SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

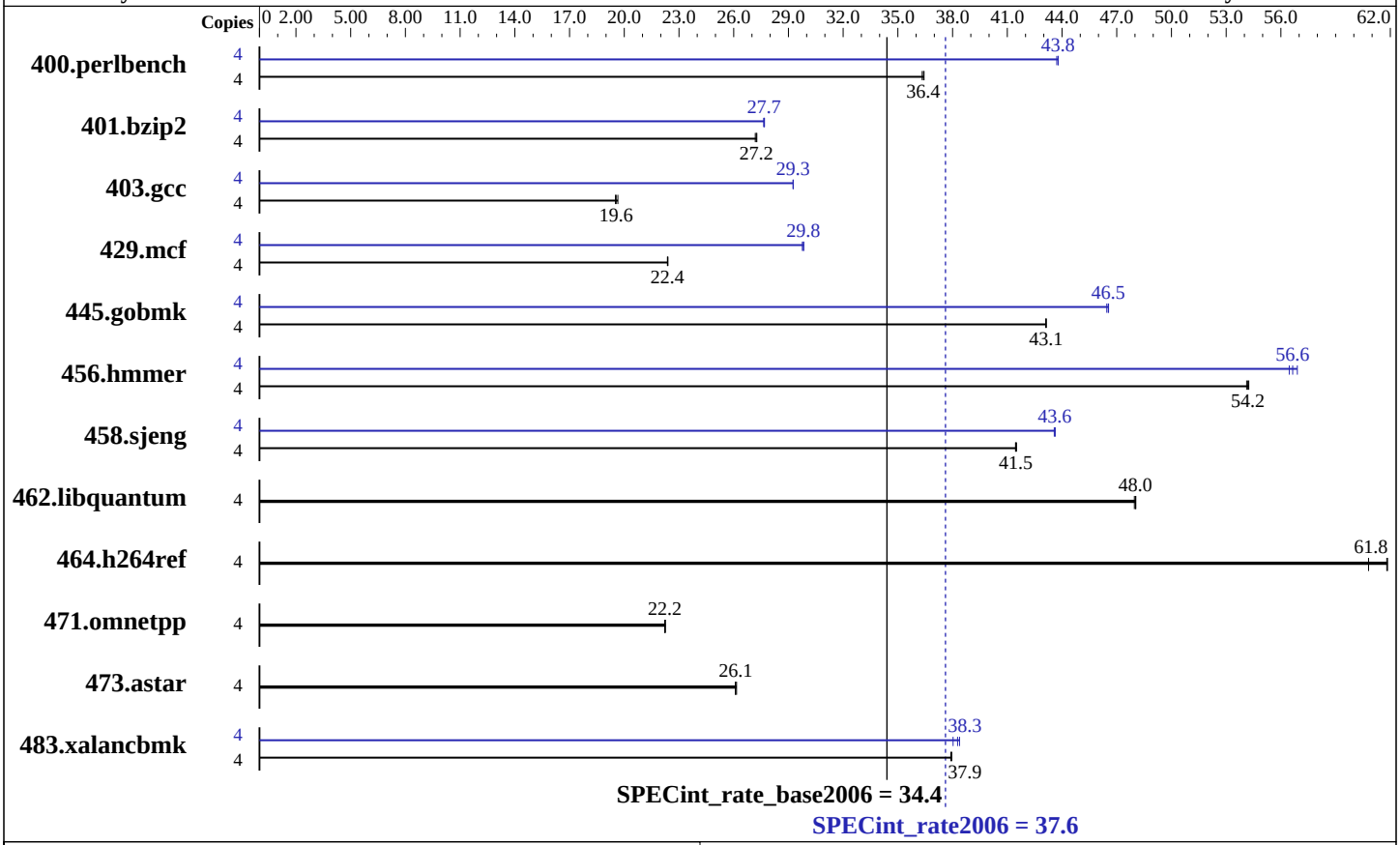
PowerEdge 2970 (AMD Opteron 2214, 2.20 GHz)

SPECint®_rate2006 = 37.6

SPECint_rate_base2006 = 34.4

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Nov-2007
Hardware Availability: Sep-2007
Software Availability: Oct-2007



Hardware

CPU Name:	AMD Opteron 2214
CPU Characteristics:	
CPU MHz:	2200
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:	16 GB (8x2GB, DDR2-667 CL5 ECC Dual Rank)
Disk Subsystem:	1 x 73 GB SAS 10k RPM
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:	ReiserFS
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

SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge 2970 (AMD Opteron 2214, 2.20 GHz)

SPECint_rate2006 = 37.6

SPECint_rate_base2006 = 34.4

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Nov-2007
Hardware Availability: Sep-2007
Software Availability: Oct-2007

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	1073	36.4	1076	36.3	**1073**	**36.4**	4	892	43.8	894	43.7	**893**	**43.8**
401.bzip2	4	**1417**	**27.2**	1420	27.2	1416	27.3	4	1394	27.7	1396	27.6	**1395**	**27.7**
403.gcc	4	**1647**	**19.6**	1650	19.5	1639	19.6	4	1101	29.3	1100	29.3	**1100**	**29.3**
429.mcf	4	1631	22.4	**1631**	**22.4**	1629	22.4	4	1223	29.8	1226	29.8	**1223**	**29.8**
445.gobmk	4	973	43.1	**973**	**43.1**	973	43.1	4	903	46.5	**902**	**46.5**	901	46.6
456.hmmer	4	**689**	**54.2**	690	54.1	688	54.2	4	661	56.5	656	56.9	**659**	**56.6**
458.sjeng	4	1168	41.4	**1167**	**41.5**	1166	41.5	4	1111	43.6	**1110**	**43.6**	1110	43.6
462.libquantum	4	1728	48.0	**1726**	**48.0**	1725	48.0	4	1728	48.0	**1726**	**48.0**	1725	48.0
464.h264ref	4	1431	61.8	1456	60.8	**1432**	**61.8**	4	1431	61.8	1456	60.8	**1432**	**61.8**
471.omnetpp	4	1123	22.3	1125	22.2	**1125**	**22.2**	4	1123	22.3	1125	22.2	**1125**	**22.2**
473.astar	4	1074	26.2	**1076**	**26.1**	1076	26.1	4	1074	26.2	**1076**	**26.1**	1076	26.1
483.xalancbmk	4	728	37.9	**728**	**37.9**	727	38.0	4	**721**	**38.3**	726	38.0	719	38.4

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

General Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2457600' was used to set environment locked pages in memory quantity
'numactl' was used to bind one copy per core, and memory to a local NUMA node
Set vm/nr_hugepages=1200 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150
```

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`

Continued on next page

Base Portability Flags (Continued)

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:
-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/pgi710_flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/pgi710_flags.20090714.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 14:35:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 November 2007.