SPEC® CINT2006 Result

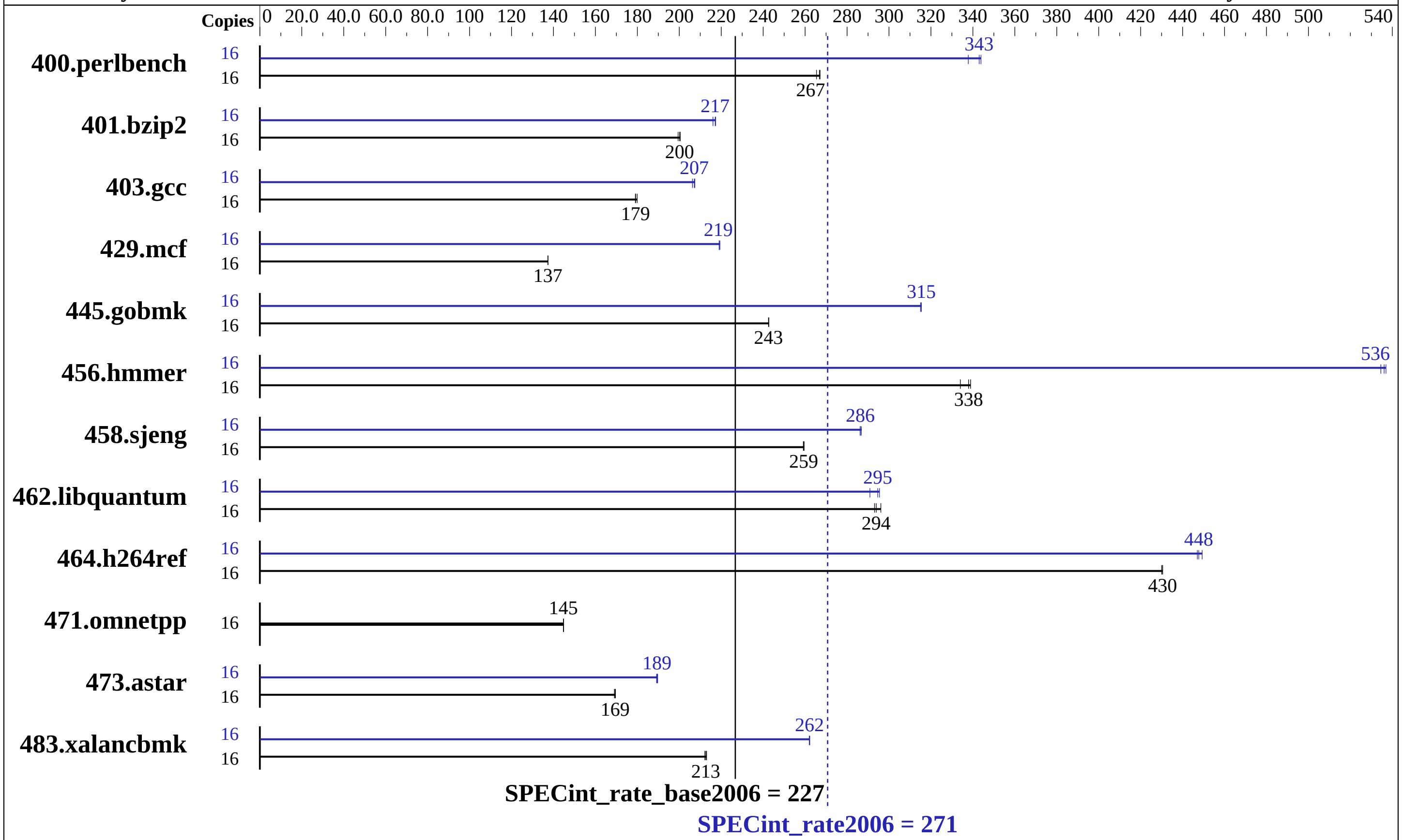
Dell Inc.

PowerEdge M905 (AMD Opteron 8393 SE, 3.10 GHz)

SPECint®_rate2006 = 271

SPECint_rate_base2006 = 227

CPU2006 license: 55		**Test date:**	May-2009
Test sponsor:	Dell Inc.	**Hardware Availability:**	May-2009
Tested by:	Dell Inc.	**Software Availability:**	Jun-2008



Hardware

CPU Name:	AMD Opteron 8393 SE
CPU Characteristics:	
CPU MHz:	3100
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	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:	6 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (16 x 4 GB DDR2-800)
Disk Subsystem:	1 x 73 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
Compiler:	PGI Server Complete Version 7.2 PathScale Compiler Suite Version 3.2
Auto Parallel:	No
File System:	ext3
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

SPEC CINT2006 Result

Dell Inc.

PowerEdge M905 (AMD Opteron 8393 SE, 3.10 GHz)

SPECint_rate2006 = 271

SPECint_rate_base2006 = 227

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: May-2009
Hardware Availability: May-2009
Software Availability: Jun-2008

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	**586**	**267**	589	265	585	267	16	**456**	**343**	463	338	455	344
401.bzip2	16	770	200	774	199	**771**	**200**	16	715	216	**711**	**217**	710	217
403.gcc	16	**719**	**179**	719	179	716	180	16	621	207	624	206	**622**	**207**
429.mcf	16	**1063**	**137**	1062	137	1063	137	16	666	219	**666**	**219**	665	219
445.gobmk	16	692	243	692	243	**692**	**243**	16	**532**	**315**	533	315	532	315
456.hmmer	16	447	334	**442**	**338**	440	339	16	279	535	**278**	**536**	278	537
458.sjeng	16	747	259	**747**	**259**	746	260	16	**676**	**286**	676	286	675	287
462.libquantum	16	1120	296	**1128**	**294**	1131	293	16	**1125**	**295**	1140	291	1122	295
464.h264ref	16	823	430	**823**	**430**	823	430	16	**791**	**448**	792	447	788	449
471.omnetpp	16	691	145	691	145	**691**	**145**	16	691	145	691	145	**691**	**145**
473.astar	16	664	169	**663**	**169**	662	170	16	594	189	592	190	**593**	**189**
483.xalancbmk	16	518	213	520	212	**519**	**213**	16	421	262	**421**	**262**	421	262

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=14336 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Platform Notes

```
HyperTransport Technology = HT 1 (Default = HT 3)
```

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"
```

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`

Continued on next page

Peak Compiler Invocation (Continued)

456.hmmer: `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.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 -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

Continued on next page

Dell Inc.

PowerEdge M905 (AMD Opteron 8393 SE, 3.10 GHz)

SPECint_rate2006 = 271

SPECint_rate_base2006 = 227

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

Test date: May-2009
Hardware Availability: May-2009
Software Availability: Jun-2008

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.hmmer: -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 -lsmartheap

Peak Other Flags

C benchmarks:

Continued on next page

Peak Other Flags (Continued)

456.hmmer: `-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.20090710.html
http://www.spec.org/cpu2006/flags/pathscale32-flags.html
http://www.spec.org/cpu2006/flags/amd-platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/pgi72_linux_flags.20090710.xml
http://www.spec.org/cpu2006/flags/pathscale32-flags.xml
http://www.spec.org/cpu2006/flags/amd-platform.xml

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 01:18:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 June 2009.