



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

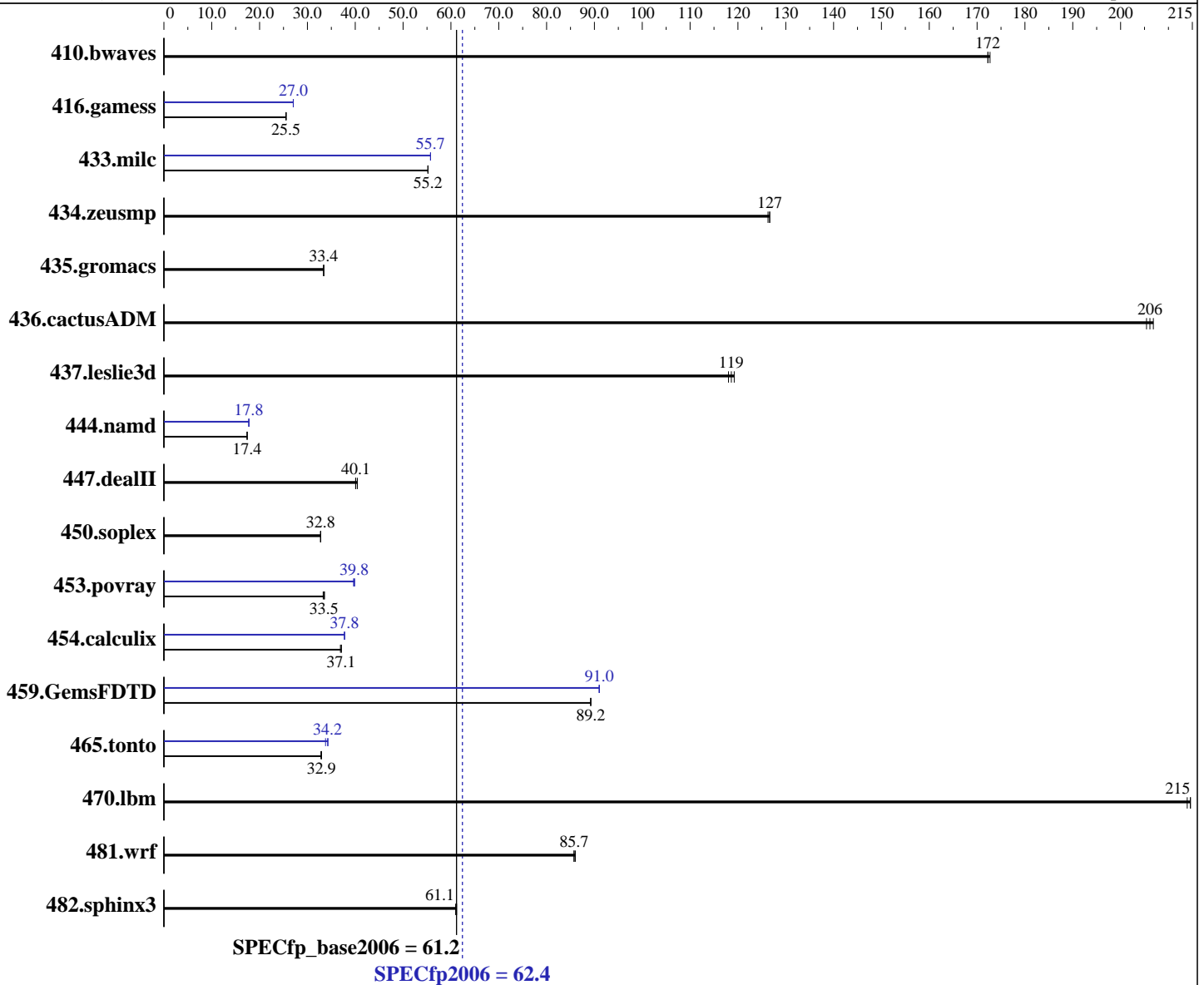
Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013



SPECfp_base2006 = 61.2

SPECfp2006 = 62.4

Hardware

CPU Name: Intel Xeon E5-2420 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux server release 6.4
 2.6.32-358.el6.x86_64
 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: ext4
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 96 GB (6 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
 Disk Subsystem: 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	78.7	173	78.9	172	78.9	172	78.7	173	78.9	172	78.9	172
416.gamess	766	25.6	767	25.5	767	25.5	724	27.0	724	27.1	724	27.0
433.milc	166	55.2	166	55.2	166	55.2	165	55.7	165	55.7	165	55.7
434.zeusmp	71.9	127	72.1	126	71.9	127	71.9	127	72.1	126	71.9	127
435.gromacs	214	33.4	214	33.4	214	33.4	214	33.4	214	33.4	214	33.4
436.cactusADM	57.8	207	58.2	205	58.0	206	57.8	207	58.2	205	58.0	206
437.leslie3d	78.8	119	79.6	118	79.2	119	78.8	119	79.6	118	79.2	119
444.namd	461	17.4	461	17.4	461	17.4	452	17.8	452	17.8	452	17.8
447.dealII	285	40.1	285	40.1	283	40.4	285	40.1	285	40.1	283	40.4
450.soplex	254	32.8	254	32.8	255	32.7	254	32.8	254	32.8	255	32.7
453.povray	158	33.6	159	33.5	160	33.3	133	39.9	134	39.8	134	39.6
454.calculix	222	37.1	223	37.1	224	36.9	218	37.8	219	37.7	218	37.8
459.GemsFDTD	119	89.2	119	89.2	119	89.2	117	91.0	117	91.0	117	91.0
465.tonto	299	33.0	300	32.8	299	32.9	287	34.2	291	33.8	287	34.3
470.lbm	64.0	215	64.2	214	64.0	215	64.0	215	64.2	214	64.0	215
481.wrf	130	85.7	130	85.7	130	86.0	130	85.7	130	85.7	130	86.0
482.sphinx3	319	61.2	319	61.1	320	61.0	319	61.2	319	61.1	320	61.0

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:
 Virtualization Technology disabled
 Execute Disable disabled
 Logical Processor disabled
 System Profile set to Performance
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on root Sat Nov 2 15:24:24 2013

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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

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 E5-2420 v2 @ 2.20GHz
  1 "physical id"s (chips)
  6 "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 : 6
    siblings  : 6
    physical 0: cores 0 1 2 3 4 5
  cache size : 15360 KB

```

```

From /proc/meminfo
MemTotal:      98991332 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.4 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
  Linux root 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013 x86_64
  x86_64 x86_64 GNU/Linux

```

run-level 3 Nov 2 07:57

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type      Size Used Avail Use% Mounted on
/dev/sda2       ext4      271G  12G  246G   5% /

```

```

Additional information from dmidecode:
  BIOS Dell Inc. 2.0.21 09/23/2013
  Memory:
    6x 00AD00B300AD HMT42GR7MFR4A-PB 16 GB 1600 MHz 2 rank

```

(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 = "6"

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
 Transparent Huge Pages disabled with:
 echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1> /proc/sys/vm/drop_caches

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.lelie3d: -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 -parallel -opt-prefetch -ansi-alias

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -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: -xAVX(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: -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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

Peak Optimization Flags (Continued)

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

Fortran benchmarks:

410.bwaves: basepeak = yes

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-

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

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

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

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-revB.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-revB.xml>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 62.4

PowerEdge T320 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECfp_base2006 = 61.2

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

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 Thu Jul 24 19:57:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 February 2014.