SPEC® CINT2006 Result

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Hewlett-Packard Company

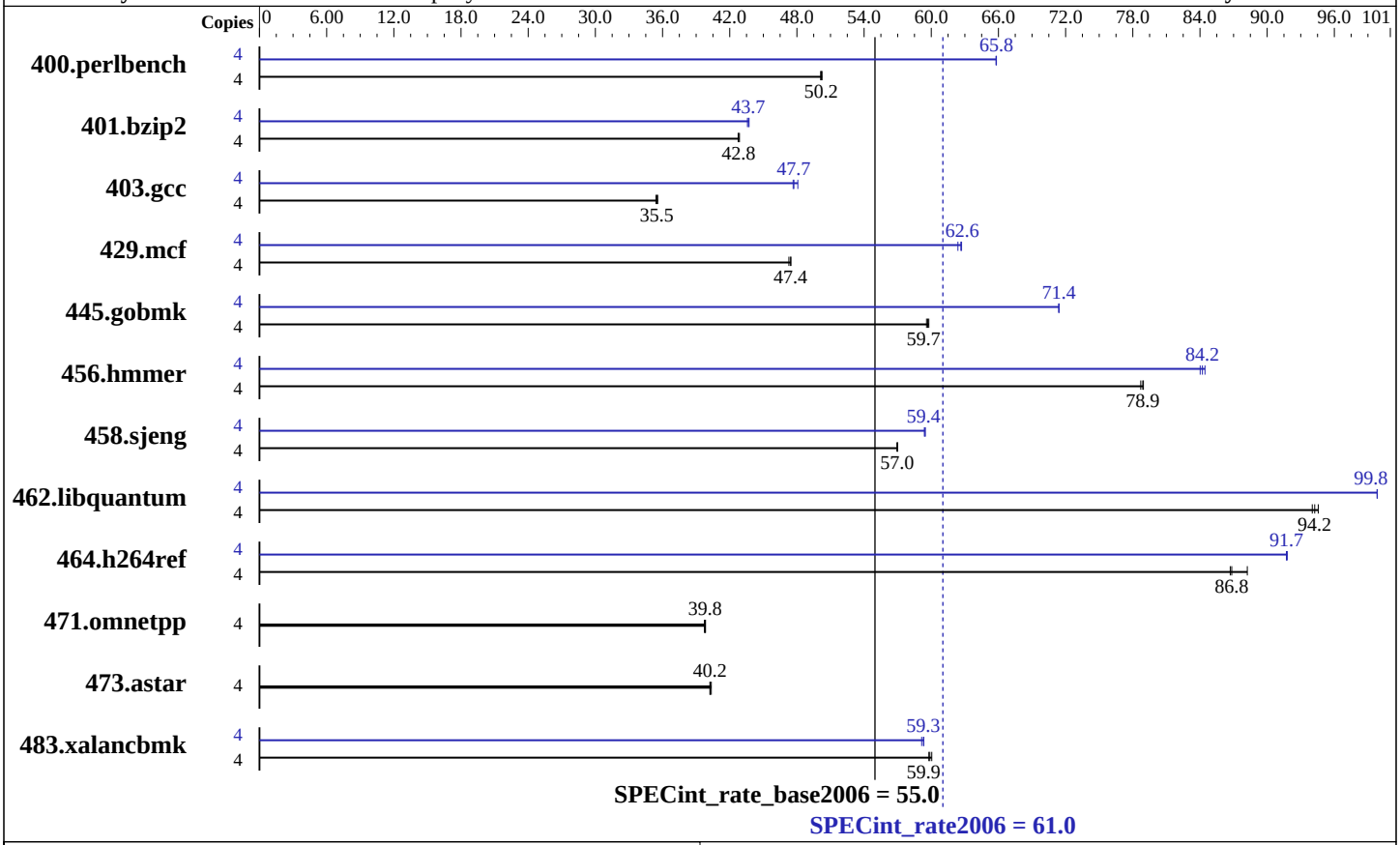
ProLiant DL185 G5
(3.0 GHz AMD Opteron 2222)

SPECint®_rate2006 = 61.0

SPECint_rate_base2006 = 55.0

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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	**779**	**50.2**	778	50.2	780	50.1	4	**594**	**65.8**	594	65.8	594	65.8
401.bzip2	4	**902**	**42.8**	903	42.8	900	42.9	4	886	43.6	883	43.7	**884**	**43.7**
403.gcc	4	**907**	**35.5**	905	35.6	909	35.4	4	670	48.1	**675**	**47.7**	676	47.7
429.mcf	4	772	47.3	769	47.5	**769**	**47.4**	4	585	62.4	582	62.7	**582**	**62.6**
445.gobmk	4	704	59.6	**703**	**59.7**	702	59.8	4	588	71.4	**588**	**71.4**	588	71.4
456.hmmer	4	474	78.7	**473**	**78.9**	473	78.9	4	**443**	**84.2**	444	84.0	442	84.4
458.sjeng	4	849	57.0	850	56.9	**850**	**57.0**	4	815	59.4	**814**	**59.4**	814	59.5
462.libquantum	4	876	94.6	**879**	**94.2**	881	94.0	4	830	99.8	**830**	**99.8**	830	99.8
464.h264ref	4	**1019**	**86.8**	1021	86.7	1003	88.2	4	965	91.7	964	91.8	**965**	**91.7**
471.omnetpp	4	**628**	**39.8**	628	39.8	629	39.7	4	**628**	**39.8**	628	39.8	629	39.7
473.astar	4	696	40.4	**698**	**40.2**	698	40.2	4	696	40.4	**698**	**40.2**	698	40.2
483.xalancbmk	4	460	60.0	**461**	**59.9**	462	59.8	4	467	59.1	**465**	**59.3**	465	59.3

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

Continued on next page

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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