



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 64.2

PowerEdge 2900 III (Intel Xeon E5410, 2.33 GHz)

SPECfp_rate_base2006 = 60.2

CPU2006 license: 55

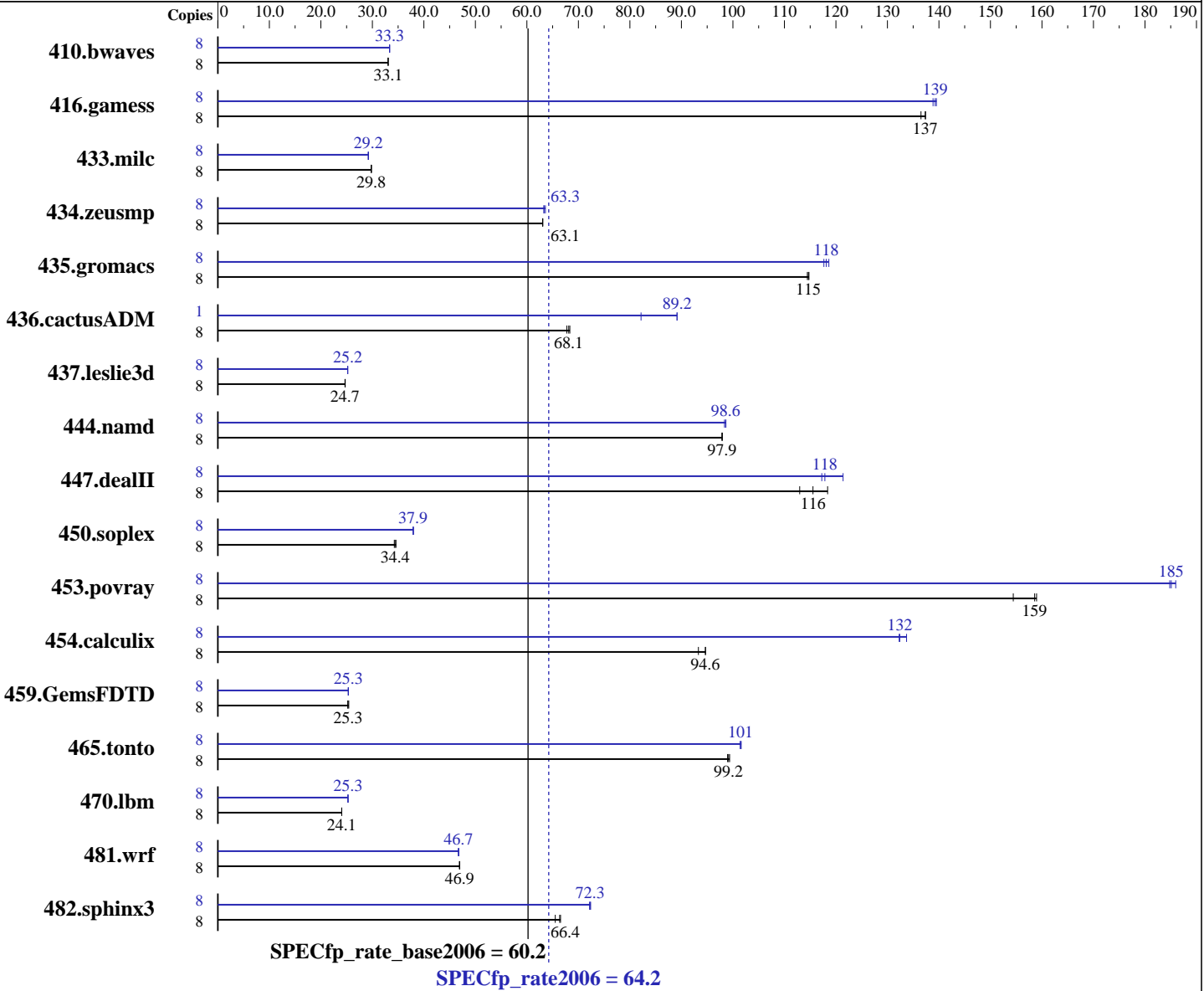
Test date: Jul-2008

Test sponsor: Dell Inc.

Hardware Availability: Nov-2007

Tested by: Dell Inc.

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5410
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2333
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 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 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (8 x 1GB 667 MHz DDR2 FB-DIMM)
Disk Subsystem: 1 x 300GB 10000 RPM SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1
Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3290	33.1	<u>3289</u>	<u>33.1</u>	3288	33.1	8	3257	33.4	<u>3262</u>	<u>33.3</u>	3263	33.3
416.gamess	8	1140	137	<u>1141</u>	<u>137</u>	1147	137	8	1128	139	<u>1125</u>	<u>139</u>	1123	140
433.milc	8	2463	29.8	<u>2465</u>	<u>29.8</u>	2467	29.8	8	2516	29.2	<u>2513</u>	<u>29.2</u>	2511	29.3
434.zeusmp	8	1155	63.0	<u>1154</u>	<u>63.1</u>	1154	63.1	8	<u>1150</u>	<u>63.3</u>	1145	63.6	1150	63.3
435.gromacs	8	499	114	<u>498</u>	<u>115</u>	498	115	8	<u>484</u>	<u>118</u>	481	119	485	118
436.cactusADM	8	<u>1403</u>	<u>68.1</u>	1411	67.8	1399	68.3	1	<u>134</u>	<u>89.2</u>	145	82.2	134	89.2
437.leslie3d	8	<u>3043</u>	<u>24.7</u>	3047	24.7	3040	24.7	8	2981	25.2	<u>2983</u>	<u>25.2</u>	2983	25.2
444.namd	8	655	97.9	655	97.9	<u>655</u>	<u>97.9</u>	8	650	98.6	652	98.4	<u>651</u>	<u>98.6</u>
447.dealII	8	<u>792</u>	<u>116</u>	773	118	810	113	8	754	121	<u>777</u>	<u>118</u>	781	117
450.soplex	8	<u>1939</u>	<u>34.4</u>	1929	34.6	1948	34.3	8	1761	37.9	<u>1760</u>	<u>37.9</u>	1757	38.0
453.povray	8	<u>268</u>	<u>159</u>	268	159	276	154	8	<u>230</u>	<u>185</u>	230	185	229	186
454.calculix	8	707	93.3	<u>697</u>	<u>94.6</u>	697	94.7	8	494	134	499	132	<u>498</u>	<u>132</u>
459.GemsFDTD	8	3365	25.2	<u>3361</u>	<u>25.3</u>	3340	25.4	8	<u>3351</u>	<u>25.3</u>	3350	25.3	3352	25.3
465.tonto	8	795	99.0	<u>794</u>	<u>99.2</u>	792	99.4	8	<u>776</u>	<u>101</u>	776	101	775	102
470.lbm	8	4570	24.1	<u>4570</u>	<u>24.1</u>	4569	24.1	8	4351	25.3	<u>4350</u>	<u>25.3</u>	4350	25.3
481.wrf	8	<u>1904</u>	<u>46.9</u>	1903	47.0	1905	46.9	8	<u>1912</u>	<u>46.7</u>	1914	46.7	1910	46.8
482.sphinx3	8	2343	66.5	<u>2350</u>	<u>66.4</u>	2380	65.5	8	<u>2157</u>	<u>72.3</u>	2161	72.2	2154	72.4

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
'/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):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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
```

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

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealIII: -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 -parallel -auto-ilp32

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

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Dell-Intel-ic10.1-fp-linux64-revC.html>



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

<http://www.spec.org/cpu2006/flags/Dell-Intel-ic10.1-fp-linux64-revC.xml>

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