SPEC® CFP2006 Result

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Hewlett-Packard Company

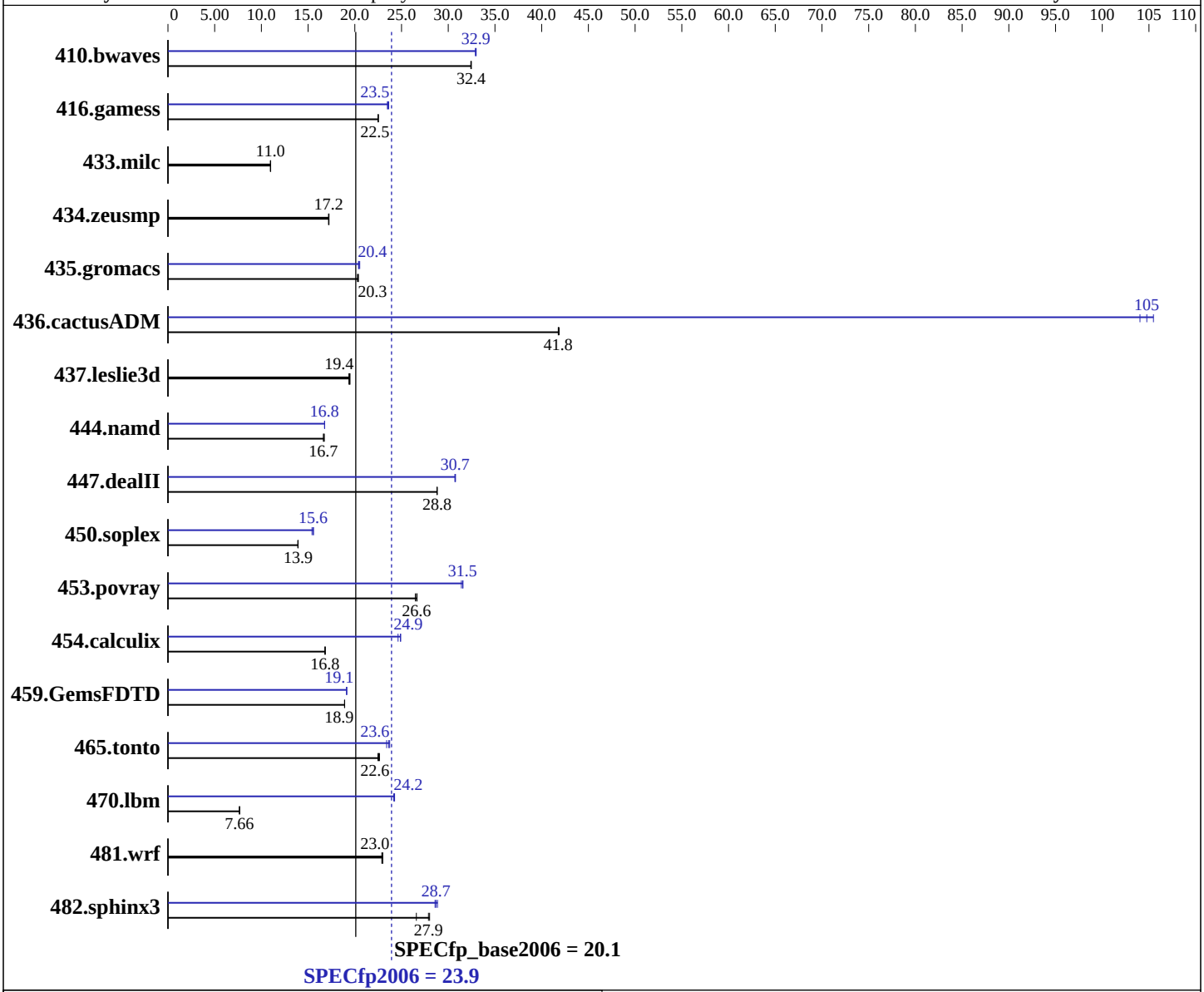
ProLiant DL380 G5
(3.16 GHz, Intel Xeon X5460)

SPECfp®2006 = 23.9

SPECfp_base2006 = 20.1

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Feb-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X5460
CPU Characteristics:	3.16 GHz, 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-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: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x72 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	419	32.5	**419**	**32.4**	419	32.4	**412**	**32.9**	412	33.0	413	32.9
416.gamess	869	22.5	871	22.5	**870**	**22.5**	829	23.6	834	23.5	**832**	**23.5**
433.milc	838	11.0	**836**	**11.0**	835	11.0	838	11.0	**836**	**11.0**	835	11.0
434.zeusmp	**529**	**17.2**	529	17.2	528	17.2	**529**	**17.2**	529	17.2	528	17.2
435.gromacs	**351**	**20.3**	350	20.4	352	20.3	**350**	**20.4**	348	20.5	350	20.4
436.cactusADM	285	41.9	286	41.8	**286**	**41.8**	**114**	**105**	115	104	113	105
437.leslie3d	482	19.5	**483**	**19.4**	485	19.4	482	19.5	**483**	**19.4**	485	19.4
444.namd	482	16.7	**482**	**16.7**	479	16.7	**478**	**16.8**	478	16.8	478	16.8
447.dealII	**397**	**28.8**	397	28.8	397	28.8	**372**	**30.7**	372	30.8	372	30.7
450.soplex	599	13.9	**599**	**13.9**	600	13.9	541	15.4	535	15.6	**536**	**15.6**
453.povray	**200**	**26.6**	200	26.7	201	26.5	168	31.6	169	31.4	**169**	**31.5**
454.calculix	491	16.8	**490**	**16.8**	490	16.8	331	24.9	**332**	**24.9**	335	24.6
459.GemsFDTD	561	18.9	561	18.9	**561**	**18.9**	**555**	**19.1**	555	19.1	555	19.1
465.tonto	438	22.5	435	22.6	**436**	**22.6**	415	23.7	420	23.4	**417**	**23.6**
470.lbm	**1793**	**7.66**	1792	7.67	1798	7.64	**567**	**24.2**	569	24.2	566	24.3
481.wrf	486	23.0	**486**	**23.0**	488	22.9	486	23.0	**486**	**23.0**	488	22.9
482.sphinx3	**699**	**27.9**	733	26.6	696	28.0	**679**	**28.7**	676	28.9	682	28.6

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
```

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 -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
```

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: `basepeak = yes`

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: basepeak = yes

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: basepeak = yes

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-int-flags.20090713.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-int-flags.20090713.xml

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 15:50:19 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 March 2008.