



SPEC® CINT2006 Result

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Acer Incorporated

SPECint®_rate2006 = 465

Acer AW2000h-AW175h F1 AMD Opteron 6274)

SPECint_rate_base2006 = 406

CPU2006 license: 97

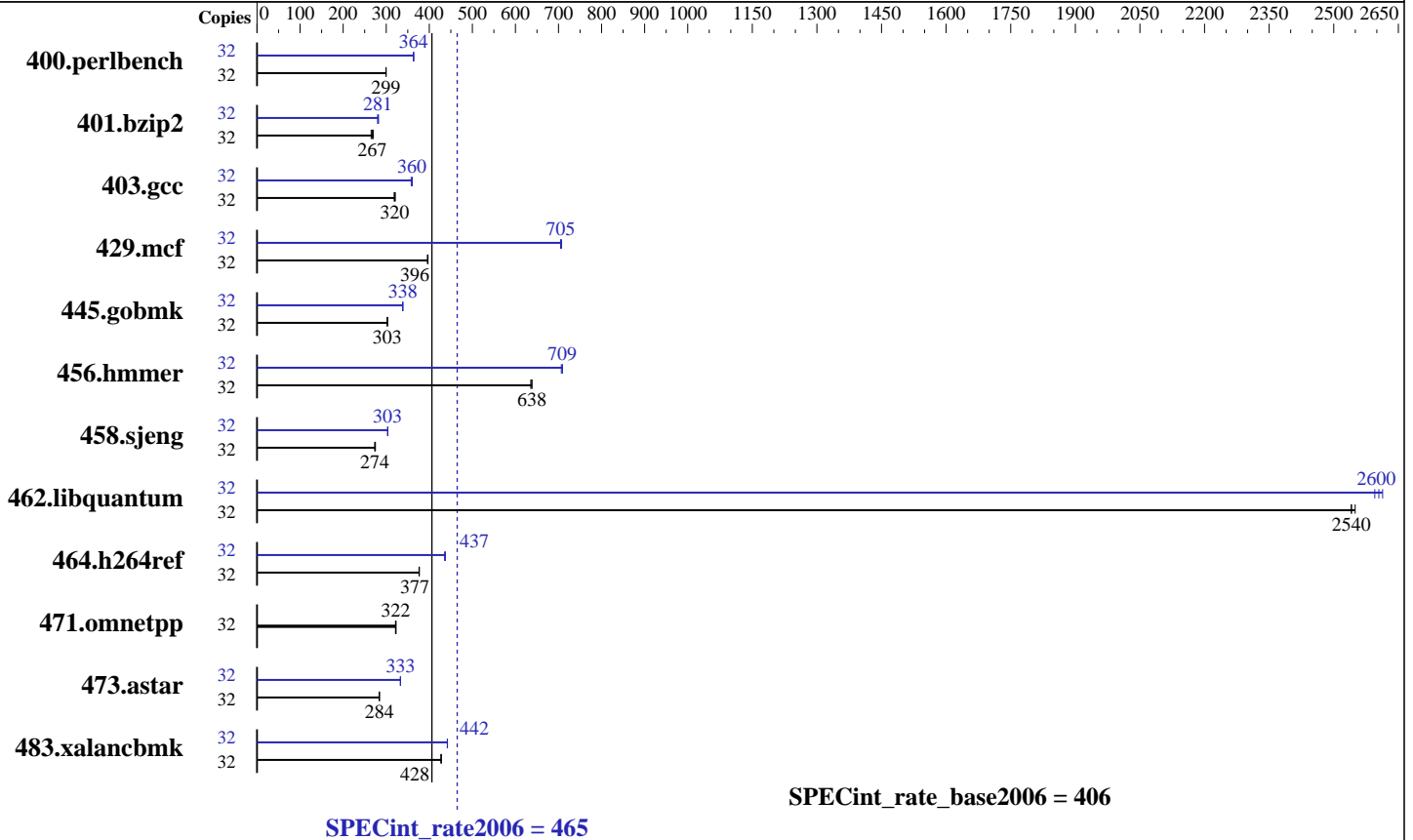
Test date: Dec-2011

Test sponsor: Acer Incorporated

Hardware Availability: Nov-2011

Tested by: Acer Incorporated

Software Availability: Jul-2011



Hardware

CPU Name: AMD Opteron 6274
 CPU Characteristics: AMD Turbo CORE technology up to 3.10 GHz
 CPU MHz: 2200
 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 1000 GB SATA, 7200 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: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None



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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	1044	299	1043	300	1044	299	32	860	364	860	363	860	364
401.bzip2	32	1143	270	1165	265	1155	267	32	1101	280	1101	281	1094	282
403.gcc	32	809	318	803	321	805	320	32	720	358	715	360	715	360
429.mcf	32	735	397	736	396	738	396	32	413	707	414	705	414	705
445.gobmk	32	1109	303	1109	303	1109	303	32	992	338	992	338	991	339
456.hammer	32	468	638	470	636	468	638	32	423	707	421	709	421	709
458.sjeng	32	1408	275	1415	274	1415	274	32	1275	304	1276	303	1276	303
462.libquantum	32	260	2550	261	2540	261	2540	32	254	2610	255	2600	255	2600
464.h264ref	32	1882	376	1879	377	1880	377	32	1620	437	1620	437	1625	436
471.omnetpp	32	622	322	620	323	621	322	32	622	322	620	323	621	322
473.astar	32	791	284	791	284	791	284	32	674	333	674	333	675	333
483.xalancbmk	32	516	428	516	428	517	427	32	500	442	499	442	500	442

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 2 x AMD Opteron 6274 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/amd1104-platform-rate-revA.20120103.html>
<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.html>

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

<http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.20120103.xml>
<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.xml>



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

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