



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®2006 = 77.8

PowerEdge R220 (Intel Xeon E3-1280 v3, 3.60 GHz)

SPECfp_base2006 = 76.3

CPU2006 license: 55

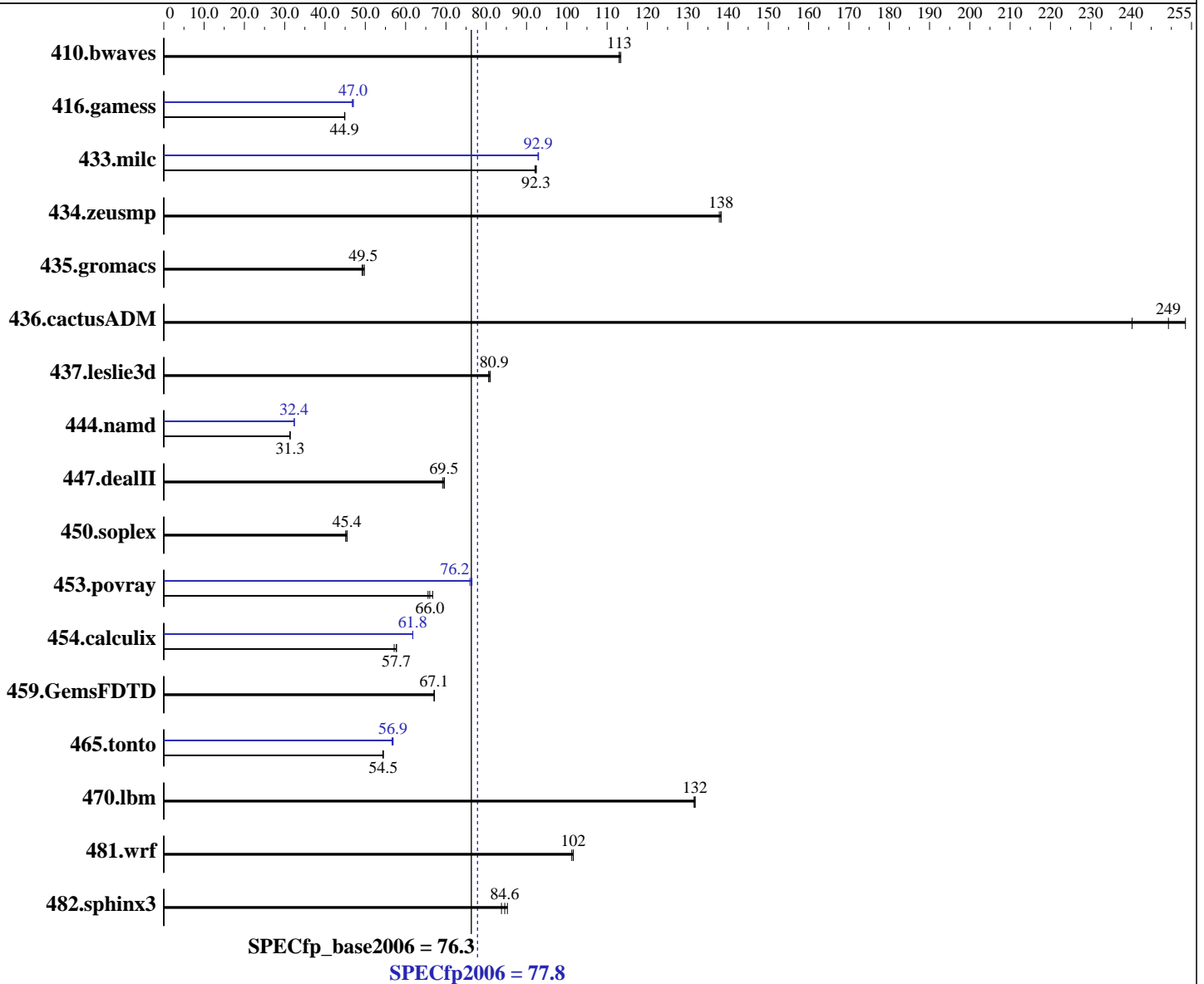
Test date: Feb-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Feb-2014



Hardware

CPU Name: Intel Xeon E3-1280 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
 CPU MHz: 3600
 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: 2 x 300 GB 10000 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	437	44.9	<u>437</u>	<u>44.9</u>	436	44.9	419	46.8	<u>417</u>	<u>47.0</u>	416	47.0
433.milc	99.7	92.1	99.3	92.4	<u>99.4</u>	<u>92.3</u>	98.7	93.0	98.9	92.9	<u>98.8</u>	<u>92.9</u>
434.zeusmp	65.8	138	<u>65.8</u>	<u>138</u>	66.0	138	65.8	138	<u>65.8</u>	<u>138</u>	66.0	138
435.gromacs	143	49.8	145	49.2	<u>144</u>	<u>49.5</u>	143	49.8	145	49.2	<u>144</u>	<u>49.5</u>
436.cactusADM	47.1	253	<u>47.9</u>	<u>249</u>	49.7	240	47.1	253	<u>47.9</u>	<u>249</u>	49.7	240
437.leslie3d	117	80.6	116	81.0	<u>116</u>	<u>80.9</u>	117	80.6	116	81.0	<u>116</u>	<u>80.9</u>
444.namd	256	31.3	256	31.3	<u>256</u>	<u>31.3</u>	248	32.4	<u>248</u>	<u>32.4</u>	248	32.4
447.dealII	<u>165</u>	<u>69.5</u>	165	69.2	164	69.6	<u>165</u>	<u>69.5</u>	165	69.2	164	69.6
450.soplex	<u>184</u>	<u>45.4</u>	185	45.1	184	45.4	<u>184</u>	<u>45.4</u>	185	45.1	184	45.4
453.povray	79.7	66.7	<u>80.6</u>	<u>66.0</u>	81.2	65.6	70.1	75.9	<u>69.8</u>	<u>76.2</u>	69.6	76.5
454.calculix	<u>143</u>	<u>57.7</u>	144	57.2	143	57.7	133	61.8	<u>134</u>	<u>61.8</u>	134	61.8
459.GemsFDTD	158	67.2	<u>158</u>	<u>67.1</u>	158	67.1	158	67.2	<u>158</u>	<u>67.1</u>	158	67.1
465.tonto	181	54.5	<u>181</u>	<u>54.5</u>	181	54.3	173	56.9	174	56.6	<u>173</u>	<u>56.9</u>
470.lbm	104	132	<u>104</u>	<u>132</u>	104	132	104	132	<u>104</u>	<u>132</u>	104	132
481.wrf	<u>110</u>	<u>102</u>	110	102	110	101	<u>110</u>	<u>102</u>	110	102	110	101
482.sphinx3	229	85.3	233	83.8	<u>230</u>	<u>84.6</u>	229	85.3	233	83.8	<u>230</u>	<u>84.6</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 linux Thu Feb 27 09:17:20 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 E3-1280 v3 @ 3.60GHz

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 linux 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 27 09:10 last=S

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sda2 ext2 542G 7.7G 533G 2% /

Additional information from dmidecode:

BIOS Dell Inc. 1.0.1 02/17/2014

Memory:

4x Samsung M391B1G73BH0-YK0 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-alloc -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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