



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®_rate2006 = 430

PowerEdge R715 (AMD Opteron 6180 SE, 2.50 GHz)

SPECint_rate_base2006 = 369

CPU2006 license: 55

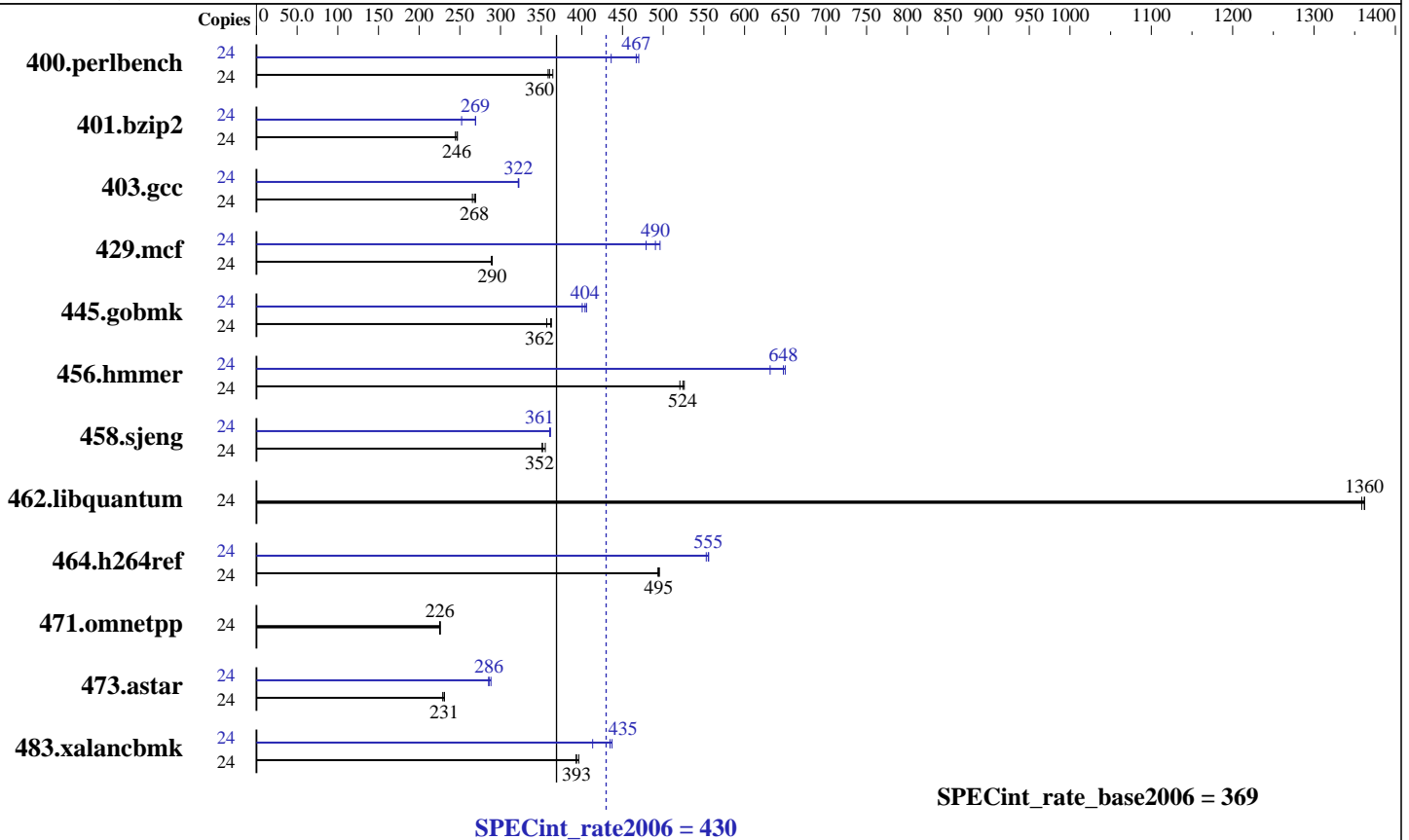
Test date: Sep-2010

Test sponsor: Dell Inc.

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011



Hardware

CPU Name: AMD Opteron 6180 SE
 CPU Characteristics: 2500
 CPU MHz: 2500
 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: 1 x 146 GB SAS 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



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint_rate2006 = 430

PowerEdge R715 (AMD Opteron 6180 SE, 2.50 GHz)

SPECint_rate_base2006 = 369

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Sep-2010
Hardware Availability: Feb-2011
Software Availability: Jan-2011

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	654	359	644	364	<u>651</u>	<u>360</u>	24	538	436	<u>502</u>	<u>467</u>	499	470
401.bzip2	24	937	247	947	245	<u>940</u>	<u>246</u>	24	918	252	<u>860</u>	<u>269</u>	860	269
403.gcc	24	717	269	728	265	<u>721</u>	<u>268</u>	24	600	322	<u>600</u>	<u>322</u>	599	323
429.mcf	24	758	289	755	290	<u>756</u>	<u>290</u>	24	<u>446</u>	<u>490</u>	457	479	441	496
445.gobmk	24	694	363	<u>696</u>	<u>362</u>	706	357	24	620	406	629	400	<u>623</u>	<u>404</u>
456.hammer	24	430	520	<u>427</u>	<u>524</u>	426	526	24	344	650	355	631	<u>346</u>	<u>648</u>
458.sjeng	24	818	355	827	351	<u>826</u>	<u>352</u>	24	806	360	<u>804</u>	<u>361</u>	804	361
462.libquantum	24	<u>365</u>	<u>1360</u>	366	1360	365	1360	24	<u>365</u>	<u>1360</u>	366	1360	365	1360
464.h264ref	24	<u>1074</u>	<u>495</u>	1076	493	1072	495	24	961	553	<u>956</u>	<u>555</u>	955	556
471.omnetpp	24	666	225	664	226	<u>665</u>	<u>226</u>	24	666	225	664	226	<u>665</u>	<u>226</u>
473.astar	24	736	229	729	231	<u>731</u>	<u>231</u>	24	<u>589</u>	<u>286</u>	584	288	590	285
483.xalancbmk	24	418	396	421	393	<u>421</u>	<u>393</u>	24	401	413	379	437	<u>381</u>	<u>435</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=10800 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)

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>

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint_rate2006 = 430

PowerEdge R715 (AMD Opteron 6180 SE, 2.50 GHz)

SPECint_rate_base2006 = 369

CPU2006 license: 55

Test date: Sep-2010

Test sponsor: Dell Inc.

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

General Notes (Continued)

Binaries were compiled on SLES10 SP2 with binutils 2.18

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 -mso -Ofast -CG:local_sched_alg=1
-INLINE:aggressive=on -IPA:plimit=8000 -IPA:small_pu=100
-HP:bd=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:
openc

C++ benchmarks:
openCC



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint_rate2006 = 430

PowerEdge R715 (AMD Opteron 6180 SE, 2.50 GHz)

SPECint_rate_base2006 = 369

CPU2006 license: 55

Test date: Sep-2010

Test sponsor: Dell Inc.

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

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=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:bdt=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:bdt=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:bdt=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:bdt=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:bdt=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:bdt=2m:heap=2m

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint_rate2006 = 430

PowerEdge R715 (AMD Opteron 6180 SE, 2.50 GHz)

SPECint_rate_base2006 = 369

CPU2006 license: 55

Test date: Sep-2010

Test sponsor: Dell Inc.

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

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: 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>

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 15:05:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 February 2011.