



# SPEC<sup>®</sup> CFP2006 Result

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## Hewlett-Packard Company

### SPECfp<sup>®</sup>\_rate2006 = 32.1

ProLiant BL480c  
(3.33 GHz, Intel Xeon processor X5260)

### SPECfp\_rate\_base2006 = 28.9

CPU2006 license: 3

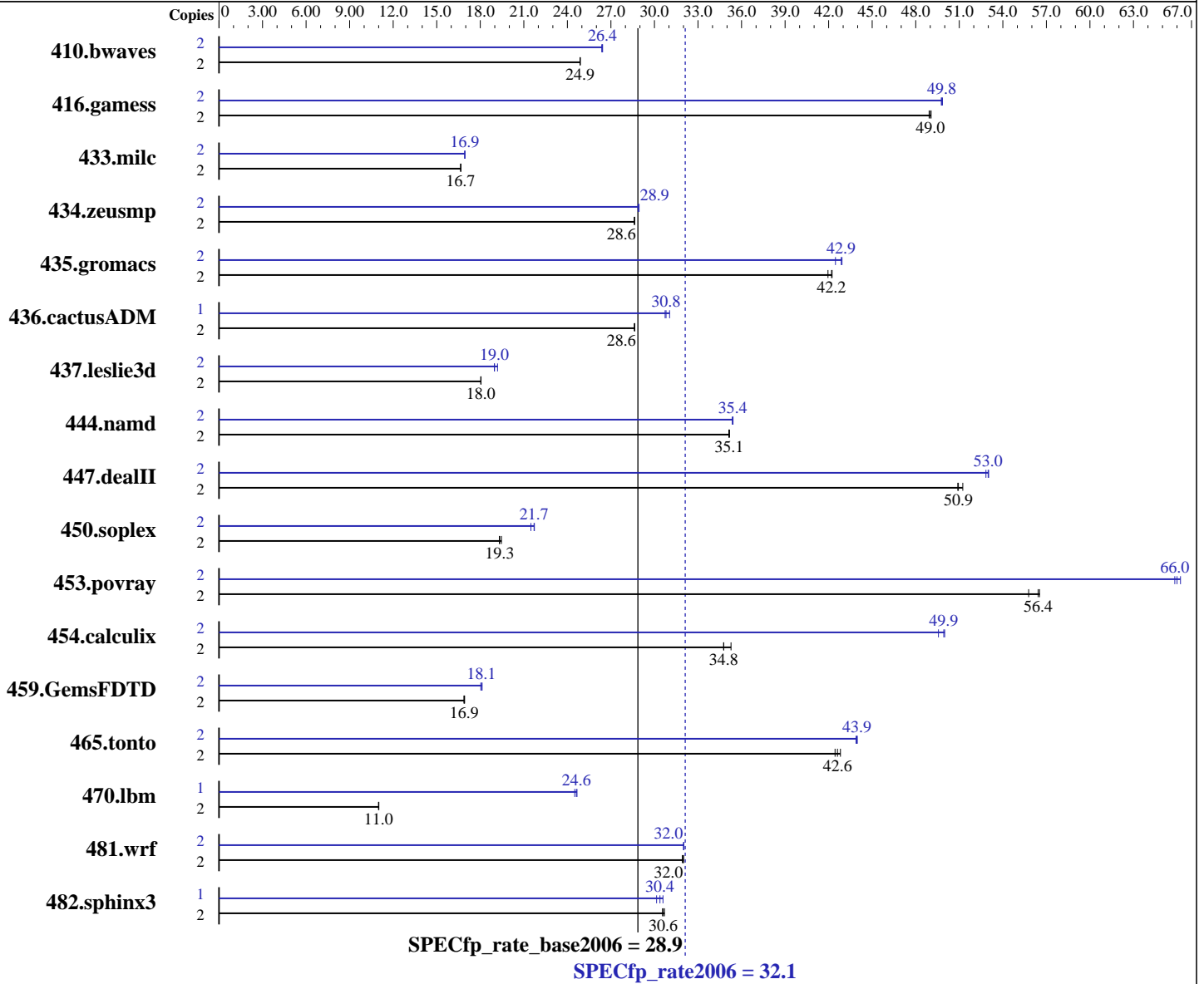
Test date: Dec-2007

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jan-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 3.33 GHz, 6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 3333  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip

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++ Compiler for applications running on IA-32 and Intel 64, Version 10.1  
 Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Intel Fortran Compiler for applications running on IA-32 and Intel 64, Version 10.1  
 Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2

Continued on next page



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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

System State: Multi-user run level 3  
Base Pointers: 64-bit  
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	2	1093	24.9	<b><u>1092</u></b>	<b><u>24.9</u></b>	1092	24.9	2	1029	26.4	<b><u>1029</u></b>	<b><u>26.4</u></b>	1031	26.4
416.gamess	2	800	48.9	798	49.1	<b><u>799</u></b>	<b><u>49.0</u></b>	2	786	49.8	787	49.8	<b><u>786</u></b>	<b><u>49.8</u></b>
433.milc	2	1102	16.7	1103	16.7	<b><u>1102</u></b>	<b><u>16.7</u></b>	2	1084	16.9	1084	16.9	<b><u>1084</u></b>	<b><u>16.9</u></b>
434.zeusmp	2	636	28.6	<b><u>636</u></b>	<b><u>28.6</u></b>	636	28.6	2	<b><u>630</u></b>	<b><u>28.9</u></b>	630	28.9	629	28.9
435.gromacs	2	340	42.0	<b><u>338</u></b>	<b><u>42.2</u></b>	338	42.2	2	336	42.5	<b><u>333</u></b>	<b><u>42.9</u></b>	333	42.9
436.cactusADM	2	835	28.6	834	28.6	<b><u>834</u></b>	<b><u>28.6</u></b>	1	<b><u>388</u></b>	<b><u>30.8</u></b>	389	30.7	385	31.0
437.leslie3d	2	1042	18.0	<b><u>1042</u></b>	<b><u>18.0</u></b>	1041	18.1	2	<b><u>990</u></b>	<b><u>19.0</u></b>	980	19.2	991	19.0
444.namd	2	457	35.1	456	35.2	<b><u>456</u></b>	<b><u>35.1</u></b>	2	<b><u>453</u></b>	<b><u>35.4</u></b>	454	35.4	453	35.4
447.dealII	2	450	50.9	<b><u>449</u></b>	<b><u>50.9</u></b>	447	51.2	2	<b><u>432</u></b>	<b><u>53.0</u></b>	433	52.8	432	53.0
450.soplex	2	857	19.5	864	19.3	<b><u>862</u></b>	<b><u>19.3</u></b>	2	<b><u>768</u></b>	<b><u>21.7</u></b>	776	21.5	768	21.7
453.povray	2	<b><u>189</u></b>	<b><u>56.4</u></b>	188	56.5	191	55.8	2	<b><u>161</u></b>	<b><u>66.0</u></b>	161	66.2	162	65.8
454.calculix	2	468	35.3	<b><u>475</u></b>	<b><u>34.8</u></b>	475	34.8	2	330	50.0	<b><u>330</u></b>	<b><u>49.9</u></b>	333	49.6
459.GemsFDTD	2	1254	16.9	<b><u>1255</u></b>	<b><u>16.9</u></b>	1258	16.9	2	<b><u>1173</u></b>	<b><u>18.1</u></b>	1176	18.0	1171	18.1
465.tonto	2	460	42.8	<b><u>462</u></b>	<b><u>42.6</u></b>	464	42.4	2	<b><u>448</u></b>	<b><u>43.9</u></b>	448	44.0	448	43.9
470.lbm	2	<b><u>2497</u></b>	<b><u>11.0</u></b>	2495	11.0	2501	11.0	1	557	24.7	<b><u>558</u></b>	<b><u>24.6</u></b>	561	24.5
481.wrf	2	698	32.0	<b><u>698</u></b>	<b><u>32.0</u></b>	700	31.9	2	698	32.0	698	32.0	<b><u>698</u></b>	<b><u>32.0</u></b>
482.sphinx3	2	1270	30.7	<b><u>1274</u></b>	<b><u>30.6</u></b>	1276	30.6	1	647	30.1	<b><u>642</u></b>	<b><u>30.4</u></b>	637	30.6

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  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M

## Platform Notes

BIOS configuration:  
Power Regulator set to Static High Performance Mode  
Adjacent Sector Prefetch 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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**Tested by:** Hewlett-Packard Company

**Software Availability:** Nov-2007

## 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 (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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.deall: -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
```

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## 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.dealIII: -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 -parallel -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/HP-Intel-ic10.1-linux-fp-flags.html>



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

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

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

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