SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

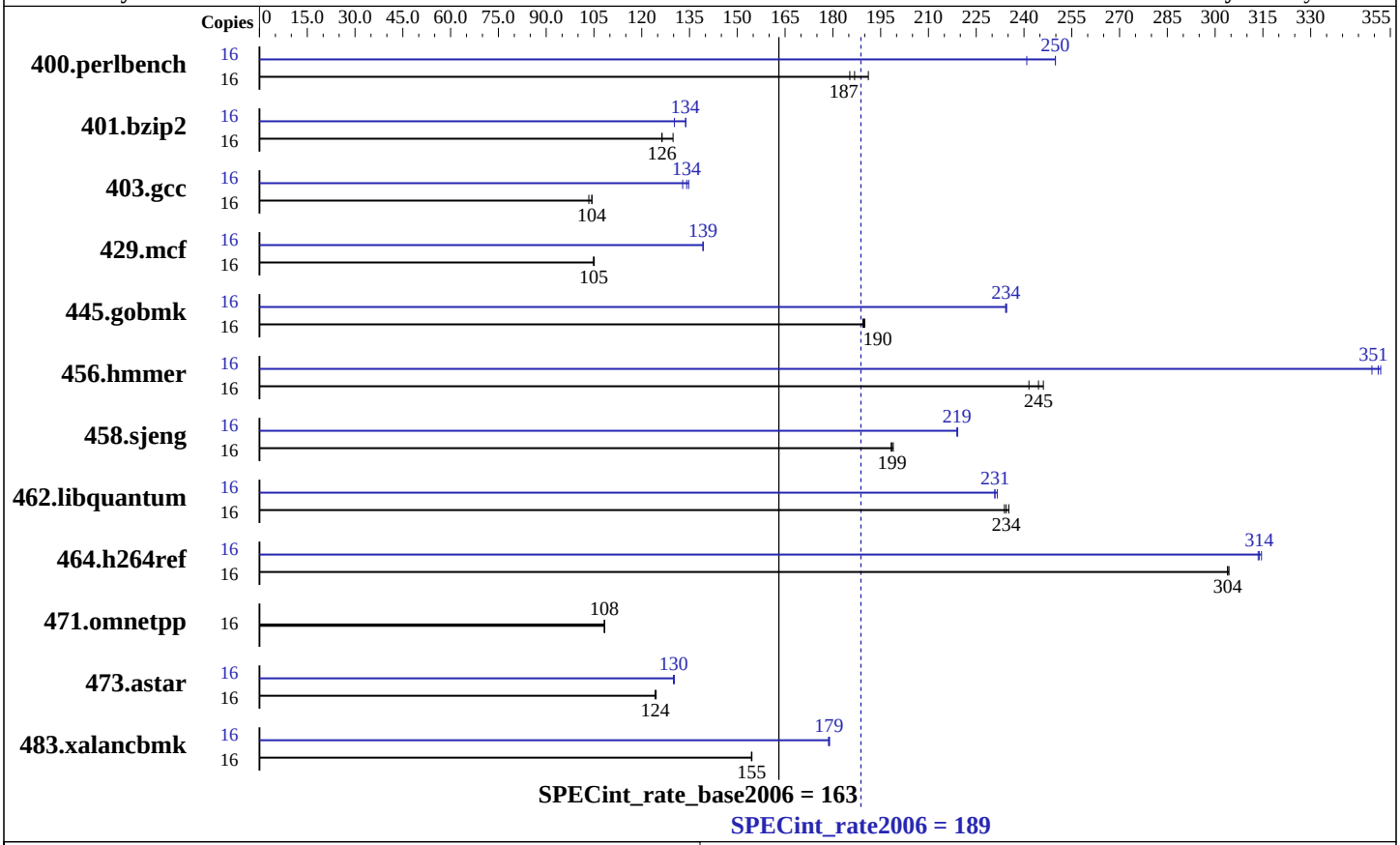
PowerEdge R905 (AMD Opteron 8358 SE, 2.40 GHz)

SPECint®_rate2006 = 189

SPECint_rate_base2006 = 163

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

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



Hardware

CPU Name:	AMD Opteron 8358 SE
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 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:	32 GB (8x4GB, DDR2-667, CL5, Reg, Dual Rank)
Disk Subsystem:	1 x 73 GB SAS, 10000 RPM
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 Version 3.1
Auto Parallel:	No
File System:	ReiserFS
System State:	Run level 3 (multi-user)
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 R905 (AMD Opteron 8358 SE, 2.40 GHz)

SPECint_rate2006 = 189

SPECint_rate_base2006 = 163

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

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	818	191	844	185	**837**	**187**	16	649	241	626	250	**626**	**250**
401.bzip2	16	1189	130	1222	126	**1222**	**126**	16	1185	130	1153	134	**1155**	**134**
403.gcc	16	1234	104	1246	103	**1235**	**104**	16	970	133	956	135	**960**	**134**
429.mcf	16	1391	105	1388	105	**1391**	**105**	16	1048	139	1047	139	**1048**	**139**
445.gobmk	16	883	190	886	189	**885**	**190**	16	**716**	**234**	716	235	716	234
456.hmmer	16	**610**	**245**	607	246	618	242	16	427	349	424	352	**425**	**351**
458.sjeng	16	976	198	**975**	**199**	973	199	16	883	219	**884**	**219**	884	219
462.libquantum	16	1409	235	**1414**	**234**	1418	234	16	**1436**	**231**	1436	231	1431	232
464.h264ref	16	1163	304	1165	304	**1165**	**304**	16	**1128**	**314**	1126	315	1129	314
471.omnetpp	16	**923**	**108**	923	108	923	108	16	**923**	**108**	923	108	923	108
473.astar	16	904	124	902	125	**904**	**124**	16	**863**	**130**	864	130	862	130
483.xalancbmk	16	715	154	714	155	**714**	**155**	16	618	179	**617**	**179**	617	179

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

Operating System Notes

```
'numactl' was used to bind copies to the cores
Environment variable PGI_HUGE_PAGES set to 150
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 4915200' was used to set environment locked pages in memory quantity
Set vm/nr_hugepages=2400 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`

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=jobs:4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:150 -tp barcelona-64 -Bstatic_pgi`

C++ benchmarks:
`-fastsse -Mipa=jobs:4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:150 --zc_eh -tp barcelona -Bstatic_pgi`

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`

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

471.omnetpp: `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: -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(pass 1) -Mpfo(pass 2) -fast -O4
-Msmartalloc=huge:150 -Mnounroll -tp barcelona-64
-Bstatic_pgi

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

429.mcf: -fastsse -Mipa=jobs:4 -Mipa=fast -Mipa=inline:1
-Msmartalloc=huge:150 -tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict -LNO:opt=0
-CG:p2align=on

456.hmmer: -fastsse -Munroll=n:8 -Msmartalloc=huge:150 -Mfprelaxed
-Mvect=partial -Msafeptr -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 -Msmartalloc=huge:150 -Mfprelaxed
-tp barcelona-64 -Bstatic_pgi

462.libquantum: -fastsse -Mfprelaxed -Msmartalloc=huge:150 -Munroll=m:8
-Mipa=jobs:4 -Mipa=fast -Mipa=inline -Mipa=noarg
-tp barcelona-64 -Bstatic_pgi

464.h264ref: -Mpfi=indirect(pass 1) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mpfo=indirect(pass 2) -fastsse -Msmartalloc=huge:150
-Mfprelaxed -tp barcelona-64 -Bstatic_pgi

Continued on next page

Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: `basepeak = yes`

473.astar: `-march=barcelona -Ofast -TENV:frame_pointer=off -WOPT:if_conv=0 -GRA:optimize_boundary=on -IPA:plimit=525 -m32 -lsmartheap`

483.xalancbmk: `-march=barcelona -Ofast -m32 -OPT:unroll_times_max=8 -CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0 -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`

C++ benchmarks (except as noted below):
`-L/root/work/cpu2006/amd123GH.libs/32`

471.omnetpp: `-w`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/amd123GH-flags.20090713.02.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/amd123GH-flags.20090713.02.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 18:52:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 August 2008.