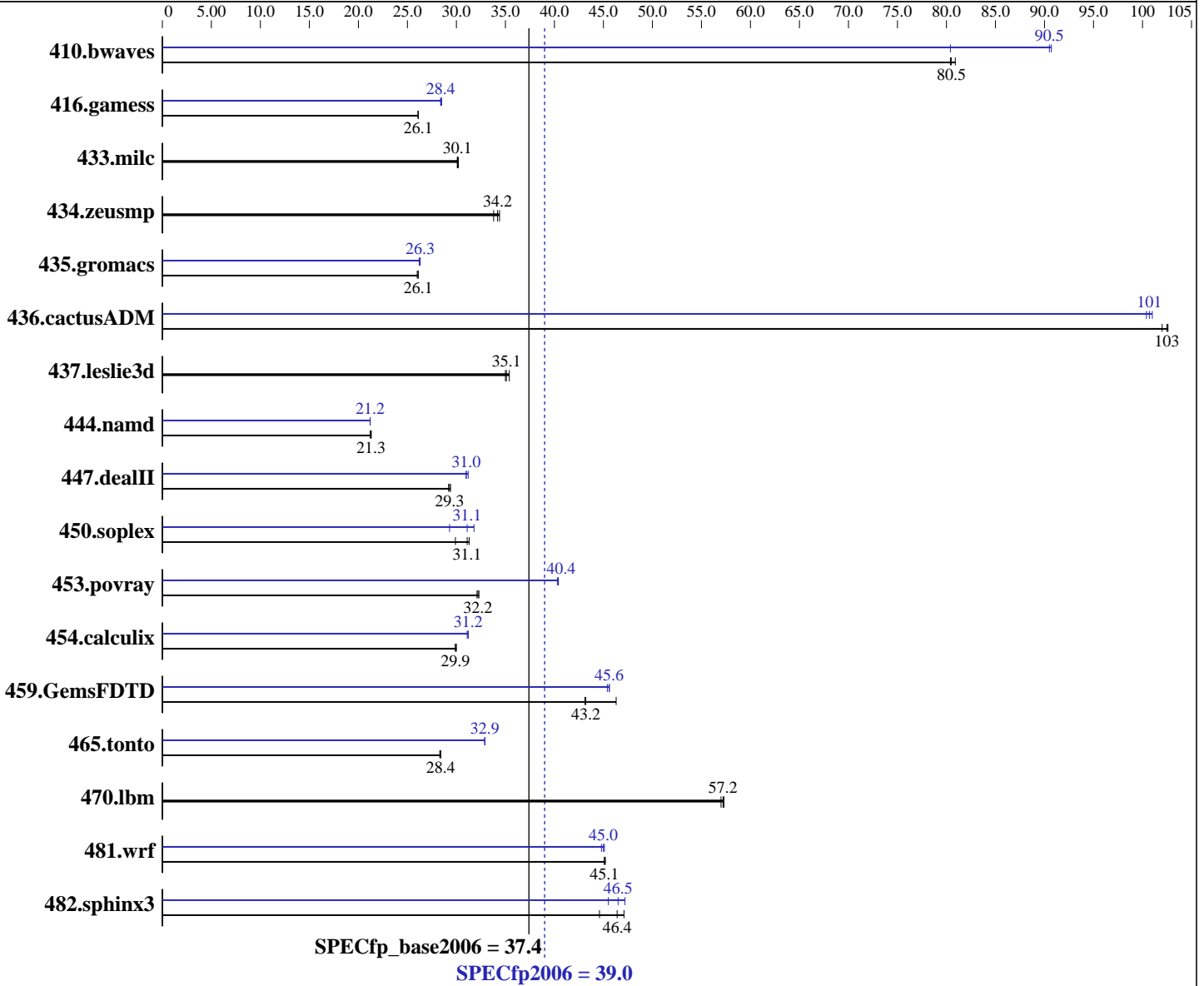
Test date: Aug-2009

Test sponsor: Dell Inc.

Hardware Availability: Aug-2009

Tested by: Dell Inc.

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon W5590  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3333  
 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: Windows Vista Business SP1 (64-bit)  
 Compiler: Intel C++ Compiler for Intel 64, Version 11.0  
 Build 20090131 Package ID: w\_cproc\_p\_11.0.072  
 Intel Visual Fortran Compiler for Intel 64, Version 11.0  
 Build 20090131 Package ID: w\_cprof\_p\_11.0.072  
 Microsoft Visual Studio 2008 SP1  
 Auto Parallel: Yes  
 File System: NTFS

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12x4 GB PC3-10600R)  
Disk Subsystem: 1 x 146 GB SAS 15000 RPM  
Other Hardware: None

System State: Default  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: MicroQuill SmartHeap Library 8.1 for x64

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>169</b>	<b>80.5</b>	168	80.9	169	80.4	150	90.7	169	80.4	<b>150</b>	<b>90.5</b>
416.gamess	751	26.1	<b>751</b>	<b>26.1</b>	751	26.1	690	28.4	686	28.5	<b>689</b>	<b>28.4</b>
433.milc	305	30.1	<b>305</b>	<b>30.1</b>	304	30.2	305	30.1	<b>305</b>	<b>30.1</b>	304	30.2
434.zeusmp	270	33.8	<b>266</b>	<b>34.2</b>	264	34.4	270	33.8	<b>266</b>	<b>34.2</b>	264	34.4
435.gromacs	<b>274</b>	<b>26.1</b>	274	26.1	274	26.0	272	26.2	271	26.3	<b>271</b>	<b>26.3</b>
436.cactusADM	<b>117</b>	<b>103</b>	117	103	117	102	118	101	<b>119</b>	<b>101</b>	119	100
437.leslie3d	268	35.0	<b>268</b>	<b>35.1</b>	266	35.4	268	35.0	<b>268</b>	<b>35.1</b>	266	35.4
444.namd	<b>377</b>	<b>21.3</b>	376	21.3	378	21.2	379	21.2	378	21.2	<b>378</b>	<b>21.2</b>
447.dealII	390	29.4	392	29.2	<b>390</b>	<b>29.3</b>	<b>369</b>	<b>31.0</b>	369	31.0	366	31.2
450.soplex	<b>268</b>	<b>31.1</b>	266	31.3	279	29.9	284	29.3	262	31.8	<b>268</b>	<b>31.1</b>
453.povray	<b>165</b>	<b>32.2</b>	165	32.3	166	32.1	<b>132</b>	<b>40.4</b>	132	40.4	132	40.3
454.calculix	275	30.0	<b>276</b>	<b>29.9</b>	276	29.9	<b>265</b>	<b>31.2</b>	264	31.2	265	31.1
459.GemsFDTD	<b>246</b>	<b>43.2</b>	246	43.1	229	46.3	<b>233</b>	<b>45.6</b>	234	45.4	233	45.6
465.tonto	<b>347</b>	<b>28.4</b>	347	28.4	348	28.3	299	32.9	<b>299</b>	<b>32.9</b>	299	32.9
470.lbm	240	57.3	<b>240</b>	<b>57.2</b>	241	57.0	240	57.3	<b>240</b>	<b>57.2</b>	241	57.0
481.wrf	248	45.1	247	45.2	<b>247</b>	<b>45.1</b>	<b>248</b>	<b>45.0</b>	249	44.8	248	45.1
482.sphinx3	414	47.1	437	44.6	<b>420</b>	<b>46.4</b>	413	47.2	<b>419</b>	<b>46.5</b>	428	45.5

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

## Platform Notes

BIOS Settings

Memory Node Interleaving: NUMA

## Base Compiler Invocation

C benchmarks:

icl -Qvc9 -Qstd=c99

C++ benchmarks:

icl -Qvc9

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## Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc9 -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64 /assume:underscore  
 416.gamess: -DSPEC\_CPU\_P64  
 433.milc: -DSPEC\_CPU\_P64  
 434.zeusmp: -DSPEC\_CPU\_P64  
 435.gromacs: -DSPEC\_CPU\_P64  
 436.cactusADM: -DSPEC\_CPU\_P64 -Qlowercase /assume:underscore  
 437.leslie3d: -DSPEC\_CPU\_P64  
 444.namd: -DSPEC\_CPU\_P64 /TP  
 447.dealII: -DSPEC\_CPU\_P64 -DDEAL\_II\_MEMBER\_VAR\_SPECIALIZATION\_BUG  
 450.soplex: -DSPEC\_CPU\_P64  
 453.povray: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
 454.calculix: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_NOZMODIFIER -Qlowercase  
 459.GemsFDTD: -DSPEC\_CPU\_P64  
 465.tonto: -DSPEC\_CPU\_P64  
 470.lbm: -DSPEC\_CPU\_P64  
 481.wrf: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
 482.sphinx3: -DSPEC\_CPU\_P64

## Base Optimization Flags

C benchmarks:

-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel  
-Qopt-prefetch /F512000000

C++ benchmarks:

-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel  
-Qopt-prefetch -Qcxx\_features /F512000000 shlw64mt.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:

-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel  
-Qopt-prefetch /F1000000000

Benchmarks using both Fortran and C:

-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel  
-Qopt-prefetch /F1000000000



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## Peak Compiler Invocation

C benchmarks:

icl -Qvc9 -Qstd=c99

C++ benchmarks:

icl -Qvc9

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc9 -Qstd=c99 ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qunroll2 /F512000000

C++ benchmarks:

444.namd: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

447.dealII: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qansi-alias -Qscalar-rep- /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

450.soplex: -Qprof\_gen(pass 1) -QxSSE4.2 -Qauto-ilp32 -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

453.povray: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div-  
-Qopt-prefetch -Qparallel /F1000000000

416.gamess: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0  
-Qansi-alias -Qscalar-rep- /F1000000000

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0  
-Qopt-prefetch -Qparallel /F1000000000

465.tonto: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto  
/F1000000000

Benchmarks using both Fortran and C:

435.gromacs: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch  
/F1000000000

436.cactusADM: -Qprof\_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2  
-Qopt-prefetch -Qparallel /F1000000000

454.calculix: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- /F1000000000

481.wrf: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div-  
-Qopt-prefetch -Qparallel /F1000000000

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

<http://www.spec.org/cpu2006/flags/dell.flags.ic11.0.win.html>

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

<http://www.spec.org/cpu2006/flags/dell.flags.ic11.0.win.xml>



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