



# SPEC® CFP2006 Result

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## Hewlett-Packard Company

SPECfp®\_rate2006 = 38.7

ProLiant ML370 G5  
(3.0 GHz, Intel Xeon processor X5365)

SPECfp\_rate\_base2006 = 36.3

CPU2006 license: 3

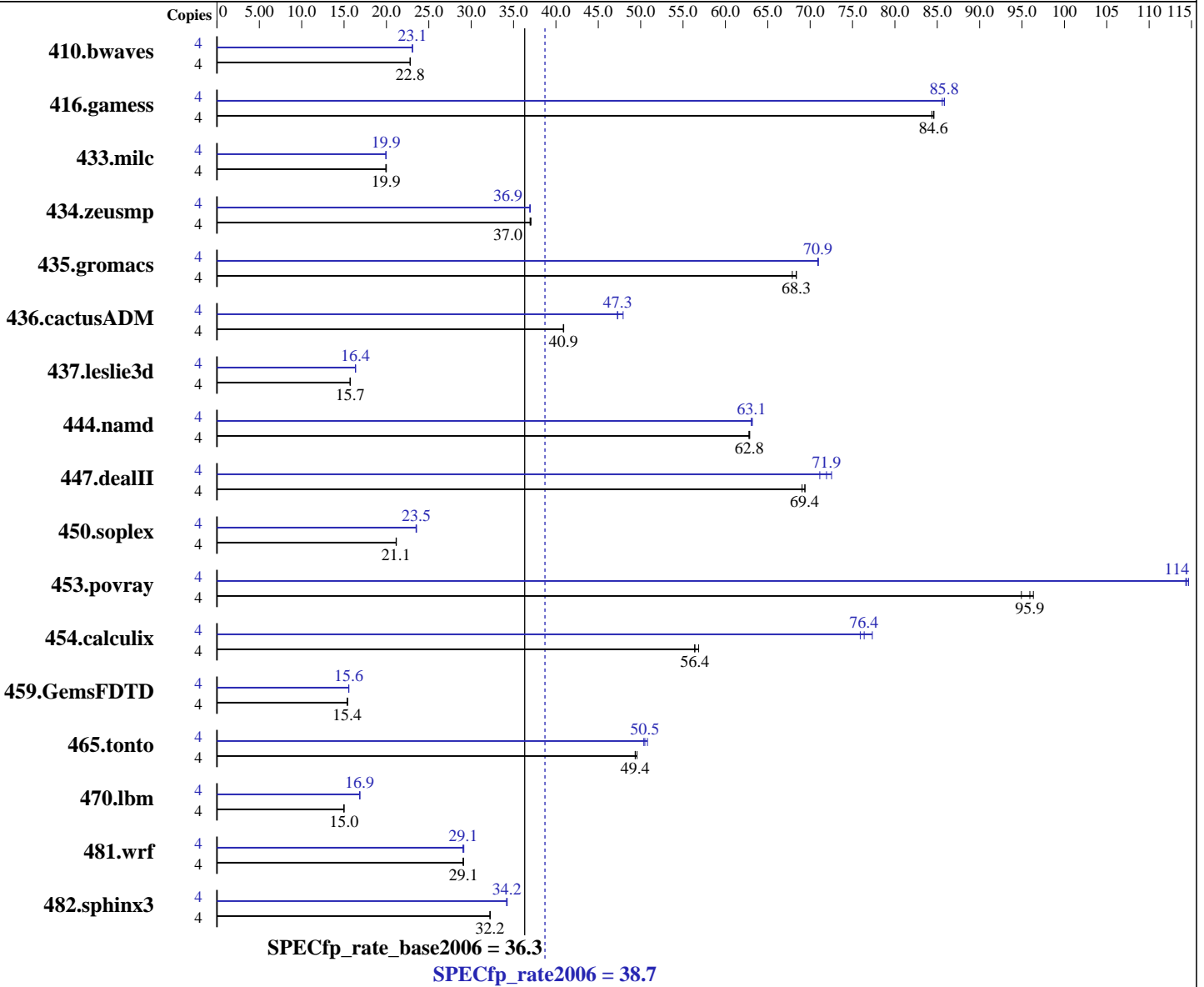
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Aug-2007

Hardware Availability: Sep-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5365  
 CPU Characteristics: 3.0 GHz, 2x4 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 or 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64)  
 kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1  
 Build 20070725  
 Auto Parallel: No  
 File System: ext2  
 System State: Multi-user run level 3  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB PC2-5300F CL5)  
Disk Subsystem: 1x72 GB 15 K SAS  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: binutils-2.17.50

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2385	22.8	2382	22.8	<b>2384</b>	<b>22.8</b>	4	2356	23.1	2356	23.1	<b>2356</b>	<b>23.1</b>
416.gamess	4	<b>926</b>	<b>84.6</b>	928	84.4	926	84.6	4	915	85.6	<b>913</b>	<b>85.8</b>	912	85.9
433.milc	4	<b>1841</b>	<b>19.9</b>	1842	19.9	1837	20.0	4	1843	19.9	<b>1841</b>	<b>19.9</b>	1839	20.0
434.zeusmp	4	<b>985</b>	<b>37.0</b>	985	37.0	982	37.1	4	<b>986</b>	<b>36.9</b>	986	36.9	984	37.0
435.gromacs	4	418	68.4	421	67.9	<b>418</b>	<b>68.3</b>	4	<b>403</b>	<b>70.9</b>	402	71.0	403	70.9
436.cactusADM	4	1168	40.9	1170	40.9	<b>1168</b>	<b>40.9</b>	4	997	47.9	<b>1011</b>	<b>47.3</b>	1012	47.3
437.leslie3d	4	2388	15.7	2394	15.7	<b>2392</b>	<b>15.7</b>	4	2301	16.3	<b>2299</b>	<b>16.4</b>	2299	16.4
444.namd	4	<b>511</b>	<b>62.8</b>	511	62.8	510	62.9	4	509	63.1	508	63.2	<b>509</b>	<b>63.1</b>
447.dealII	4	659	69.4	663	69.0	<b>660</b>	<b>69.4</b>	4	631	72.5	<b>636</b>	<b>71.9</b>	643	71.1
450.soplex	4	<b>1577</b>	<b>21.1</b>	1578	21.1	1576	21.2	4	1417	23.5	<b>1418</b>	<b>23.5</b>	1420	23.5
453.povray	4	<b>222</b>	<b>95.9</b>	221	96.3	224	94.9	4	186	115	<b>186</b>	<b>114</b>	186	114
454.calculix	4	<b>585</b>	<b>56.4</b>	585	56.4	581	56.8	4	<b>432</b>	<b>76.4</b>	435	75.9	427	77.3
459.GemsFDTD	4	<b>2760</b>	<b>15.4</b>	2763	15.4	2750	15.4	4	2728	15.6	2729	15.6	<b>2728</b>	<b>15.6</b>
465.tonto	4	798	49.3	794	49.6	<b>797</b>	<b>49.4</b>	4	781	50.4	<b>779</b>	<b>50.5</b>	775	50.8
470.lbm	4	3667	15.0	3666	15.0	<b>3667</b>	<b>15.0</b>	4	3261	16.9	3261	16.9	<b>3261</b>	<b>16.9</b>
481.wrf	4	1539	29.0	<b>1536</b>	<b>29.1</b>	1535	29.1	4	<b>1537</b>	<b>29.1</b>	1534	29.1	1539	29.0
482.sphinx3	4	2417	32.3	<b>2420</b>	<b>32.2</b>	2420	32.2	4	2281	34.2	<b>2278</b>	<b>34.2</b>	2276	34.3

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

## 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 configuration:  
Power Regulator set to Static High Performance Mode  
Adjacent Sector Prefetch Disabled  
Hardware Prefetcher Disabled



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## 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



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## 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.deallI: -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
```

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## 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



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-flags.20090714.01.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-flags.20090714.01.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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