



# SPEC<sup>®</sup> CFP2006 Result

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## Dell Inc.

### SPECfp<sup>®</sup>\_rate2006 = 48.0

### PowerEdge R300 (Intel Xeon X3363, 2.83 GHz)

### SPECfp\_rate\_base2006 = 45.4

CPU2006 license: 55

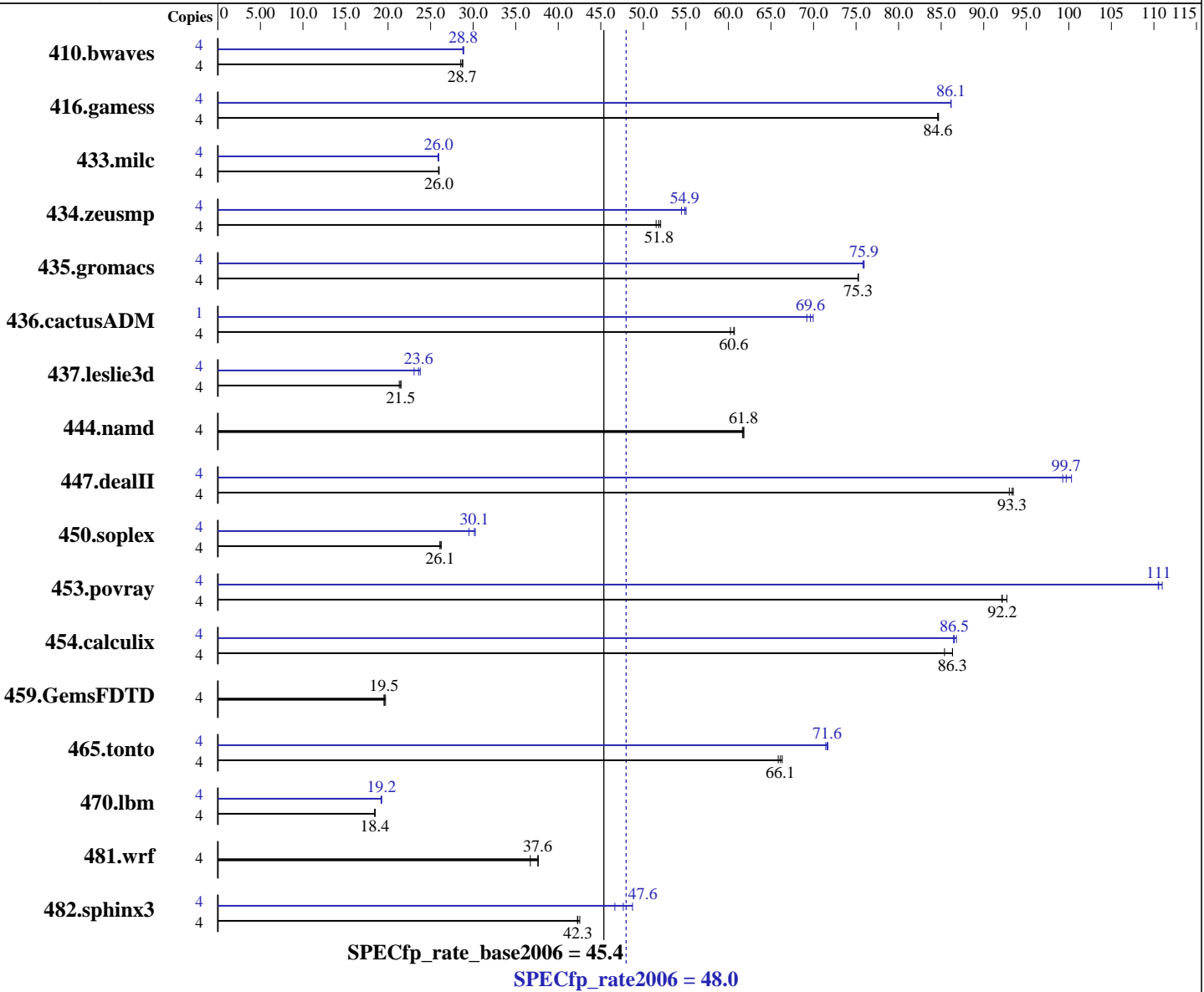
Test date: Nov-2008

Test sponsor: Dell Inc.

Hardware Availability: Mar-2008

Tested by: Dell Inc.

Software Availability: Nov-2008



#### Hardware

CPU Name: Intel Xeon X3363  
 CPU Characteristics: 2833  
 CPU MHz: 2833  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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#### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042, l\_fproc\_b\_11.0.042  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (4 x 4 GB DDR2-667 FBDIMM)  
Disk Subsystem: 2 x 36 GB 10000 RPM SAS  
Other Hardware: None

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	4	1905	28.5	<b><u>1894</u></b>	<b><u>28.7</u></b>	1888	28.8	4	1888	28.8	<b><u>1885</u></b>	<b><u>28.8</u></b>	1881	28.9
416.gamess	4	<b><u>925</u></b>	<b><u>84.6</u></b>	926	84.6	925	84.7	4	909	86.2	<b><u>909</u></b>	<b><u>86.1</u></b>	909	86.1
433.milc	4	1412	26.0	1416	25.9	<b><u>1413</u></b>	<b><u>26.0</u></b>	4	1414	26.0	<b><u>1414</u></b>	<b><u>26.0</u></b>	1420	25.9
434.zeusmp	4	699	52.0	<b><u>702</u></b>	<b><u>51.8</u></b>	707	51.5	4	668	54.5	661	55.0	<b><u>663</u></b>	<b><u>54.9</u></b>
435.gromacs	4	380	75.2	<b><u>380</u></b>	<b><u>75.3</u></b>	379	75.3	4	376	75.9	<b><u>376</u></b>	<b><u>75.9</u></b>	377	75.8
436.cactusADM	4	794	60.2	<b><u>788</u></b>	<b><u>60.6</u></b>	787	60.7	1	173	69.2	<b><u>172</u></b>	<b><u>69.6</u></b>	171	70.0
437.leslie3d	4	1748	21.5	<b><u>1749</u></b>	<b><u>21.5</u></b>	1764	21.3	4	1631	23.1	<b><u>1594</u></b>	<b><u>23.6</u></b>	1581	23.8
444.namd	4	<b><u>519</u></b>	<b><u>61.8</u></b>	519	61.8	520	61.6	4	<b><u>519</u></b>	<b><u>61.8</u></b>	519	61.8	520	61.6
447.dealII	4	<b><u>490</u></b>	<b><u>93.3</u></b>	492	93.0	490	93.5	4	461	99.3	<b><u>459</u></b>	<b><u>99.7</u></b>	456	100
450.soplex	4	1271	26.3	1278	26.1	<b><u>1277</u></b>	<b><u>26.1</u></b>	4	1131	29.5	<b><u>1107</u></b>	<b><u>30.1</u></b>	1103	30.2
453.povray	4	231	92.1	230	92.7	<b><u>231</u></b>	<b><u>92.2</u></b>	4	193	111	192	111	<b><u>192</u></b>	<b><u>111</u></b>
454.calculix	4	386	85.4	<b><u>382</u></b>	<b><u>86.3</u></b>	382	86.3	4	<b><u>381</u></b>	<b><u>86.5</u></b>	382	86.5	380	86.8
459.GemsFDTD	4	2154	19.7	2172	19.5	<b><u>2172</u></b>	<b><u>19.5</u></b>	4	2154	19.7	2172	19.5	<b><u>2172</u></b>	<b><u>19.5</u></b>
465.tonto	4	<b><u>595</u></b>	<b><u>66.1</u></b>	593	66.3	598	65.8	4	549	71.7	<b><u>550</u></b>	<b><u>71.6</u></b>	551	71.4
470.lbm	4	2973	18.5	2981	18.4	<b><u>2981</u></b>	<b><u>18.4</u></b>	4	2866	19.2	<b><u>2856</u></b>	<b><u>19.2</u></b>	2856	19.2
481.wrf	4	1217	36.7	<b><u>1188</u></b>	<b><u>37.6</u></b>	1187	37.7	4	1217	36.7	<b><u>1188</u></b>	<b><u>37.6</u></b>	1187	37.7
482.sphinx3	4	<b><u>1843</u></b>	<b><u>42.3</u></b>	1833	42.5	1845	42.3	4	1671	46.7	<b><u>1636</u></b>	<b><u>47.6</u></b>	1600	48.7

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.

## General Notes

taskset was used to bind processes to cores except for 436.cactusADM peak  
OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M



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CPU2006 license: 55

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## 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:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

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.deallI: -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

## Peak Optimization Flags

C benchmarks:

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## Peak Optimization Flags (Continued)

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: basepeak = yes

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -ansi-alias  
-scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -opt-prefetch -parallel  
-auto-ilp32

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## Peak Optimization Flags (Continued)

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

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-ic11.0-fp-linux64-revA.20090713.05.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.11.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.05.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.11.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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