SPEC® CINT2006 Result

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Hewlett-Packard Company

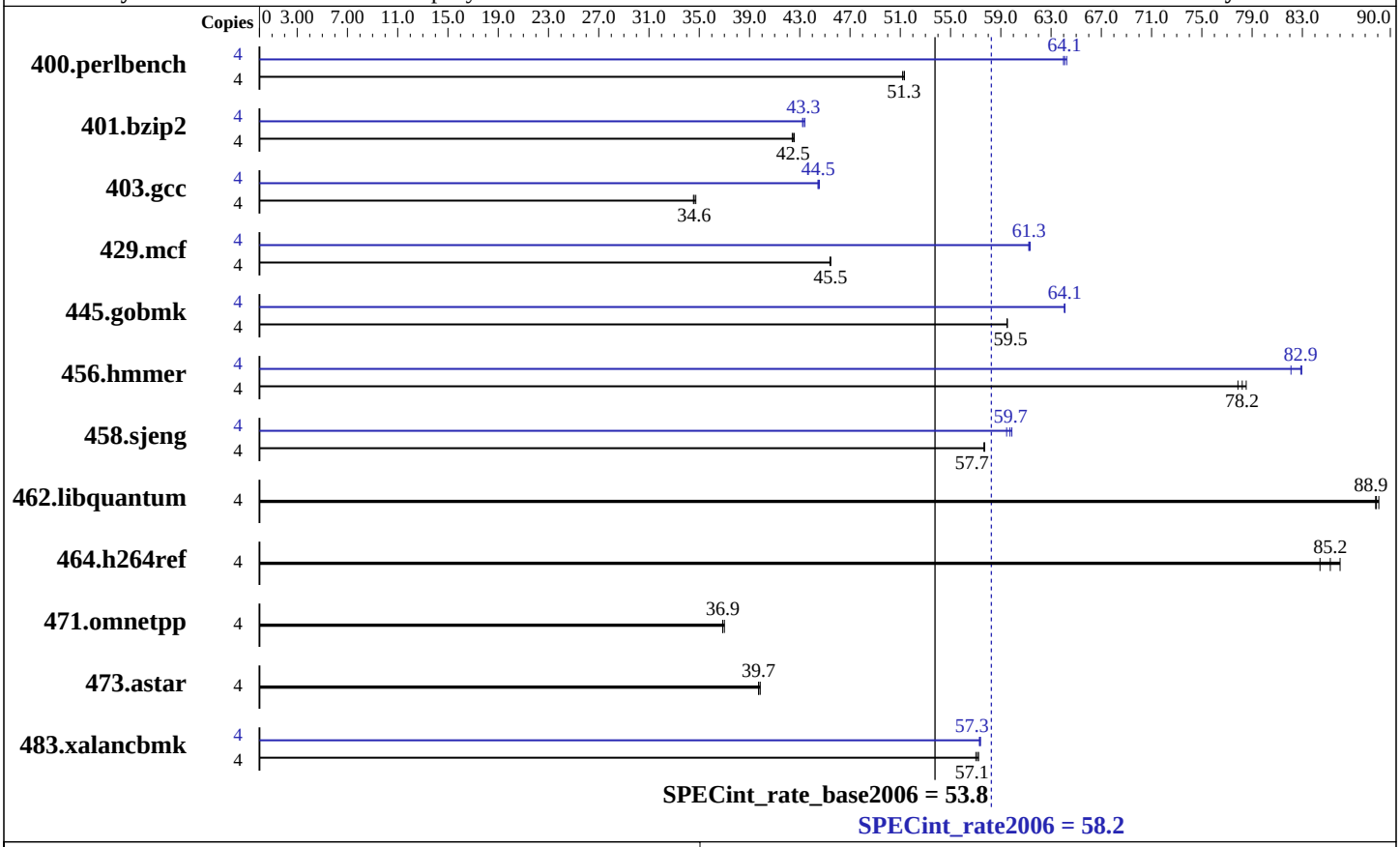
ProLiant DL385 G2
(3.0 GHz AMD Opteron 2222)

SPECint®_rate2006 = 58.2

SPECint_rate_base2006 = 53.8

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

Test date: Sep-2007
Hardware Availability: Sep-2007
Software Availability: Oct-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:	1x72 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 7.1-0 C Compiler PGI pgCC 7.1-0 C++ Compiler
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:	SmartHeap 8.0 32-bit Library for Linux

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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	761	51.3	764	51.2	**762**	**51.3**	4	611	64.0	608	64.2	**610**	**64.1**
401.bzip2	4	907	42.6	910	42.4	**909**	**42.5**	4	893	43.2	**892**	**43.3**	889	43.4
403.gcc	4	927	34.7	932	34.5	**931**	**34.6**	4	723	44.6	724	44.5	**724**	**44.5**
429.mcf	4	803	45.4	803	45.5	**803**	**45.5**	4	595	61.3	596	61.2	**596**	**61.3**
445.gobmk	4	705	59.5	705	59.5	**705**	**59.5**	4	655	64.1	**655**	**64.1**	655	64.1
456.hmmer	4	475	78.5	479	77.9	**477**	**78.2**	4	455	82.1	450	83.0	**450**	**82.9**
458.sjeng	4	839	57.7	**839**	**57.7**	839	57.7	4	808	59.9	814	59.5	**810**	**59.7**
462.libquantum	4	**932**	**88.9**	933	88.8	930	89.1	4	**932**	**88.9**	933	88.8	930	89.1
464.h264ref	4	1029	86.0	1049	84.4	**1039**	**85.2**	4	1029	86.0	1049	84.4	**1039**	**85.2**
471.omnetpp	4	676	37.0	**678**	**36.9**	678	36.9	4	676	37.0	**678**	**36.9**	678	36.9
473.astar	4	705	39.9	707	39.7	**707**	**39.7**	4	705	39.9	707	39.7	**707**	**39.7**
483.xalancbmk	4	482	57.2	484	57.0	**483**	**57.1**	4	482	57.3	481	57.4	**481**	**57.3**

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

Continued on next page

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:64 -tp k8-64 -Bstatic_pgi

C++ benchmarks:
-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh
-tp k8-32 -Bstatic_pgi -lsmartheap

Base Other Flags

C benchmarks:
-w

C++ benchmarks:
-w -L/proj/qa/smartheap/SmartHeap_8/lib

Peak Compiler Invocation

C benchmarks:
pgcc

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: `-Mpfi`(pass 1) `-Mpfo`(pass 2) `-Mipa=inline`(pass 2) `-fast -O4 -Mfprelaxed -Msmartalloc=huge:8 -Mnounroll -tp k8-64 -Bstatic_pgi`

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

403.gcc: `-fastsse -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast -Mipa=inline -tp k8-32 -Bstatic_pgi`

429.mcf: `-fastsse -Mipa=fast -Mipa=inline -Msmartalloc=huge:16 -tp k8-32 -Bstatic_pgi`

445.gobmk: `-Mpfi`(pass 1) `-Mpfo`(pass 2) `-Mipa=fast`(pass 2) `-fast -O4 -Msmartalloc=huge:32 -Mfprelaxed -Mnovect -tp k8-64 -Bstatic_pgi`

456.hmmer: `-fast -Msmartalloc=huge:32 -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:32 -Mfprelaxed -tp k8-64 -Bstatic_pgi`

462.libquantum: `basepeak = yes`

464.h264ref: `basepeak = yes`

C++ benchmarks:

471.omnetpp: `basepeak = yes`

473.astar: `basepeak = yes`

483.xalancbmk: `-fastsse -O4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh -tp k8-32 -Bstatic_pgi -lsmartheap`

Peak Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w -L/proj/qa/smartheap/SmartHeap_8/lib`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/hp-pgi710_flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/hp-pgi710_flags.xml`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 12:39:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 September 2007.