



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 49.6

PowerEdge R200 (Intel Xeon X3360, 2.83 GHz)

SPECfp_rate_base2006 = 46.6

CPU2006 license: 55

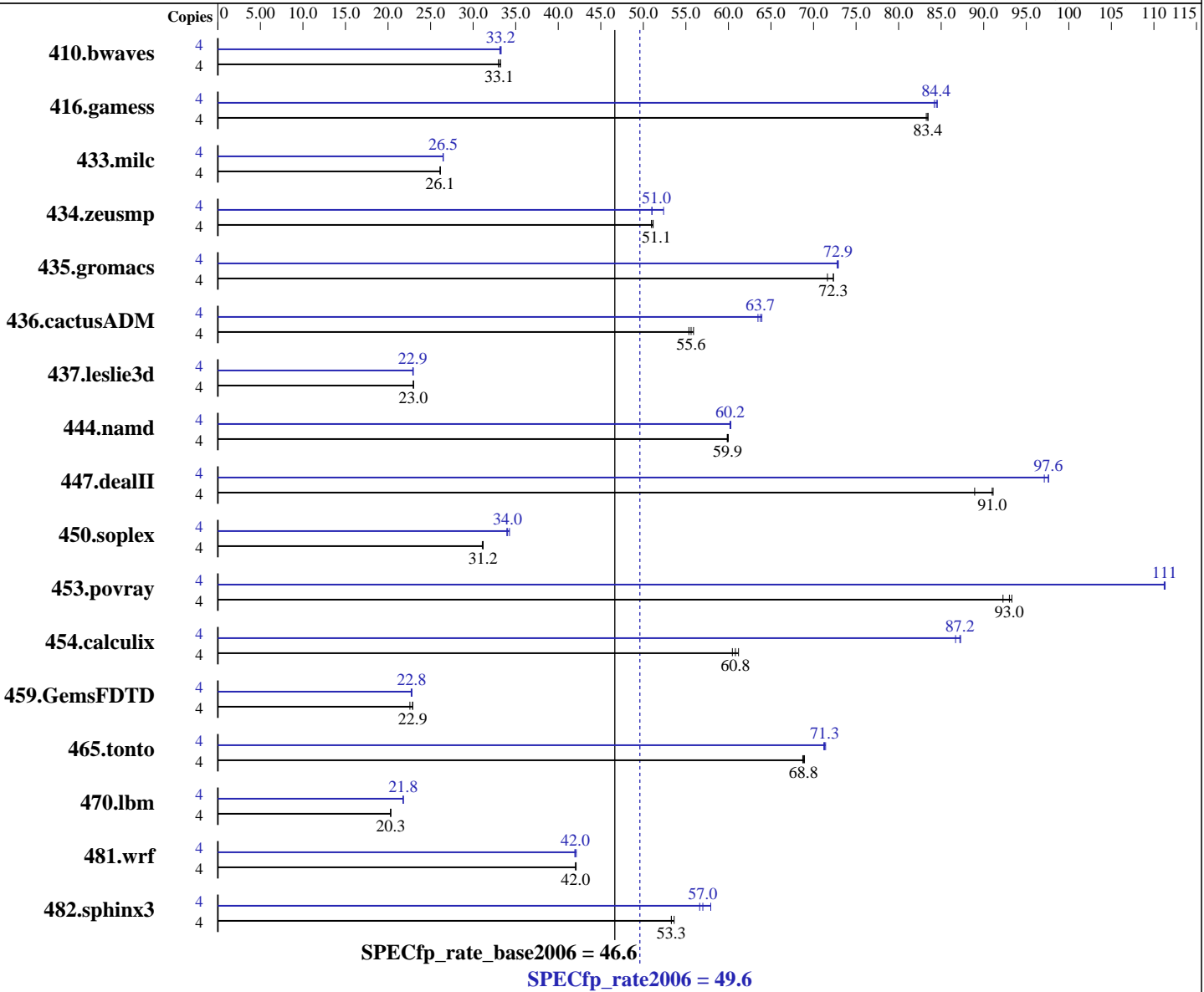
Test date: Mar-2008

Test sponsor: Dell Inc.

Hardware Availability: Mar-2008

Tested by: Dell Inc.

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X3360
 CPU Characteristics: 1333 MHz system bus
 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) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
 Auto Parallel: No
 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: 8 GB (4 x 2GB 800MHz DDR2)
Disk Subsystem: 1 x 750 GB 7200 RPM SATA
Other Hardware: None

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

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	1635	33.2	<u>1645</u>	<u>33.1</u>	1648	33.0	4	1633	33.3	<u>1635</u>	<u>33.2</u>	1640	33.1		
416.gamess	4	941	83.3	<u>939</u>	<u>83.4</u>	938	83.5	4	<u>928</u>	<u>84.4</u>	926	84.6	930	84.2		
433.milc	4	1404	26.2	<u>1406</u>	<u>26.1</u>	1406	26.1	4	<u>1387</u>	<u>26.5</u>	1387	26.5	1387	26.5		
434.zeusmp	4	712	51.2	715	50.9	<u>712</u>	<u>51.1</u>	4	714	51.0	695	52.4	<u>713</u>	<u>51.0</u>		
435.gromacs	4	399	71.6	395	72.3	<u>395</u>	<u>72.3</u>	4	392	72.8	<u>392</u>	<u>72.9</u>	392	72.9		
436.cactusADM	4	855	55.9	<u>860</u>	<u>55.6</u>	863	55.4	4	748	63.9	753	63.5	<u>750</u>	<u>63.7</u>		
437.leslie3d	4	<u>1637</u>	<u>23.0</u>	1637	23.0	1635	23.0	4	<u>1641</u>	<u>22.9</u>	1641	22.9	1637	23.0		
444.namd	4	536	59.9	<u>536</u>	<u>59.9</u>	535	60.0	4	<u>533</u>	<u>60.2</u>	533	60.2	532	60.3		
447.dealII	4	502	91.1	<u>503</u>	<u>91.0</u>	515	88.9	4	471	97.1	469	97.6	<u>469</u>	<u>97.6</u>		
450.soplex	4	<u>1070</u>	<u>31.2</u>	1074	31.1	1070	31.2	4	<u>980</u>	<u>34.0</u>	982	34.0	973	34.3		
453.povray	4	<u>229</u>	<u>93.0</u>	228	93.3	231	92.3	4	<u>191</u>	<u>111</u>	191	111	191	111		
454.calculix	4	539	61.2	<u>543</u>	<u>60.8</u>	546	60.5	4	378	87.3	<u>378</u>	<u>87.2</u>	381	86.7		
459.GemsFDTD	4	1880	22.6	1854	22.9	<u>1854</u>	<u>22.9</u>	4	<u>1864</u>	<u>22.8</u>	1868	22.7	1861	22.8		
465.tonto	4	571	68.9	<u>572</u>	<u>68.8</u>	573	68.7	4	551	71.4	<u>552</u>	<u>71.3</u>	553	71.2		
470.lbm	4	<u>2706</u>	<u>20.3</u>	2706	20.3	2706	20.3	4	2523	21.8	2524	21.8	<u>2523</u>	<u>21.8</u>		
481.wrf	4	1061	42.1	<u>1063</u>	<u>42.0</u>	1063	42.0	4	1061	42.1	1065	41.9	<u>1064</u>	<u>42.0</u>		
482.sphinx3	4	1454	53.6	<u>1463</u>	<u>53.3</u>	1463	53.3	4	1346	57.9	<u>1368</u>	<u>57.0</u>	1377	56.6		

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

Compiler Invocation Notes

KMP_STACK_SIZE set to 64M
KMP_AFFINITY set to physical,0

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs

Platform Notes

BIOS Settings:
Adjacent Cache Line Prefetch = Disabled (default Enabled)
Hardware Prefetcher = Disabled (default Enabled)



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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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32
```

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Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32



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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.04.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.04.xml>

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