SPEC® CINT2006 Result

Hewlett-Packard Company

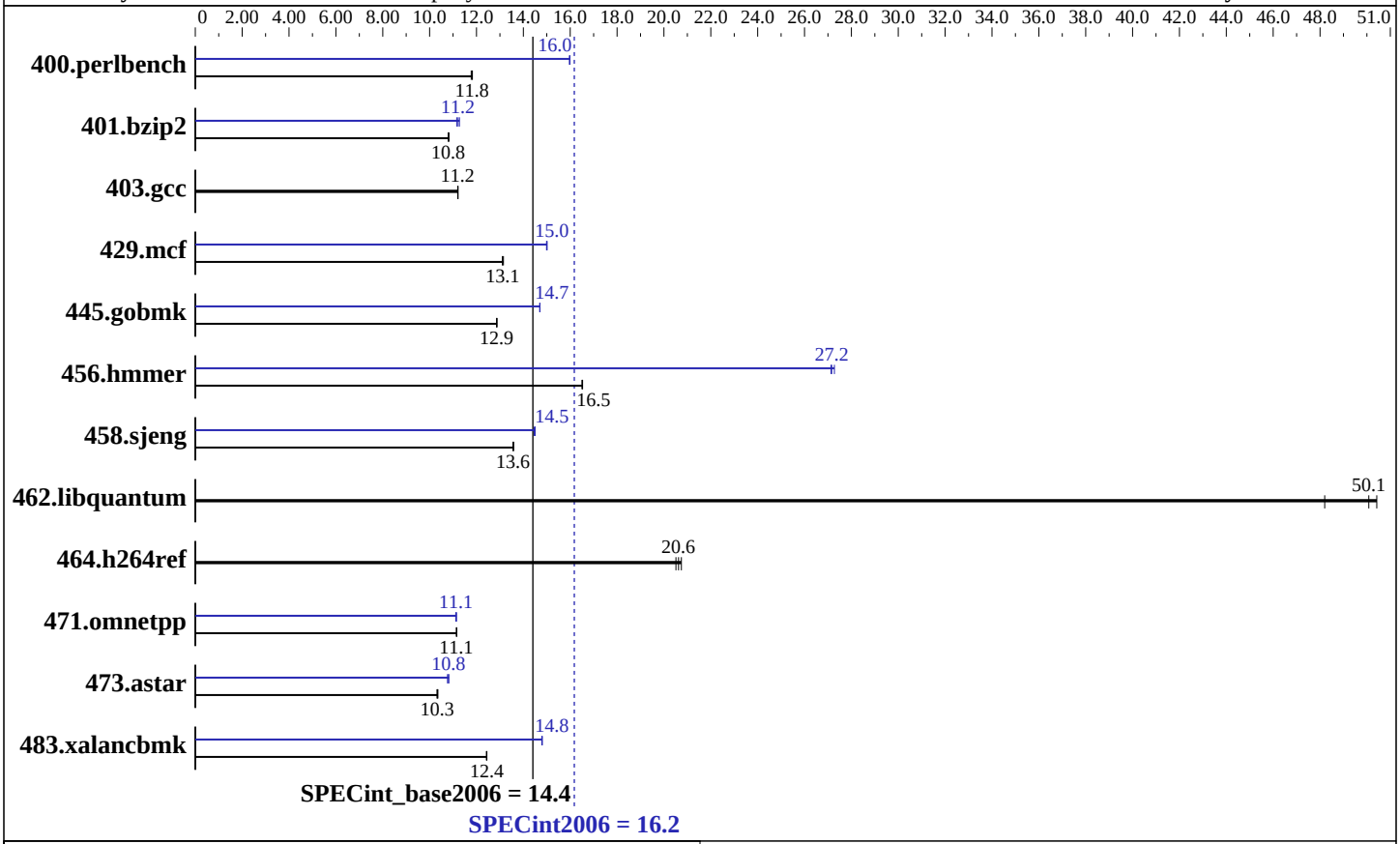
ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

SPECint®2006 = 16.2

SPECint_base2006 = 14.4

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

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jun-2008



Hardware

CPU Name:	AMD Opteron 8360 SE
CPU Characteristics:	
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	2 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (16x4 GB, PC2-5300P CL5)
Disk Subsystem:	1x146 GB 15 K SAS
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	PGI Server Complete Version 7.2 PathScale Compiler Suite Release 3.2
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap 8.1 32-bit Library for Linux

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	830	11.8	**827**	**11.8**	826	11.8	**612**	**16.0**	611	16.0	612	16.0
401.bzip2	894	10.8	891	10.8	**893**	**10.8**	**860**	**11.2**	865	11.2	856	11.3
403.gcc	718	11.2	**719**	**11.2**	719	11.2	718	11.2	**719**	**11.2**	719	11.2
429.mcf	693	13.2	**695**	**13.1**	696	13.1	608	15.0	**608**	**15.0**	608	15.0
445.gobmk	**815**	**12.9**	816	12.9	815	12.9	**713**	**14.7**	713	14.7	713	14.7
456.hmmer	564	16.5	**565**	**16.5**	565	16.5	**344**	**27.2**	344	27.1	342	27.3
458.sjeng	893	13.6	**892**	**13.6**	891	13.6	834	14.5	**834**	**14.5**	837	14.5
462.libquantum	411	50.4	430	48.2	**414**	**50.1**	411	50.4	430	48.2	**414**	**50.1**
464.h264ref	**1073**	**20.6**	1079	20.5	1067	20.7	**1073**	**20.6**	1079	20.5	1067	20.7
471.omnetpp	560	11.2	561	11.1	**561**	**11.1**	561	11.1	**561**	**11.1**	562	11.1
473.astar	680	10.3	**680**	**10.3**	678	10.4	649	10.8	652	10.8	**650**	**10.8**
483.xalancbmk	**555**	**12.4**	555	12.4	555	12.4	467	14.8	**466**	**14.8**	466	14.8

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
Environment stack size set to 'unlimited'
Max locked memory set to 2097152
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 7168.
NCPUS set to number of cores
```

Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
```

Base Compiler Invocation

C benchmarks:
`pgcc`

C++ benchmarks:
`pgcpp`

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`

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Base Portability Flags (Continued)

401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fastsse -Msmartalloc=huge:896 -Mfprelaxed -Mconcur=innermost
-Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

C++ benchmarks:
-fastsse -Msmartalloc=huge:896 -Mfprelaxed --zc_eh -Mipa=jobs:4
-Mipa=fast -Mipa=inline -tp barcelona -Bstatic_pgi

Peak Compiler Invocation

C benchmarks (except as noted below):
pgcc

400.perlbench: pathcc

445.gobmk: pathcc

C++ benchmarks (except as noted below):
pathCC

473.astar: pgcpp

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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Peak Portability Flags (Continued)

464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0
-WOPT:if_conv=0 -CG:local_sched_alg=1

401.bzip2: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Mconcur=innermost -Mprefetch=t0
-Mnounroll -tp barcelona-64 -Bstatic_pgi

403.gcc: basepeak = yes

429.mcf: -fastsse -Mconcur -Msmartalloc=huge:896 -Mipa=jobs:4
-Mipa=fast -Mipa=inline:1 -tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict
-LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmer: -fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:896
-Msafeptr -Mprefetch=t0 -Mfprelaxed -Mipa=jobs:4
-Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=jobs:4(pass 2) -Mipa=fast(pass 2)
-Mipa=inline:1(pass 2) -Mipa=noarg(pass 2) -Mpfo(pass 2)
-fastsse -Mconcur -Msmartalloc=huge:896 -Mfprelaxed
-tp barcelona-64 -Bstatic_pgi

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -march=barcelona -Ofast -CG:gcm=off -INLINE:aggressive=on
-OPT:alias=disjoint -WOPT:if_conv=0 -m32
-L/cpu2006/SmartHeap_8.1/lib -lsmartheap

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -Mipa=inline:6(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Msafeptr=global -Mfprelaxed --zc_eh
-tp barcelona -Bstatic_pgi

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Peak Optimization Flags (Continued)

483.xalancbmk: `-march=barcelona -Ofast -m32 -OPT:unroll_times_max=8 -CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0 -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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