



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 126

PowerEdge M805 (AMD Opteron 2380, 2.50 GHz)

SPECint_rate_base2006 = 105

CPU2006 license: 55

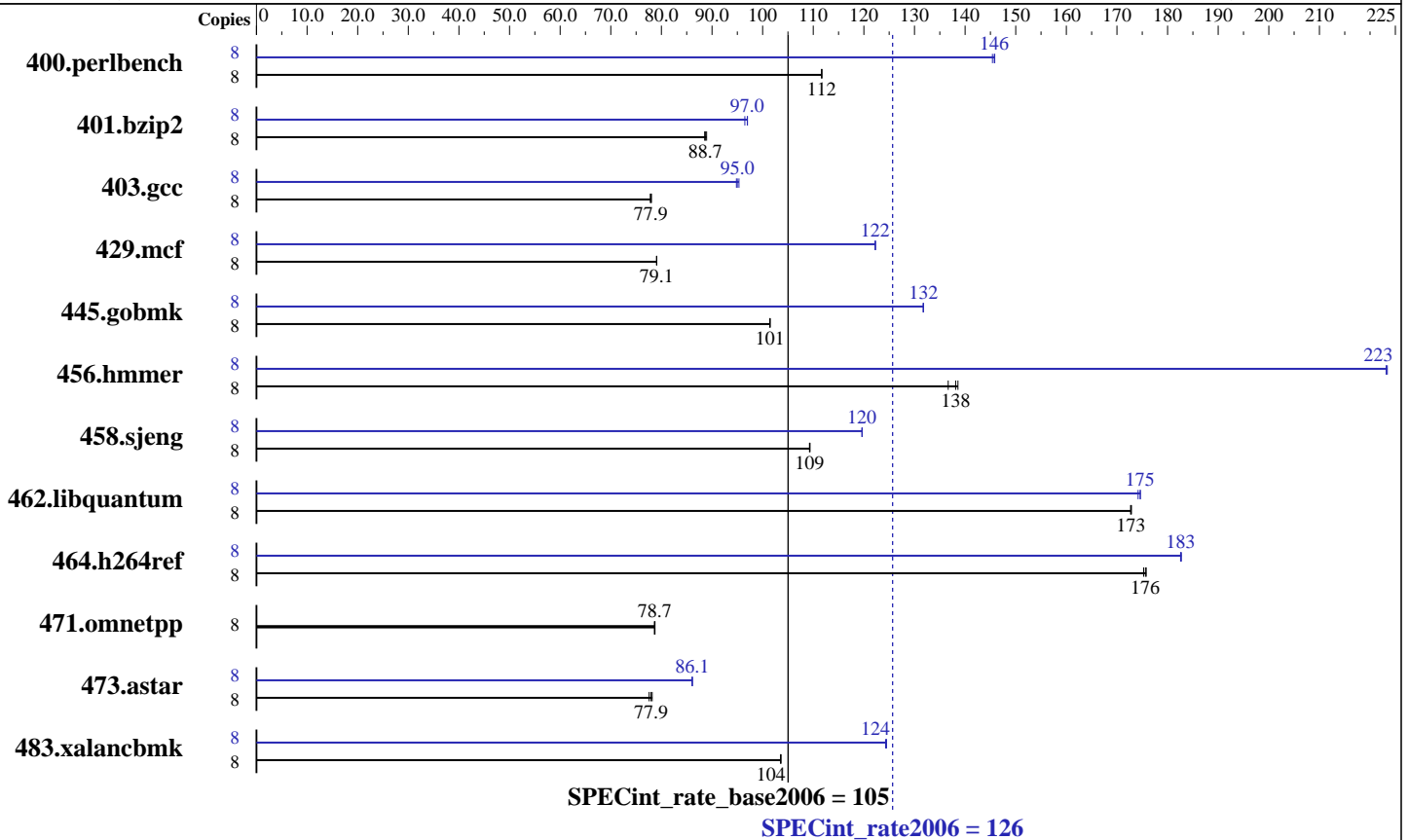
Test date: Nov-2008

Test sponsor: Dell Inc.

Hardware Availability: Nov-2008

Tested by: Dell Inc.

Software Availability: Oct-2008



Hardware

CPU Name: AMD Opteron 2380
 CPU Characteristics:
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 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: 32 GB (8 x 4 GB DDR2-800)
 Disk Subsystem: 1 x 36 GB 10000 RPM SAS
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2
 Kernel 2.6.16.60-0.21-smp
 Compiler: PGI Server Complete Version 7.2
 PathScale Compiler Suite Version 3.2
 Auto Parallel: No
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: binutils 2.18
 32-bit and 64-bit libhugetlbfs libraries
 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	8	700	112	700	112	700	112	8	536	146	536	146	538	145
401.bzip2	8	872	88.6	868	88.9	871	88.7	8	796	97.0	796	97.0	800	96.5
403.gcc	8	826	77.9	828	77.8	825	78.0	8	678	95.0	676	95.3	679	94.8
429.mcf	8	923	79.0	923	79.1	923	79.1	8	597	122	597	122	597	122
445.gobmk	8	827	101	827	101	827	101	8	637	132	637	132	637	132
456.hammer	8	546	137	539	139	540	138	8	334	223	334	223	334	223
458.sjeng	8	885	109	886	109	886	109	8	809	120	809	120	809	120
462.libquantum	8	960	173	959	173	959	173	8	949	175	952	174	949	175
464.h264ref	8	1008	176	1007	176	1010	175	8	970	183	970	183	969	183
471.omnetpp	8	635	78.7	635	78.7	636	78.6	8	635	78.7	635	78.7	636	78.6
473.astar	8	718	78.2	721	77.9	724	77.6	8	652	86.1	653	86.1	652	86.1
483.xalancbmk	8	533	104	533	104	533	104	8	444	124	444	124	444	124

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

Operating System Notes

The libhugetlbfs libraries were installed using the installation rpms that came with the distribution.

'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=7168 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

General Notes

Environment variables set by runspec before the start of the run:
HUGETLB_MORECORE = "yes"
LD_LIBRARY_PATH = "/root/cpu2006-1.1/amd909gh-libs/64:/root/cpu2006-1.1/amd909gh-libs/32"



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Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

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:
-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed
-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

C++ benchmarks:
-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed
--zc_eh -Mipa=fast -Mipa=inline:10 -tp barcelona-32 -Bstatic_pgi

Base Other Flags

C benchmarks:
-Mipa=jobs:4

C++ benchmarks:
-Mipa=jobs:4

Peak Compiler Invocation

C benchmarks (except as noted below):
pathcc

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Peak Compiler Invocation (Continued)

456.hmmcr: pgcc

462.libquantum: pgcc

C++ benchmarks (except as noted below):

pgcpp

483.xalancbmk: pathCC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
 401.bzip2: -DSPEC_CPU_LP64
 445.gobmk: -DSPEC_CPU_LP64
 456.hmmcr: -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)
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT(pass 2)
 -L/usr/lib64 -lhugetlbfs(pass 2) -Ofast -IPA:plimit=20000
 -IPA:field_reorder=on -LNO:opt=0 -WOPT:if_conv=0
 -CG:local_sched_alg=1

401.bzip2: -march=barcelona -O3 -OPT:alias=disjoint -OPT:Ofast
 -OPT:goto=off -INLINE:aggressive=on -CG:local_sched_alg=1
 -m3dnow
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
 -L/usr/lib64 -lhugetlbfs

403.gcc: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -Ofast -OPT:malloc_alg=1
 -LNO:trip_count=256 -LNO:prefetch_ahead=10
 -CG:prefer_lru_reg=off -m32

429.mcf: -march=barcelona -O3 -ipa -INLINE:aggressive=on
 -CG:gcm=off -GRA:prioritize_by_density=on -m32
 -L/usr/lib -lhugetlbfs

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Peak Optimization Flags (Continued)

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2)
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT(pass 2)
 -L/usr/lib64 -lhugetlbfs(pass 2) -O3 -OPT:alias=restrict
 -LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmcr: -Mvect=cachesize:6291456 -fastsse -Mvect=partial
 -Munroll=n:8 -Msmartalloc=huge -Msafeptr -Mprefetch=t0
 -Mfprelaxed -Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline
 -tp barcelona-64 -Bstatic_pgi

458.sjeng: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2)
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT(pass 2)
 -L/usr/lib64 -lhugetlbfs(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: -Mvect=cachesize:6291456 -fastsse -Munroll=m:8
 -Msmartalloc=huge -Mprefetch=distance:4 -Mfprelaxed
 -Mipa=fast -Mipa=inline -Mipa=noarg -tp barcelona-64
 -Bstatic_pgi

464.h264ref: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2)
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT(pass 2)
 -L/usr/lib64 -lhugetlbfs(pass 2) -O3 -IPA:plimit=20000
 -OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr_load_use=0
 -CG:push_pop_int_saved_regs=off -CG:prefer_lru_reg=off

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
 -Mipa=inline:6(pass 2) -Mvect=cachesize:6291456 -fastsse
 -O4 -Msmartalloc=huge -Msafeptr=global -Mfprelaxed
 --zc_eh -tp barcelona-32 -Bstatic_pgi

483.xalancbmk: -march=barcelona -Ofast -INLINE:aggressive=on -m32
 -L/root/work/libraries/SmartHeap_8.1/lib -lsmarheap

Peak Other Flags

C benchmarks:

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Peak Other Flags (Continued)

456.hmmmer: -Mipa=jobs:4

462.libquantum: -Mipa=jobs:4

C++ benchmarks (except as noted below):
-Mipa=jobs:4(pass 2)

483.xalancbmk: No flags used

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

http://www.spec.org/cpu2006/flags/pgi72_linux_flags.20090713.html

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.html

<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.html>

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

http://www.spec.org/cpu2006/flags/pgi72_linux_flags.20090713.xml

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.xml

<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.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.

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