SPEC® CINT2006 Result

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Hewlett-Packard Company

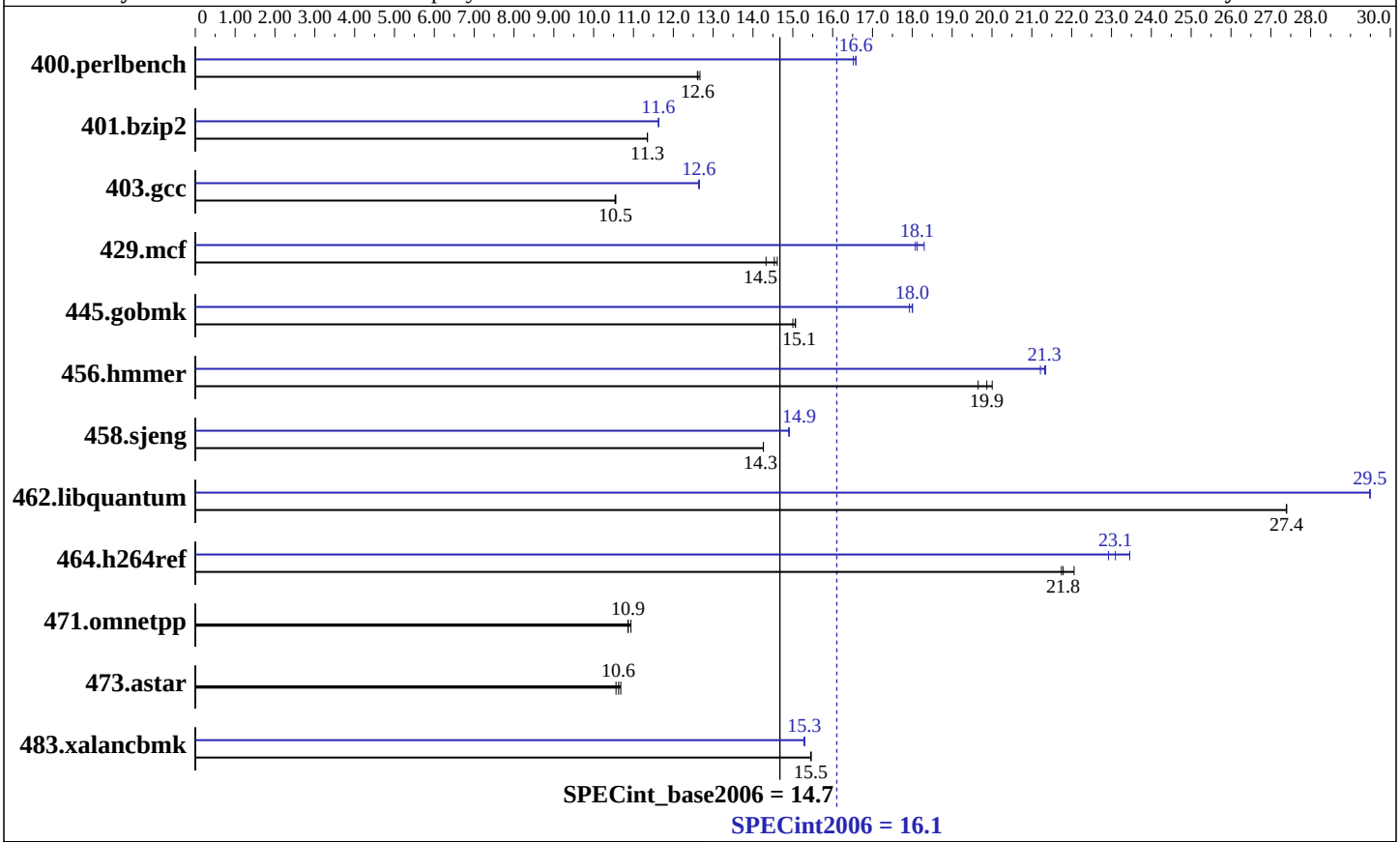
ProLiant DL185 G5
(3.0 GHz AMD Opteron 2222)

SPECint®2006 = 16.1

SPECint_base2006 = 14.7

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

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



Hardware

CPU Name:	AMD Opteron 2222
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (8x4 GB PC2-5300P CL5)
Disk Subsystem:	1x146 GB 10 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:	The Portland Group (PGI) PGI pgcc 7.1-1 C Compiler PGI pgCC 7.1-1 C++ Compiler QLogic PathScale Compiler Suite, Release 3.0
Auto Parallel:	No
File System:	ext2
System State:	Multi-user run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**774**	**12.6**	771	12.7	775	12.6	591	16.5	**589**	**16.6**	589	16.6
401.bzip2	850	11.3	850	11.4	**850**	**11.3**	830	11.6	**830**	**11.6**	830	11.6
403.gcc	764	10.5	**763**	**10.5**	763	10.6	636	12.7	**637**	**12.6**	637	12.6
429.mcf	624	14.6	**627**	**14.5**	636	14.3	498	18.3	505	18.1	**503**	**18.1**
445.gobmk	699	15.0	**696**	**15.1**	696	15.1	585	17.9	**583**	**18.0**	583	18.0
456.hmmer	**470**	**19.9**	466	20.0	475	19.7	**438**	**21.3**	437	21.3	440	21.2
458.sjeng	848	14.3	**848**	**14.3**	849	14.3	**812**	**14.9**	812	14.9	812	14.9
462.libquantum	**756**	**27.4**	757	27.4	756	27.4	703	29.5	**703**	**29.5**	703	29.5
464.h264ref	**1016**	**21.8**	1018	21.7	1003	22.1	965	22.9	943	23.5	**958**	**23.1**
471.omnetpp	571	10.9	**575**	**10.9**	575	10.9	571	10.9	**575**	**10.9**	575	10.9
473.astar	657	10.7	**661**	**10.6**	665	10.6	657	10.7	**661**	**10.6**	665	10.6
483.xalancbmk	446	15.5	447	15.5	**447**	**15.5**	452	15.3	**451**	**15.3**	451	15.3

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'
ulimit -l set to 1048576
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
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

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Base Portability Flags (Continued)

462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
464.h264ref: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Base Optimization Flags

C benchmarks:
`-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed -Msmartalloc=huge:840 -tp k8-64 -Bstatic_pgi`

C++ benchmarks:
`-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448 --zc_eh -tp k8-32 -Bstatic_pgi -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

Base Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

Peak Compiler Invocation

C benchmarks (except as noted below):
`pgcc`

400.perlbench: `pathcc`

403.gcc: `pathcc`

445.gobmk: `pathcc`

464.h264ref: `pathcc`

C++ benchmarks:
`pgcpp`

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -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

Peak Optimization Flags

C benchmarks:

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-LNO:opt=0

401.bzip2: -Mpfi(pass 1) -Mpfo(pass 2) -fast -O4
-Msmartalloc=huge:448 -tp k8-64 -Bstatic_pgi

403.gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:Ofast

429.mcf: -fastsse -Mipa=fast -Mipa=inline -Msmartalloc=huge:420
-tp k8-32 -Bstatic_pgi

445.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off
-WOPT:retype_expr=on

456.hmmer: -fast -Msmartalloc=huge:448 -Mfprelaxed -Msafeptr
-Mipa=const -Mipa=ptr -Mipa=arg -tp k8-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast
-Msmartalloc=huge:448 -Mfprelaxed -tp k8-64 -Bstatic_pgi

462.libquantum: -fast -Mfprelaxed -Msmartalloc=huge:448 -Munroll=m:4
-Mipa=fast -Mipa=inline -Mipa=noarg -Bstatic_pgi

464.h264ref: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: basepeak = yes

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Peak Optimization Flags (Continued)

483.xalancbmk: `-fastsse -O4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:420 --zc_eh -tp k8-32 -Bstatic_pgi -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

Peak Other Flags

C benchmarks (except as noted below):
`-w`

400.perlbench: `No flags used`

403.gcc: `No flags used`

445.gobmk: `No flags used`

464.h264ref: `No flags used`

C++ benchmarks:
`-w`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/hp-pgi710_ps30_flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/hp-pgi710_ps30_flags.xml`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 15:13:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 January 2008.