



SPEC[®] CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190-B8228,
AMD Opteron 4334

SPECint[®]_rate2006 = 253

SPECint_rate_base2006 = 225

CPU2006 license: 49

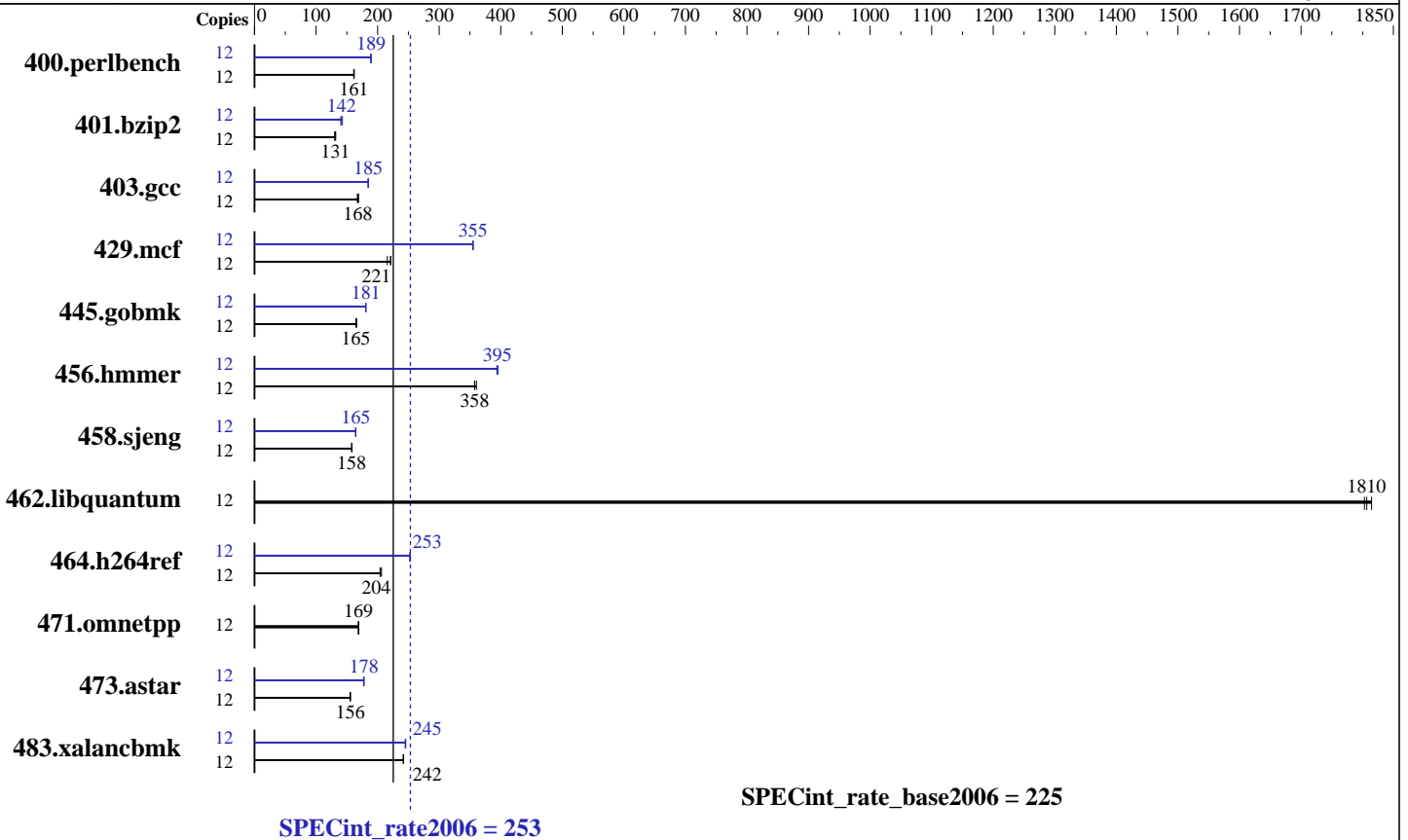
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Dec-2012

Software Availability: Aug-2012



Hardware

CPU Name: AMD Opteron 4334
CPU Characteristics: AMD Turbo CORE technology up to 3.50 GHz
CPU MHz: 3100
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 192 KB I on chip per chip,
64 KB I shared / 2 cores;
16 KB D on chip per core
Secondary Cache: 6 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 128 GB SSD
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	12	727	161	<u>727</u>	<u>161</u>	724	162	12	621	189	619	189	<u>619</u>	<u>189</u>
401.bzip2	12	890	130	<u>882</u>	<u>131</u>	878	132	12	<u>818</u>	<u>142</u>	811	143	827	140
403.gcc	12	<u>575</u>	<u>168</u>	571	169	578	167	12	524	184	<u>523</u>	<u>185</u>	522	185
429.mcf	12	507	216	<u>496</u>	<u>221</u>	494	221	12	309	355	<u>308</u>	<u>355</u>	308	355
445.gobmk	12	758	166	<u>763</u>	<u>165</u>	764	165	12	695	181	<u>696</u>	<u>181</u>	697	181
456.hammer	12	<u>313</u>	<u>358</u>	313	357	311	361	12	284	394	<u>284</u>	<u>395</u>	283	395
458.sjeng	12	918	158	<u>919</u>	<u>158</u>	920	158	12	885	164	<u>883</u>	<u>165</u>	882	165
462.libquantum	12	137	1810	<u>138</u>	<u>1810</u>	138	1800	12	137	1810	<u>138</u>	<u>1810</u>	138	1800
464.h264ref	12	<u>1299</u>	<u>204</u>	1301	204	1287	206	12	<u>1051</u>	<u>253</u>	1050	253	1052	253
471.omnetpp	12	443	169	445	169	<u>443</u>	<u>169</u>	12	443	169	445	169	<u>443</u>	<u>169</u>
473.astar	12	542	155	541	156	<u>542</u>	<u>156</u>	12	475	177	<u>474</u>	<u>178</u>	473	178
483.xalancbmk	12	342	242	343	242	<u>343</u>	<u>242</u>	12	<u>337</u>	<u>245</u>	338	245	337	246

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

Transparent huge pages were enabled for this run (OS default)

Huge pages were not configured for this run.

General Notes

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

LD_LIBRARY_PATH = "/root/work/cpu2006v1.2/amd1206-rate-libs-revA/32:/root/work/cpu2006v1.2/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:bd=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:bd=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:bd=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:bd=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: basepeak = yes

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: basepeak = yes

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 -lsmartheap

The flags file that was used to format this result can be browsed at

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

You can also download the XML flags source by saving the following link:

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

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

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