



SPEC[®] CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint[®]_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Opteron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

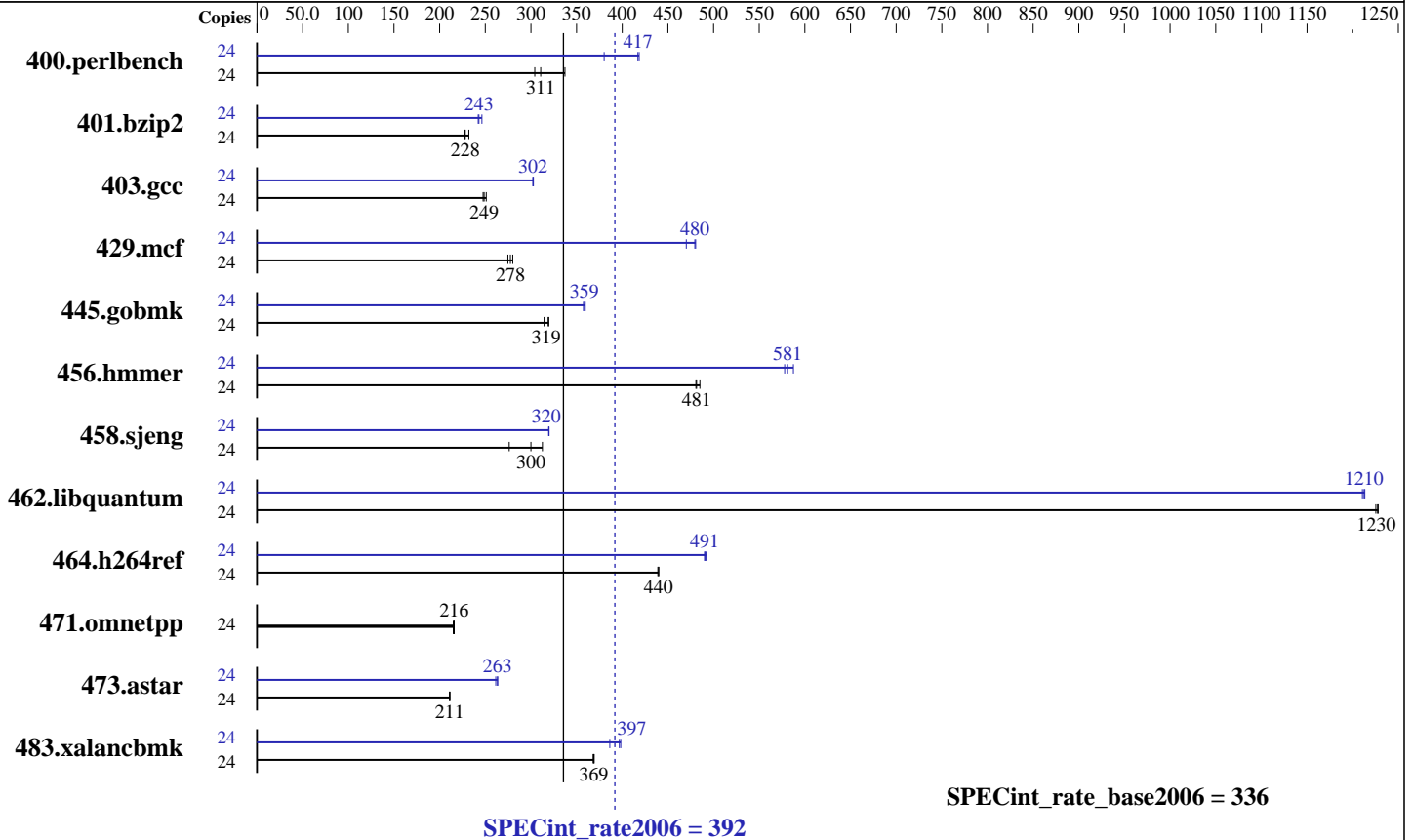
Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-2010



Hardware

CPU Name: AMD Opteron 6174
 CPU Characteristics:
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 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: 12 MB I+D on chip per chip, 6 MB shared / 6 cores
 Other Cache: None
 Memory: 64 GB (16 x 4 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: Seagate ST3500320AS 1 x 500 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
 Compiler: x86 Open64 4.2.4 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: binutils 2.18
 SmartHeap 8.1 32-bit Library for Linux



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Opteron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-2010

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	695	337	771	304	<u>755</u>	<u>311</u>	24	617	380	560	419	<u>562</u>	<u>417</u>
401.bzip2	24	998	232	<u>1015</u>	<u>228</u>	1017	228	24	956	242	940	246	<u>953</u>	<u>243</u>
403.gcc	24	780	248	770	251	<u>777</u>	<u>249</u>	24	638	303	<u>639</u>	<u>302</u>	639	302
429.mcf	24	<u>789</u>	<u>278</u>	781	280	797	275	24	<u>456</u>	<u>480</u>	456	480	466	470
445.gobmk	24	801	314	<u>790</u>	<u>319</u>	788	320	24	<u>702</u>	<u>359</u>	700	359	704	358
456.hammer	24	466	481	462	485	<u>465</u>	<u>481</u>	24	387	578	381	587	<u>385</u>	<u>581</u>
458.sjeng	24	1051	276	<u>968</u>	<u>300</u>	929	313	24	<u>908</u>	<u>320</u>	908	320	909	319
462.libquantum	24	405	1230	<u>405</u>	<u>1230</u>	406	1230	24	411	1210	410	1210	<u>410</u>	<u>1210</u>
464.h264ref	24	1207	440	<u>1208</u>	<u>440</u>	1210	439	24	<u>1083</u>	<u>491</u>	1083	490	1080	492
471.omnetpp	24	694	216	698	215	<u>695</u>	<u>216</u>	24	694	216	698	215	<u>695</u>	<u>216</u>
473.astar	24	<u>799</u>	<u>211</u>	797	211	799	211	24	644	261	<u>640</u>	<u>263</u>	639	264
483.xalancbmk	24	<u>449</u>	<u>369</u>	448	369	450	368	24	429	386	<u>417</u>	<u>397</u>	416	398

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=10800 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

Platform Notes

SSI Server Power Supply 600W or higher
System was configured with ASPEED AST2050 VGA (on board VGA)

General Notes

Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "450"
LD_LIBRARY_PATH = "/cpu2006/amd1002-rate-libs-revC/64:/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>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Optron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-2010

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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Opteron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-2010

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:bdtd=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:bdtd=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:bdtd=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:bdtd=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:bdtd=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:bdtd=2m:heap=2m

```

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Opteron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-2010

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 -lsmarheap

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>

<http://www.spec.org/cpu2006/flags/amd-platform-rate-revC.xml>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

SPECint_rate2006 = 392

ASUS RS500A-E6 (KGNE-D16) server system
(2.2 GHz AMD Opteron 6174)

SPECint_rate_base2006 = 336

CPU2006 license: 9016

Test date: Oct-2010

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Aug-2010

Tested by: ASUSTeK Computer Inc.

Software Availability: Oct-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 13:56:34 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 November 2010.