



# SPEC® CFP2006 Result

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## Hewlett-Packard Company

SPECfp®2006 = 13.7

ProLiant DL580 G4  
(3.4 GHz, Intel Xeon processor 7140M)

SPECfp\_base2006 = 13.3

CPU2006 license: 3

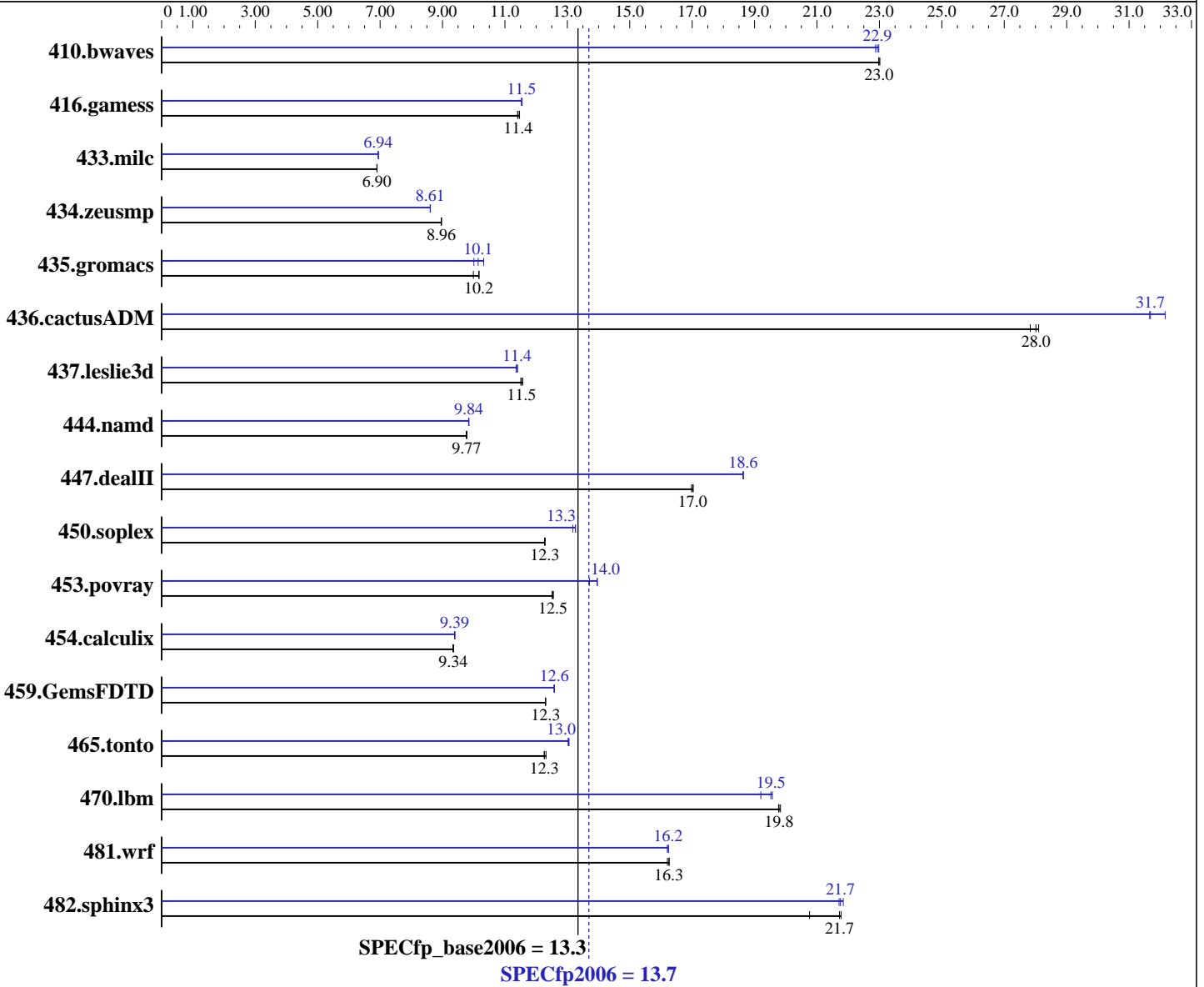
Test date: Aug-2007

Test sponsor: Hewlett-Packard Company

Hardware Availability: Aug-2006

Tested by: Hewlett-Packard Company

Software Availability: May-2007



**Hardware**

CPU Name: Intel Xeon 7140M  
 CPU Characteristics: 3.4 GHz, 800 MHz system bus  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1,2,4 chips  
 Primary Cache: 12 K micro-ops I + 16 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core

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**Software**

Operating System: SuSE LinuxEnterprise Server 10 (x86\_64) kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ Compiler for IA32/EM64T applications, Version 10.0  
 Build 20070426 Package ID: l\_cc\_p\_10.0.023  
 Intel Fortran Compiler for applications running on Intel 64, Version 10.0  
 Build 20070426 Package ID: l\_fc\_p\_10.0.023  
 Auto Parallel: Yes

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L3 Cache: 16 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (16x2 GB PC2-3200R)  
Disk Subsystem: 1x72 GB 15 K SAS  
Other Hardware: None

File System: ext2  
System State: Multi-user run level 3  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	590	23.0	<b><u>591</u></b>	<b><u>23.0</u></b>	591	23.0	591	23.0	594	22.9	<b><u>593</u></b>	<b><u>22.9</u></b>
416.gamess	1707	11.5	<b><u>1714</u></b>	<b><u>11.4</u></b>	1717	11.4	1698	11.5	<b><u>1698</u></b>	<b><u>11.5</u></b>	1695	11.5
433.milc	1330	6.90	<b><u>1330</u></b>	<b><u>6.90</u></b>	1331	6.90	<b><u>1322</u></b>	<b><u>6.94</u></b>	1322	6.95	1323	6.94
434.zeusmp	1015	8.96	1015	8.97	<b><u>1015</u></b>	<b><u>8.96</u></b>	1057	8.61	1057	8.61	<b><u>1057</u></b>	<b><u>8.61</u></b>
435.gromacs	<b><u>702</u></b>	<b><u>10.2</u></b>	702	10.2	715	9.99	714	10.0	692	10.3	<b><u>704</u></b>	<b><u>10.1</u></b>
436.cactusADM	429	27.8	<b><u>427</u></b>	<b><u>28.0</u></b>	425	28.1	377	31.7	372	32.2	<b><u>377</u></b>	<b><u>31.7</u></b>
437.leslie3d	817	11.5	812	11.6	<b><u>815</u></b>	<b><u>11.5</u></b>	824	11.4	<b><u>825</u></b>	<b><u>11.4</u></b>	828	11.4
444.namd	820	9.78	<b><u>821</u></b>	<b><u>9.77</u></b>	822	9.76	<b><u>815</u></b>	<b><u>9.84</u></b>	814	9.85	815	9.84
447.dealII	674	17.0	<b><u>672</u></b>	<b><u>17.0</u></b>	672	17.0	614	18.6	614	18.6	<b><u>614</u></b>	<b><u>18.6</u></b>
450.soplex	679	12.3	<b><u>679</u></b>	<b><u>12.3</u></b>	679	12.3	<b><u>629</u></b>	<b><u>13.3</u></b>	629	13.3	633	13.2
453.povray	425	12.5	<b><u>424</u></b>	<b><u>12.5</u></b>	424	12.6	<b><u>381</u></b>	<b><u>14.0</u></b>	388	13.7	381	14.0
454.calculix	882	9.35	884	9.34	<b><u>883</u></b>	<b><u>9.34</u></b>	<b><u>879</u></b>	<b><u>9.39</u></b>	878	9.40	879	9.39
459.GemsFDTD	863	12.3	<b><u>862</u></b>	<b><u>12.3</u></b>	862	12.3	843	12.6	<b><u>843</u></b>	<b><u>12.6</u></b>	844	12.6
465.tonto	799	12.3	<b><u>802</u></b>	<b><u>12.3</u></b>	803	12.3	754	13.1	<b><u>754</u></b>	<b><u>13.0</u></b>	756	13.0
470.lbm	693	19.8	<b><u>694</u></b>	<b><u>19.8</u></b>	695	19.8	702	19.6	<b><u>704</u></b>	<b><u>19.5</u></b>	716	19.2
481.wrf	<b><u>687</u></b>	<b><u>16.3</u></b>	687	16.3	689	16.2	<b><u>688</u></b>	<b><u>16.2</u></b>	688	16.2	689	16.2
482.sphinx3	939	20.8	<b><u>897</u></b>	<b><u>21.7</u></b>	895	21.8	898	21.7	<b><u>896</u></b>	<b><u>21.7</u></b>	892	21.8

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

## Platform Notes

BIOS configuration:  
Power Regulator Disabled  
Adjacent Sector Prefetch Enabled  
Hardware Prefetcher Enabled  
Hyper-Threading Technology Disabled



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**Test date:** Aug-2007

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**Hardware Availability:** Aug-2006

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**Software Availability:** May-2007

## 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:  
-xP -ipo -O3 -static -no-prec-div

C++ benchmarks:  
-xP -ipo -O3 -static -no-prec-div

Fortran benchmarks:  
-xP -ipo -O3 -static -no-prec-div -parallel

Benchmarks using both Fortran and C:  
-xP -ipo -O3 -static -no-prec-div -parallel



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## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.0.023/bin/icc -L/opt/intel/cc/10.0.023/lib
-I/opt/intel/cc/10.0.023/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.0.023/bin/icpc -L/opt/intel/cc/10.0.023/lib
-I/opt/intel/cc/10.0.023/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.0.023/bin/ifort -L/opt/intel/fc/10.0.023/lib
-I/opt/intel/fc/10.0.023/include
```

Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static
-no-prec-div -fno-alias
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static
-no-prec-div -unroll2 -no-scalar-rep -prefetch
```

```
482.sphinx3: -xP -ipo -O3 -static -no-prec-div -unroll2
```

C++ benchmarks:

```
444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static
-no-prec-div -fno-alias -auto-ilp32
```

```
447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static
-no-prec-div -unroll2 -ansi-alias -no-scalar-rep
```

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## Peak Optimization Flags (Continued)

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xP -ipo -O3 -static -no-prec-div -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -unroll2 -Ob0 -ansi-alias -no-scalar-rep

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -parallel

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -unroll2 -Ob0 -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -unroll4

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -fno-alias

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static  
-no-prec-div -unroll2 -auto-ilp32 -parallel

454.calculix: -xP -ipo -O3 -static -no-prec-div -auto-ilp32

481.wrf: -xP -ipo -O3 -static -no-prec-div -auto-ilp32 -parallel

The flags file that was used to format this result can be browsed at  
<http://www.spec.org/cpu2006/flags/hp-ic10-flags.20090714.00.html>

You can also download the XML flags source by saving the following link:  
<http://www.spec.org/cpu2006/flags/hp-ic10-flags.20090714.00.xml>



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

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