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

IBM Corporation

$SPECfp®\_rate2006 = \quad 75.2$

IBM System x3650 (Intel Xeon X5450)

$SPECfp\_rate\_base2006 = \quad 66.6$

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

Test date: Jan-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007

SPECfp_rate_base2006 = 66.6

SPECfp_rate2006 = 75.2

Hardware	
CPU Name:	Intel Xeon X5450
CPU Characteristics:	1333MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

Software	
Operating System:	SuSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-smp
Compiler:	Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	64-bit

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3650 (Intel Xeon X5450)

SPECfp_rate2006 =	75.2
SPECfp_rate_base2006 =	66.6

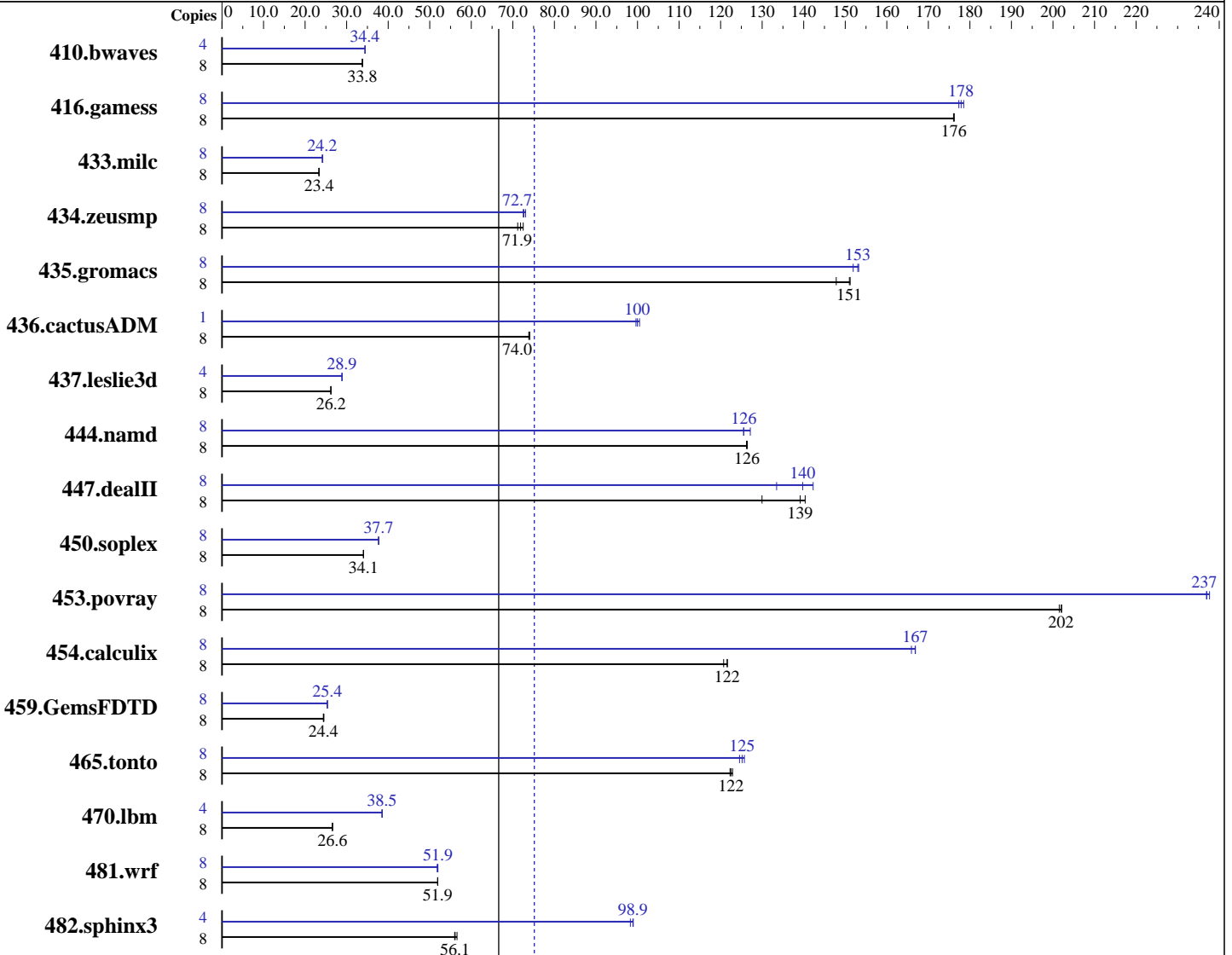**CPU2006 license:** 11　　　　　　　　　　　　　　　　　　　　**Test date:**　Jan-2008
Test sponsor:　IBM Corporation　　　　　　　　　　　　　**Hardware Availability:**　Jan-2008
Tested by:　　IBM Corporation　　　　　　　　　　　　　**Software Availability:**　Nov-2007

L3 Cache:	None	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.17.50.0.15
Memory:	16 GB (8 x 2 GB DDR2-5300F ECC)		
Disk Subsystem:	1 x 36 GB SAS, 15000 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3215	33.8	3219	33.8	**3219**	**33.8**	4	**1579**	**34.4**	1579	34.4	1579	34.4
416.gamess	8	889	176	**889**	**176**	890	176	8	883	177	878	179	**881**	**178**
433.milc	8	3152	23.3	3142	23.4	**3143**	**23.4**	8	**3040**	**24.2**	3028	24.3	3043	24.1
434.zeusmp	8	1004	72.5	**1013**	**71.9**	1023	71.2	8	**1002**	**72.7**	996	73.1	1004	72.5
435.gromacs	8	378	151	386	148	**378**	**151**	8	**373**	**153**	376	152	373	153
436.cactusADM	8	1291	74.0	**1292**	**74.0**	1295	73.8	1	**120**	**100**	119	100	120	99.6
437.leslie3d	8	2867	26.2	2872	26.2	**2868**	**26.2**	4	**1302**	**28.9**	1302	28.9	1301	28.9
444.namd	8	507	126	508	126	**508**	**126**	8	505	127	**511**	**126**	511	126
447.dealII	8	**658**	**139**	652	140	704	130	8	686	133	**655**	**140**	643	142
450.soplex	8	1961	34.0	**1959**	**34.1**	1958	34.1	8	1771	37.7	1770	37.7	**1770**	**37.7**
453.povray	8	211	202	211	201	**211**	**202**	8	180	237	**180**	**237**	179	238
454.calculix	8	543	122	547	121	**543**	**122**	8	395	167	398	166	**396**	**167**
459.GemsFDTD	8	3460	24.5	3479	24.4	**3475**	**24.4**	8	3347	25.4	**3347**	**25.4**	3349	25.3
465.tonto	8	641	123	644	122	**643**	**122**	8	626	126	**629**	**125**	632	125
470.lbm	8	**4135**	**26.6**	4135	26.6	4133	26.6	4	**1427**	**38.5**	1427	38.5	1426	38.6
481.wrf	8	1721	51.9	**1721**	**51.9**	1722	51.9	8	1726	51.8	1720	52.0	**1720**	**51.9**
482.sphinx3	8	2784	56.0	**2779**	**56.1**	2756	56.6	4	**788**	**98.9**	793	98.3	788	99.0

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

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Disabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
Powersaved dameon was disabled in OS
taskset utility used to bind CPU(s) to processes
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3650 (Intel Xeon X5450)

SPECfp_rate2006 = 75.2

SPECfp_rate_base2006 = 66.6

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

Test date: Jan-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3650 (Intel Xeon X5450)

SPECfp_rate2006 =   75.2

SPECfp_rate_base2006 = 66.6

CPU2006 license: 11	**Test date:** Jan-2008
Test sponsor: IBM Corporation	**Hardware Availability:** Jan-2008
Tested by: IBM Corporation	**Software Availability:** Nov-2007

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

   433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

   450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib`
           `-I/opt/intel/cc/10.1.008/include`

Fortran benchmarks (except as noted below):
```
ifort
```

   437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib`
           `-I/opt/intel/fc/10.1.008/include`

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

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

Peak Optimization Flags

C benchmarks:

       433.milc: `-prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias`
               `-auto-ilp32`

        470.lbm: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2`
               `-scalar-rep- -prefetch -opt-malloc-options=3`

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3650 (Intel Xeon X5450)

$SPECfp\_rate2006 =$ 75.2

$SPECfp\_rate\_base2006 =$ 66.6

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007

Peak Optimization Flags (Continued)

482.sphinx3: `-fast -unroll2`

C++ benchmarks:

444.namd: `-prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32`

447.dealII: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3`

453.povray: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast -prefetch`

416.gamess: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-prof-gen(pass 1) -prof-use(pass 2) -fast`

437.leslie3d: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3`

459.GemsFDTD: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch`

465.tonto: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.11.html`

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

$SPECfp\_rate2006 = \quad 75.2$

IBM System x3650 (Intel Xeon X5450)

$SPECfp\_rate\_base2006 = \quad 66.6$

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

Test date: Jan-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.11.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 v1.0.
Report generated on Tue Jul 22 16:17:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 February 2008.