SPEC® CINT2006 Result

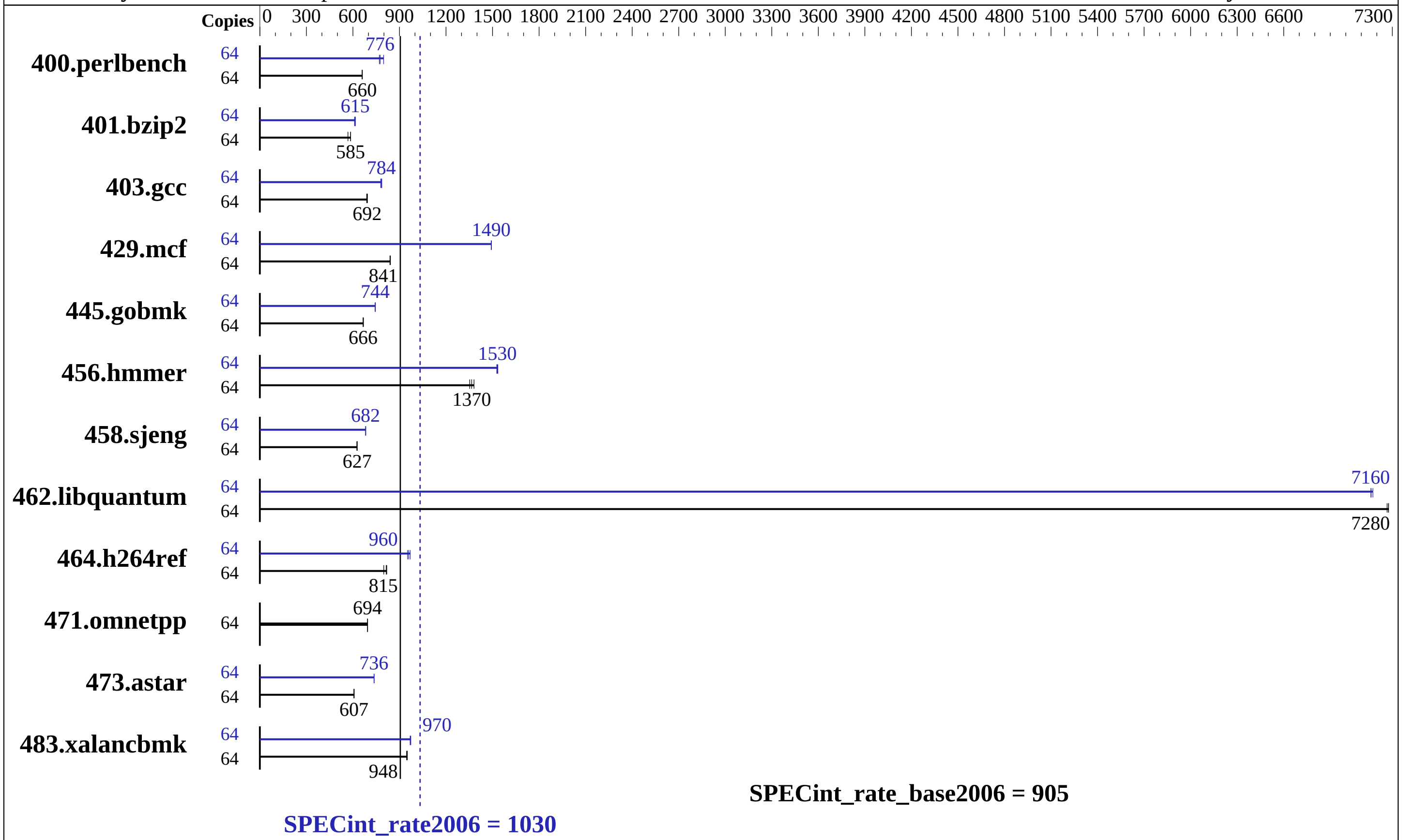
Acer Incorporated

Acer AR585 F1 (AMD Opteron 6278)

SPECint®_rate2006 = 1030

SPECint_rate_base2006 = 905

CPU2006 license: 97		**Test date:**	May-2012
Test sponsor:	Acer Incorporated	**Hardware Availability:**	Jun-2012
Tested by:	Acer Incorporated	**Software Availability:**	Dec-2011



Hardware

CPU Name:	AMD Opteron 6278
CPU Characteristics:	AMD Turbo CORE technology up to 3.30 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	64 cores, 4 chips, 16 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	512 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache:	16 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache:	16 MB I+D on chip per chip, 8 MB shared / 8 cores
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2, Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 4.5.1 of x86 Open64 Compiler Suite (from AMD)
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (Full multiuser with network)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap 10.0 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	64	949	659	946	661	**947**	**660**	64	**806**	**776**	812	770	784	798
401.bzip2	64	1088	568	**1056**	**585**	1055	585	64	**1005**	**615**	1011	611	1003	615
403.gcc	64	743	693	**744**	**692**	748	689	64	**658**	**784**	661	779	656	786
429.mcf	64	696	839	**694**	**841**	694	842	64	**391**	**1490**	391	1490	391	1490
445.gobmk	64	1005	668	1009	666	**1008**	**666**	64	**903**	**744**	903	743	901	745
456.hmmer	64	433	1380	441	1350	**437**	**1370**	64	**390**	**1530**	389	1530	391	1530
458.sjeng	64	1234	628	1239	625	**1235**	**627**	64	1137	681	1134	683	**1135**	**682**
462.libquantum	64	182	7280	**182**	**7280**	182	7270	64	185	7170	185	7160	**185**	**7160**
464.h264ref	64	1731	818	**1739**	**815**	1773	799	64	1488	952	1461	969	**1476**	**960**
471.omnetpp	64	576	695	**576**	**694**	576	694	64	576	695	**576**	**694**	576	694
473.astar	64	741	606	**740**	**607**	738	608	64	610	736	**610**	**736**	611	736
483.xalancbmk	64	465	950	467	946	**466**	**948**	64	456	969	454	973	**455**	**970**

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

Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
Please DO NOT publish the result before AMD announce the processor
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```

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152'  was used to set environment locked pages in memory limit

Set transparent_hugepage=never as a boot parameter in /boot/grub/menu.lst

Set vm/nr_hugepages=57344 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Platform Notes

```
BIOS Settings:
PowerNow = Disabled
Fan Speed Control Modes = Full Speed
```

General Notes

```
Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "896"
LD_LIBRARY_PATH = "/usr/cpu2006/amd1104-rate-libs-revC/32:/usr/cpu2006/amd1104-rate-libs-revC/64"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
http://developer.amd.com/cpu/open64

Binaries were compiled on a system with 2x AMD Opteron 6274 chips + 64GB Memory using RHEL 6.1
```

Base Compiler Invocation

C benchmarks:
 opencc

C++ benchmarks:
 openCC

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

Base Optimization Flags

C benchmarks:
 -march=bdver1 -Ofast -CG:local_sched_alg=1 -INLINE:aggressive=ON
 -IPA:plimit=8000 -IPA:small_pu=100 -HP:bd=2m:heap=2m -mso
 -LNO:prefetch=2

C++ benchmarks:
 -march=bdver1 -Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on
 -D__OPEN64_FAST_SET -L/root/work/libraries/SmartHeap-10/lib -lsmartheap

Peak Compiler Invocation

C benchmarks:
`opencc`

C++ benchmarks:
`openCC`

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=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -LNO:prefetch=2 -LNO:opt=0 -IPA:plimit=20000 -OPT:unroll_times_max=8 -OPT:unroll_size=256 -OPT:unroll_level=2 -OPT:keep_ext=on -WOPT:if_conv=0 -WOPT:sib=on -CG:local_sched_alg=1 -CG:unroll_fb_req=on -CG:movext_icmp=off -HP:bd=2m:heap=2m

401.bzip2: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3 -LNO:prefetch=2 -LNO:pf2=0 -OPT:alias=disjoint -OPT:goto=off -CG:local_sched_alg=1 -HP:bdt=2m:heap=2m

403.gcc: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -LNO:trip_count=256 -CG:cmp_peep=on -CG:pre_minreg_level=2 -m32 -HP:bdt=2m:heap=2m -GRA:unspill=on -IPA:small_pu=200 -WOPT:sib=on

429.mcf: -march=bdver1 -O3 -OPT:unroll_times_max=5 -ipa -INLINE:aggressive=on -CG:gcm=off -CG:dsched=on -GRA:prioritize_by_density=on -m32 -HP:bdt=2m:heap=2m -mso

445.gobmk: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -OPT:unroll_size=256 -OPT:unroll_times_max=8 -OPT:keep_ext=on -IPA:plimit=750 -IPA:min_hotness=300 -IPA:pu_reorder=1

Continued on next page

Peak Optimization Flags (Continued)

445.gobmk (continued):
-LNO:ignore_feedback=off -WOPT:if_conv=2 -HP:bd=2m:heap=2m

456.hmmer: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -LNO:prefetch=2 -OPT:alias=disjoint -OPT:unroll_times_max=16 -OPT:unroll_size=512 -OPT:unroll_level=2 -OPT:keep_ext=on -CG:cflow=0 -CG:cmp_peep=on -CG:pre_local_sched=off -HP:bdt=2m:heap=2m

458.sjeng: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -CG:ptr_load_use=0 -CG:divrem_opt=on -CG:movext_icmp=off -CG:locs_best=on -LNO:full_unroll=10 -IPA:pu_reorder=2 -HP:heap=2m:bd=2m -WOPT:sib=on

462.libquantum: -march=bdver1 -Ofast -mso -OPT:unroll_size=512 -OPT:unroll_times_max=16 -LNO:prefetch=2 -LNO:prefetch_ahead=4 -LNO:pf2=0 -CG:local_sched_alg=1 -CG:p2align=0 -INLINE:aggressive=ON -IPA:plimit=15000 -IPA:small_pu=100 -HP:bdt=2m:heap=2m,limit=300

464.h264ref: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3 -OPT:unroll_size=256 -OPT:unroll_times_max=2 -IPA:plimit=20000 -OPT:alias=disjoint -CG:ptr_load_use=0 -CG:local_sched_alg=1 -HP:bdt=2m:heap=2m

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -march=bdver1 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -TENV:frame_pointer=off -WOPT:if_conv=0 -WOPT:sib=on -CG:divrem_opt=on -CG:p2align=1 -CG:dsched=on -GRA:optimize_boundary=on -OPT:alias=disjoint -INLINE:aggressive=on -IPA:small_pu=3000 -IPA:plimit=3000 -m32 -HP:bdt=2m:heap=2m

483.xalancbmk: -march=bdver1 -Ofast -LNO:prefetch=2 -OPT:unroll_size=512 -OPT:unroll_times_max=8 -D__OPEN64_FAST_SET -INLINE:aggressive=on -m32 -CG:cmp_peep=on -CG:local_sched=off -CG:p2align=1 -GRA:unspill=on -TENV:frame_pointer=off -fno-emit-exceptions -L/root/work/libraries/SmartHeap-10/lib -lsmartheap

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/x86-open64-451-flags-rate-revC-I.html
http://www.spec.org/cpu2006/flags/amd-acer-platform-rate-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/x86-open64-451-flags-rate-revC-I.xml
http://www.spec.org/cpu2006/flags/amd-acer-platform-rate-revC.xml

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

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