



# SPEC® CFP2006 Result

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## Hewlett-Packard Company

SPECfp®2006 = **23.9**

ProLiant BL460c  
(3.33 GHz, Intel Xeon processor X5260)

SPECfp\_base2006 = **20.5**

CPU2006 license: 3

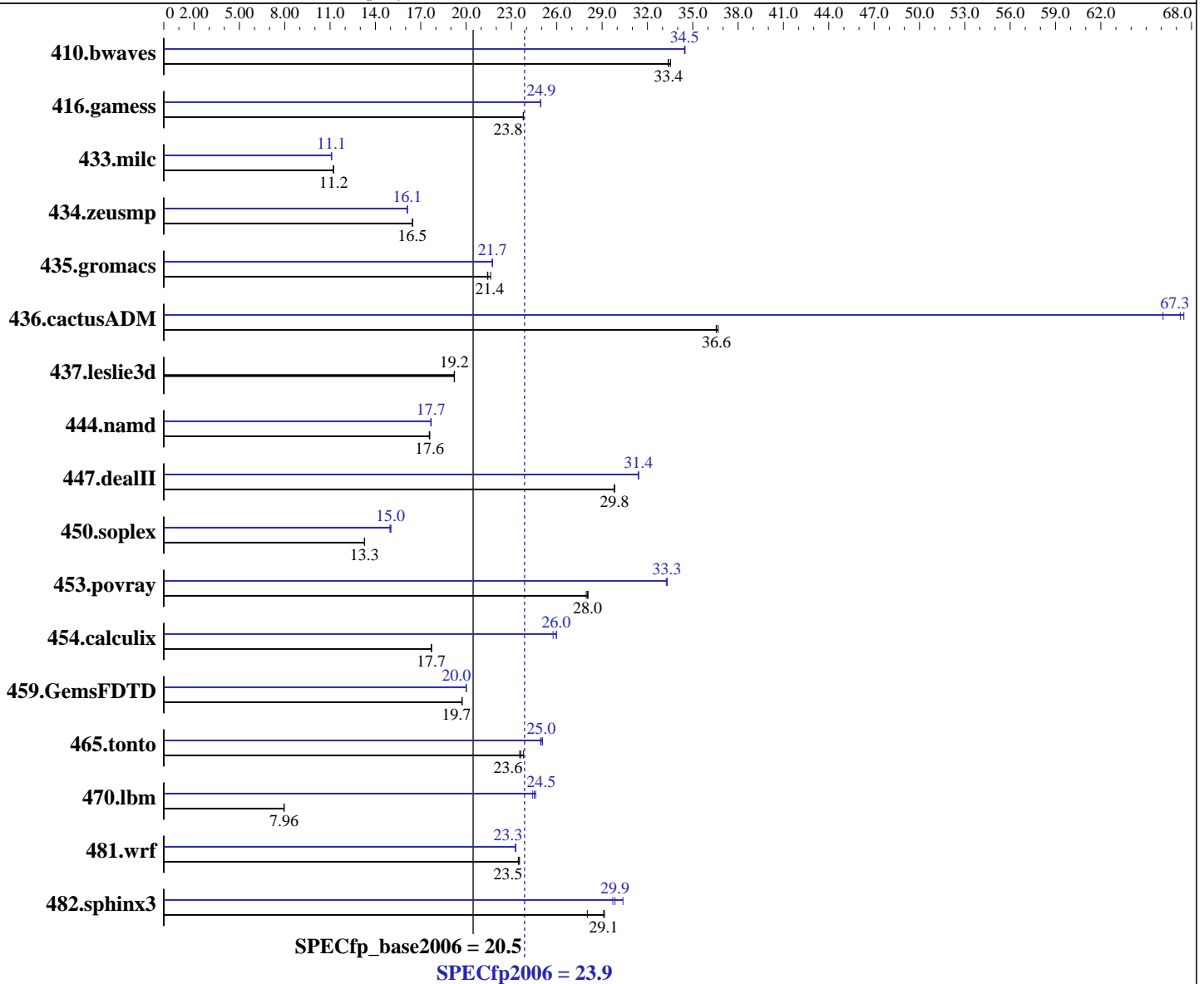
Test date: Dec-2007

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: 4 cores, 2 chips, 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

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**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

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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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>407</b>	<b>33.4</b>	407	33.4	405	33.5	394	34.5	<b>394</b>	<b>34.5</b>	394	34.5
416.gamess	<b>823</b>	<b>23.8</b>	823	23.8	823	23.8	<b>785</b>	<b>24.9</b>	785	24.9	786	24.9
433.milc	817	11.2	<b>817</b>	<b>11.2</b>	818	11.2	827	11.1	827	11.1	<b>827</b>	<b>11.1</b>
434.zeusmp	553	16.5	<b>553</b>	<b>16.5</b>	552	16.5	564	16.1	<b>565</b>	<b>16.1</b>	565	16.1
435.gromacs	<b>333</b>	<b>21.4</b>	333	21.4	330	21.6	328	21.7	328	21.7	<b>328</b>	<b>21.7</b>
436.cactusADM	326	36.7	327	36.5	<b>327</b>	<b>36.6</b>	177	67.5	181	66.1	<b>178</b>	<b>67.3</b>
437.leslie3d	<b>489</b>	<b>19.2</b>	489	19.2	489	19.2	<b>489</b>	<b>19.2</b>	489	19.2	489	19.2
444.namd	456	17.6	457	17.6	<b>456</b>	<b>17.6</b>	<b>454</b>	<b>17.7</b>	453	17.7	454	17.7
447.dealII	384	29.8	384	29.8	<b>384</b>	<b>29.8</b>	364	31.4	<b>364</b>	<b>31.4</b>	364	31.4
450.soplex	628	13.3	<b>628</b>	<b>13.3</b>	628	13.3	555	15.0	<b>556</b>	<b>15.0</b>	557	15.0
453.povray	<b>190</b>	<b>28.0</b>	190	28.0	190	28.1	<b>160</b>	<b>33.3</b>	160	33.3	160	33.2
454.calculix	466	17.7	466	17.7	<b>466</b>	<b>17.7</b>	318	26.0	<b>318</b>	<b>26.0</b>	320	25.8
459.GemsFDTD	538	19.7	<b>538</b>	<b>19.7</b>	537	19.7	531	20.0	530	20.0	<b>530</b>	<b>20.0</b>
465.tonto	413	23.8	418	23.5	<b>417</b>	<b>23.6</b>	393	25.1	<b>394</b>	<b>25.0</b>	395	24.9
470.lbm	1725	7.96	1728	7.95	<b>1726</b>	<b>7.96</b>	558	24.6	<b>560</b>	<b>24.5</b>	563	24.4
481.wrf	<b>476</b>	<b>23.5</b>	476	23.5	475	23.5	480	23.3	<b>480</b>	<b>23.3</b>	480	23.3
482.sphinx3	696	28.0	668	29.2	<b>670</b>	<b>29.1</b>	642	30.4	656	29.7	<b>653</b>	<b>29.9</b>

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  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 200M

## 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 -parallel

C++ benchmarks:

-fast -parallel

Fortran benchmarks:

-fast -parallel

Benchmarks using both Fortran and C:

-fast -parallel



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## 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:

ifort

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
437.leslie3d: -DSPEC_CPU_LP64
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
```

```
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 -parallel

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: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch -parallel

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 -parallel -prefetch -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>

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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