



SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 101

PowerEdge FC830 (Intel Xeon E5-4667 v3, 2.00 GHz)

SPECfp_base2006 = 94.6

CPU2006 license: 55

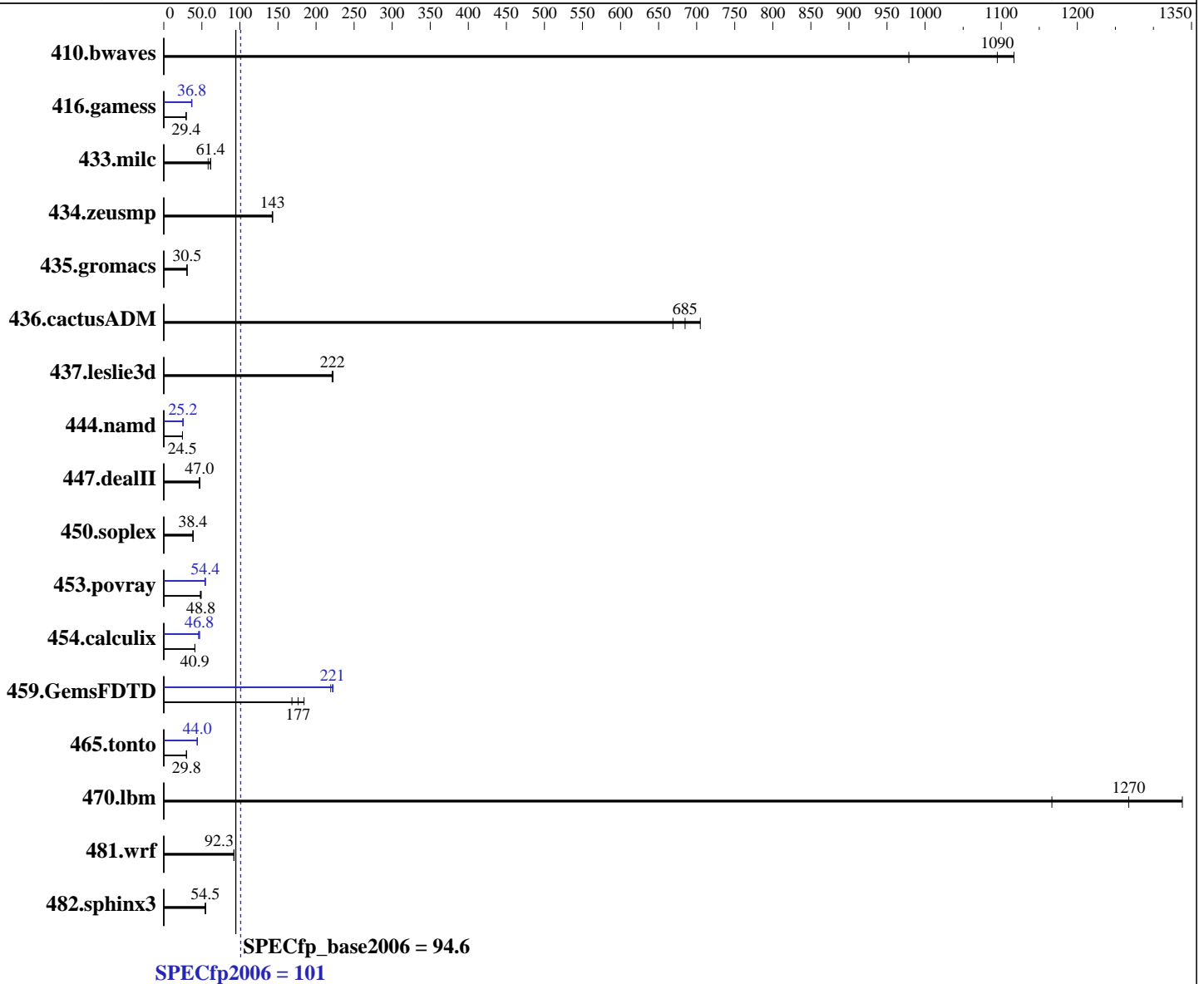
Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Jun-2015

Tested by: Dell Inc.

Software Availability: Jun-2015



Hardware

CPU Name: Intel Xeon E5-4667 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip, 2 threads/core
 CPU(s) orderable: 4 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 12
 3.12.28-4-default
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)

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L3 Cache: 40 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 400 GB 7200 RPM SATA
 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	13.9	979	<u>12.4</u>	<u>1090</u>	12.2	1120	13.9	979	<u>12.4</u>	<u>1090</u>	12.2	1120
416.gamess	668	29.3	<u>667</u>	<u>29.4</u>	666	29.4	531	36.9	537	36.4	<u>532</u>	<u>36.8</u>
433.milc	158	58.2	149	61.6	<u>150</u>	<u>61.4</u>	158	58.2	149	61.6	<u>150</u>	<u>61.4</u>
434.zeusmp	63.9	142	63.6	143	<u>63.7</u>	<u>143</u>	63.9	142	63.6	143	<u>63.7</u>	<u>143</u>
435.gromacs	235	30.4	<u>234</u>	<u>30.5</u>	233	30.6	235	30.4	<u>234</u>	<u>30.5</u>	233	30.6
436.cactusADM	<u>17.5</u>	<u>685</u>	17.9	669	17.0	705	<u>17.5</u>	<u>685</u>	17.9	669	17.0	705
437.leslie3d	42.5	221	42.3	222	<u>42.4</u>	<u>222</u>	42.5	221	42.3	222	<u>42.4</u>	<u>222</u>
444.namd	<u>327</u>	<u>24.5</u>	327	24.5	326	24.6	318	25.2	318	25.2	<u>318</u>	<u>25.2</u>
447.dealII	245	46.7	242	47.3	<u>244</u>	<u>47.0</u>	245	46.7	242	47.3	<u>244</u>	<u>47.0</u>
450.soplex	218	38.2	<u>217</u>	<u>38.4</u>	216	38.6	218	38.2	<u>217</u>	<u>38.4</u>	216	38.6
453.povray	111	48.0	108	49.1	<u>109</u>	<u>48.8</u>	<u>97.7</u>	<u>54.4</u>	97.2	54.7	98.2	54.2
454.calculix	202	40.9	<u>202</u>	<u>40.9</u>	202	40.9	176	46.9	181	45.7	<u>176</u>	<u>46.8</u>
459.GemsFDTD	63.0	168	<u>60.1</u>	<u>177</u>	57.6	184	48.4	219	<u>47.9</u>	<u>221</u>	47.7	222
465.tonto	328	30.0	332	29.7	<u>330</u>	<u>29.8</u>	<u>224</u>	<u>44.0</u>	223	44.1	224	43.8
470.lbm	10.3	1340	11.8	1170	<u>10.8</u>	<u>1270</u>	10.3	1340	11.8	1170	<u>10.8</u>	<u>1270</u>
481.wrf	<u>121</u>	<u>92.3</u>	121	92.3	121	91.9	<u>121</u>	<u>92.3</u>	121	92.3	121	91.9
482.sphinx3	355	54.9	357	54.5	<u>357</u>	<u>54.5</u>	355	54.9	357	54.5	<u>357</u>	<u>54.5</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

BIOS settings:
 Snoop Mode set to Home Snoop
 Virtualization Technology disabled
 System Profile set to Performance
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
 running on linux-3aq4 Fri Jan 30 04:53:36 2015

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 E5-4667 v3 @ 2.00GHz

4 "physical id"s (chips)

128 "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 : 16

siblings : 32

physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

cache size : 40960 KB

From /proc/meminfo

MemTotal: 529334376 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 12

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 0

This file is deprecated and will be removed in a future service pack or release.

Please check /etc/os-release for details about this release.

os-release:

NAME="SLES"

VERSION="12"

VERSION_ID="12"

PRETTY_NAME="SUSE Linux Enterprise Server 12"

ID="sles"

ANSI_COLOR="0;32"

CPE_NAME="cpe:/o:suse:sles:12"

uname -a:

Linux linux-3aq4 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014 (9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 29 22:28 last=5

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 267G 13G 253G 5% /

Additional information from dmidecode:

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Platform Notes (Continued)

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 0.4.0 01/08/2015

Memory:

3x 00AD063200AD HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz
29x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
16x Not Specified Not Specified

(End of data from sysinfo program)

General Notes

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

KMP_AFFINITY = "granularity=fine,compact,1,0"

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

OMP_NUM_THREADS = "64"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent_hugepage/enabled

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

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Base Portability Flags (Continued)

```

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

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



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Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

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

447.deallI: 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: -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 -opt-prefetch -parallel

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:

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Peak Optimization Flags (Continued)

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revE.20150421.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revE.20150421.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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