



# SPEC® CFP2006 Result

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## Hewlett-Packard Company

ProLiant ML350 G5  
(3.33 GHz, Intel Xeon X5260)

**SPECfp®2006 = 22.9**

**SPECfp\_base2006 = 19.6**

CPU2006 license: 3

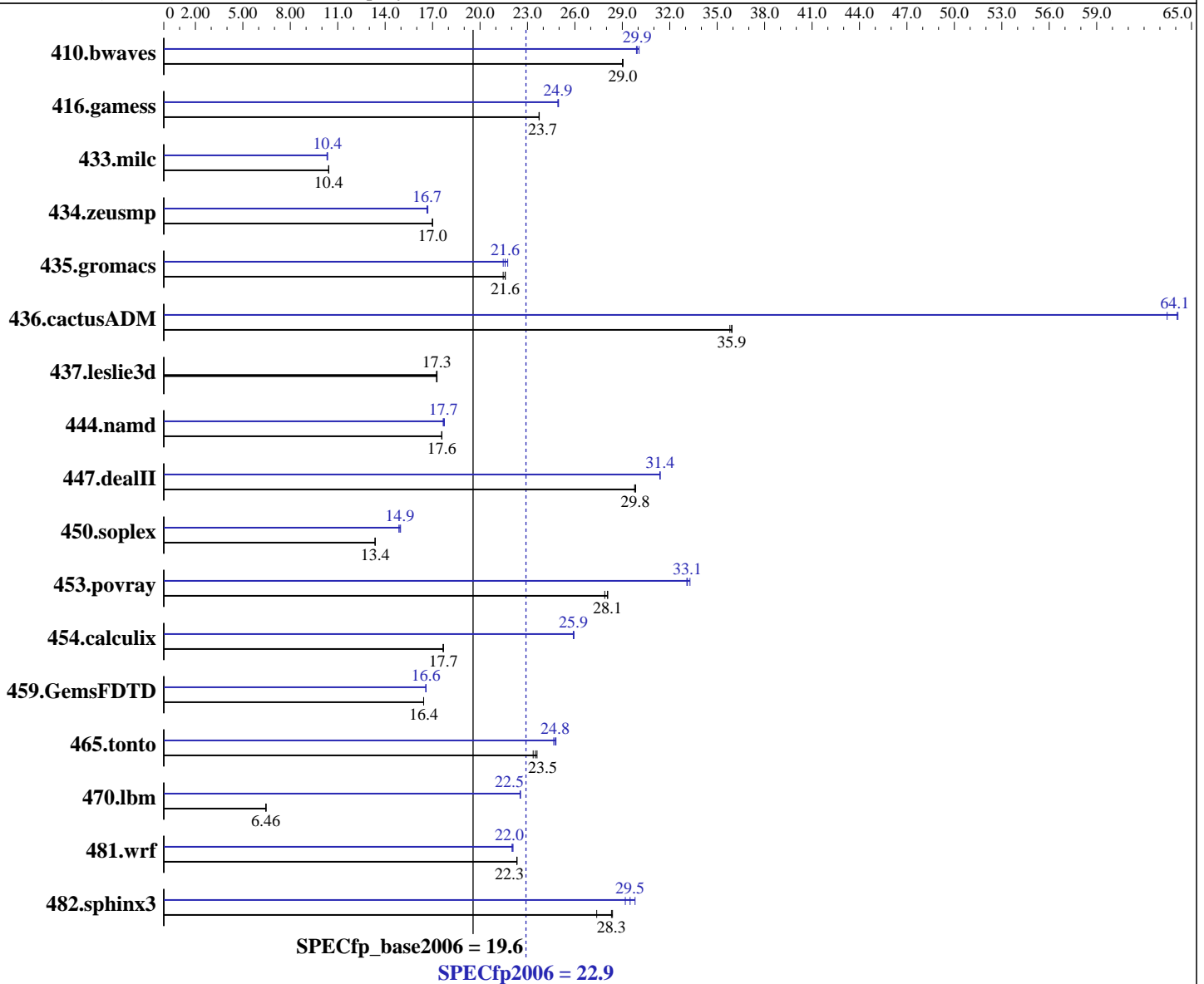
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: May-2008

Hardware Availability: Jul-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 3.33 GHz, 6 MB L2, 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

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smpp  
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Intel Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB PC2-5300F CL5)  
Disk Subsystem: 1x36 GB 15 K SAS  
Other Hardware: None

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	469	29.0	468	29.0	<b>468</b>	<b>29.0</b>	455	29.9	452	30.1	<b>454</b>	<b>29.9</b>
416.gamess	<b>825</b>	<b>23.7</b>	825	23.7	825	23.7	784	25.0	<b>785</b>	<b>24.9</b>	785	24.9
433.milc	<b>880</b>	<b>10.4</b>	880	10.4	881	10.4	<b>887</b>	<b>10.4</b>	889	10.3	887	10.4
434.zeusmp	535	17.0	<b>535</b>	<b>17.0</b>	536	17.0	545	16.7	<b>546</b>	<b>16.7</b>	547	16.6
435.gromacs	331	21.6	333	21.5	<b>331</b>	<b>21.6</b>	328	21.8	<b>331</b>	<b>21.6</b>	333	21.5
436.cactusADM	334	35.8	333	35.9	<b>333</b>	<b>35.9</b>	<b>186</b>	<b>64.1</b>	188	63.5	186	64.1
437.leslie3d	544	17.3	<b>544</b>	<b>17.3</b>	545	17.2	544	17.3	<b>544</b>	<b>17.3</b>	545	17.2
444.namd	<b>456</b>	<b>17.6</b>	456	17.6	456	17.6	452	17.7	<b>453</b>	<b>17.7</b>	454	17.7
447.dealII	383	29.8	<b>384</b>	<b>29.8</b>	384	29.8	364	31.4	<b>364</b>	<b>31.4</b>	365	31.4
450.soplex	624	13.4	624	13.4	<b>624</b>	<b>13.4</b>	557	15.0	<b>558</b>	<b>14.9</b>	561	14.9
453.povray	191	27.9	190	28.1	<b>190</b>	<b>28.1</b>	161	33.1	<b>161</b>	<b>33.1</b>	160	33.3
454.calculix	467	17.7	<b>467</b>	<b>17.7</b>	467	17.7	<b>318</b>	<b>25.9</b>	318	25.9	319	25.9
459.GemsFDTD	646	16.4	<b>646</b>	<b>16.4</b>	646	16.4	<b>640</b>	<b>16.6</b>	639	16.6	641	16.6
465.tonto	417	23.6	421	23.4	<b>419</b>	<b>23.5</b>	397	24.8	<b>397</b>	<b>24.8</b>	399	24.7
470.lbm	2123	6.47	<b>2127</b>	<b>6.46</b>	2131	6.45	610	22.5	<b>610</b>	<b>22.5</b>	609	22.6
481.wrf	<b>500</b>	<b>22.3</b>	500	22.3	500	22.3	507	22.0	506	22.1	<b>507</b>	<b>22.0</b>
482.sphinx3	712	27.4	<b>688</b>	<b>28.3</b>	687	28.4	<b>661</b>	<b>29.5</b>	668	29.2	654	29.8

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



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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-req- -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.20090714.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.20090714.xml>



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

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