



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]2006 = 76.9

PowerEdge R220 (Intel Xeon E3-1270 v3, 3.50 GHz)

SPECfp_base2006 = 75.5

CPU2006 license: 55

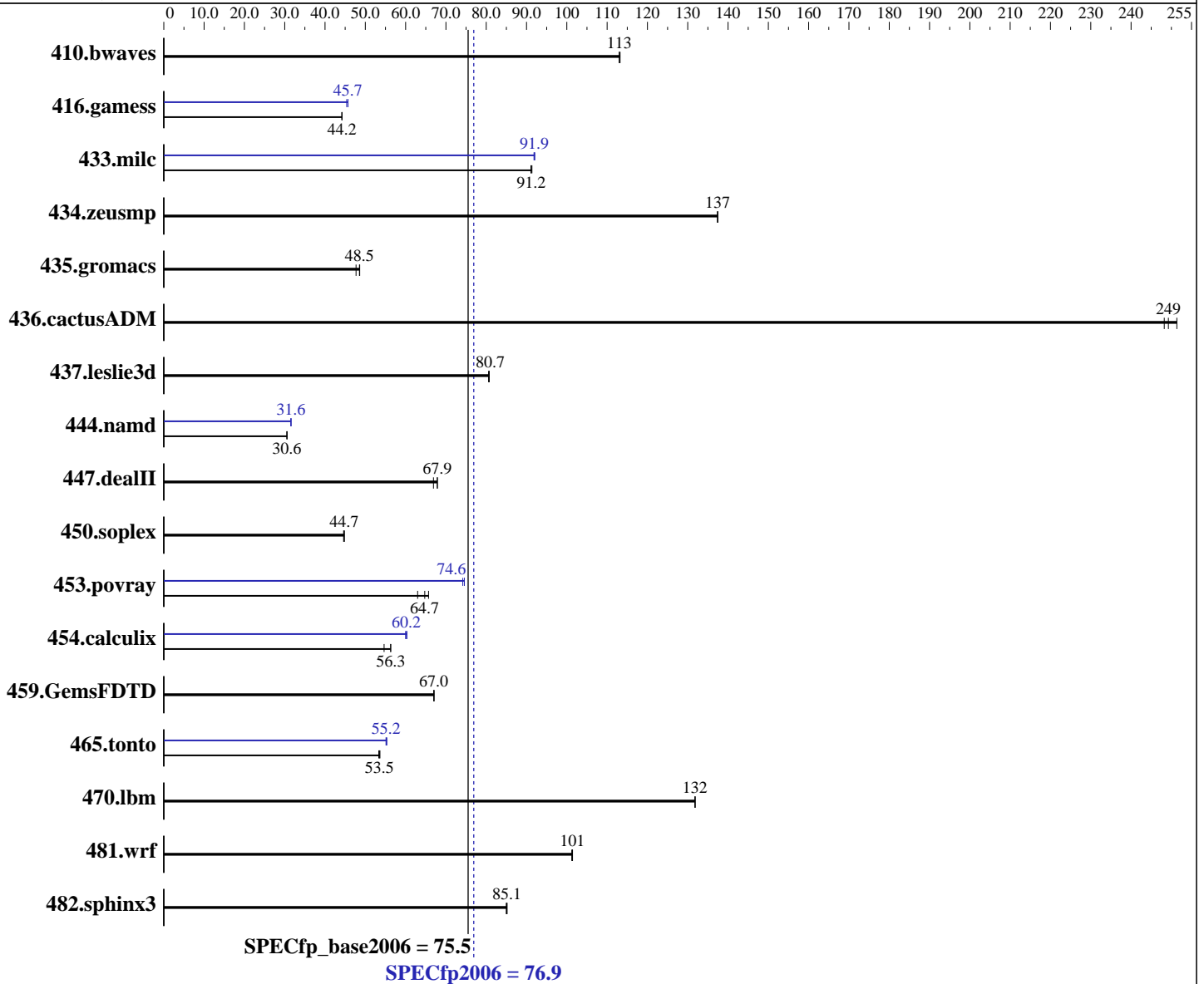
Test date: Feb-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Feb-2014



Hardware

CPU Name: Intel Xeon E3-1270 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz
 CPU MHz: 3500
 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: 256 KB I+D on chip per core

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Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
 3.0.76-0.11-default
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS
 Other Hardware: None

Base Pointers: 64-bit
 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>120</u>	<u>113</u>	120	113	120	113	<u>120</u>	<u>113</u>	120	113	120	113
416.gamess	443	44.2	443	44.2	<u>443</u>	<u>44.2</u>	432	45.4	428	45.7	<u>429</u>	<u>45.7</u>
433.milc	101	91.1	101	91.3	<u>101</u>	<u>91.2</u>	<u>99.9</u>	<u>91.9</u>	99.7	92.1	99.9	91.8
434.zeusmp	66.2	137	<u>66.2</u>	<u>137</u>	66.2	137	66.2	137	<u>66.2</u>	<u>137</u>	66.2	137
435.gromacs	147	48.6	<u>147</u>	<u>48.5</u>	150	47.7	147	48.6	<u>147</u>	<u>48.5</u>	150	47.7
436.cactusADM	47.5	251	<u>47.9</u>	<u>249</u>	48.1	248	47.5	251	<u>47.9</u>	<u>249</u>	48.1	248
437.leslie3d	117	80.6	116	80.7	<u>116</u>	<u>80.7</u>	117	80.6	116	80.7	<u>116</u>	<u>80.7</u>
444.namd	<u>262</u>	<u>30.6</u>	262	30.6	262	30.6	254	31.6	<u>254</u>	<u>31.6</u>	254	31.5
447.dealII	171	66.9	169	67.9	<u>169</u>	<u>67.9</u>	171	66.9	169	67.9	<u>169</u>	<u>67.9</u>
450.soplex	186	44.8	187	44.6	<u>186</u>	<u>44.7</u>	186	44.8	187	44.6	<u>186</u>	<u>44.7</u>
453.povray	84.5	63.0	81.0	65.7	<u>82.2</u>	<u>64.7</u>	<u>71.3</u>	<u>74.6</u>	71.3	74.6	71.7	74.2
454.calculix	<u>147</u>	<u>56.3</u>	147	56.3	151	54.7	137	60.3	138	60.0	<u>137</u>	<u>60.2</u>
459.GemsFDTD	<u>158</u>	<u>67.0</u>	158	67.1	158	67.0	<u>158</u>	<u>67.0</u>	158	67.1	158	67.0
465.tonto	183	53.6	184	53.3	<u>184</u>	<u>53.5</u>	<u>178</u>	<u>55.2</u>	178	55.3	178	55.2
470.lbm	104	132	104	132	<u>104</u>	<u>132</u>	104	132	104	132	<u>104</u>	<u>132</u>
481.wrf	<u>110</u>	<u>101</u>	110	101	110	101	<u>110</u>	<u>101</u>	110	101	110	101
482.sphinx3	229	85.2	229	85.0	<u>229</u>	<u>85.1</u>	229	85.2	229	85.0	<u>229</u>	<u>85.1</u>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Virtualization Technology disabled
 Execute Disable disabled
 System Profile set to Performance
 Logical Processor disabled
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on R220 Mon Feb 24 16:04:13 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E3-1270 v3 @ 3.50GHz

1 "physical id"s (chips)

4 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 4

siblings : 4

physical 0: cores 0 1 2 3

cache size : 8192 KB

From /proc/meminfo

MemTotal: 32809896 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*

SuSE-release:

SUSE Linux Enterprise Server 11 (x86_64)

VERSION = 11

PATCHLEVEL = 3

uname -a:

Linux R220 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)

x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 24 15:46 last=S

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sda2 ext2 221G 41G 180G 19% /

Additional information from dmidecode:

BIOS Dell Inc. 1.0.1 02/17/2014

Memory:

4x Hynix/Hyundai HMT41GU7AFR8A-PB 8 GB 1600 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

OMP_NUM_THREADS = "4"

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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(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

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic14.0-official-linux64.20140128.html>
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.xml>



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