SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

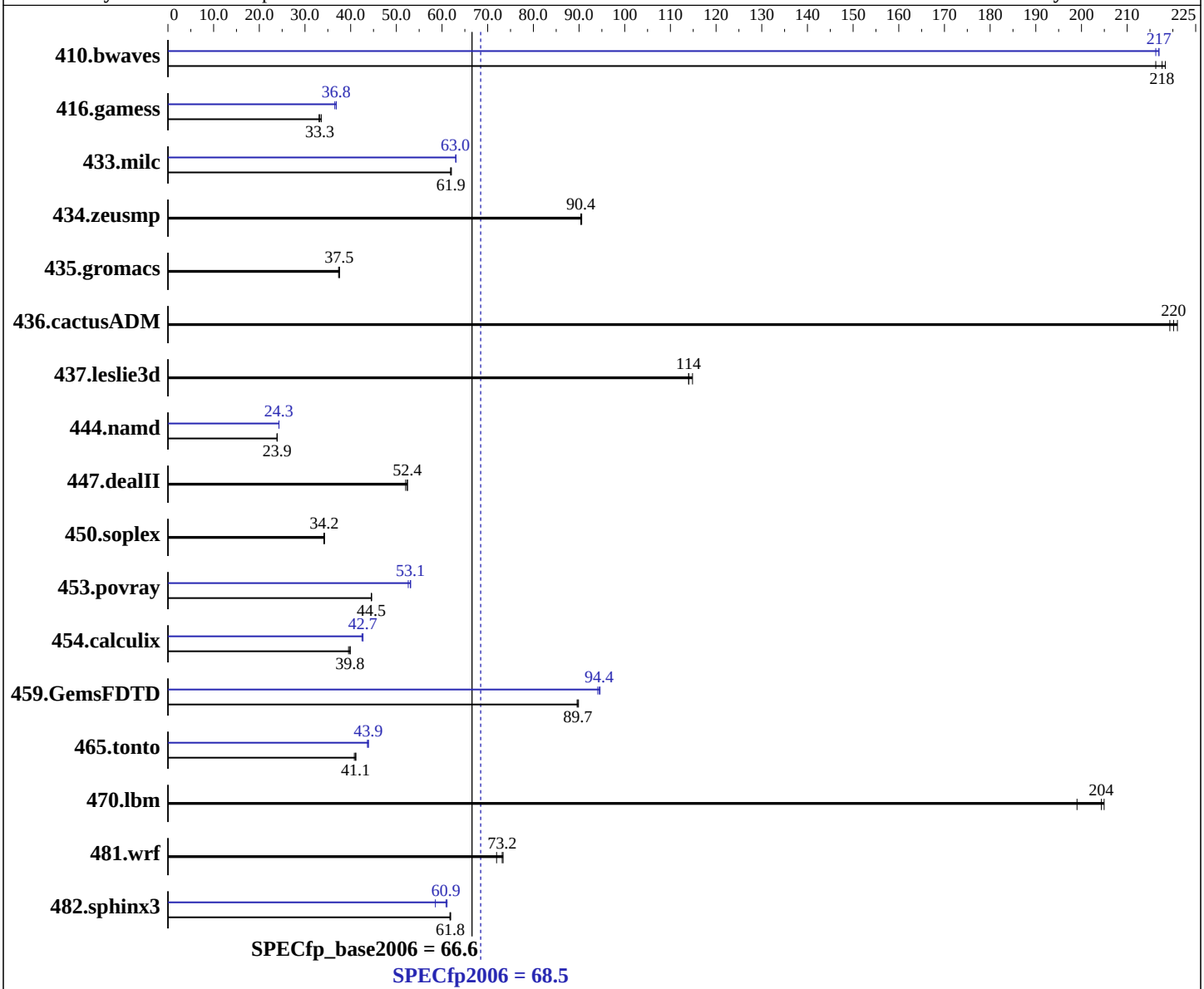
IBM System x iDataPlex dx360 M4 (Intel Xeon E5-2637)

SPECfp®2006 = 68.5

SPECfp_base2006 = 66.6

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Jun-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Xeon E5-2637
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
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 6.2 (Santiago) 2.6.32-220.el6.x86_64
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:	ext4

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x iDataPlex dx360 M4 (Intel Xeon E5-2637)

SPECfp2006 = 68.5

SPECfp_base2006 = 66.6

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Jun-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011

L3 Cache: 5 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
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	62.8	216	**62.4**	**218**	62.2	218	62.6	217	**62.6**	**217**	62.8	216
416.gamess	**589**	**33.3**	583	33.6	592	33.1	536	36.5	531	36.8	**531**	**36.8**
433.milc	148	62.1	**148**	**61.9**	148	61.9	146	63.1	146	63.0	**146**	**63.0**
434.zeusmp	101	90.4	100	90.6	**101**	**90.4**	101	90.4	100	90.6	**101**	**90.4**
435.gromacs	190	37.6	191	37.4	**190**	**37.5**	190	37.6	191	37.4	**190**	**37.5**
436.cactusADM	**54.3**	**220**	54.1	221	54.5	219	**54.3**	**220**	54.1	221	54.5	219
437.leslie3d	82.5	114	**82.5**	**114**	81.8	115	82.5	114	**82.5**	**114**	81.8	115
444.namd	335	23.9	336	23.9	**335**	**23.9**	330	24.3	**330**	**24.3**	330	24.3
447.dealII	218	52.4	**218**	**52.4**	220	52.0	218	52.4	**218**	**52.4**	220	52.0
450.soplex	243	34.3	**244**	**34.2**	244	34.1	243	34.3	**244**	**34.2**	244	34.1
453.povray	**120**	**44.5**	119	44.6	120	44.5	101	52.6	100	53.1	**100**	**53.1**
454.calculix	207	39.9	**207**	**39.8**	209	39.5	193	42.7	194	42.5	**193**	**42.7**
459.GemsFDTD	**118**	**89.7**	118	89.9	118	89.6	112	94.6	113	94.1	**112**	**94.4**
465.tonto	239	41.1	**240**	**41.1**	241	40.8	224	43.9	**224**	**43.9**	225	43.7
470.lbm	69.0	199	67.0	205	**67.2**	**204**	69.0	199	67.0	205	**67.2**	**204**
481.wrf	155	71.9	**153**	**73.2**	152	73.4	155	71.9	**153**	**73.2**	152	73.4
482.sphinx3	315	61.9	**315**	**61.8**	316	61.7	333	58.5	319	61.1	**320**	**60.9**

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"
Zone reclaim mode enabled with:
echo 1 > /proc/sys/vm/zone_reclaim_mode
```

Platform Notes

```
BIOS Settings:
Operating Mode set to Maximum Performance
Sysinfo program /root/SPECcpu-v1.2/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
running on tianden Tue Jun 26 15:25:02 2012

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

Continued on next page

Platform Notes (Continued)

```
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2637 0 @ 3.00GHz
          2 "physical id"s (chips)
          8 "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 : 2
          siblings  : 4
          physical 0: cores 0 1
          physical 1: cores 0 1
       cache size : 5120 KB

    From /proc/meminfo
       MemTotal:       132096584 kB
       HugePages_Total:       0
       Hugepagesize:       2048 kB

    /usr/bin/lsb_release -d
       Red Hat Enterprise Linux Server release 6.2 (Santiago)

    From /etc/*release* /etc/*version*
       redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
       system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
       system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

    uname -a:
       Linux tianden 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64
       x86_64 x86_64 GNU/Linux

    run-level 3 Jun 25 15:44

    SPEC is set to: /root/SPECcpu-v1.2
       Filesystem     Type    Size  Used Avail Use% Mounted on
       /dev/mapper/vg_tianden-lv_root
                      ext4    145G   61G   78G  44% /

    (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/SPECcpu-v1.2/libs/32:/root/SPECcpu-v1.2/libs/64"
 OMP_NUM_THREADS = "4"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RHEL5.5
  Transparent Huge Pages enabled with:
```

Continued on next page

General Notes (Continued)

```
echo always > /sys/kernel/mm/redhat_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
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 -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

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

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

Peak Optimization Flags (Continued)

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/IBM-Platform-Flags-V1.2-SNB-C.html

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/IBM-Platform-Flags-V1.2-SNB-C.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 10:08:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 July 2012.