# SPEC® CFP2006 Result



## Hewlett-Packard Company

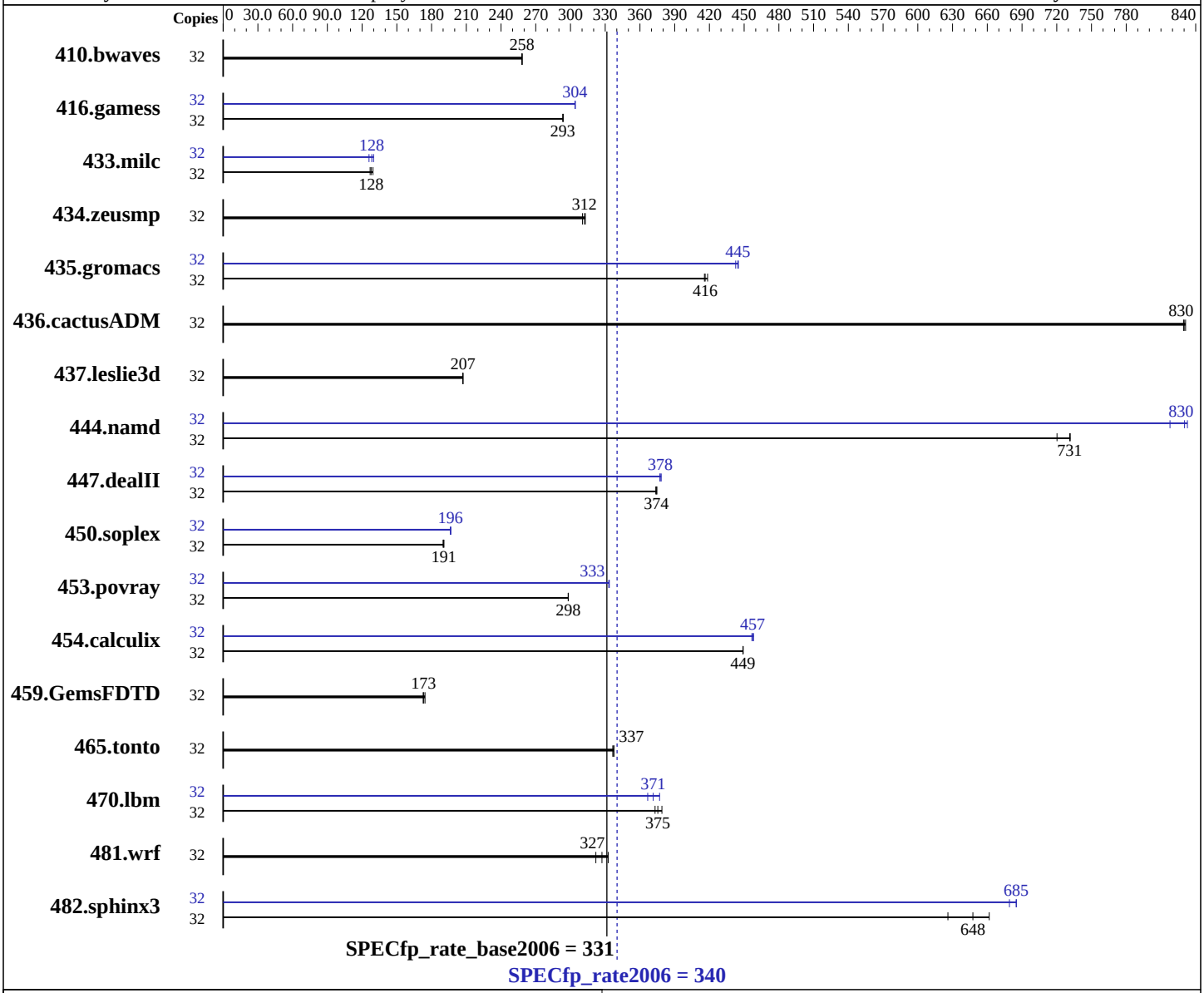
HP Integrity rx8640
(1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECfp®_rate2006 = 340

SPECfp_rate_base2006 = 331

**CPU2006 license:** 03
**Test sponsor:** Hewlett-Packard Company
**Tested by:** Hewlett-Packard Company

**Test date:** Dec-2006
**Hardware Availability:** Sep-2006
**Software Availability:** Nov-2006




### Hardware

| | |
|---|---|
| CPU Name: | Dual-Core Intel Itanium 2 9050 |
| CPU Characteristics: | 1.6GHz/24MB, 533MHz FSB |
| CPU MHz: | 1600 |
| FPU: | Integrated |
| CPU(s) enabled: | 32 cores, 16 chips, 2 cores/chip |
| CPU(s) orderable: | 1-16 chips |
| Primary Cache: | 16 KB I + 16 KB D on chip per core |
| Secondary Cache: | 1 MB I + 256 KB D on chip per core |

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### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux AS release 4 (Update 4) |
| Compiler: | Intel C++ Compiler 9.1 for Linux (Build 20061105)<br>Intel Fortran Compiler 9.1 for Linux (Build 20061105) |
| Auto Parallel: | No |
| File System: | ext3 |
| System State: | Multi-user |

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| | |
|---|---|
| L3 Cache: | 12 MB I+D on chip per core |
| Other Cache: | None |
| Memory: | 128 GB (64x2GB DIMMs) |
| Disk Subsystem: | 73GB 15K RPM SCSI |
| Other Hardware: | None |

| | |
|---|---|
| Base Pointers: | 64-bit |
| Peak Pointers: | 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 | 32 | **1684** | **258** | 1684 | 258 | 1686 | 258 | 32 | **1684** | **258** | 1684 | 258 | 1686 | 258 |
| 416.gamess | 32 | 2135 | 293 | 2133 | 294 | **2135** | **293** | 32 | 2061 | 304 | 2060 | 304 | **2061** | **304** |
| 433.milc | 32 | 2314 | 127 | **2298** | **128** | 2270 | 129 | 32 | **2288** | **128** | 2260 | 130 | 2332 | 126 |
| 434.zeusmp | 32 | 931 | 313 | **933** | **312** | 938 | 310 | 32 | 931 | 313 | **933** | **312** | 938 | 310 |
| 435.gromacs | 32 | 550 | 416 | 546 | 418 | **549** | **416** | 32 | **514** | **445** | 516 | 443 | 513 | 445 |
| 436.cactusADM | 32 | 460 | 831 | 461 | 830 | **461** | **830** | 32 | 460 | 831 | 461 | 830 | **461** | **830** |
| 437.leslie3d | 32 | 1454 | 207 | **1452** | **207** | 1452 | 207 | 32 | 1454 | 207 | **1452** | **207** | 1452 | 207 |
| 444.namd | 32 | 356 | 720 | **351** | **731** | 351 | 732 | 32 | 308 | 833 | 314 | 818 | **309** | **830** |
| 447.dealII | 32 | **978** | **374** | 980 | 374 | 977 | 375 | 32 | 970 | 377 | 968 | 378 | **970** | **378** |
| 450.soplex | 32 | 1400 | 191 | 1405 | 190 | **1401** | **191** | 32 | **1359** | **196** | 1360 | 196 | 1357 | 197 |
| 453.povray | 32 | 571 | 298 | 571 | 298 | **571** | **298** | 32 | 511 | 333 | **511** | **333** | 510 | 334 |
| 454.calculix | 32 | **588** | **449** | 588 | 449 | 588 | 449 | 32 | **577** | **457** | 578 | 457 | 576 | 458 |
| 459.GemsFDTD | 32 | 1965 | 173 | **1960** | **173** | 1947 | 174 | 32 | 1965 | 173 | **1960** | **173** | 1947 | 174 |
| 465.tonto | 32 | 936 | 337 | 933 | 338 | **934** | **337** | 32 | 936 | 337 | 933 | 338 | **934** | **337** |
| 470.lbm | 32 | 1179 | 373 | **1171** | **375** | 1160 | 379 | 32 | 1199 | 367 | **1184** | **371** | 1166 | 377 |
| 481.wrf | 32 | 1110 | 322 | **1092** | **327** | 1075 | 333 | 32 | 1110 | 322 | **1092** | **327** | 1075 | 333 |
| 482.sphinx3 | 32 | 996 | 626 | **963** | **648** | 943 | 662 | 32 | 910 | 685 | 918 | 679 | **911** | **685** |

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

## Operating System Notes

```
stacksize set to unlimited prior to run
```

## Platform Notes

```
System was configured as a single partition with
4 cells and 4 processors (8 cores) per cell.
Memory was configured as 100% cell local.

The following config file entry was used to bind
processes to cores using the Linux "numactl" utility:
submit = let "MYNUM=$SPECCOPYNUM" ; let "NODE=\$MYNUM/8" ; numactl --cpubind \$NODE --membind \$NODE $command
```

## 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_LINUX -DSPEC_CPU_CASE_FLAG
482.sphinx3: -DSPEC_CPU_LP64

## Base Optimization Flags

C benchmarks:
-fast -IPF_fp_relaxed -ansi-alias

C++ benchmarks:
-fast -IPF_fp_relaxed -ansi-alias

Fortran benchmarks:
-fast -IPF_fp_relaxed

Benchmarks using both Fortran and C:
-fast -IPF_fp_relaxed -ansi-alias

## Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -fast -IPF_fp_relaxed -ansi-alias -fno-alias

470.lbm: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed -ansi-alias

482.sphinx3: Same as 470.lbm

C++ benchmarks:

444.namd: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed -no-prefetch -fno-alias

447.dealII: -fast -IPF_fp_relaxed -ansi-alias -no-alias-args

450.soplex: -fast -IPF_fp_relaxed -ansi-alias -inline-factor=150

453.povray: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -fast -IPF_fp_relaxed -inline-factor=150

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## Peak Optimization Flags (Continued)

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed -fno-alias -inline-factor=150

436.cactusADM: basepeak = yes

454.calculix: -fast -IPF_fp_relaxed -fno-alias

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IPF_intel91_flags.20090715.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/IPF_intel91_flags.20090715.xml



For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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