



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 78.2

ProLiant DL380 G5
(3.16 GHz, Intel Xeon processor X5460)

SPECfp_rate_base2006 = 70.1

CPU2006 license: 3

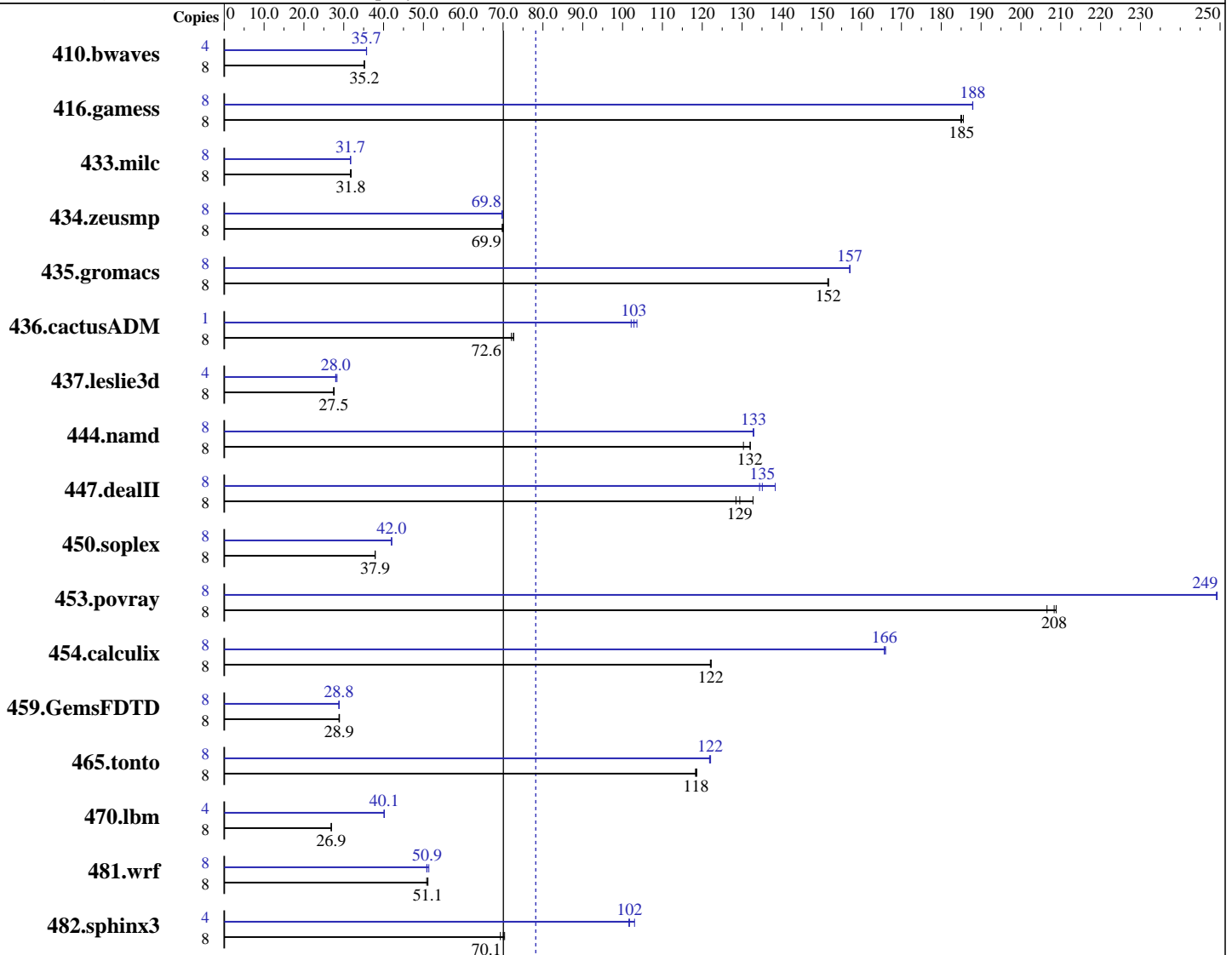
Test date: Oct-2007

Test sponsor: Hewlett-Packard Company

Hardware Availability: Nov-2007

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



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Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3.16GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3166
 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-smpp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
 Auto Parallel: Yes
 File System: ext2
 System State: Multi-user run level 3
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GHz 10 K SAS
Other Hardware: None

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	<u>3093</u>	<u>35.2</u>	3087	35.2	3095	35.1	4	1521	35.7	1523	35.7	<u>1522</u>	<u>35.7</u>
416.gamess	8	847	185	<u>846</u>	<u>185</u>	844	186	8	<u>834</u>	<u>188</u>	834	188	833	188
433.milc	8	2319	31.7	<u>2312</u>	<u>31.8</u>	2304	31.9	8	2314	31.7	2319	31.7	<u>2316</u>	<u>31.7</u>
434.zeusmp	8	1044	69.8	1040	70.0	<u>1041</u>	<u>69.9</u>	8	1043	69.8	1045	69.7	<u>1043</u>	<u>69.8</u>
435.gromacs	8	377	152	376	152	<u>377</u>	<u>152</u>	8	364	157	364	157	<u>364</u>	<u>157</u>
436.cactusADM	8	<u>1317</u>	<u>72.6</u>	1315	72.7	1326	72.1	1	117	102	<u>116</u>	<u>103</u>	115	104
437.leslie3d	8	2740	27.4	<u>2732</u>	<u>27.5</u>	2725	27.6	4	<u>1343</u>	<u>28.0</u>	1328	28.3	1343	28.0
444.namd	8	486	132	<u>486</u>	<u>132</u>	492	130	8	<u>483</u>	<u>133</u>	483	133	483	133
447.dealII	8	689	133	<u>707</u>	<u>129</u>	712	128	8	<u>678</u>	<u>135</u>	662	138	681	134
450.soplex	8	1759	37.9	<u>1762</u>	<u>37.9</u>	1762	37.9	8	1587	42.0	<u>1588</u>	<u>42.0</u>	1590	42.0
453.povray	8	204	209	206	207	<u>204</u>	<u>208</u>	8	<u>171</u>	<u>249</u>	171	249	171	249
454.calculix	8	<u>540</u>	<u>122</u>	541	122	540	122	8	398	166	<u>398</u>	<u>166</u>	398	166
459.GemsFDTD	8	2946	28.8	2933	28.9	<u>2941</u>	<u>28.9</u>	8	2943	28.8	2948	28.8	<u>2947</u>	<u>28.8</u>
465.tonto	8	<u>665</u>	<u>118</u>	664	119	665	118	8	<u>645</u>	<u>122</u>	645	122	646	122
470.lbm	8	4091	26.9	<u>4091</u>	<u>26.9</u>	4089	26.9	4	1368	40.2	1370	40.1	<u>1369</u>	<u>40.1</u>
481.wrf	8	1747	51.1	<u>1750</u>	<u>51.1</u>	1758	50.8	8	<u>1755</u>	<u>50.9</u>	1740	51.4	1757	50.8
482.sphinx3	8	2215	70.4	<u>2226</u>	<u>70.1</u>	2249	69.3	4	767	102	757	103	<u>766</u>	<u>102</u>

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
'/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 200M

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode
Adjacent Sector Prefetch Disabled
Hardware Prefetcher Disabled



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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):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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.deallI: -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
```

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Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

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

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



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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.20090714.01.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.20090714.01.xml>

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