



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]_rate2006 = 30.5

ProLiant ML350 G5
(3.33 GHz, Intel Xeon X5260)

SPECfp_rate_base2006 = 27.6

CPU2006 license: 3

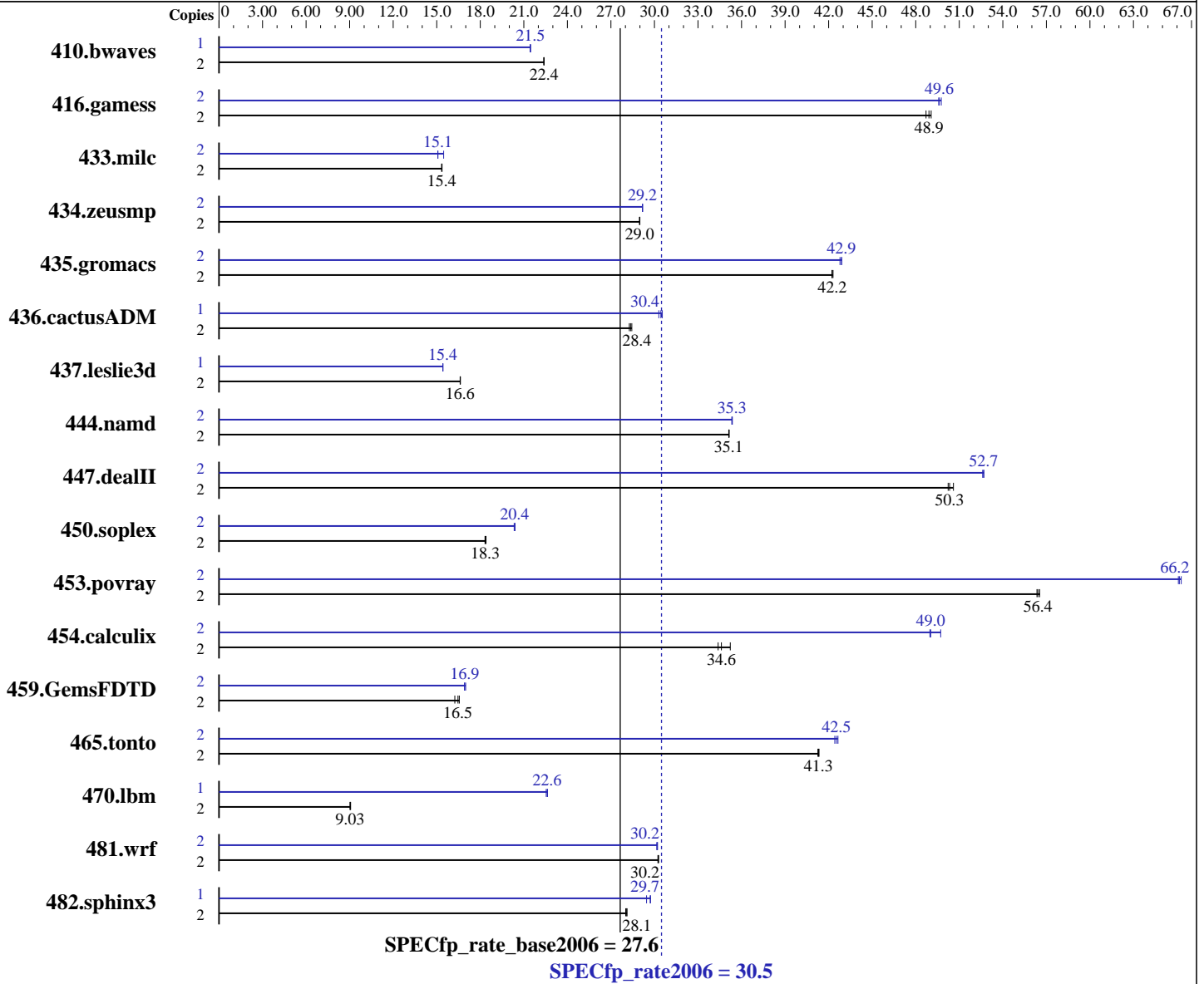
Test date: May-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jul-2008

Tested by: Hewlett-Packard Company

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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	2	1215	22.4	<u>1214</u>	<u>22.4</u>	1213	22.4	1	633	21.5	<u>633</u>	<u>21.5</u>	634	21.4		
416.gamess	2	<u>801</u>	<u>48.9</u>	798	49.1	804	48.7	2	787	49.8	<u>789</u>	<u>49.6</u>	790	49.6		
433.milc	2	<u>1196</u>	<u>15.4</u>	1195	15.4	1197	15.3	2	1186	15.5	1218	15.1	<u>1217</u>	<u>15.1</u>		
434.zeusmp	2	628	29.0	<u>628</u>	<u>29.0</u>	628	29.0	2	624	29.2	<u>624</u>	<u>29.2</u>	624	29.2		
435.gromacs	2	338	42.3	<u>338</u>	<u>42.2</u>	338	42.2	2	<u>333</u>	<u>42.9</u>	333	42.9	334	42.8		
436.cactusADM	2	<u>843</u>	<u>28.4</u>	845	28.3	840	28.4	1	394	30.3	391	30.5	<u>393</u>	<u>30.4</u>		
437.leslie3d	2	1130	16.6	<u>1131</u>	<u>16.6</u>	1132	16.6	1	<u>609</u>	<u>15.4</u>	610	15.4	609	15.4		
444.namd	2	<u>457</u>	<u>35.1</u>	457	35.1	456	35.2	2	454	35.3	454	35.4	<u>454</u>	<u>35.3</u>		
447.dealII	2	455	50.2	<u>455</u>	<u>50.3</u>	452	50.6	2	435	52.6	<u>434</u>	<u>52.7</u>	434	52.7		
450.soplex	2	910	18.3	907	18.4	<u>909</u>	<u>18.3</u>	2	820	20.3	818	20.4	<u>819</u>	<u>20.4</u>		
453.povray	2	189	56.3	188	56.5	<u>189</u>	<u>56.4</u>	2	161	66.1	<u>161</u>	<u>66.2</u>	161	66.3		
454.calculix	2	480	34.4	468	35.2	<u>477</u>	<u>34.6</u>	2	332	49.7	337	49.0	<u>336</u>	<u>49.0</u>		
459.GemsFDTD	2	1306	16.2	1282	16.6	<u>1289</u>	<u>16.5</u>	2	1254	16.9	<u>1254</u>	<u>16.9</u>	1249	17.0		
465.tonto	2	476	41.3	<u>476</u>	<u>41.3</u>	477	41.3	2	462	42.6	464	42.4	<u>463</u>	<u>42.5</u>		
470.lbm	2	3030	9.07	<u>3042</u>	<u>9.03</u>	3042	9.03	1	607	22.6	<u>608</u>	<u>22.6</u>	610	22.5		
481.wrf	2	<u>739</u>	<u>30.2</u>	739	30.2	737	30.3	2	740	30.2	<u>740</u>	<u>30.2</u>	741	30.2		
482.sphinx3	2	1391	28.0	<u>1388</u>	<u>28.1</u>	1387	28.1	1	<u>656</u>	<u>29.7</u>	656	29.7	662	29.5		

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 64M

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

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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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 (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.20090714.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.20090714.xml>

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