



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 86.0

ProLiant DL160 G5
(3.0 GHz, Intel Xeon X5472)

SPECfp_rate_base2006 = 76.5

CPU2006 license: 3

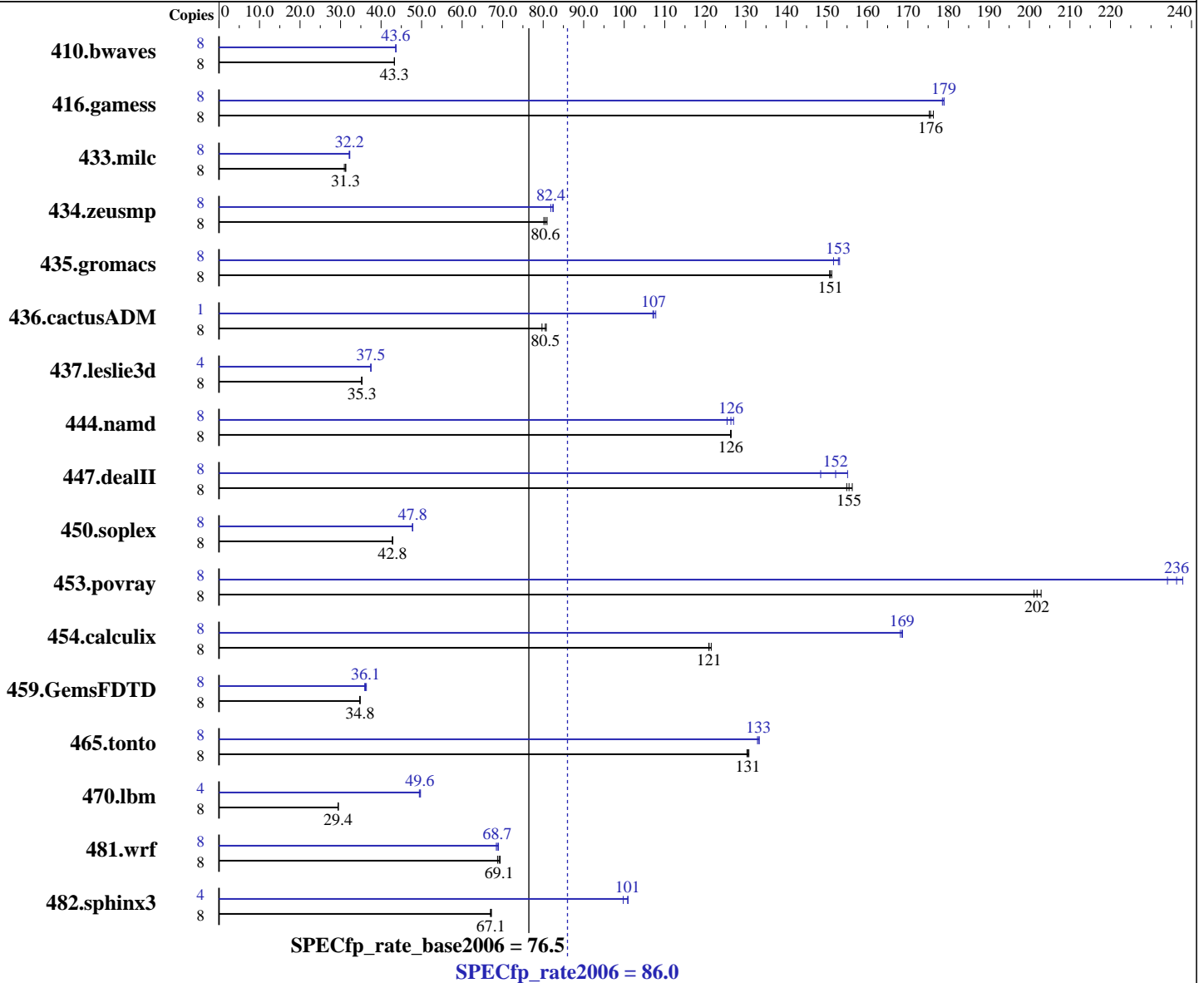
Test date: Feb-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jan-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X5472
 CPU Characteristics: 3.0 GHz, 2x6 MB L2 shared, 1600 MHz system bus
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 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: 32 GB (8x4 GB PC2-5300F CL5)
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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	2513	43.3	<u>2511</u>	<u>43.3</u>	2510	43.3	8	<u>2491</u>	<u>43.6</u>	2493	43.6	2489	43.7		
416.gamess	8	888	176	<u>892</u>	<u>176</u>	894	175	8	<u>876</u>	<u>179</u>	877	179	875	179		
433.milc	8	2374	30.9	2348	31.3	<u>2349</u>	<u>31.3</u>	8	2275	32.3	<u>2281</u>	<u>32.2</u>	2285	32.1		
434.zeusmp	8	899	81.0	908	80.2	<u>904</u>	<u>80.6</u>	8	882	82.5	889	81.9	<u>884</u>	<u>82.4</u>		
435.gromacs	8	<u>379</u>	<u>151</u>	378	151	379	151	8	373	153	<u>374</u>	<u>153</u>	377	152		
436.cactusADM	8	1199	79.7	1184	80.8	<u>1187</u>	<u>80.5</u>	1	112	107	<u>111</u>	<u>107</u>	111	108		
437.leslie3d	8	<u>2132</u>	<u>35.3</u>	2138	35.2	2131	35.3	4	1003	37.5	<u>1003</u>	<u>37.5</u>	1004	37.5		
444.namd	8	508	126	<u>508</u>	<u>126</u>	508	126	8	512	125	505	127	<u>508</u>	<u>126</u>		
447.dealII	8	586	156	591	155	<u>589</u>	<u>155</u>	8	616	148	<u>601</u>	<u>152</u>	590	155		
450.soplex	8	1558	42.8	1557	42.9	<u>1558</u>	<u>42.8</u>	8	<u>1396</u>	<u>47.8</u>	1395	47.8	1398	47.7		
453.povray	8	<u>211</u>	<u>202</u>	212	201	210	203	8	182	234	179	238	<u>180</u>	<u>236</u>		
454.calculix	8	546	121	<u>546</u>	<u>121</u>	543	121	8	<u>392</u>	<u>169</u>	392	168	391	169		
459.GemsFDTD	8	2445	34.7	<u>2437</u>	<u>34.8</u>	2437	34.8	8	<u>2349</u>	<u>36.1</u>	2361	36.0	2333	36.4		
465.tonto	8	602	131	<u>603</u>	<u>131</u>	604	130	8	590	133	592	133	<u>591</u>	<u>133</u>		
470.lbm	8	3741	29.4	<u>3738</u>	<u>29.4</u>	3731	29.5	4	1112	49.4	1105	49.7	<u>1108</u>	<u>49.6</u>		
481.wrf	8	1300	68.7	<u>1293</u>	<u>69.1</u>	1288	69.4	8	1306	68.4	<u>1301</u>	<u>68.7</u>	1296	69.0		
482.sphinx3	8	2319	67.2	<u>2323</u>	<u>67.1</u>	2328	67.0	4	781	99.8	<u>773</u>	<u>101</u>	772	101		

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
'/usr/bin/taskset' used to bind processes to CPUs
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
Adjacent Sector Prefetch Disabled
Hardware Prefetcher Enabled



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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.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.xml>

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