# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Dell Inc.

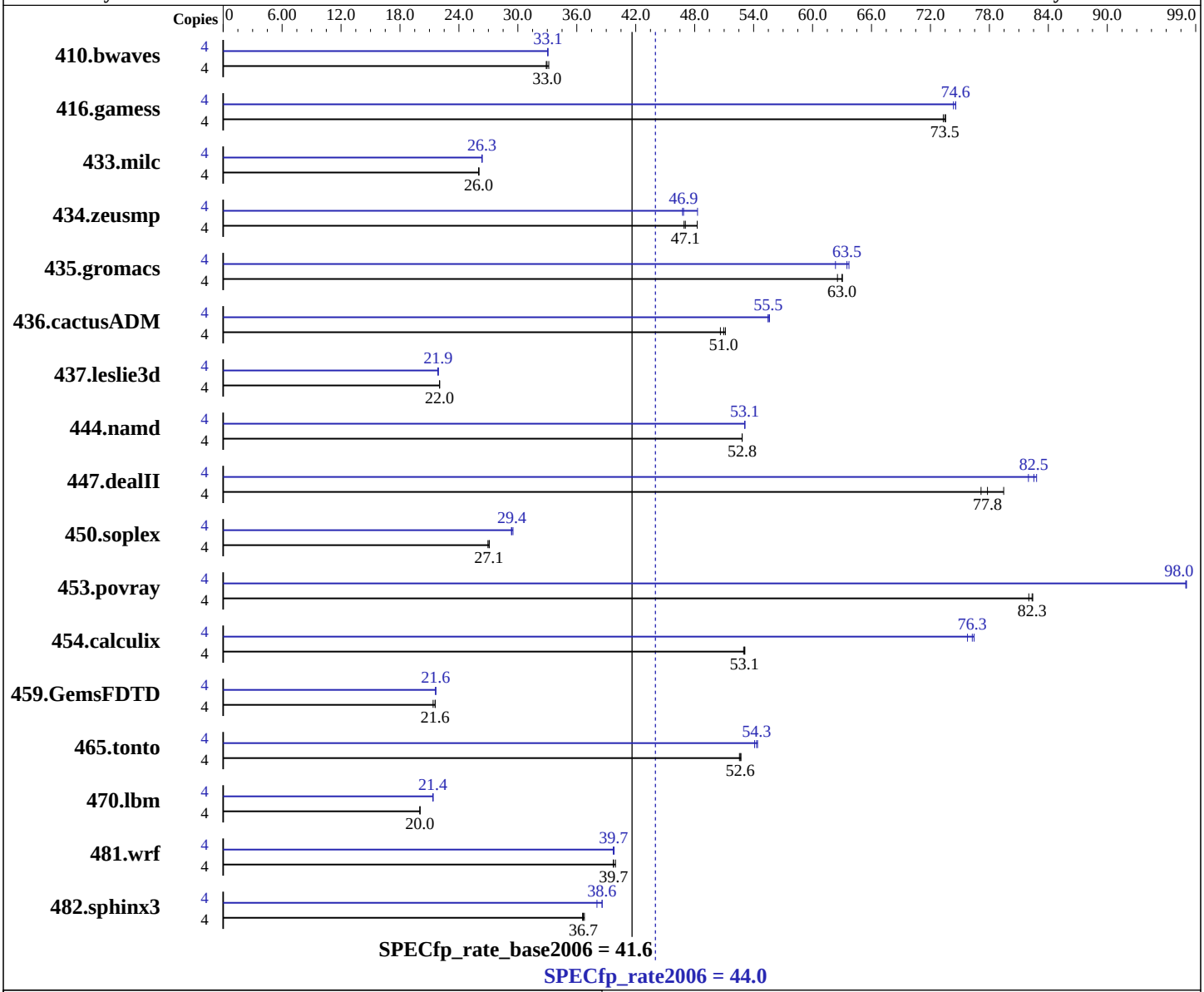
PowerEdge R200 (Intel Xeon X3320, 2.50 GHz)

SPECfp®_rate2006 = 44.0

SPECfp_rate_base2006 = 41.6

**CPU2006 license:** 55
**Test sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test date:** Mar-2008
**Hardware Availability:** Mar-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X3320 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 2500 |
| 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: | 6 MB I+D on chip per chip, 3 MB shared / 2 cores |

Continued on next page

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R200 (Intel Xeon X3320, 2.50 GHz)

SPECfp_rate2006 = 44.0

SPECfp_rate_base2006 = 41.6

**CPU2006 license:** 55
**Test sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test date:** Mar-2008
**Hardware Availability:** Mar-2008
**Software Availability:** Nov-2007

L3 Cache: None
Other Cache: None
Memory: 8 GB (4 x 2GB 800MHz DDR2)
Disk Subsystem: 1 x 750 GB 7200 RPM SATA
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 1640 | 33.1 | **1649** | **33.0** | 1653 | 32.9 | 4 | 1646 | 33.0 | **1644** | **33.1** | 1644 | 33.1 |
| 416.gamess | 4 | 1068 | 73.3 | **1066** | **73.5** | 1065 | 73.5 | 4 | **1050** | **74.6** | 1054 | 74.3 | 1050 | 74.6 |
| 433.milc | 4 | 1410 | 26.0 | 1411 | 26.0 | **1411** | **26.0** | 4 | 1392 | 26.4 | 1394 | 26.3 | **1394** | **26.3** |
| 434.zeusmp | 4 | 776 | 46.9 | **774** | **47.1** | 754 | 48.3 | 4 | 778 | 46.8 | **777** | **46.9** | 754 | 48.3 |
| 435.gromacs | 4 | 453 | 63.0 | 457 | 62.5 | **453** | **63.0** | 4 | 448 | 63.7 | 458 | 62.3 | **450** | **63.5** |
| 436.cactusADM | 4 | **938** | **51.0** | 944 | 50.6 | 935 | 51.1 | 4 | **861** | **55.5** | 862 | 55.5 | 859 | 55.6 |
| 437.leslie3d | 4 | **1707** | **22.0** | 1707 | 22.0 | 1707 | 22.0 | 4 | 1721 | 21.9 | 1716 | 21.9 | **1717** | **21.9** |
| 444.namd | 4 | **607** | **52.8** | 607 | 52.8 | 607 | 52.8 | 4 | **604** | **53.1** | 604 | 53.1 | 604 | 53.1 |
| 447.dealII | 4 | **588** | **77.8** | 576 | 79.5 | 593 | 77.2 | 4 | 558 | 82.0 | 553 | 82.8 | **554** | **82.5** |
| 450.soplex | 4 | **1233** | **27.1** | 1238 | 27.0 | 1231 | 27.1 | 4 | **1135** | **29.4** | 1137 | 29.3 | 1131 | 29.5 |
| 453.povray | 4 | **258** | **82.3** | 258 | 82.4 | 259 | 82.0 | 4 | 217 | 98.1 | 217 | 98.0 | **217** | **98.0** |
| 454.calculix | 4 | **622** | **53.1** | 623 | 53.0 | 621 | 53.1 | 4 | 436 | 75.8 | **433** | **76.3** | 432 | 76.4 |
| 459.GemsFDTD | 4 | 1986 | 21.4 | 1966 | 21.6 | **1967** | **21.6** | 4 | 1963 | 21.6 | 1960 | 21.7 | **1962** | **21.6** |
| 465.tonto | 4 | **748** | **52.6** | 747 | 52.7 | 749 | 52.6 | 4 | **725** | **54.3** | 723 | 54.4 | 728 | 54.1 |
| 470.lbm | 4 | 2744 | 20.0 | 2743 | 20.0 | **2743** | **20.0** | 4 | 2574 | 21.4 | 2572 | 21.4 | **2573** | **21.4** |
| 481.wrf | 4 | 1119 | 39.9 | **1124** | **39.7** | 1125 | 39.7 | 4 | 1123 | 39.8 | 1125 | 39.7 | **1124** | **39.7** |
| 482.sphinx3 | 4 | 2131 | 36.6 | 2120 | 36.8 | **2126** | **36.7** | 4 | 2049 | 38.1 | 2021 | 38.6 | **2021** | **38.6** |

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

## Compiler Invocation Notes

```
KMP_STACK_SIZE set to 64M
KMP_AFFINITY set to physical,0
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
```

## Platform Notes

```
BIOS Settings:
Adjacent Cache Line Prefetch = Disabled (default Enabled)
Hardware Prefetcher = Disabled (default Enabled)
```

## 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

## Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: `icc`

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

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

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

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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`

Continued on next page

## Peak Optimization Flags (Continued)

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

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 -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.20090713.04.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.20090713.04.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 18:20:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 April 2008.