



SPEC® CINT2006 Result

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Acer Incorporated

SPECint®_rate2006 = 816

Acer AR585 F1 (AMD Opteron 6238)

SPECint_rate_base2006 = 713

CPU2006 license: 97

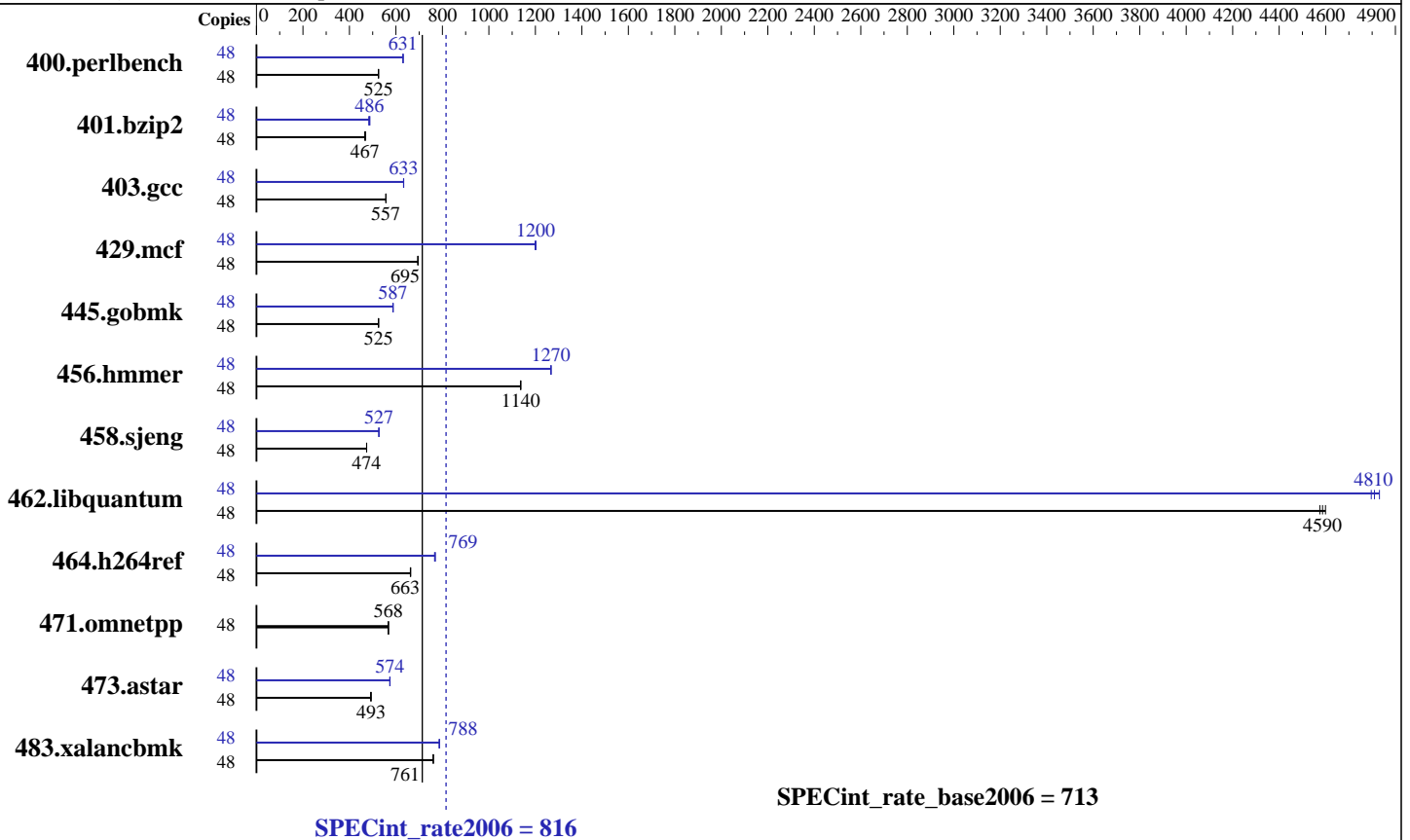
Test date: Dec-2011

Test sponsor: Acer Incorporated

Hardware Availability: Nov-2011

Tested by: Acer Incorporated

Software Availability: Jul-2011



Hardware

CPU Name: AMD Opteron 6238
 CPU Characteristics: AMD Turbo CORE technology up to 3.20 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 48 cores, 4 chips, 12 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 384 KB I on chip per chip,
 64 KB I shared / 2 cores;
 16 KB D on chip per core
 Secondary Cache: 12 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 / 6 cores
 Other Cache: None
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 500 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++: 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	48	893	525	894	524	893	525	48	744	631	744	630	743	631
401.bzip2	48	993	467	986	470	993	466	48	959	483	949	488	952	486
403.gcc	48	694	557	693	558	694	557	48	610	634	611	633	610	633
429.mcf	48	631	694	630	695	629	695	48	365	1200	364	1200	364	1200
445.gobmk	48	959	525	959	525	959	525	48	855	589	858	587	857	587
456.hammer	48	394	1140	394	1140	394	1140	48	353	1270	353	1270	354	1270
458.sjeng	48	1225	474	1226	474	1226	474	48	1103	526	1101	528	1103	527
462.libquantum	48	217	4590	216	4600	217	4570	48	207	4800	207	4810	206	4830
464.h264ref	48	1600	664	1604	662	1603	663	48	1382	769	1386	766	1381	769
471.omnetpp	48	528	568	529	567	528	568	48	528	568	529	567	528	568
473.astar	48	683	493	686	491	683	493	48	586	575	588	573	587	574
483.xalancbmk	48	435	761	435	761	435	761	48	421	788	420	788	422	785

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=43008 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.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: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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