



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®_rate2006 = 293

PowerEdge M915 (AMD Opteron 6136, 2.40 GHz)

SPECint_rate_base2006 = 253

CPU2006 license: 55

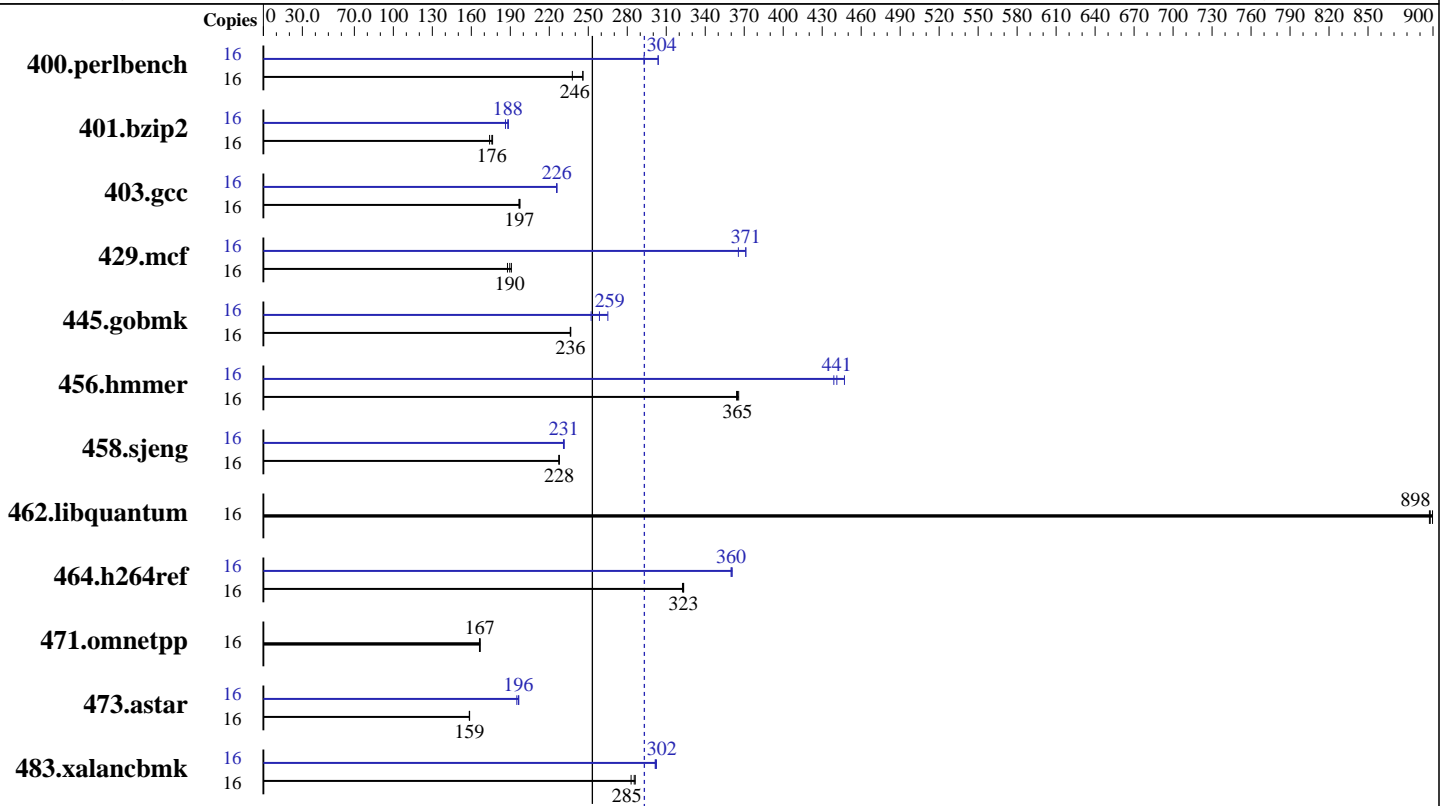
Test date: May-2011

Test sponsor: Dell Inc.

Hardware Availability: Jun-2011

Tested by: Dell Inc.

Software Availability: Jul-2010



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Hardware

CPU Name: AMD Opteron 6136
 CPU Characteristics:
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 / 4 cores
 Other Cache: None
 Memory: 64 GB (16 x 4 GB 2Rx4 PC3L-10600R-9, ECC)
 Disk Subsystem: 1 x 146 GB 10000 RPM SAS
 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 (Full multiuser with network)
 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	16	658	238	636	246	636	246	16	534	293	515	304	514	304
401.bzip2	16	887	174	875	176	878	176	16	829	186	819	189	821	188
403.gcc	16	654	197	652	197	655	197	16	571	226	571	226	570	226
429.mcf	16	777	188	770	190	765	191	16	393	371	393	371	399	366
445.gobmk	16	711	236	710	236	710	236	16	633	265	666	252	649	259
456.hammer	16	409	365	408	366	410	364	16	340	439	338	441	334	447
458.sjeng	16	850	228	851	227	851	228	16	838	231	837	231	837	231
462.libquantum	16	369	897	369	900	369	898	16	369	897	369	900	369	898
464.h264ref	16	1098	322	1095	323	1095	323	16	984	360	981	361	984	360
471.omnetpp	16	600	167	599	167	601	166	16	600	167	599	167	601	166
473.astar	16	708	159	709	158	708	159	16	576	195	572	196	571	197
483.xalancbmk	16	390	283	387	285	386	286	16	366	302	366	302	365	302

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=14336 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 = "896"
LD_LIBRARY_PATH = "/root/cpu2006-1.1/amd1002-rate-libs-revC/64:/root/cpu2006-1.1/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

Base Compiler Invocation

C benchmarks:
opencc

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Base Compiler Invocation (Continued)

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 -lsmarheap

Peak Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC

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

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Peak Portability Flags (Continued)

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:bd=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:bd=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:bd=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:bd=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:bd=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:bd=2m:heap=2m

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

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Peak Optimization Flags (Continued)

458.sjeng (continued):

-OPT:unroll_times_max=8 -INLINE:aggressive=on

462.libquantum: basepeak = yes

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>

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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 21:48:42 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 5 July 2011.