



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 97.1

PowerEdge 6950 (AMD Opteron 8218, 2.60 GHz)

SPECint_rate_base2006 = 89.2

CPU2006 license: 55

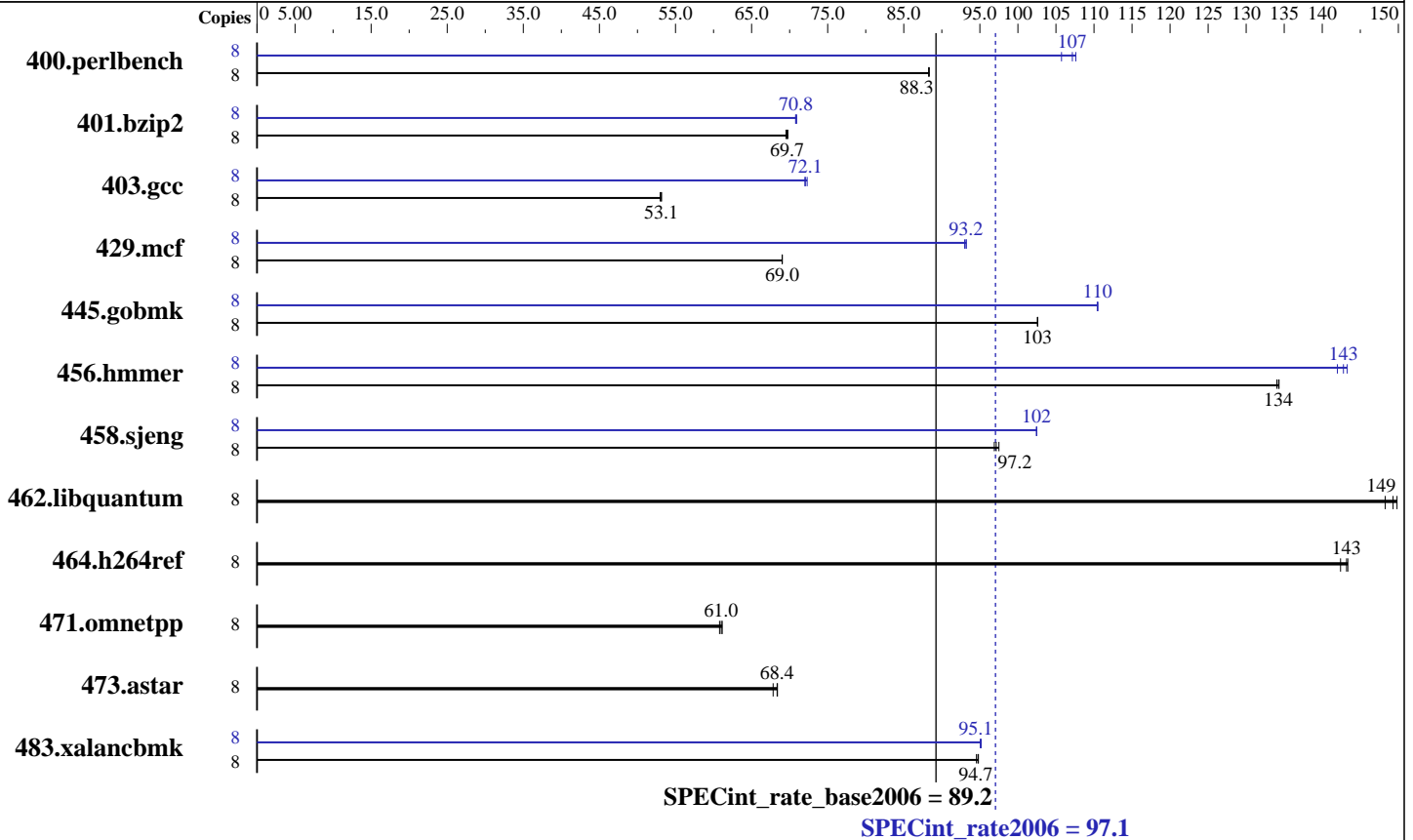
Test date: Sep-2007

Test sponsor: Dell Inc.

Hardware Availability: Dec-2006

Tested by: Dell Inc.

Software Availability: Oct-2007



Hardware

CPU Name: AMD Opteron 8218
 CPU Characteristics: 2666
 CPU MHz: 2666
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 32 GB (16x2GB, DDR2-667 CL5 ECC Dual Rank)
 Disk Subsystem: 1 x 250 GB SATA 7200 RPM
 Other Hardware: None

Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10 SP1
 Compiler: The Portland Group (PGI)
 PGI pgcc 7.1-0 C Compiler
 PGI pgCC 7.1-0 C++ Compiler
 Auto Parallel: No
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: SmartHeap 8.0 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	885	88.3	885	88.3	885	88.3	8	739	106	726	108	729	107
401.bzip2	8	1106	69.8	1108	69.7	1111	69.5	8	1089	70.9	1090	70.8	1091	70.8
403.gcc	8	1212	53.1	1211	53.2	1215	53.0	8	894	72.0	891	72.3	894	72.1
429.mcf	8	1057	69.0	1057	69.0	1057	69.0	8	783	93.2	784	93.0	783	93.2
445.gobmk	8	818	103	818	103	818	103	8	759	111	760	110	760	110
456.hmmer	8	556	134	557	134	556	134	8	521	143	526	142	523	143
458.sjeng	8	999	96.9	996	97.2	993	97.5	8	945	102	945	102	945	102
462.libquantum	8	1118	148	1110	149	1106	150	8	1118	148	1110	149	1106	150
464.h264ref	8	1235	143	1236	143	1243	142	8	1235	143	1236	143	1243	142
471.omnetpp	8	818	61.1	820	61.0	823	60.8	8	818	61.1	820	61.0	823	60.8
473.astar	8	828	67.8	822	68.4	821	68.4	8	828	67.8	822	68.4	821	68.4
483.xalancbmk	8	583	94.7	582	94.8	584	94.6	8	581	95.1	580	95.2	581	95.1

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2457600' was used to set environment locked pages in memory quantity
'numactl' was used to bind one copy per core, and memory to a local NUMA node
Set vm/nr_hugepages=1200 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150
```

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
```

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Base 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

Base Optimization Flags

C benchmarks:

-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed
-Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi

C++ benchmarks:

-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh
-tp k8-32 -Bstatic_pgi -lsmartheap

Base Other Flags

C benchmarks:

-w

C++ benchmarks:

-w -L/proj/qa/smartheap/SmartHeap_8/lib

Peak Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

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



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Peak Optimization Flags

C benchmarks:

400.perlbench: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=inline(pass 2) -fast
-O4 -Mfprelaxed -Msmartalloc=huge:8 -Mnounroll -tp k8-64
-Bstatic_pgi

401.bzip2: -Mpfi(pass 1) -Mpfo(pass 2) -fast -O4
-Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi

403.gcc: -fastsse -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast
-Mipa=inline -tp k8-32 -Bstatic_pgi

429.mcf: -fastsse -Mipa=fast -Mipa=inline -Msmartalloc=huge:16
-tp k8-32 -Bstatic_pgi

445.gobmk: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2) -fast -O4
-Msmartalloc=huge:32 -Mfprelaxed -Mnovect -tp k8-64
-Bstatic_pgi

456.hmmer: -fast -Msmartalloc=huge:32 -Mfprelaxed -Msafeptr
-Mipa=const -Mipa=ptr -Mipa=arg -tp k8-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast
-Msmartalloc=huge:32 -Mfprelaxed -tp k8-64 -Bstatic_pgi

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: basepeak = yes

483.xalancbmk: -fastsse -O4 -Mipa=fast -Mipa=inline -Mfprelaxed
-Msmartalloc --zc_eh -tp k8-32 -Bstatic_pgi -lsmartheap

Peak Other Flags

C benchmarks:

-w

C++ benchmarks:

-w -L/proj/qa/smartheap/SmartHeap_8/lib



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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/pgi710_flags.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/pgi710_flags.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 14:15:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 October 2007.