



SPEC® CINT2006 Result

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Acer Incorporated

SPECint®_rate2006 = 368

Acer AR385 F1 (AMD Opteron 6262 HE)

SPECint_rate_base2006 = 325

CPU2006 license: 97

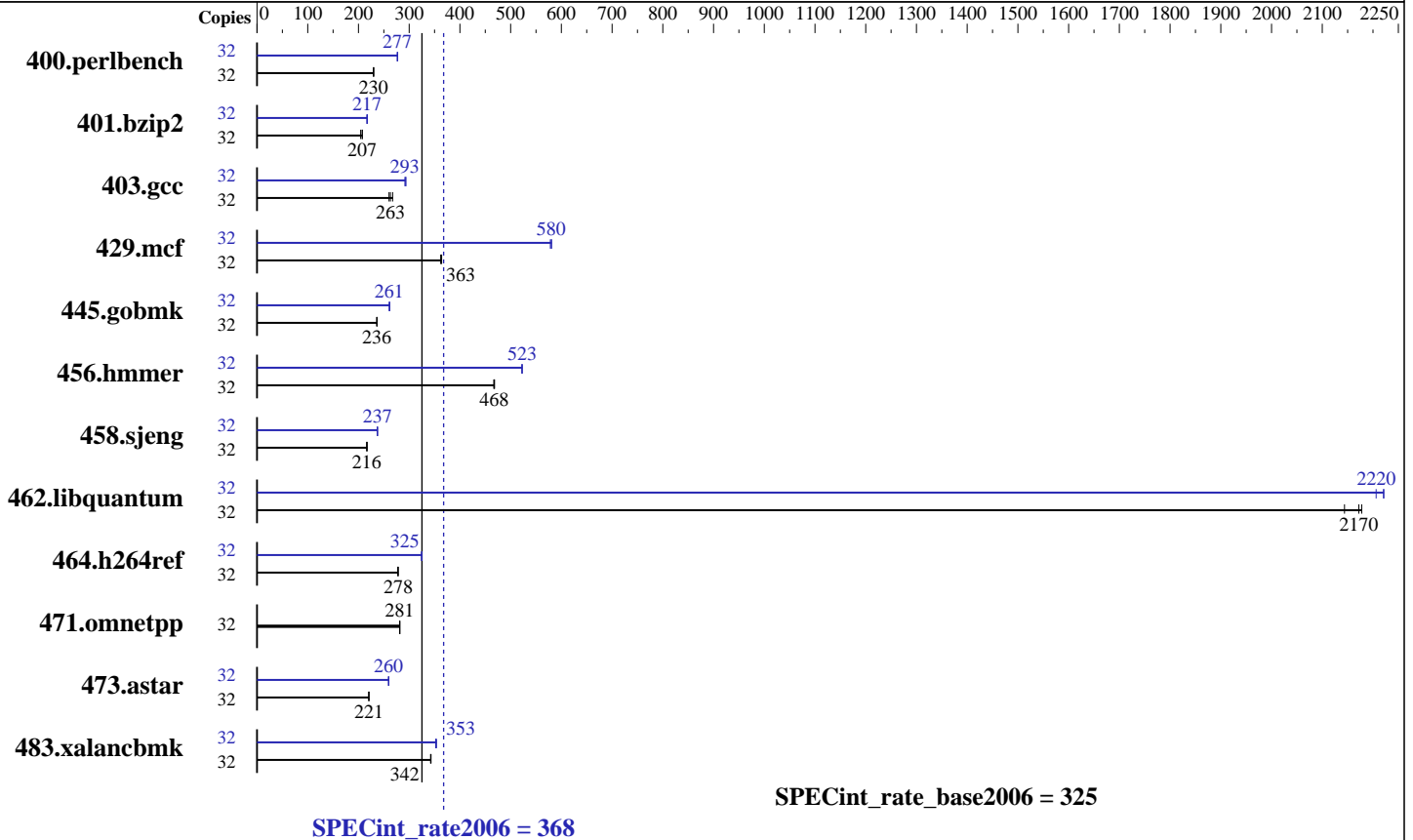
Test date: Nov-2011

Test sponsor: Acer Incorporated

Hardware Availability: Nov-2011

Tested by: Acer Incorporated

Software Availability: Jul-2011



Hardware

CPU Name: AMD Opteron 6262 HE
 CPU Characteristics: AMD Turbo CORE technology up to 2.90 GHz
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
 CPU(s) orderable: 1,2 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: 128 GB (16 x 8 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 300 GB SATA, 10000 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1,
 Kernel 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++/Fortran: Version 4.2.5.2 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	32	1362	230	1360	230	<u>1360</u>	<u>230</u>	32	<u>1129</u>	<u>277</u>	1131	276	1127	277
401.bzip2	32	1511	204	<u>1490</u>	<u>207</u>	1487	208	32	<u>1421</u>	<u>217</u>	1419	218	1426	216
403.gcc	32	963	267	<u>980</u>	<u>263</u>	990	260	32	<u>878</u>	<u>293</u>	878	293	884	292
429.mcf	32	802	364	806	362	<u>804</u>	<u>363</u>	32	<u>503</u>	<u>580</u>	503	581	505	578
445.gobmk	32	<u>1420</u>	<u>236</u>	1423	236	1417	237	32	1283	262	<u>1287</u>	<u>261</u>	1287	261
456.hammer	32	640	467	638	468	<u>638</u>	<u>468</u>	32	<u>571</u>	<u>523</u>	571	523	572	522
458.sjeng	32	1791	216	<u>1789</u>	<u>216</u>	1783	217	32	1630	237	1632	237	<u>1631</u>	<u>237</u>
462.libquantum	32	309	2140	304	2180	<u>305</u>	<u>2170</u>	32	301	2210	298	2220	<u>299</u>	<u>2220</u>
464.h264ref	32	<u>2545</u>	<u>278</u>	2553	277	2545	278	32	2184	324	<u>2179</u>	<u>325</u>	2179	325
471.omnetpp	32	711	281	<u>711</u>	<u>281</u>	711	281	32	711	281	<u>711</u>	<u>281</u>	711	281
473.astar	32	1019	221	1019	220	<u>1019</u>	<u>221</u>	32	866	259	<u>865</u>	<u>260</u>	865	260
483.xalancbmk	32	644	343	645	342	<u>645</u>	<u>342</u>	32	<u>626</u>	<u>353</u>	627	352	624	354

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 kernel/randomize_va_space=0 in /etc/sysctl.conf

Set vm/nr_hugepages=28672 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-revA/32:/usr/cpu2006/amd1104-rate-libs-revA/64"

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General Notes (Continued)

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 6276 chips + 128GB Memory using RHEL 6.1

Base Compiler Invocation

C benchmarks:
openc

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:
openc

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Peak Compiler Invocation (Continued)

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:bd=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:bd=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
          -GRA:prioritize_by_density=on -m32 -HP:bd=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
            -LNO:ignore_feedback=off -WOPT:if_conv=2 -HP:bd=2m:heap=2m

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Peak Optimization Flags (Continued)

456.hmmcr: -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:bd=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:bd=2m:heap=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
 -INLINE:aggressive=on -IPA:plimit=15000 -IPA:small_pu=100
 -HP:bd=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:bd=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
 -GRA:optimize_boundary=on -OPT:alias=disjoint
 -INLINE:aggressive=on -IPA:small_pu=3000 -IPA:plimit=3000
 -m32 -HP:bd=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 -GRA:unspill=on -TENV:frame_pointer=off
 -fno-emit-exceptions
 -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-open64-425-flags-rate-revA.html>

<http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.html>

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

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.xml>

<http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.xml>



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