



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 174

PowerEdge R710 (Intel Xeon E5630, 2.53 GHz)

SPECfp_rate_base2006 = 167

CPU2006 license: 55

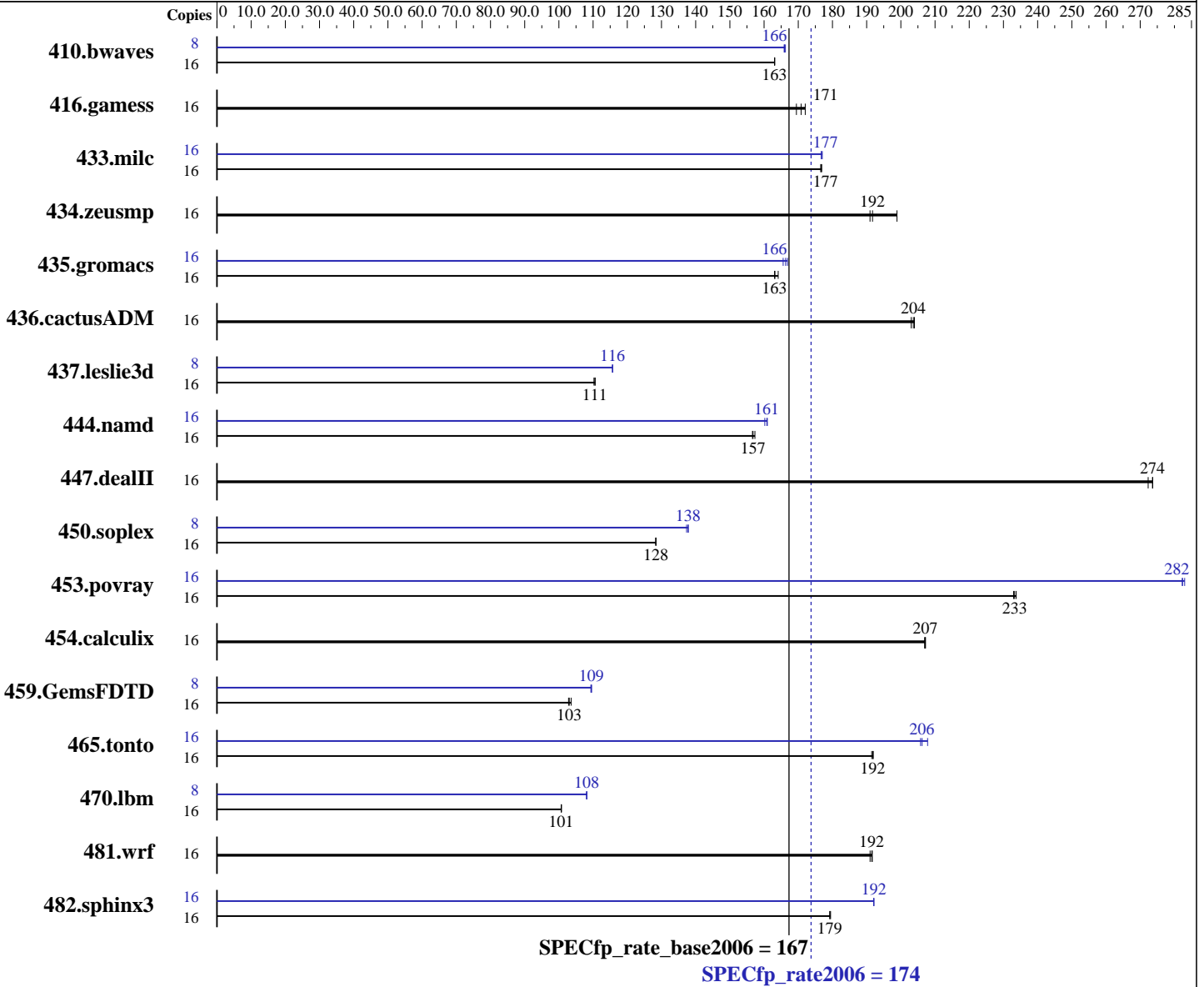
Test date: Apr-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon E5630
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2533
 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: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB DDR3-1333 DR CL9, ECC, downclocked to 1066 MHz)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

Base Pointers: 64-bit
 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	16	1333	163	1334	163	<u>1333</u>	<u>163</u>	8	655	166	654	166	<u>655</u>	<u>166</u>		
416.gamess	16	1821	172	1849	169	<u>1834</u>	<u>171</u>	16	1821	172	1849	169	<u>1834</u>	<u>171</u>		
433.milc	16	<u>832</u>	<u>177</u>	830	177	832	177	16	830	177	<u>831</u>	<u>177</u>	831	177		
434.zeusmp	16	762	191	732	199	<u>759</u>	<u>192</u>	16	762	191	732	199	<u>759</u>	<u>192</u>		
435.gromacs	16	696	164	<u>700</u>	<u>163</u>	701	163	16	<u>687</u>	<u>166</u>	690	166	685	167		
436.cactusADM	16	<u>939</u>	<u>204</u>	942	203	937	204	16	<u>939</u>	<u>204</u>	942	203	937	204		
437.leslie3d	16	<u>1361</u>	<u>111</u>	1364	110	1360	111	8	650	116	<u>650</u>	<u>116</u>	650	116		
444.namd	16	816	157	819	157	<u>819</u>	<u>157</u>	16	797	161	<u>798</u>	<u>161</u>	801	160		
447.dealII	16	669	274	<u>669</u>	<u>274</u>	672	272	16	669	274	<u>669</u>	<u>274</u>	672	272		
450.soplex	16	<u>1039</u>	<u>128</u>	1039	128	1040	128	8	<u>484</u>	<u>138</u>	484	138	486	137		
453.povray	16	364	234	<u>365</u>	<u>233</u>	365	233	16	301	283	302	282	<u>301</u>	<u>282</u>		
454.calculix	16	638	207	<u>637</u>	<u>207</u>	637	207	16	638	207	<u>637</u>	<u>207</u>	637	207		
459.GemsFDTD	16	1639	104	<u>1648</u>	<u>103</u>	1651	103	8	<u>775</u>	<u>109</u>	775	110	776	109		
465.tonto	16	<u>821</u>	<u>192</u>	822	191	820	192	16	758	208	<u>763</u>	<u>206</u>	765	206		
470.lbm	16	2182	101	2184	101	<u>2183</u>	<u>101</u>	8	1016	108	<u>1017</u>	<u>108</u>	1017	108		
481.wrf	16	936	191	<u>933</u>	<u>192</u>	933	192	16	936	191	<u>933</u>	<u>192</u>	933	192		
482.sphinx3	16	1738	179	1740	179	<u>1740</u>	<u>179</u>	16	1623	192	1624	192	<u>1623</u>	<u>192</u>		

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.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Data Reuse = Disabled (Default = Enabled)



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General Notes

The Dell PowerEdge R710 and the Bull NovaScale R460 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R710 model. Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

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:

-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -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



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Peak Optimization Flags

C benchmarks:

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

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

447.dealIII: basepeak = yes

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

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

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

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

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml>

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For other inquiries, please contact webmaster@spec.org.

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