SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

$SPECfp^{®}\_rate2006 =$ 99.9
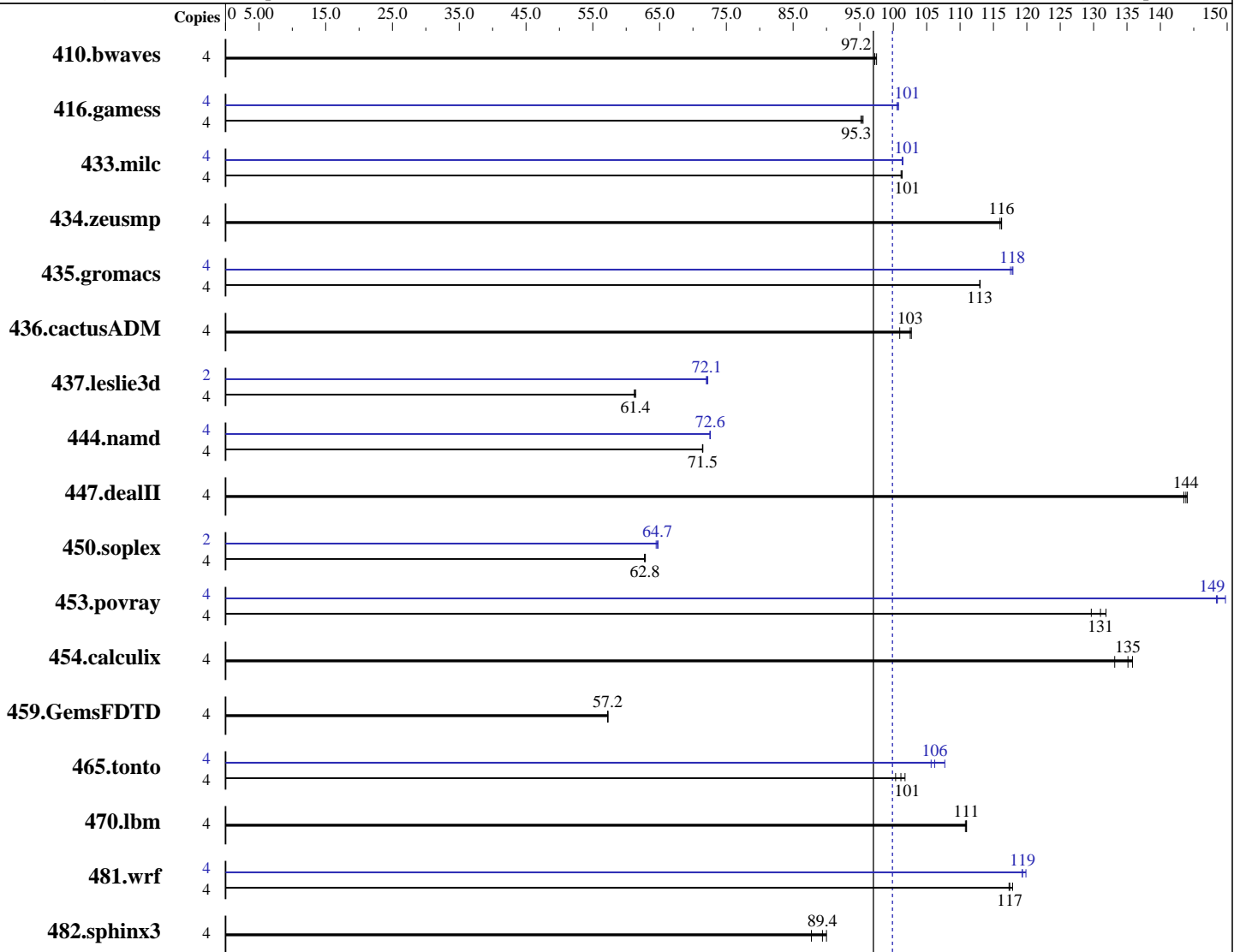
SPECfp_rate_base2006 = 97.0

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

Test date: Mar-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

Benchmark	Copies	Result
410.bwaves	4	97.2
416.gamess	4	101
416.gamess	4	95.3
433.milc	4	101
433.milc	4	101
434.zeusmp	4	116
435.gromacs	4	118
435.gromacs	4	113
436.cactusADM	4	103
437.leslie3d	2	72.1
437.leslie3d	4	61.4
444.namd	4	72.6
444.namd	4	71.5
447.dealII	4	144
450.soplex	2	64.7
450.soplex	4	62.8
453.povray	4	149
453.povray	4	131
454.calculix	4	135
459.GemsFDTD	4	57.2
465.tonto	4	106
465.tonto	4	101
470.lbm	4	111
481.wrf	4	119
481.wrf	4	117
482.sphinx3	4	89.4

SPECfp_rate_base2006 = 97.0

SPECfp_rate2006 = 99.9

Hardware

CPU Name: Intel Core i3-4330
CPU Characteristics:
CPU MHz: 3500
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
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: No
File System: ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

SPECfp_rate2006 =   99.9

SPECfp_rate_base2006 = 97.0

CPU2006 license: 11	**Test date:** Mar-2014
Test sponsor: IBM Corporation	**Hardware Availability:** Dec-2013
Tested by: IBM Corporation	**Software Availability:** Sep-2013

L3 Cache:	4 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 1 TB SATA, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	558	97.5	**559**	**97.2**	559	97.2	4	558	97.5	**559**	**97.2**	559	97.2
416.gamess	4	**821**	**95.3**	820	95.5	823	95.2	4	779	101	777	101	**778**	**101**
433.milc	4	363	101	**363**	**101**	362	101	4	362	101	**362**	**101**	362	101
434.zeusmp	4	313	116	**313**	**116**	314	116	4	313	116	**313**	**116**	314	116
435.gromacs	4	253	113	**253**	**113**	253	113	4	**242**	**118**	242	118	243	118
436.cactusADM	4	473	101	**466**	**103**	465	103	4	473	101	**466**	**103**	465	103
437.leslie3d	4	**613**	**61.4**	612	61.4	614	61.2	2	260	72.2	**261**	**72.1**	261	72.0
444.namd	4	**449**	**71.5**	449	71.4	449	71.5	4	442	72.5	**442**	**72.6**	442	72.6
447.dealII	4	318	144	**318**	**144**	319	144	4	318	144	**318**	**144**	319	144
450.soplex	4	532	62.7	531	62.9	**531**	**62.8**	2	259	64.5	**258**	**64.7**	258	64.8
453.povray	4	161	132	**162**	**131**	164	130	4	**143**	**149**	143	148	142	150
454.calculix	4	243	136	248	133	**244**	**135**	4	243	136	248	133	**244**	**135**
459.GemsFDTD	4	741	57.3	**742**	**57.2**	742	57.2	4	741	57.3	**742**	**57.2**	742	57.2
465.tonto	4	**389**	**101**	392	100	387	102	4	**371**	**106**	365	108	373	106
470.lbm	4	**495**	**111**	495	111	496	111	4	**495**	**111**	495	111	496	111
481.wrf	4	379	118	381	117	**380**	**117**	4	**374**	**119**	375	119	373	120
482.sphinx3	4	**872**	**89.4**	866	90.0	889	87.7	4	**872**	**89.4**	866	90.0	889	87.7

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS setting:
Operating Mode set to Maximum Performance
Sysinfo program /home/SPECcpu-new/config/sysinfo.rev6818

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

SPECfp_rate2006 =   99.9

SPECfp_rate_base2006 = 97.0

Platform Notes (Continued)

```
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on x3250M5 Tue Mar 18 00:32:45 2014

This section contains SUT (System Under Test) info as seen by
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) Core(TM) i3-4330 CPU @ 3.50GHz
      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 : 2
      siblings  : 4
      physical 0: cores 0 1
   cache size : 4096 KB

From /proc/meminfo
   MemTotal:       16299404 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 Mar 17 15:45

SPEC is set to: /home/SPECcpu-new
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/mapper/vg_x3250m5-lv_home
                  ext4     852G   18G  791G   3% /home

Additional information from dmidecode:
   BIOS IBM -[JUE109OUS-1.00]- 11/20/2013
   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.
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

$SPECfp_rate2006 = $ 99.9

$SPECfp_rate_base2006 = $ 97.0

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

Test date: Mar-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

General Notes

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

 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
```

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 -opt-prefetch -auto-p32
      -ansi-alias -opt-mem-layout-trans=3
```

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

SPECfp_rate2006 =   99.9

SPECfp_rate_base2006 = 97.0

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

Test date: Mar-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

Base Optimization Flags (Continued)

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Peak Compiler Invocation

C benchmarks:
```
icc    -m64
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```
```
  450.soplex: icpc -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Peak 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
    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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

$SPECfp\_rate2006 = 99.9$

$SPECfp\_rate\_base2006 = 97.0$

Peak Portability Flags (Continued)

```
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
```

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)
          -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
          -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes
```

C++ benchmarks:

```
444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -O3(pass 2) -no-prec-div(pass 2)
          -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
          -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div(pass 2)
            -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
            -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div(pass 2)
            -opt-mem-layout-trans=3(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
```

IBM Corporation

IBM System x3250 M5
(Intel Core i3-4330, 3.50 GHz)

$SPECfp\_rate2006 = 99.9$

$SPECfp\_rate\_base2006 = 97.0$

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

Test date: Mar-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

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) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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

---

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 17:42:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 April 2014.