



SPEC® CINT2006 Result

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Acer Incorporated

SPECint®_rate2006 = 1050

Acer AR585 F1 (AMD Opteron 6376)

SPECint_rate_base2006 = 916

CPU2006 license: 97

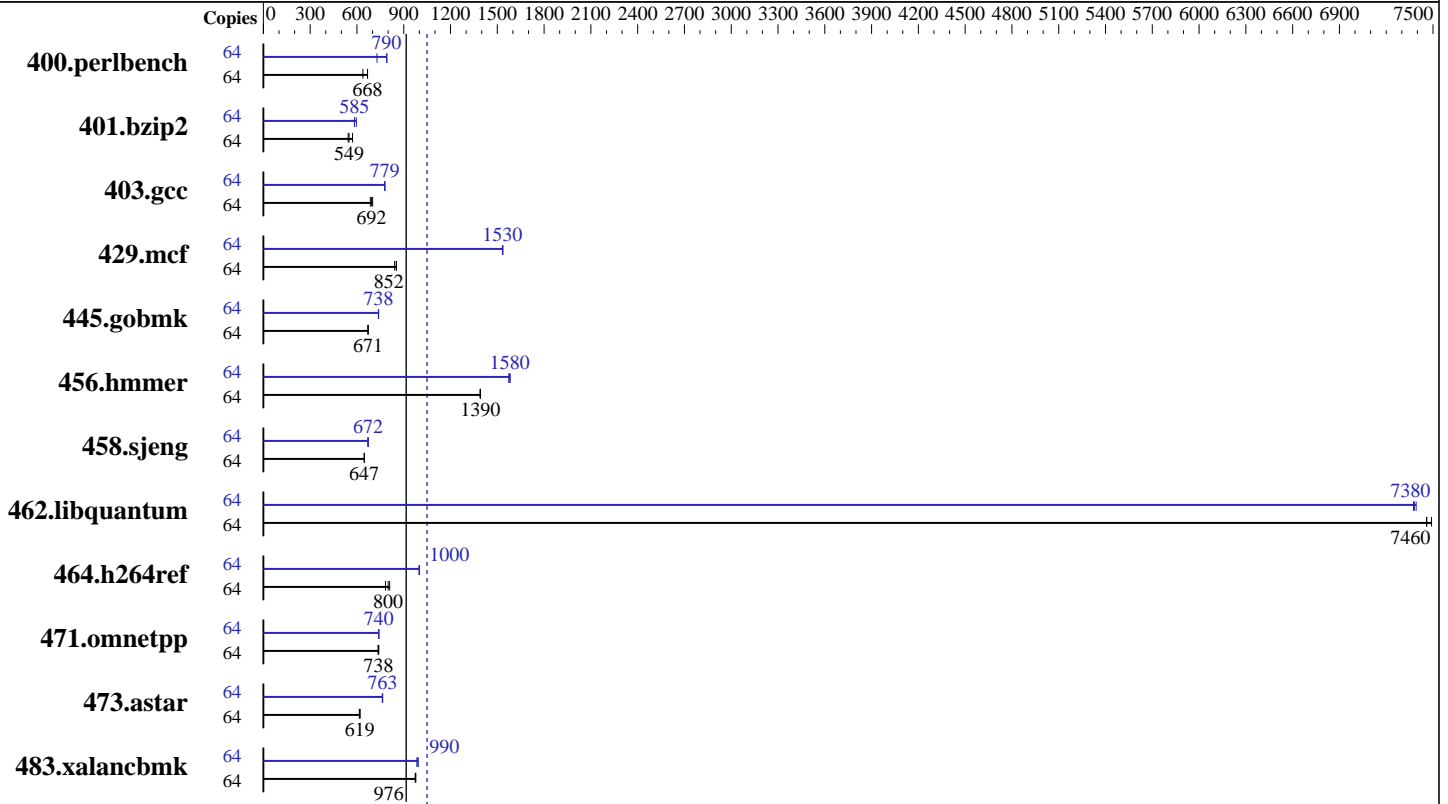
Test date: Nov-2012

Test sponsor: Acer Incorporated

Hardware Availability: Nov-2012

Tested by: Acer Incorporated

Software Availability: Aug-2012



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Hardware

CPU Name: AMD Opteron 6376
 CPU Characteristics: AMD Turbo CORE technology up to 3.20 GHz
 CPU MHz: 2300
 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 6.3,
 Kernel 2.6.32-279.el6.x86_64
 Compiler: C/C++: Version 4.5.2 of x86 Open64 Compiler Suite
 (from AMD)
 Auto Parallel: No
 File System: ext3
 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	980	638	<u>936</u>	<u>668</u>	936	668	64	858	729	<u>791</u>	<u>790</u>	789	792
401.bzip2	64	1136	543	1080	572	<u>1124</u>	<u>549</u>	64	1058	584	<u>1056</u>	<u>585</u>	1036	596
403.gcc	64	<u>744</u>	<u>692</u>	751	686	735	701	64	<u>662</u>	<u>779</u>	661	779	663	777
429.mcf	64	684	853	<u>685</u>	<u>852</u>	694	842	64	381	1530	380	1540	<u>381</u>	<u>1530</u>
445.gobmk	64	1000	671	<u>1000</u>	<u>671</u>	1000	671	64	908	739	<u>910</u>	<u>738</u>	911	737
456.hammer	64	<u>429</u>	<u>1390</u>	429	1390	430	1390	64	<u>378</u>	<u>1580</u>	380	1570	377	1580
458.sjeng	64	1195	648	<u>1197</u>	<u>647</u>	1197	647	64	1151	673	<u>1152</u>	<u>672</u>	1157	669
462.libquantum	64	<u>178</u>	<u>7460</u>	177	7490	178	7460	64	179	7390	180	7380	<u>180</u>	<u>7380</u>
464.h264ref	64	<u>1771</u>	<u>800</u>	1749	810	1809	783	64	<u>1416</u>	<u>1000</u>	1419	998	1414	1000
471.omnetpp	64	544	735	<u>542</u>	<u>738</u>	540	740	64	<u>540</u>	<u>740</u>	540	740	541	739
473.astar	64	<u>726</u>	<u>619</u>	725	620	730	615	64	589	763	587	765	<u>589</u>	<u>763</u>
483.xalancbmk	64	<u>453</u>	<u>976</u>	452	978	454	973	64	445	993	449	984	<u>446</u>	<u>990</u>

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.

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

General Notes

Environment variables set by runspec before the start of the run:

HUGETLB_LIMIT = "896"

LD_LIBRARY_PATH = "/usr/cpu2006/amd1206-rate-libs-revA/32:/usr/cpu2006/amd1206-rate-libs-revA/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 6386SE chips + 128GB Memory using RHEL 6.3



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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:
-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
-march=bdver1

C++ benchmarks:
-Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on -D__OPEN64_FAST_SET
-march=bdver1 -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

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Peak Portability Flags (Continued)

```

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
473.astar: -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: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 -march=bdver1
-GRA:aggr_loop_splitting=off -GRA:loop_splitting=off

401.bzip2: -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
-march=bdver2

403.gcc: -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 -march=bdver2 -mno-fma4

429.mcf: -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 -march=bdver1

445.gobmk: -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 -LNO:ignore_feedback=off -WOPT:if_conv=2
-HP:bd=2m:heap=2m -march=bdver1

456.hmmer: -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
-CG:p2align=0 -CG:load_exe=3 -CG:dsched=on -march=bdver1

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Peak Optimization Flags (Continued)

458.sjeng: -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 -march=bdver1

462.libquantum: -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 -march=bdver2

464.h264ref: -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 -march=bdver1

C++ benchmarks:

471.omnetpp: -Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on
-WOPT:sib=on -D__OPEN64_FAST_SET -march=bdver2 -mno-fma4
-L/root/work/libraries/SmartHeap-10/lib -lsmarheap

473.astar: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-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 -HP:bdt=2m:heap=2m
-march=bdver1

483.xalancbmk: -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 -march=bdver2
-mno-fma4
-L/root/work/libraries/SmartHeap-10/lib -lsmarheap

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/x86-open64-452-flags-rate-revA-I.html>

<http://www.spec.org/cpu2006/flags/amd1206-acer-platform-rate-revA-I.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/x86-open64-452-flags-rate-revA-I.xml>

<http://www.spec.org/cpu2006/flags/amd1206-acer-platform-rate-revA-I.xml>



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For other inquiries, please contact webmaster@spec.org.

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