



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint®2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

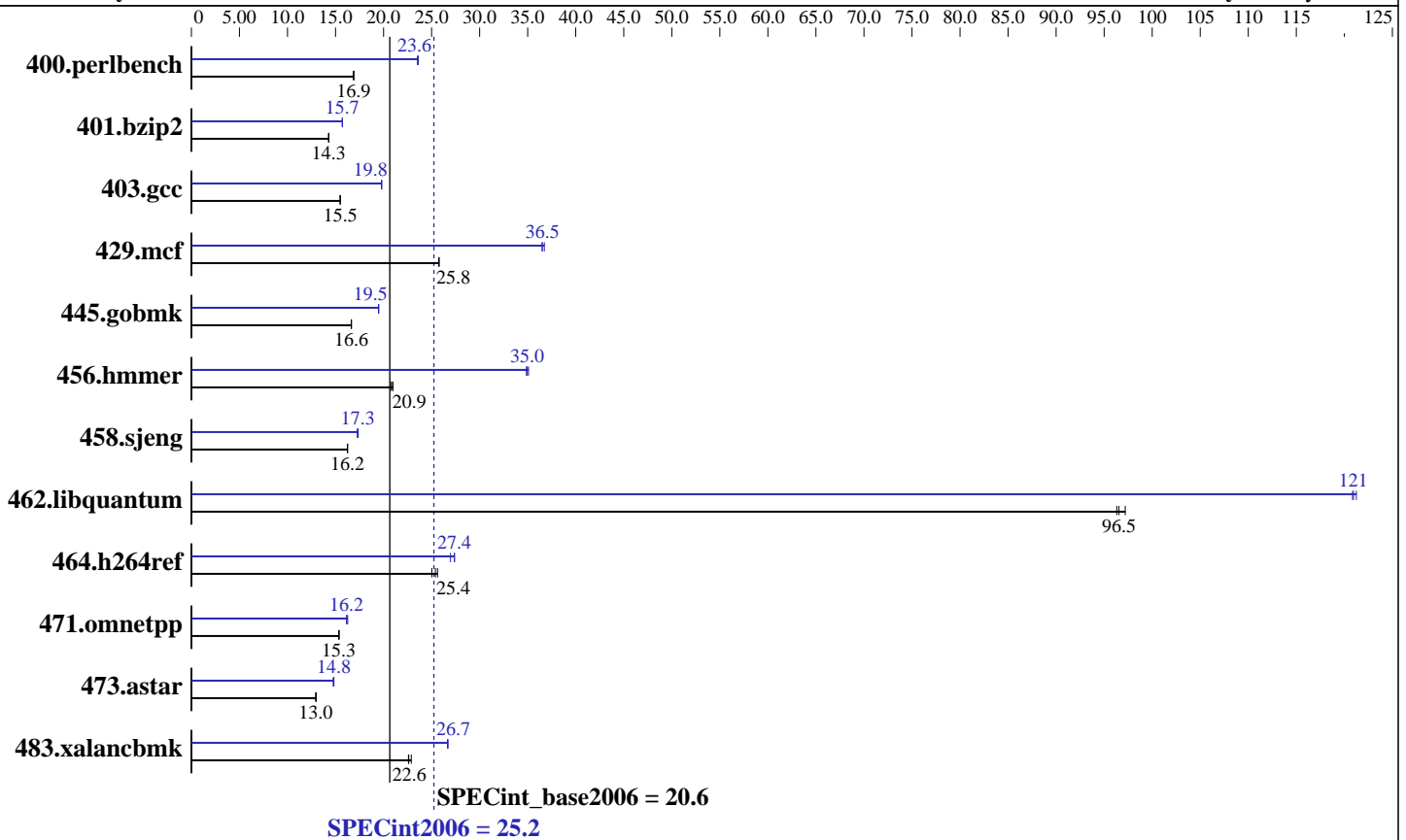
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010



Hardware

CPU Name: AMD Opteron 4184
 CPU Characteristics:
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 cores/chip
 CPU(s) orderable: 1,2 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: 6 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 128 GB SATA SSD
 Crucial RealSSD C300 CTFDDAC128MAG-1G1
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64),
 Kernel 2.6.27.19-5-default
 Compiler: x86 Open64 4.2.3.2 Compiler Suite (from AMD)
 Auto Parallel: Yes
 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 8.1 32-bit Library for Linux



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	579	16.9	<u>579</u>	<u>16.9</u>	578	16.9	414	23.6	<u>415</u>	<u>23.6</u>	415	23.5
401.bzip2	<u>675</u>	<u>14.3</u>	675	14.3	675	14.3	615	15.7	<u>614</u>	<u>15.7</u>	614	15.7
403.gcc	<u>520</u>	<u>15.5</u>	520	15.5	520	15.5	<u>407</u>	<u>19.8</u>	407	19.8	406	19.8
429.mcf	354	25.8	<u>354</u>	<u>25.8</u>	354	25.7	250	36.5	<u>250</u>	<u>36.5</u>	248	36.7
445.gobmk	630	16.6	630	16.6	<u>630</u>	<u>16.6</u>	<u>538</u>	<u>19.5</u>	538	19.5	538	19.5
456.hammer	449	20.8	<u>445</u>	<u>20.9</u>	445	21.0	268	34.9	266	35.1	<u>267</u>	<u>35.0</u>
458.sjeng	745	16.2	<u>745</u>	<u>16.2</u>	745	16.2	697	17.4	701	17.3	<u>698</u>	<u>17.3</u>
462.libquantum	213	97.2	215	96.3	<u>215</u>	<u>96.5</u>	171	121	171	121	<u>171</u>	<u>121</u>
464.h264ref	864	25.6	<u>871</u>	<u>25.4</u>	884	25.0	821	27.0	<u>809</u>	<u>27.4</u>	808	27.4
471.omnetpp	407	15.4	407	15.3	<u>407</u>	<u>15.3</u>	<u>387</u>	<u>16.2</u>	384	16.3	387	16.1
473.astar	542	12.9	<u>542</u>	<u>13.0</u>	541	13.0	<u>474</u>	<u>14.8</u>	476	14.8	473	14.8
483.xalancbmk	305	22.6	302	22.9	<u>305</u>	<u>22.6</u>	258	26.7	259	26.6	<u>259</u>	<u>26.7</u>

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=1000 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

powersave -f was used to set the CPU frequency to its maximum.

Binaries were compiled on SLES10 SP2 with binutils 2.18

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/work/cpu2006/amd1002-speed-libs-revA/64:/root/work/cpu2006/amd1002-speed-libs-revA/32"
O64_OMP_AFFINITY_MAP = "0,1,2,3,4,5"
O64_OMP_SPIN_USER_LOCK = "true"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
<http://developer.amd.com/cpu/open64>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010

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=barcelona -Ofast -apo -CG:local_sched_alg=1
-HP:bdt=2m:heap=2m,limit=450 -LNO:parallel_overhead=10000

C++ benchmarks:
-march=barcelona -Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on
-L/root/work/libraries/SmartHeap-8.1/lib -lsmarheap

Peak Compiler Invocation

C benchmarks:
openc

C++ benchmarks:
openCC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010

Peak Portability Flags (Continued)

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 -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:bdtd=2m:heap=2m

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

403.gcc: -march=barcelona -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:bdtd=2m:heap=2m -GRA:unspill=on -IPA:small_pu=200

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

445.gobmk: -march=barcelona -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:bdtd=2m:heap=2m

456.hmmer: -march=barcelona -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:bdtd=2m:heap=2m

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010

Peak Optimization Flags (Continued)

458.sjeng: -march=barcelona -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 -IPA:min_hotness=32 -CG:ptr_load_use=0
-OPT:unroll_times_max=8 -INLINE:aggressive=on
-HP:bdt=2m:heap=2m

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

464.h264ref: -march=barcelona -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 -HP:bdt=2m:heap=2m

C++ benchmarks:

471.omnetpp: -march=barcelona -Ofast -CG:gcm=off -INLINE:aggressive=on
-WOPT:if_conv=0 -m32 -HP:bdt=2m:heap=2m

473.astar: -march=barcelona -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 -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 -lsmarheap

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/x86-open64-423-flags-speed-revA.20101207.html>

<http://www.spec.org/cpu2006/flags/amd-platform-speed-revA.html>

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

<http://www.spec.org/cpu2006/flags/x86-open64-423-flags-speed-revA.20101207.xml>

<http://www.spec.org/cpu2006/flags/amd-platform-speed-revA.xml>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Tyan

(Test Sponsor: Advanced Micro Devices)

Tyan YR190B8228,
AMD Opteron 4184

SPECint2006 = 25.2

SPECint_base2006 = 20.6

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2010

Hardware Availability: Aug-2010

Software Availability: May-2010

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 15:23:59 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 February 2011.