



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

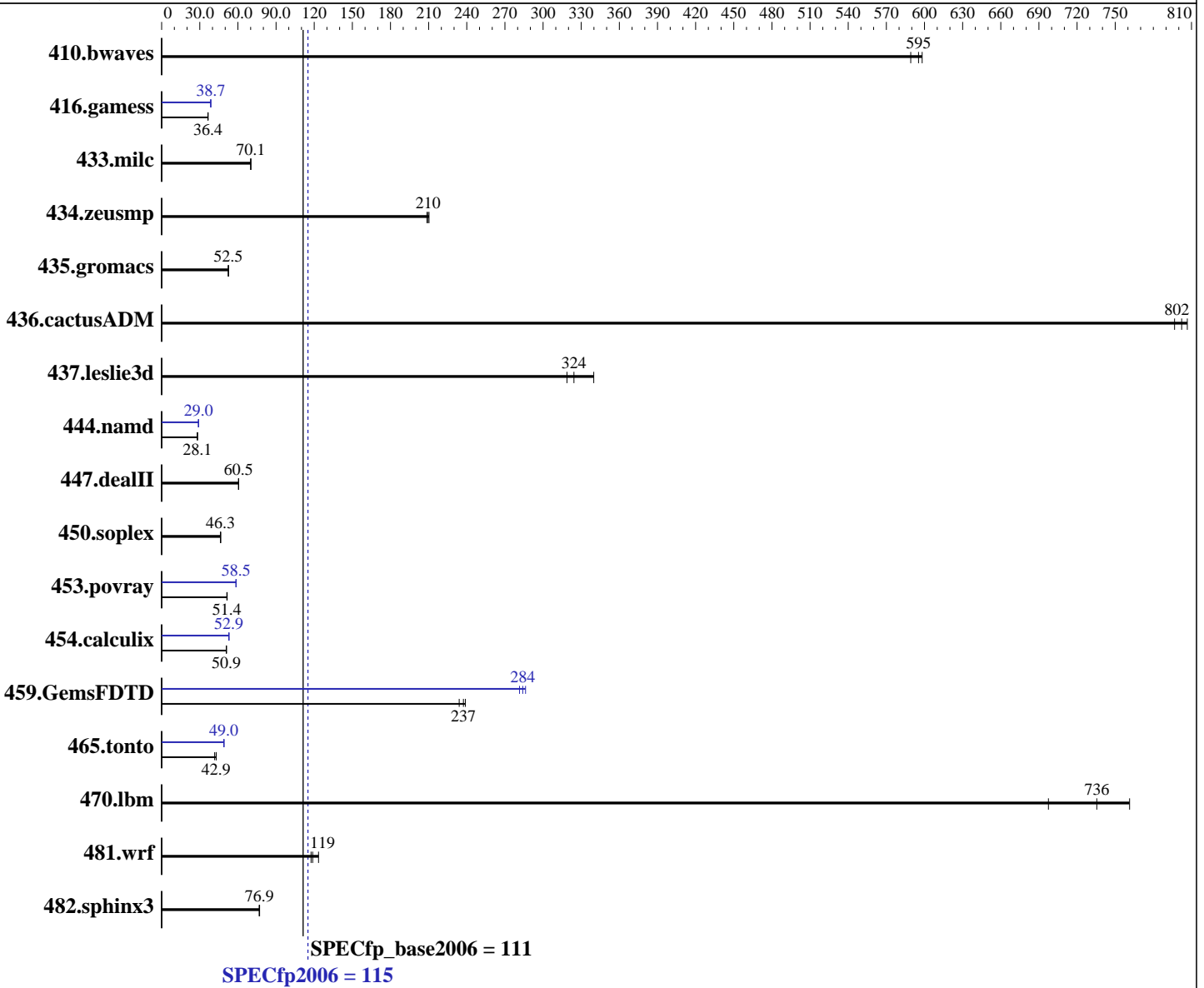
Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016



Hardware	
CPU Name:	Intel Xeon E5-2690 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	28 cores, 2 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Continued on next page

Software	
Operating System:	Red Hat Enterprise Linux Server release 7.1 (Maipo)
	3.10.0-229.el7.x86_64
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
	Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

L3 Cache: 35 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS
 Other Hardware: None

System State: Run level 3 (multi-user)
 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	23.1	589	22.7	598	<u>22.8</u>	<u>595</u>	23.1	589	22.7	598	<u>22.8</u>	<u>595</u>
416.gamess	536	36.5	538	36.4	<u>537</u>	<u>36.4</u>	<u>506</u>	<u>38.7</u>	508	38.6	506	38.7
433.milc	131	70.1	<u>131</u>	<u>70.1</u>	131	70.1	131	70.1	<u>131</u>	<u>70.1</u>	131	70.1
434.zeusmp	<u>43.4</u>	<u>210</u>	43.3	210	43.6	209	<u>43.4</u>	<u>210</u>	43.3	210	43.6	209
435.gromacs	136	52.4	136	52.6	<u>136</u>	<u>52.5</u>	136	52.4	136	52.6	<u>136</u>	<u>52.5</u>
436.cactusADM	15.0	797	<u>14.9</u>	<u>802</u>	14.8	807	15.0	797	<u>14.9</u>	<u>802</u>	14.8	807
437.leslie3d	29.5	319	27.7	340	<u>29.0</u>	<u>324</u>	29.5	319	27.7	340	<u>29.0</u>	<u>324</u>
444.namd	<u>285</u>	<u>28.1</u>	285	28.1	285	28.2	277	29.0	<u>277</u>	<u>29.0</u>	276	29.0
447.dealII	189	60.5	189	60.5	<u>189</u>	<u>60.5</u>	189	60.5	189	60.5	<u>189</u>	<u>60.5</u>
450.soplex	180	46.2	179	46.5	<u>180</u>	<u>46.3</u>	180	46.2	179	46.5	<u>180</u>	<u>46.3</u>
453.povray	103	51.6	<u>104</u>	<u>51.4</u>	104	51.3	91.0	58.5	<u>90.9</u>	<u>58.5</u>	90.8	58.6
454.calculix	162	50.9	<u>162</u>	<u>50.9</u>	162	50.9	<u>156</u>	<u>52.9</u>	156	52.9	156	52.9
459.GemsFDTD	44.4	239	45.3	234	<u>44.7</u>	<u>237</u>	37.7	281	<u>37.4</u>	<u>284</u>	37.1	286
465.tonto	236	41.7	229	42.9	<u>230</u>	<u>42.9</u>	201	49.1	201	49.0	<u>201</u>	<u>49.0</u>
470.lbm	18.0	761	19.7	697	<u>18.7</u>	<u>736</u>	18.0	761	19.7	697	<u>18.7</u>	<u>736</u>
481.wrf	<u>94.0</u>	<u>119</u>	90.5	123	95.0	118	<u>94.0</u>	<u>119</u>	90.5	123	95.0	118
482.sphinx3	<u>254</u>	<u>76.9</u>	254	76.8	253	77.1	<u>254</u>	<u>76.9</u>	254	76.8	253	77.1

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
 Memory Patrol Scrub disabled
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Wed Dec 23 09:27:51 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

Platform Notes (Continued)

some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
model name      : Intel(R) Xeon(R) CPU E5-2690 v4@ 2.60GHz
 2 "physical id"s (chips)
 56 "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    : 14
  siblings     : 28
  physical 0   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size    : 35840 KB

```

```

From /proc/meminfo
MemTotal:      528282996 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.1 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.1"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

```

```

uname -a:
Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
EST 2015 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 23 04:15 last=5

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   200G   20G  181G  10% /

```

Additional information from dmidecode:

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. 1.7.11 12/07/2015

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

Platform Notes (Continued)

Memory:

16x 00CE00B300CE M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz
8x 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 = "28"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
memory using RedHat EL 7.1

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
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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

Base Portability Flags (Continued)

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

Peak Portability Flags

Same as Base Portability Flags



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

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:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -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:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 115

PowerEdge T630 (Intel Xeon E5-2690 v4, 2.60 GHz)

SPECfp_base2006 = 111

CPU2006 license: 55

Test date: Dec-2015

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Mar-2016

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Apr 5 14:54:35 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 April 2016.