



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

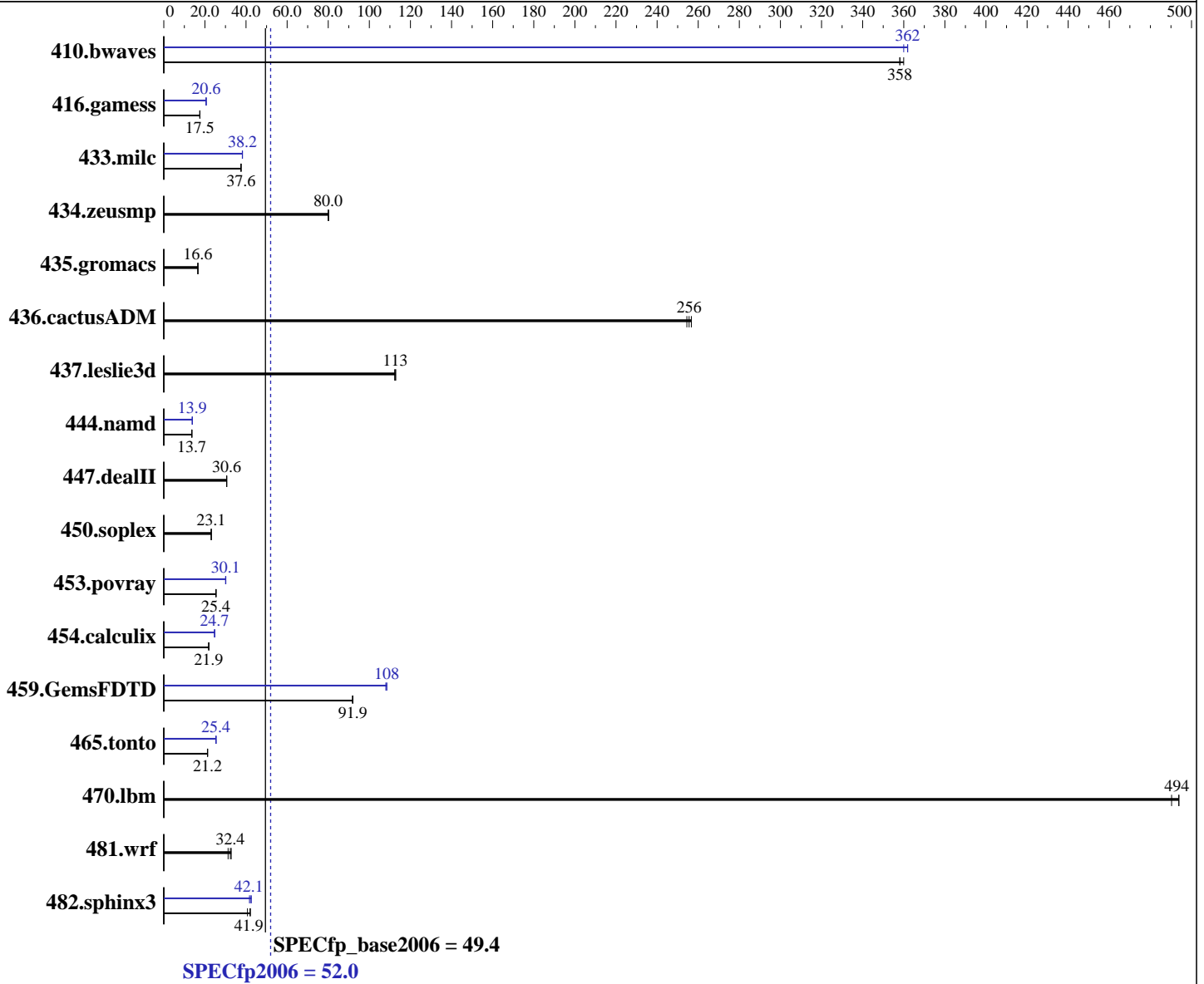
Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-4603
 CPU Characteristics:
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.27-default
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1067 MHz)
 Disk Subsystem: 1 x 900 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	37.9	358	38.0	358	37.8	360	37.8	360	37.6	362	37.6	362
416.gamess	1116	17.5	1115	17.6	1117	17.5	953	20.5	948	20.7	950	20.6
433.milc	244	37.6	244	37.6	244	37.6	240	38.3	240	38.2	240	38.2
434.zeusmp	114	80.2	114	80.0	114	80.0	114	80.2	114	80.0	114	80.0
435.gromacs	430	16.6	431	16.5	431	16.6	430	16.6	431	16.5	431	16.6
436.cactusADM	47.0	254	46.6	257	46.8	256	47.0	254	46.6	257	46.8	256
437.leslie3d	83.3	113	83.5	113	83.7	112	83.3	113	83.5	113	83.7	112
444.namd	588	13.6	587	13.7	587	13.7	579	13.9	579	13.8	578	13.9
447.dealII	374	30.6	373	30.7	374	30.6	374	30.6	373	30.7	374	30.6
450.soplex	361	23.1	361	23.1	361	23.1	361	23.1	361	23.1	361	23.1
453.povray	210	25.4	209	25.4	210	25.4	176	30.2	177	30.1	177	30.1
454.calculix	376	21.9	378	21.8	377	21.9	334	24.7	334	24.7	334	24.7
459.GemsFDTD	115	91.9	115	91.9	116	91.8	98.2	108	97.8	108	97.8	108
465.tonto	463	21.2	460	21.4	464	21.2	387	25.5	388	25.3	387	25.4
470.lbm	27.8	494	28.0	490	27.8	494	27.8	494	28.0	490	27.8	494
481.wrf	345	32.4	340	32.8	357	31.3	345	32.4	340	32.8	357	31.3
482.sphinx3	465	41.9	462	42.1	479	40.7	468	41.7	457	42.6	463	42.1

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

CPU Power Management set to Maximum Performance
 Memory Frequency set to Maximum Performance
 Turbo Boost set to Enabled
 C States/C1E set to Enabled
 Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on linux-0j3r Mon May 14 15:52:47 2012

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 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

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 E5-4603 0 @ 2.00GHz
  4 "physical id"s (chips)
  32 "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  : 8
    physical 0: cores 0 1 2 3
    physical 1: cores 0 1 2 3
    physical 2: cores 0 1 2 3
    physical 3: cores 0 1 2 3
  cache size : 10240 KB

```

```

From /proc/meminfo
MemTotal:      264501520 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 = 2

```

```

uname -a:
  Linux linux-0j3r 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
  (d73692b) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 May 14 05:40 last=5

```

SPEC is set to: /root/CPU2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext3  886G  160G  682G  19% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

General Notes

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

```

KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

General Notes (Continued)

OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Transparent Huge Pages disabled with:

```
echo never > /sys/kernel/mm/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.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deallI: -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

```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -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) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Peak Optimization Flags (Continued)

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

447.dealII: 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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

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- -static

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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 52.0

PowerEdge M820 (Intel Xeon E5-4603, 2.00 GHz)

SPECfp_base2006 = 49.4

CPU2006 license: 55

Test date: May-2012

Test sponsor: Dell Inc.

Hardware Availability: Aug-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.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 Thu Jul 24 11:17:37 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 August 2012.