



# SPEC® CFP2006 Result

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## Hewlett-Packard Company

**SPECfp®2006 = 22.4**

ProLiant DL120 G5  
(2.66 GHz, Intel Xeon X3350)

**SPECfp\_base2006 = 20.6**

CPU2006 license: 3

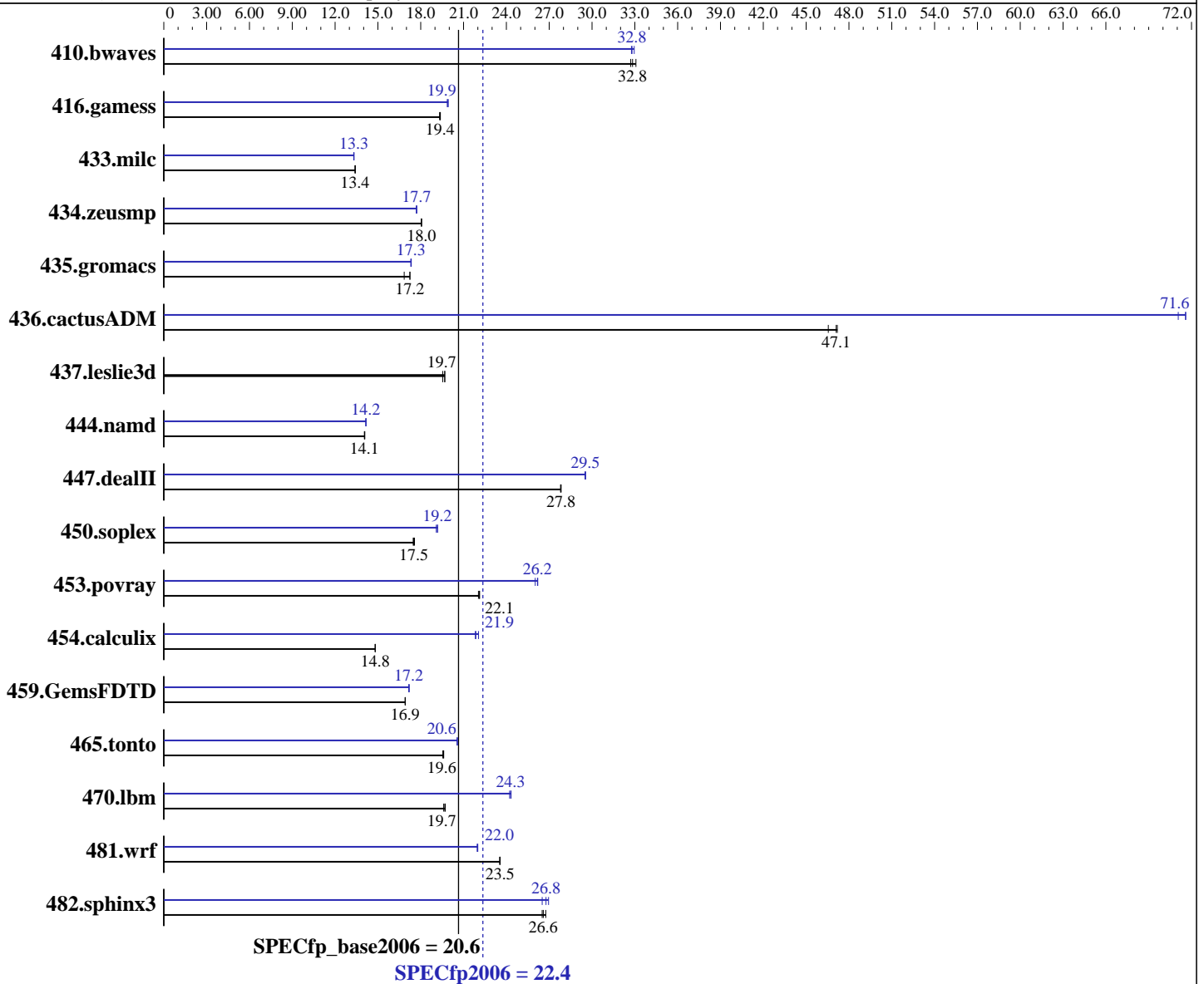
Test date: Jun-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X3350  
 CPU Characteristics: 2.66 GHz, 2x6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 2666  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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 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: 8 GB (4x2 GB PC2-6400E CL6)  
Disk Subsystem: 1x160 GB 7.2 K SATA  
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	411	33.1	415	32.7	<b>414</b>	<b>32.8</b>	415	32.8	412	33.0	<b>414</b>	<b>32.8</b>
416.gamess	<b>1011</b>	<b>19.4</b>	1010	19.4	1013	19.3	982	19.9	986	19.9	<b>985</b>	<b>19.9</b>
433.milc	684	13.4	685	13.4	<b>685</b>	<b>13.4</b>	690	13.3	689	13.3	<b>690</b>	<b>13.3</b>
434.zeusmp	504	18.1	504	18.0	<b>504</b>	<b>18.0</b>	514	17.7	514	17.7	<b>514</b>	<b>17.7</b>
435.gromacs	<b>414</b>	<b>17.2</b>	424	16.8	414	17.2	413	17.3	412	17.3	<b>412</b>	<b>17.3</b>
436.cactusADM	<b>254</b>	<b>47.1</b>	257	46.6	253	47.2	<b>167</b>	<b>71.6</b>	168	71.1	167	71.6
437.leslie3d	478	19.7	<b>478</b>	<b>19.7</b>	481	19.5	478	19.7	<b>478</b>	<b>19.7</b>	481	19.5
444.namd	569	14.1	571	14.1	<b>570</b>	<b>14.1</b>	566	14.2	566	14.2	<b>566</b>	<b>14.2</b>
447.dealII	411	27.8	<b>411</b>	<b>27.8</b>	412	27.8	388	29.5	<b>387</b>	<b>29.5</b>	387	29.5
450.soplex	475	17.6	<b>476</b>	<b>17.5</b>	477	17.5	<b>435</b>	<b>19.2</b>	435	19.2	437	19.1
453.povray	<b>241</b>	<b>22.1</b>	241	22.0	241	22.1	203	26.2	<b>203</b>	<b>26.2</b>	204	26.0
454.calculix	<b>557</b>	<b>14.8</b>	557	14.8	557	14.8	374	22.1	<b>377</b>	<b>21.9</b>	378	21.8
459.GemsFDTD	<b>627</b>	<b>16.9</b>	627	16.9	628	16.9	617	17.2	<b>618</b>	<b>17.2</b>	618	17.2
465.tonto	<b>502</b>	<b>19.6</b>	503	19.5	502	19.6	479	20.6	<b>479</b>	<b>20.6</b>	479	20.6
470.lbm	697	19.7	<b>698</b>	<b>19.7</b>	701	19.6	565	24.3	<b>565</b>	<b>24.3</b>	567	24.2
481.wrf	475	23.5	<b>474</b>	<b>23.5</b>	474	23.6	508	22.0	509	22.0	<b>508</b>	<b>22.0</b>
482.sphinx3	735	26.5	728	26.8	<b>733</b>	<b>26.6</b>	<b>728</b>	<b>26.8</b>	735	26.5	723	27.0

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

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## Base Compiler Invocation (Continued)

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

## 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

```

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## Peak Compiler Invocation (Continued)

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

482.sphinx3: -fast -unroll2

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## Peak Optimization Flags (Continued)

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 -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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