# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

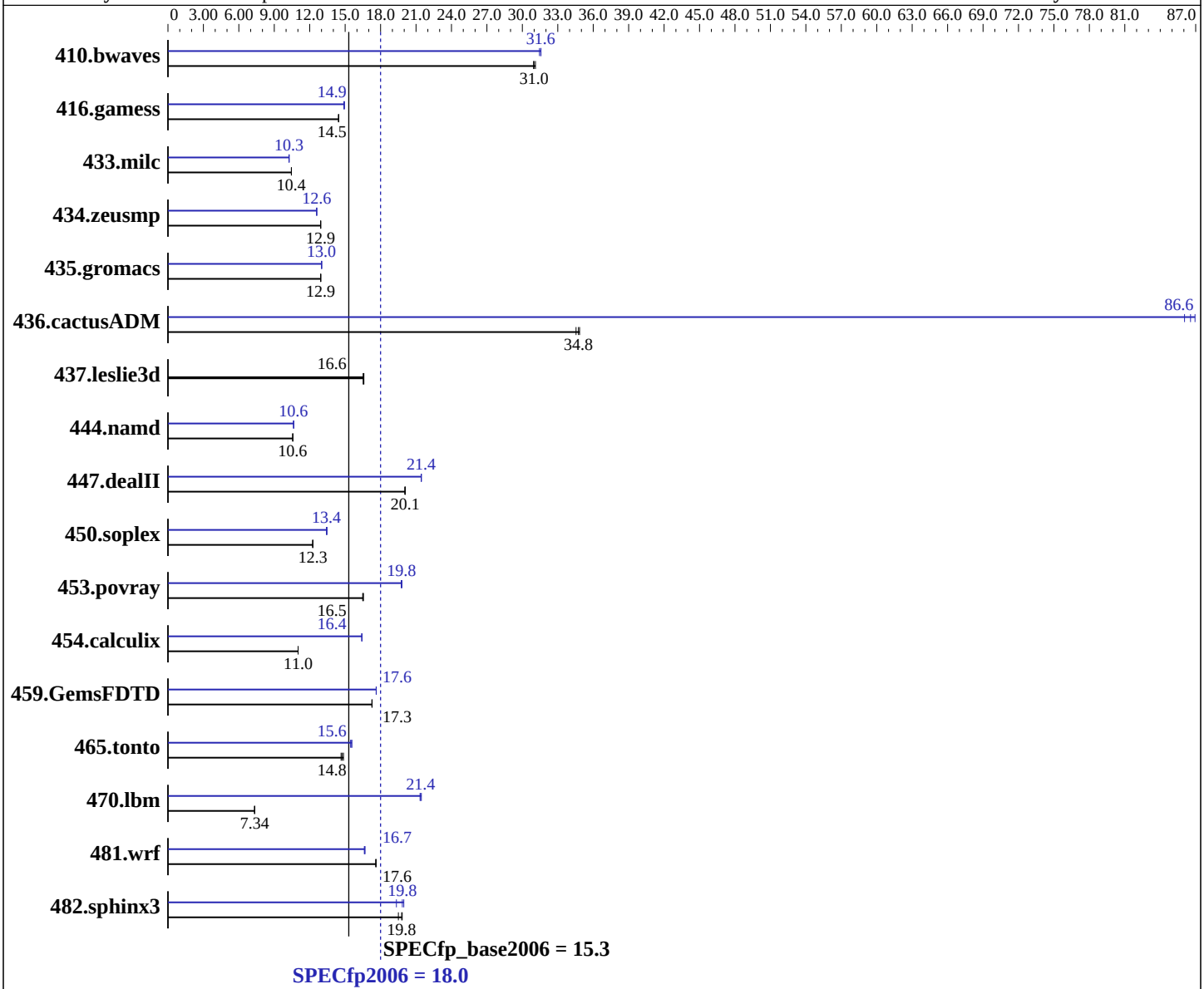
## IBM System x3550 (Intel Xeon E5405)

SPECfp®2006 = 18.0

SPECfp_base2006 = 15.3

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

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




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5405 |
| CPU Characteristics: | 1333MHz system bus |
| CPU MHz: | 1997 |
| 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 |

Continued on next page

### 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 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

## IBM System x3550 (Intel Xeon E5405)

SPECfp2006 = 18.0

SPECfp_base2006 = 15.3

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

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

L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem: 1 x 36 GB SAS, 15000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 439 | 31.0 | **439** | **31.0** | 437 | 31.1 | **431** | **31.6** | 432 | 31.4 | 430 | 31.6 |
| 416.gamess | **1355** | **14.5** | 1357 | 14.4 | 1354 | 14.5 | **1313** | **14.9** | 1314 | 14.9 | 1310 | 14.9 |
| 433.milc | 878 | 10.5 | 879 | 10.4 | **879** | **10.4** | **896** | **10.3** | 895 | 10.3 | 896 | 10.3 |
| 434.zeusmp | **704** | **12.9** | 704 | 12.9 | 704 | 12.9 | **723** | **12.6** | 723 | 12.6 | 723 | 12.6 |
| 435.gromacs | 553 | 12.9 | 552 | 12.9 | **552** | **12.9** | **549** | **13.0** | 549 | 13.0 | 549 | 13.0 |
| 436.cactusADM | **344** | **34.8** | 346 | 34.5 | 343 | 34.8 | 139 | 86.1 | 137 | 86.9 | **138** | **86.6** |
| 437.leslie3d | **568** | **16.6** | 567 | 16.6 | 569 | 16.5 | **568** | **16.6** | 567 | 16.6 | 569 | 16.5 |
| 444.namd | 759 | 10.6 | 759 | 10.6 | **759** | **10.6** | 755 | 10.6 | 753 | 10.6 | **754** | **10.6** |
| 447.dealII | 569 | 20.1 | **570** | **20.1** | 571 | 20.0 | **534** | **21.4** | 534 | 21.4 | 533 | 21.5 |
| 450.soplex | **680** | **12.3** | 680 | 12.3 | 681 | 12.2 | 621 | 13.4 | 619 | 13.5 | **621** | **13.4** |
| 453.povray | **322** | **16.5** | 322 | 16.5 | 323 | 16.5 | 269 | 19.8 | 269 | 19.7 | **269** | **19.8** |
| 454.calculix | **749** | **11.0** | 749 | 11.0 | 749 | 11.0 | 502 | 16.4 | **503** | **16.4** | 503 | 16.4 |
| 459.GemsFDTD | 614 | 17.3 | **614** | **17.3** | 615 | 17.3 | 602 | 17.6 | 602 | 17.6 | **602** | **17.6** |
| 465.tonto | 662 | 14.9 | 671 | 14.7 | **667** | **14.8** | 637 | 15.5 | 632 | 15.6 | **633** | **15.6** |
| 470.lbm | **1873** | **7.34** | 1872 | 7.34 | 1874 | 7.33 | 640 | 21.5 | **642** | **21.4** | 644 | 21.3 |
| 481.wrf | **635** | **17.6** | 634 | 17.6 | 635 | 17.6 | 670 | 16.7 | **671** | **16.7** | 672 | 16.6 |
| 482.sphinx3 | **985** | **19.8** | 999 | 19.5 | 983 | 19.8 | 1008 | 19.3 | **982** | **19.8** | 976 | 20.0 |

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 450.soplex,
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Enabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M
Powersaved dameon was disabled in OS
```

## Base Compiler Invocation

C benchmarks:

```
icc
```

Continued on next page

## Base Compiler Invocation (Continued)

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 -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

# 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:
`ifort`

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`
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`
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`

Continued on next page

# 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 -parallel

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: basepeak = yes

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

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 -parallel -prefetch -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

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 16:35:16 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 February 2008.