



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]2006 = 37.5

PowerEdge R210 II (Intel Xeon E3-1260L, 2.40 GHz)

SPECfp_base2006 = 36.1

CPU2006 license: 55

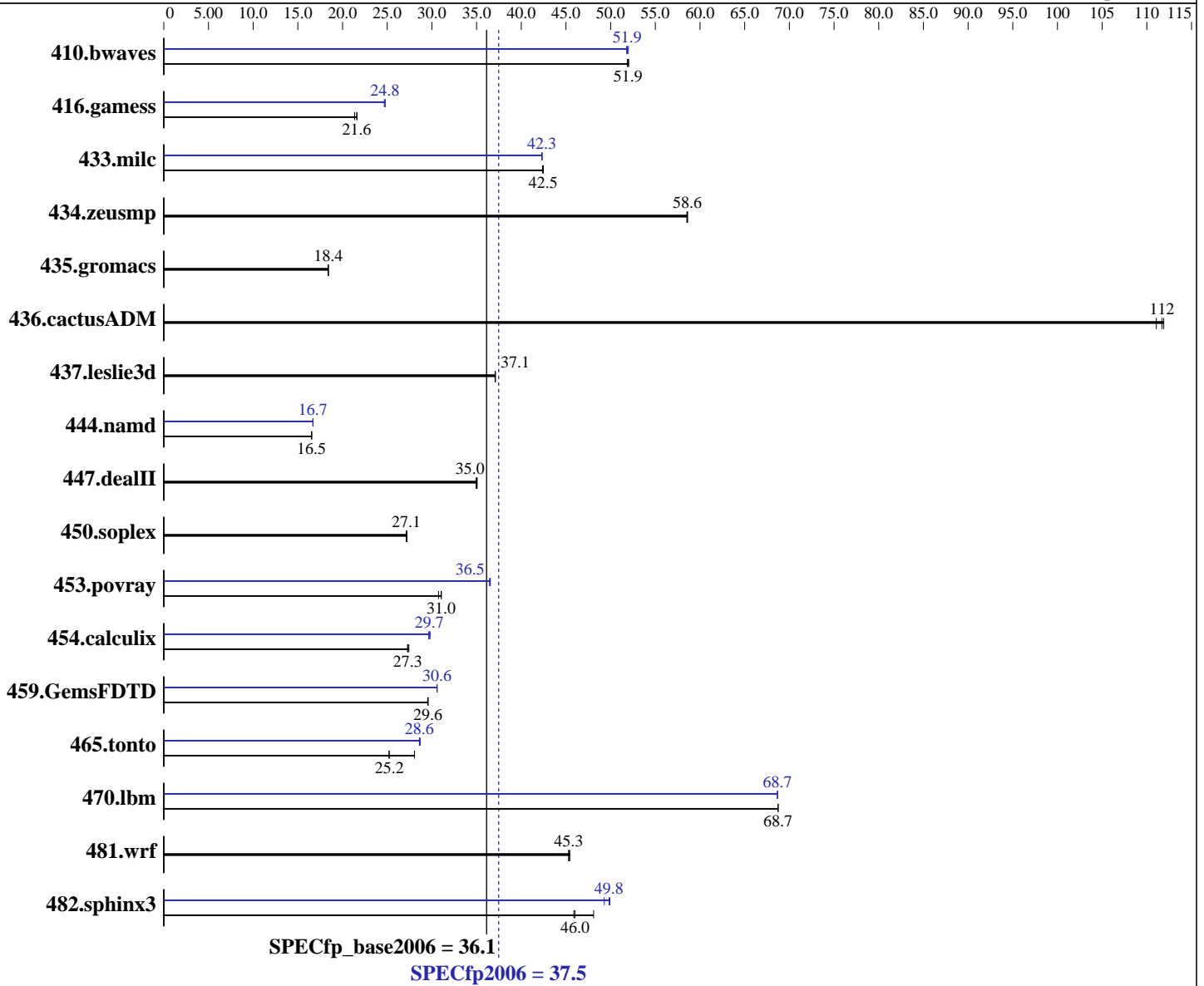
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2011

Hardware Availability: May-2011

Software Availability: Apr-2011



Hardware

CPU Name: Intel Xeon E3-1260L
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 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 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12 Alpha Build 20110105
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (4 x 2 GB 2Rx8 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>262</u>	<u>51.9</u>	261	52.0	262	51.9	261	52.0	262	51.8	<u>262</u>	<u>51.9</u>
416.gamess	906	21.6	917	21.3	<u>906</u>	<u>21.6</u>	793	24.7	<u>791</u>	<u>24.8</u>	790	24.8
433.milc	<u>216</u>	<u>42.5</u>	216	42.5	217	42.4	217	42.3	217	42.4	<u>217</u>	<u>42.3</u>
434.zeusmp	155	58.5	<u>155</u>	<u>58.6</u>	155	58.6	155	58.5	<u>155</u>	<u>58.6</u>	155	58.6
435.gromacs	388	18.4	<u>388</u>	<u>18.4</u>	388	18.4	388	18.4	<u>388</u>	<u>18.4</u>	388	18.4
436.cactusADM	<u>107</u>	<u>112</u>	107	112	108	111	<u>107</u>	<u>112</u>	107	112	108	111
437.leslie3d	253	37.1	<u>253</u>	<u>37.1</u>	254	37.1	253	37.1	<u>253</u>	<u>37.1</u>	254	37.1
444.namd	<u>485</u>	<u>16.5</u>	485	16.5	485	16.5	481	16.7	480	16.7	<u>480</u>	<u>16.7</u>
447.dealII	327	34.9	<u>327</u>	<u>35.0</u>	326	35.1	327	34.9	<u>327</u>	<u>35.0</u>	326	35.1
450.soplex	<u>307</u>	<u>27.1</u>	307	27.2	308	27.1	<u>307</u>	<u>27.1</u>	307	27.2	308	27.1
453.povray	173	30.7	<u>171</u>	<u>31.0</u>	171	31.1	146	36.4	146	36.5	<u>146</u>	<u>36.5</u>
454.calculix	<u>302</u>	<u>27.3</u>	301	27.4	302	27.3	278	29.6	<u>278</u>	<u>29.7</u>	277	29.8
459.GemsFDTD	<u>359</u>	<u>29.6</u>	359	29.5	359	29.6	347	30.6	347	30.6	<u>347</u>	<u>30.6</u>
465.tonto	351	28.1	<u>390</u>	<u>25.2</u>	391	25.2	343	28.7	<u>344</u>	<u>28.6</u>	344	28.6
470.lbm	<u>200</u>	<u>68.7</u>	200	68.7	200	68.7	200	68.7	200	68.7	<u>200</u>	<u>68.7</u>
481.wrf	246	45.4	<u>246</u>	<u>45.3</u>	247	45.3	246	45.4	<u>246</u>	<u>45.3</u>	247	45.3
482.sphinx3	<u>424</u>	<u>46.0</u>	425	45.9	405	48.1	395	49.3	<u>391</u>	<u>49.8</u>	390	49.9

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900> /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Logical Processor = Disabled (Default = Enabled)



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General Notes

OMP_NUM_THREADS set to number of cores
The Dell PowerEdge R210 II and the Bull NovaScale R410B F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R210 II model. Binaries were compiled on RHEL5.5

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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -parallel
-ansi-alias -static -auto-ilp32

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

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

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

481.wrf: basepeak = yes



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The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.xml>

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

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