SPEC® CINT2006 Result
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Acer Incorporated

Acer AR585 F1 (AMD Opteron 6168)

SPECint®_rate2006 = 698

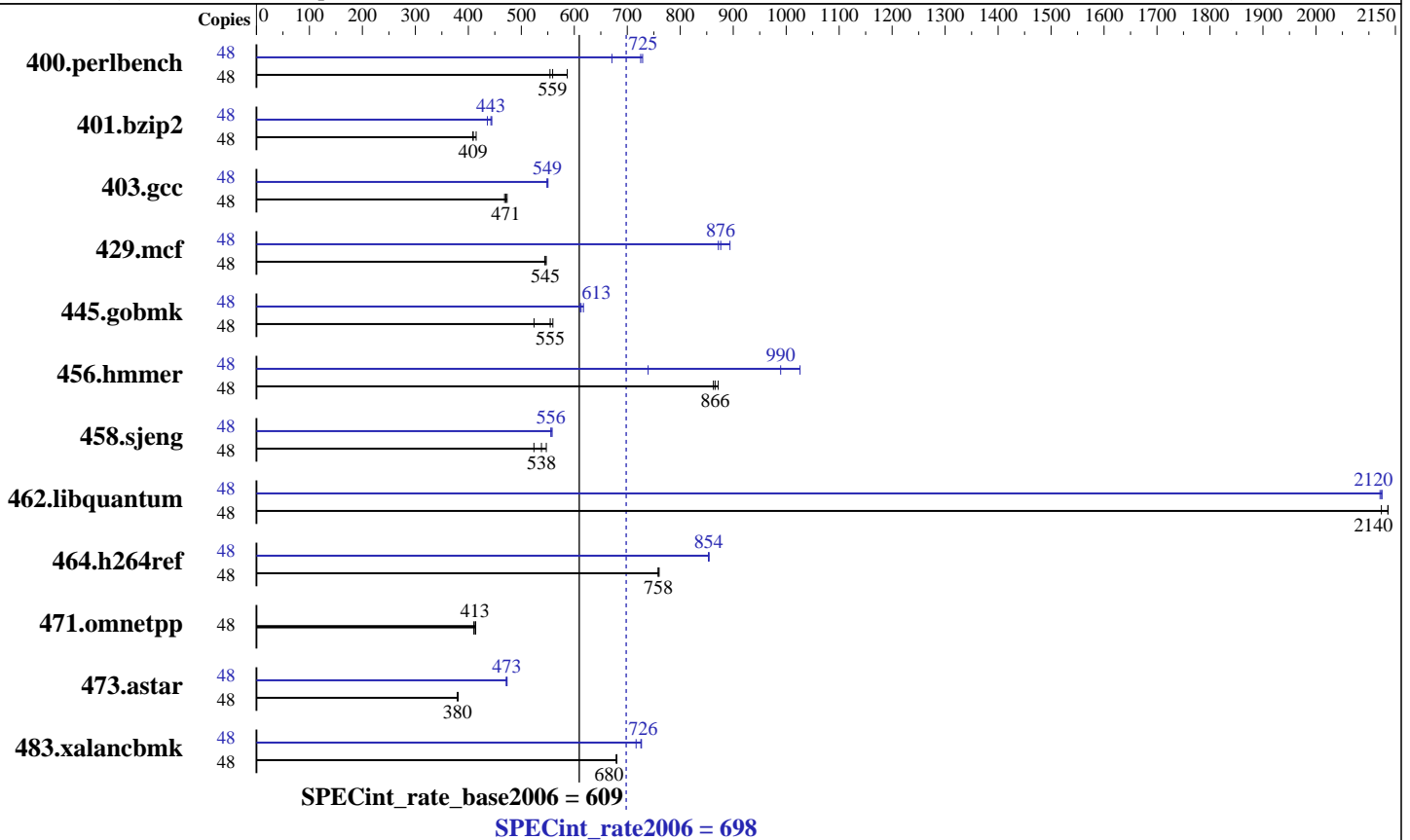SPECint_rate_base2006 = 609

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Mar-2011
Hardware Availability: Jul-2010
Software Availability: Jul-2010

Benchmark	Copies	Result
400.perlbench	48 / 48	725 / 559
401.bzip2	48 / 48	443 / 409
403.gcc	48 / 48	549 / 471
429.mcf	48 / 48	876 / 545
445.gobmk	48 / 48	613 / 555
456.hmmer	48 / 48	990 / 866
458.sjeng	48 / 48	556 / 538
462.libquantum	48 / 48	2120 / 2140
464.h264ref	48 / 48	854 / 758
471.omnetpp	48	413
473.astar	48 / 48	473 / 380
483.xalancbmk	48 / 48	726 / 680

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Hardware

CPU Name:	AMD Opteron 6168
CPU Characteristics:	
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	48 cores, 4 chips, 12 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip, 6 MB shared / 6 cores
Other Cache:	None
Memory:	128 GB (32 x 4 GB 2Rx8 PC3-10600R-9, ECC)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP1 Kernel 2.6.32.12-0.7-default
Compiler:	x86 Open64 4.2.4 Compiler Suite (from AMD)
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multiuser)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap 8.1 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	799	587	846	554	**839**	**559**	48	699	671	643	729	**647**	**725**
401.bzip2	48	1117	415	**1132**	**409**	1133	409	48	1062	436	**1047**	**443**	1043	444
403.gcc	48	**821**	**471**	817	473	825	468	48	702	550	704	549	**704**	**549**
429.mcf	48	800	547	**803**	**545**	805	544	48	**499**	**876**	490	894	502	872
445.gobmk	48	**908**	**555**	961	524	900	560	48	**822**	**613**	816	617	824	611
456.hmmer	48	519	863	**517**	**866**	514	872	48	436	1030	**453**	**990**	606	739
458.sjeng	48	1109	524	**1080**	**538**	1062	547	48	**1044**	**556**	1041	558	1045	556
462.libquantum	48	468	2120	**466**	**2140**	466	2140	48	**468**	**2120**	469	2120	468	2120
464.h264ref	48	**1400**	**758**	1397	760	1401	758	48	**1244**	**854**	1245	853	1243	854
471.omnetpp	48	**727**	**413**	731	410	725	414	48	**727**	**413**	731	410	725	414
473.astar	48	**887**	**380**	889	379	885	381	48	715	471	**713**	**473**	712	473
483.xalancbmk	48	488	679	487	680	**487**	**680**	48	462	717	456	727	**456**	**726**

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 vm/nr_hugepages=21600 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 = "450"
    LD_LIBRARY_PATH = "/usr/cpu2006/amd1002-rate-libs-revC/64:/usr/cpu2006/amd1002-rate-libs-revC/32"

    The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
    http://developer.amd.com/cpu/open64
    Binaries were compiled on SLES10 SP2 with binutils 2.18
    This result was measured on the Gateway GR585 F1.
    The Acer AR585 F1 and Gateway GR585 F1 are electronically equivalent.

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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:
```
      -march=barcelona -mso -Ofast -CG:local_sched_alg=1
      -INLINE:aggressive=on -IPA:plimit=8000 -IPA:small_pu=100
      -HP:bdt=2m:heap=2m
```

C++ benchmarks:
```
      -march=barcelona -mso -Ofast -m32 -INLINE:aggressive=on
      -CG:cmp_peep=on -L/root/work/libraries/SmartHeap-8.1/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
   483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
   400.perlbench: -march=barcelona -mso -fb_create fbdata(pass 1)
               -fb_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0
               -OPT:unroll_times_max=8 -OPT:unroll_size=256
               -OPT:unroll_level=2 -OPT:keep_ext=on -WOPT:if_conv=0
               -CG:local_sched_alg=1 -CG:unroll_fb_req=on
               -HP:bdt=2m:heap=2m

      401.bzip2: -march=barcelona -mso -fb_create fbdata(pass 1)
               -fb_opt fbdata(pass 2) -O3 -OPT:alias=disjoint
               -OPT:goto=off -CG:local_sched_alg=1 -HP:bdt=2m:heap=2m

        403.gcc: -march=barcelona -mso -fb_create fbdata(pass 1)
               -fb_opt fbdata(pass 2) -Ofast -LNO:trip_count=256
               -LNO:prefetch_ahead=10 -CG:cmp_peep=on -m32
               -HP:bdt=2m:heap=2m -GRA:unspill=on -IPA:small_pu=200

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

      445.gobmk: -march=barcelona -mso -fb_create fbdata(pass 1)
               -fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict
               -OPT:unroll_times_max=8 -OPT:unroll_size=256
               -OPT:unroll_level=2 -OPT:keep_ext=on -ipa -IPA:plimit=750
               -IPA:min_hotness=300 -IPA:pu_reorder=1 -LNO:prefetch=1
               -LNO:ignore_feedback=off -CG:p2align=on
               -CG:unroll_fb_req=on -HP:bdt=2m:heap=2m

      456.hmmer: -march=barcelona -mso -fb_create fbdata(pass 1)
               -fb_opt fbdata(pass 2) -Ofast -LNO:prefetch=0
               -OPT:alias=disjoint -OPT:unroll_times_max=8
               -OPT:unroll_size=256 -OPT:unroll_level=2 -OPT:keep_ext=on
               -CG:local_sched_alg=1 -CG:cflow=0
               -CG:push_pop_int_saved_regs=off -CG:cmp_peep=on
               -HP:bdt=2m:heap=2m
```

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Peak Optimization Flags (Continued)

```
  458.sjeng: -march=barcelona -mso -fb_create fbdata(pass 1)
             -fb_opt fbdata(pass 2) -O3 -ipa -LNO:ignore_feedback=off
             -LNO:full_unroll=10 -LNO:fusion=0 -LNO:fission=2
             -IPA:pu_reorder=2 -CG:ptr_load_use=0
             -OPT:unroll_times_max=8 -INLINE:aggressive=on

462.libquantum: -march=barcelona -mso -Ofast -LNO:pf2=0 -CG:gcm=off
             -CG:use_prefetchnta=on -CG:cmp_peep=on -WOPT:aggstr=0
             -HP:bdt=2m:heap=2m -OPT:alias=disjoint
             -INLINE:aggressive=on -IPA:space=1000 -IPA:plimit=20000

  464.h264ref: -march=barcelona -mso -fb_create fbdata(pass 1)
             -fb_opt fbdata(pass 2) -O3 -IPA:plimit=20000
             -OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr_load_use=0
             -CG:push_pop_int_saved_regs=off
```

C++ benchmarks:

```
 471.omnetpp: basepeak = yes

    473.astar: -march=barcelona -mso -fb_create fbdata(pass 1)
             -fb_opt fbdata(pass 2) -Ofast -TENV:frame_pointer=off
             -WOPT:if_conv=0 -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=barcelona -mso -Ofast -INLINE:aggressive=on -m32
             -CG:cmp_peep=on -GRA:unspill=on -TENV:frame_pointer=off
             -fno-emit-exceptions
             -L/root/work/libraries/SmartHeap-8.1/lib -lsmartheap
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC.20100901.html
http://www.spec.org/cpu2006/flags/amd-platform-rate-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC.20100901.xml
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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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