SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

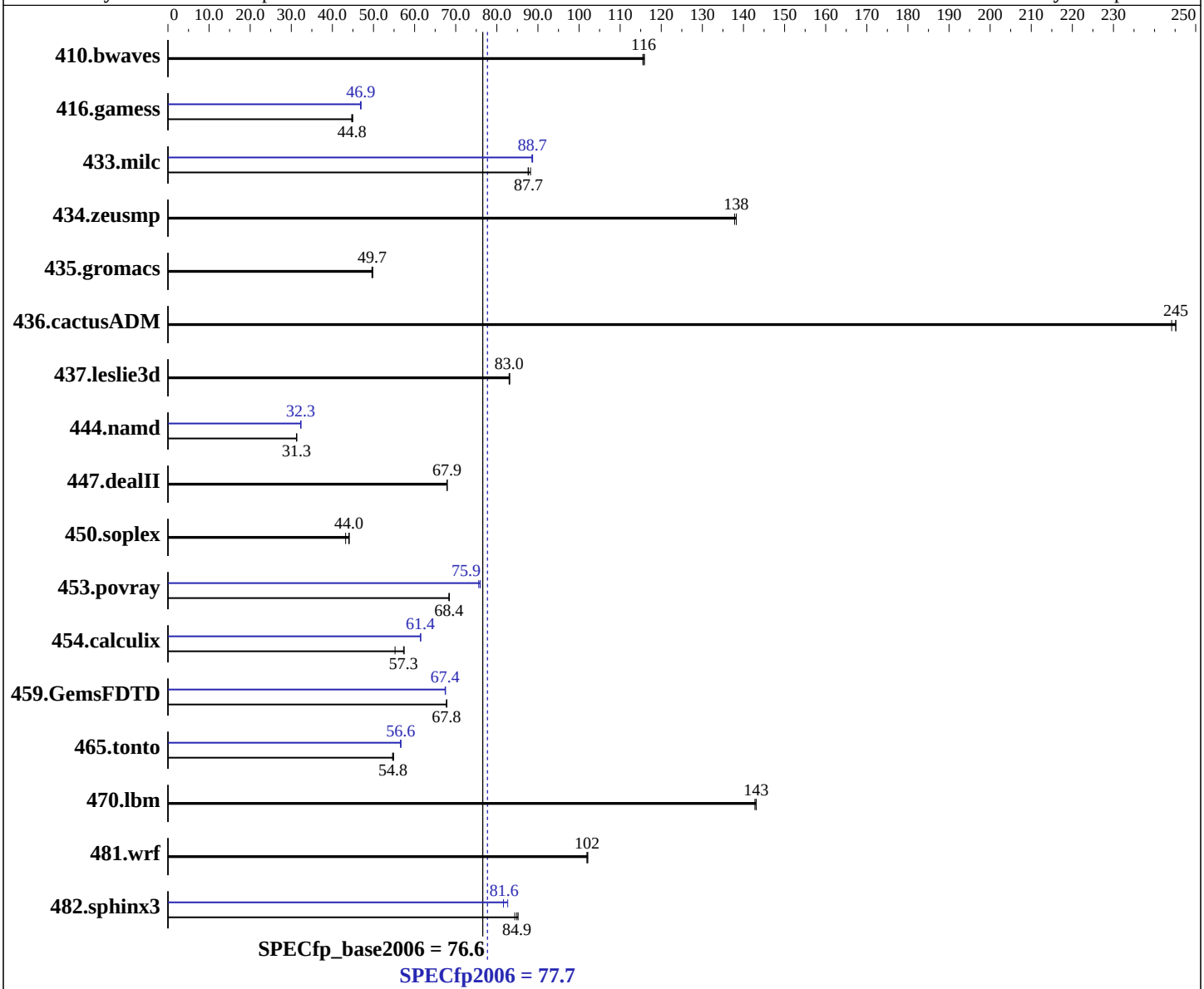
IBM System x3250 M5
(Intel Xeon E3-1280 v3, 3.60 GHz)

SPECfp®2006 = 77.7

SPECfp_base2006 = 76.6

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

Test date: Oct-2013
Hardware Availability: Dec-2013
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E3-1280 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	3600
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 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 (Santiago) 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

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Xeon E3-1280 v3, 3.60 GHz)

SPECfp2006 = 77.7

SPECfp_base2006 = 76.6

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

Test date: Oct-2013
Hardware Availability: Dec-2013
Software Availability: Sep-2013

L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem:	1 x 1 TB 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	**117**	**116**	117	116	118	116	**117**	**116**	117	116	118	116
416.gamess	438	44.7	**437**	**44.8**	436	45.0	**417**	**46.9**	417	46.9	418	46.8
433.milc	105	87.6	**105**	**87.7**	104	88.2	103	88.7	**104**	**88.7**	104	88.5
434.zeusmp	66.0	138	65.8	138	**65.8**	**138**	66.0	138	65.8	138	**65.8**	**138**
435.gromacs	**144**	**49.7**	143	49.8	144	49.6	**144**	**49.7**	143	49.8	144	49.6
436.cactusADM	**48.7**	**245**	48.9	244	48.7	245	**48.7**	**245**	48.9	244	48.7	245
437.leslie3d	113	83.2	**113**	**83.0**	113	83.0	113	83.2	**113**	**83.0**	113	83.0
444.namd	**256**	**31.3**	256	31.3	256	31.3	248	32.3	248	32.3	**248**	**32.3**
447.dealII	168	67.9	169	67.9	**168**	**67.9**	168	67.9	169	67.9	**168**	**67.9**
450.soplex	193	43.2	189	44.1	**190**	**44.0**	193	43.2	189	44.1	**190**	**44.0**
453.povray	**77.8**	**68.4**	77.8	68.4	77.7	68.4	**70.1**	**75.9**	70.4	75.6	70.0	76.0
454.calculix	144	57.5	149	55.2	**144**	**57.3**	134	61.4	**134**	**61.4**	134	61.5
459.GemsFDTD	156	67.8	**157**	**67.8**	157	67.8	**157**	**67.4**	157	67.5	157	67.4
465.tonto	179	54.9	**180**	**54.8**	180	54.6	174	56.6	174	56.7	**174**	**56.6**
470.lbm	**96.0**	**143**	96.0	143	96.2	143	**96.0**	**143**	96.0	143	96.2	143
481.wrf	**110**	**102**	109	102	110	102	**110**	**102**	109	102	110	102
482.sphinx3	231	84.4	**230**	**84.9**	229	85.2	236	82.7	**239**	**81.6**	239	81.6

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 setting:
Operating Mode set to Custom
C-State enabled in BIOS
Hyper-Threading set to Disabled
Sysinfo program /home/SPECcpu/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on x3250M5 Wed Oct 23 20:35:52 2013

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 E3-1280 v3 @ 3.60GHz
          1 "physical id"s (chips)
          4 "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  : 4
          physical 0: cores 0 1 2 3
       cache size : 8192 KB

    From /proc/meminfo
       MemTotal:       16299396 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 x3250M5 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 Oct 21 11:41

    SPEC is set to: /home/SPECcpu
       Filesystem     Type    Size  Used Avail Use% Mounted on
       /dev/mapper/vg_x3250m5-lv_home
                      ext4    852G  8.6G  800G   2% /home

    Additional information from dmidecode:
      BIOS IBM -[JUE109GUS-1.00]- 09/28/2013
      Memory:
       2x 0000    1600 MHz
       2x Micron 18KSF1G72AZ-1G6E1 8 GB 1600 MHz 2 rank

    (End of data from sysinfo program)
   "2x 0000    1600 MHz" memory information from dmidecode indicates unused DIMM slots.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/SPECcpu/libs/32:/home/SPECcpu/libs/64:/home/SPECcpu/sh"
OMP_NUM_THREADS = "4"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
 Turbo Mode enabled in BIOS
```

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:
`-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

Peak Optimization Flags

C benchmarks:

433.milc: `-xCORE-AVX2`(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

Continued on next page

Peak Optimization Flags (Continued)

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.dealII: 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:

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-HSW-A.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/IBM-Platform-Flags-V1.2-HSW-A.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 Mon Sep 22 17:20:15 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 January 2014.