# SPEC® CFP2006 Result



## Hewlett-Packard Company

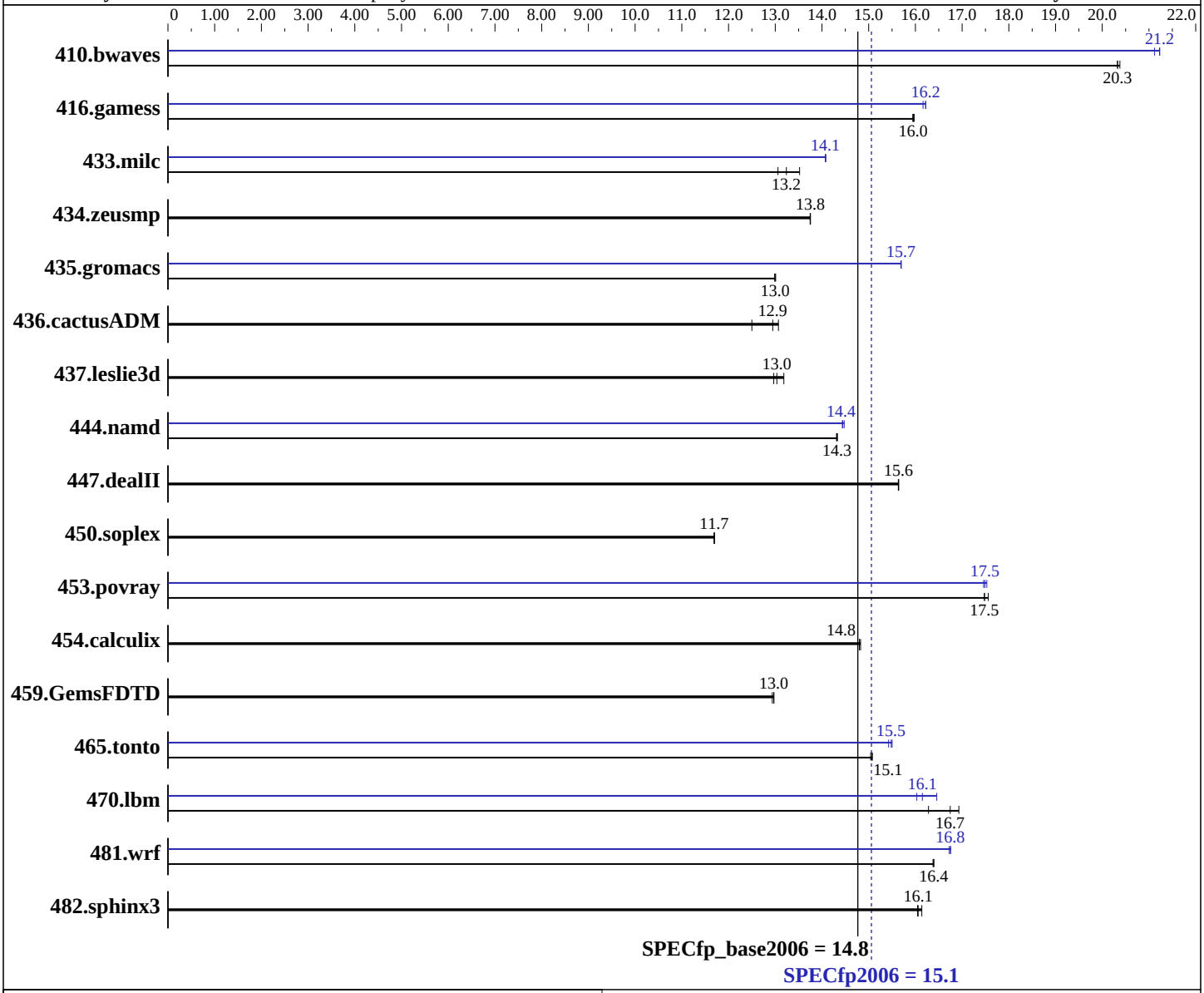
ProLiant DL365
(3.0G Hz AMD Opteron 2222)

SPECfp®2006 = 15.1

SPECfp_base2006 = 14.8

**CPU2006 license:** 3
**Test sponsor:** Hewlett-Packard Company
**Tested by:** Hewlett-Packard Company

**Test date:** Aug-2007
**Hardware Availability:** Sep-2007
**Software Availability:** Oct-2007




### Hardware

| | |
|---|---|
| CPU Name: | AMD Opteron 2222 |
| CPU Characteristics: | |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 1 core, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 64 KB I + 64 KB D on chip per core |
| Secondary Cache: | 1 MB I+D on chip per core |

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### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 10 (x86_64) SP1<br>kernel 2.6.16.46-0.12-default |
| Compiler: | The Portland Group (PGI)<br>PGI pgf90 7.1-0 Fortran Compiler<br>PGI pgcc 7.1-0 C Compiler<br>PGI pgCC 7.1-0 C++ Compiler |
| Auto Parallel: | No |
| File System: | ext2 |
| System State: | Multi-user, run level 3 |

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB, PC2-5300P CL5)
Disk Subsystem: 1x72 GB 10 K SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: none

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | **669** | **20.3** | 667 | 20.4 | 669 | 20.3 | **640** | **21.2** | 643 | 21.1 | 640 | 21.2 |
| 416.gamess | 1226 | 16.0 | 1228 | 15.9 | **1227** | **16.0** | **1207** | **16.2** | 1207 | 16.2 | 1211 | 16.2 |
| 433.milc | 703 | 13.1 | **693** | **13.2** | 679 | 13.5 | 652 | 14.1 | 652 | 14.1 | **652** | **14.1** |
| 434.zeusmp | **662** | **13.8** | 662 | 13.8 | 662 | 13.7 | **662** | **13.8** | 662 | 13.8 | 662 | 13.7 |
| 435.gromacs | **549** | **13.0** | 550 | 13.0 | 549 | 13.0 | 455 | 15.7 | **455** | **15.7** | 455 | 15.7 |
| 436.cactusADM | **923** | **12.9** | 914 | 13.1 | 956 | 12.5 | **923** | **12.9** | 914 | 13.1 | 956 | 12.5 |
| 437.leslie3d | 713 | 13.2 | 725 | 13.0 | **721** | **13.0** | 713 | 13.2 | 725 | 13.0 | **721** | **13.0** |
| 444.namd | **560** | **14.3** | 560 | 14.3 | 560 | 14.3 | 556 | 14.4 | **555** | **14.4** | 554 | 14.5 |
| 447.dealII | 732 | 15.6 | 731 | 15.6 | **732** | **15.6** | 732 | 15.6 | 731 | 15.6 | **732** | **15.6** |
| 450.soplex | 713 | 11.7 | 713 | 11.7 | **713** | **11.7** | 713 | 11.7 | 713 | 11.7 | **713** | **11.7** |
| 453.povray | 304 | 17.5 | 303 | 17.6 | **304** | **17.5** | **304** | **17.5** | 303 | 17.5 | 305 | 17.5 |
| 454.calculix | **557** | **14.8** | 557 | 14.8 | 556 | 14.8 | **557** | **14.8** | 557 | 14.8 | 556 | 14.8 |
| 459.GemsFDTD | 818 | 13.0 | **818** | **13.0** | 820 | 12.9 | 818 | 13.0 | **818** | **13.0** | 820 | 12.9 |
| 465.tonto | 654 | 15.0 | 653 | 15.1 | **653** | **15.1** | 638 | 15.4 | 635 | 15.5 | **636** | **15.5** |
| 470.lbm | 812 | 16.9 | **821** | **16.7** | 844 | 16.3 | 835 | 16.5 | **851** | **16.1** | 857 | 16.0 |
| 481.wrf | 682 | 16.4 | **681** | **16.4** | 681 | 16.4 | **667** | **16.8** | 667 | 16.8 | 668 | 16.7 |
| 482.sphinx3 | 1208 | 16.1 | 1215 | 16.0 | **1214** | **16.1** | 1208 | 16.1 | 1215 | 16.0 | **1214** | **16.1** |

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

## Operating System Notes

```
Environment stack size set to 'unlimited'
ulimit -l set to 1048576
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Single-processor kernel used
```

## Base Compiler Invocation

C benchmarks:
pgcc

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## Base Compiler Invocation (Continued)

C++ benchmarks:
pgcpp

Fortran benchmarks:
pgf95

Benchmarks using both Fortran and C:
pgcc pgf95

## 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 -Mnomain
436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
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 -Mnomain
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 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

C++ benchmarks:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
--zc_eh -tp k8-64 -Bstatic_pgi

Fortran benchmarks:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

Benchmarks using both Fortran and C:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

## Base Other Flags

C benchmarks:
-w

C++ benchmarks:
-w

Fortran benchmarks:
-w

Benchmarks using both Fortran and C:
-w

## Peak Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

Fortran benchmarks:
pgf95

Benchmarks using both Fortran and C:
pgcc pgf95

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast -O4 -Mdse
-Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi

470.lbm: -fast -Mfprelaxed -Msmartalloc=huge:8 -Mipa=fast
-Mipa=noarg -tp k8-64 -Bstatic_pgi

482.sphinx3: basepeak = yes

Continued on next page

## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: `-Mpfi`(pass 1) `-Mpfo`(pass 2) `-Mipa=fast`(pass 2) `-Mipa=inline`(pass 2) `-fast -O4 -Mfprelaxed -Msmartalloc=huge:32 --zc_eh -tp k8-64 -Bstatic_pgi`

447.dealII: `basepeak = yes`

450.soplex: `basepeak = yes`

453.povray: `-fast -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast -Mipa=inline --zc_eh -tp k8-64 -Bstatic_pgi`

Fortran benchmarks:

410.bwaves: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc -tp k8-64 -Bstatic_pgi`

416.gamess: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Mvect=noaltcode -Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-fast -Mfprelaxed -Msmartalloc=huge:128 -Mipa=fast -Mipa=inline -Mvect=noaltcode -tp k8-64 -Bstatic_pgi`

Benchmarks using both Fortran and C:

435.gromacs: `-fast -O4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:16 -tp k8-64 -Mfpapprox=rsqrt -Bstatic_pgi`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

481.wrf: `-fast -Mfprelaxed -Msmartalloc=huge:32 -Mvect=noaltcode -tp k8-64 -Bstatic_pgi`

## Peak Other Flags

C benchmarks:

`-w`

Continued on next page

## Peak Other Flags (Continued)

C++ benchmarks:
-w

Fortran benchmarks:
-w

Benchmarks using both Fortran and C:
-w

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-pgi710_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-pgi710_flags.xml



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 13:27:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 September 2007.