



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint®2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

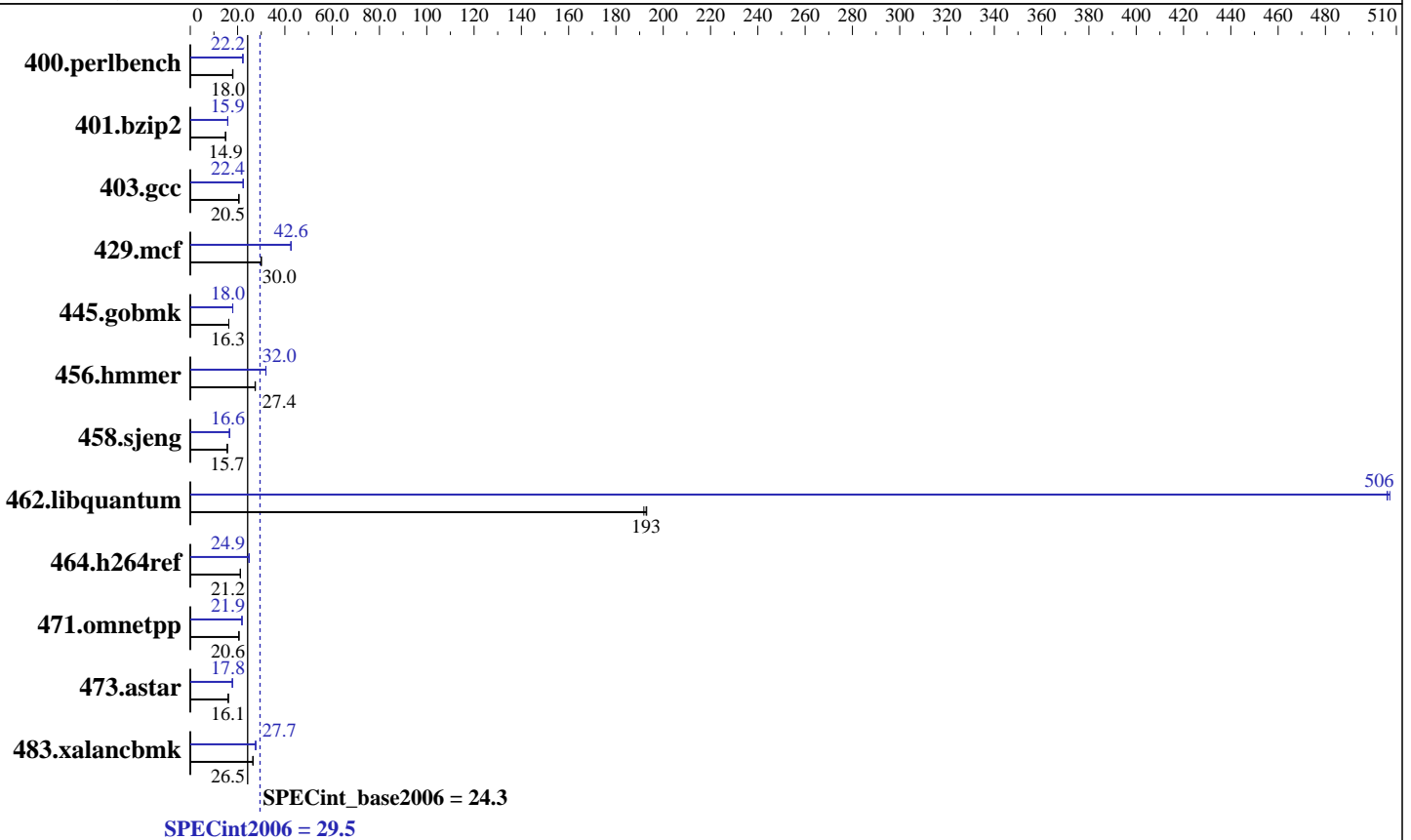
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012



Hardware

CPU Name: AMD Opteron 6366 HE
 CPU Characteristics: AMD Turbo CORE technology up to 3.10 GHz
 CPU MHz: 1800
 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 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 320 GB SATA, 7200 RPM
 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 4.2.5.2 of x86 Open64 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 10.0 32-bit Library for Linux



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	546	17.9	543	18.0	542	18.0	439	22.3	440	22.2	440	22.2
401.bzip2	646	14.9	646	14.9	646	14.9	608	15.9	609	15.8	609	15.9
403.gcc	392	20.5	392	20.5	392	20.6	360	22.4	360	22.4	360	22.4
429.mcf	304	30.0	304	30.0	304	30.0	214	42.6	214	42.6	214	42.6
445.gobmk	644	16.3	644	16.3	644	16.3	584	18.0	585	17.9	584	18.0
456.hammer	340	27.4	341	27.4	339	27.6	292	32.0	292	32.0	291	32.0
458.sjeng	772	15.7	772	15.7	774	15.6	730	16.6	729	16.6	729	16.6
462.libquantum	107	193	107	193	108	192	40.9	506	40.8	507	40.9	506
464.h264ref	1044	21.2	1045	21.2	1045	21.2	889	24.9	889	24.9	891	24.8
471.omnetpp	304	20.6	304	20.5	304	20.6	286	21.8	285	21.9	286	21.9
473.astar	436	16.1	437	16.1	437	16.1	394	17.8	394	17.8	394	17.8
483.xalancbmk	260	26.6	261	26.5	260	26.5	250	27.7	250	27.6	249	27.7

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
cpuspeed stop was used to set the CPU frequency to its maximum.

Set vm/nr_hugepages=4000 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 = "4000"
LD_LIBRARY_PATH = "/root/work/cpu2006v1.2/amd1104-speed-libs-revA/32:/root/work/cpu2006v1.2/amd1104-speed-libs-revA/64"
O64_OMP_AFFINITY_MAP = "0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31"
O64_OMP_SPIN_COUNT = "800000"
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>

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012

General Notes (Continued)

Binaries were compiled on a system with 2x AMD Opteron 6220 chips + 64GB 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.hmmr: -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 -CG:p2align=0
-INLINE:aggressive=on -IPA:plimit=8000 -IPA:small_pu=100
-HP:bd=2m:heap=2m -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

C++ benchmarks:

openCC



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012

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.xalanbmk: -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:load_exe=0 -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

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

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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012

Peak Optimization Flags (Continued)

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
-CG:p2align=1 -LNO:full_unroll=10 -IPA:pu_reorder=2
-HP:bdt=2m:heap=2m -WOPT:sib=on

462.libquantum: -march=bdver1 -Ofast -OPT:unroll_size=512
-OPT:unroll_times_max=8 -LNO:prefetch=2 -LNO:pf2=0
-CG:local_sched_alg=1 -INLINE:aggressive=on
-IPA:plimit=8000 -IPA:small_pu=100
-HP:bdt=2m:heap=2m,limit=450 -apo

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:bdt=2m:heap=2m

C++ benchmarks:

471.omnetpp: -march=bdver1 -Ofast -D__OPEN64_FAST_SET -CG:gcm=off
-INLINE:aggressive=on -WOPT:if_conv=0 -WOPT:sib=on -m32
-HP:bdt=2m:heap=2m

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
-CG:p2align=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=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 -CG:p2align=0 -GRA:unspill=on
-TENV:frame_pointer=off -fno-emit-exceptions
-L/root/work/libraries/SmartHeap-10/lib -lsmartheap

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

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-speed-revA-I.html>
<http://www.spec.org/cpu2006/flags/amd-platform-speed-revA-I.html>

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

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-speed-revA-I.xml>
<http://www.spec.org/cpu2006/flags/amd-platform-speed-revA-I.xml>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6366 HE

SPECint2006 = 29.5

SPECint_base2006 = 24.3

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Jun-2012

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 v1.2.
Report generated on Thu Jul 24 14:58:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 January 2013.