



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®_rate2006 = 81.5

PowerEdge M805 (AMD Opteron 2344 HE, 1.7 GHz)

SPECint_rate_base2006 = 70.5

CPU2006 license: 55

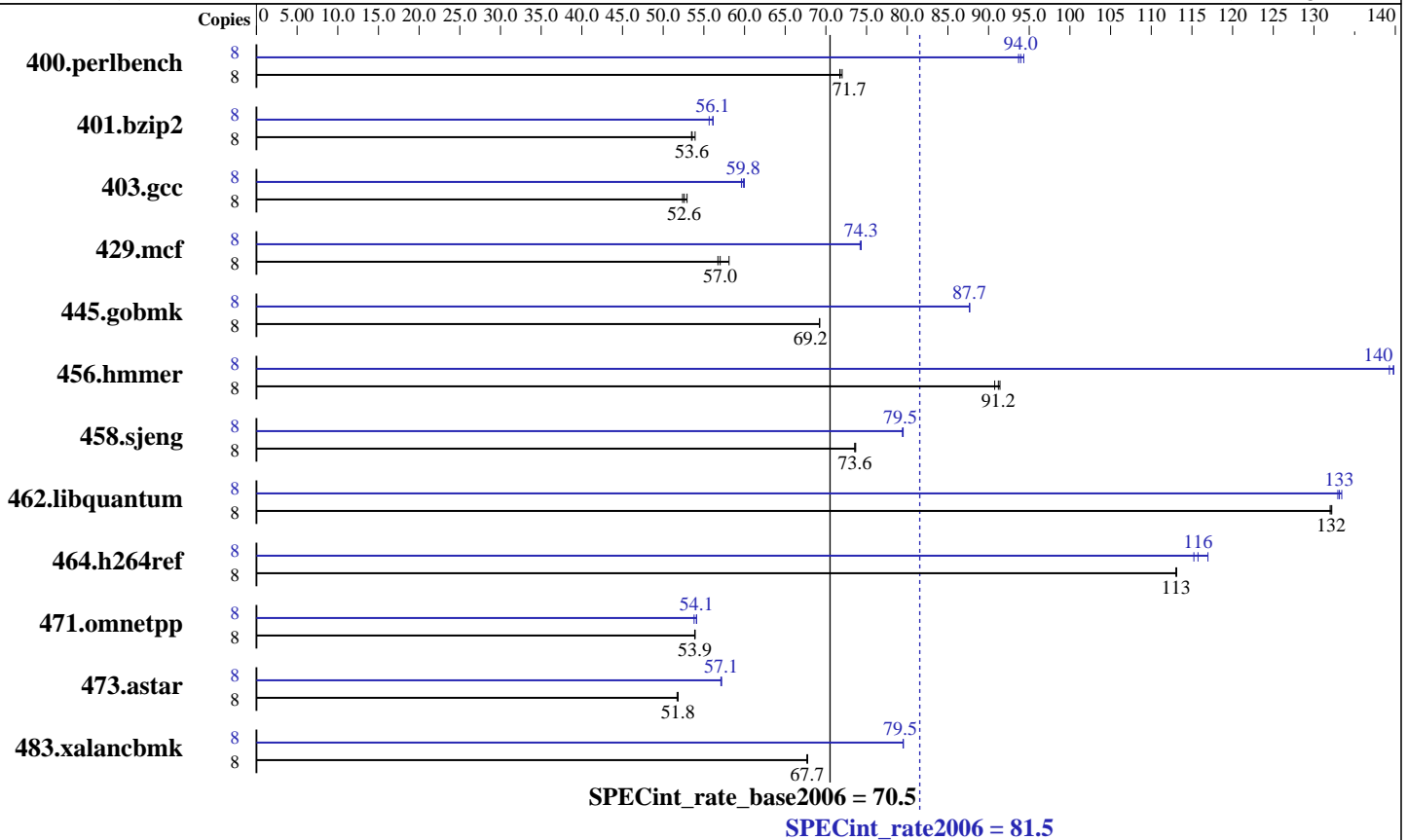
Test date: Sep-2008

Test sponsor: Dell Inc.

Hardware Availability: Apr-2008

Tested by: Dell Inc.

Software Availability: Aug-2008



Hardware

CPU Name: AMD Opteron 2344 HE
 CPU Characteristics: 1700
 CPU MHz: 1700
 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: 2 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (8 x 2 GB DDR2-667 Dual Rank)
 Disk Subsystem: 1 x 73 15000 RPM SATA
 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: 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	1090	71.7	<u>1089</u>	<u>71.7</u>	1086	72.0	8	834	93.7	829	94.3	<u>832</u>	<u>94.0</u>
401.bzip2	8	1432	53.9	<u>1441</u>	<u>53.6</u>	1443	53.5	8	1387	55.7	1375	56.1	<u>1376</u>	<u>56.1</u>
403.gcc	8	1229	52.4	1217	52.9	<u>1224</u>	<u>52.6</u>	8	<u>1076</u>	<u>59.8</u>	1074	60.0	1080	59.6
429.mcf	8	1256	58.1	1286	56.7	<u>1280</u>	<u>57.0</u>	8	983	74.2	<u>982</u>	<u>74.3</u>	981	74.3
445.gobmk	8	1212	69.2	<u>1212</u>	<u>69.2</u>	1212	69.2	8	957	87.6	<u>957</u>	<u>87.7</u>	957	87.7
456.hammer	8	822	90.8	<u>818</u>	<u>91.2</u>	817	91.4	8	<u>534</u>	<u>140</u>	534	140	536	139
458.sjeng	8	<u>1316</u>	<u>73.6</u>	1314	73.7	1316	73.5	8	<u>1218</u>	<u>79.5</u>	1218	79.5	1219	79.4
462.libquantum	8	1256	132	<u>1255</u>	<u>132</u>	1254	132	8	1242	133	<u>1245</u>	<u>133</u>	1247	133
464.h264ref	8	1565	113	<u>1566</u>	<u>113</u>	1566	113	8	<u>1530</u>	<u>116</u>	1536	115	1514	117
471.omnetpp	8	927	53.9	<u>928</u>	<u>53.9</u>	928	53.9	8	924	54.1	929	53.8	<u>924</u>	<u>54.1</u>
473.astar	8	<u>1084</u>	<u>51.8</u>	1084	51.8	1086	51.7	8	984	57.1	<u>983</u>	<u>57.1</u>	982	57.2
483.xalancbmk	8	<u>815</u>	<u>67.7</u>	815	67.8	816	67.7	8	694	79.5	694	79.5	<u>694</u>	<u>79.5</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

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2457600' was used to set environment locked pages in memory limit
Set vm/nr_hugepages=1200 in /etc/sysctl.conf
Environment variable PGI_HUGE_PAGES set to 150
mount -t hugetlbfs nodev /mnt/hugepages

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.1/amd729gh-libs:/root/cpu2006-1.1/amd729gh-libs/32:\\$LD_LIBRARY_PATH"

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp



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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:

```
-fastsse -Msmartalloc=huge:150 -Mfprelaxed -Mipa=fast -Mipa=inline
-tp barcelona-64 -Bstatic_pgi
```

C++ benchmarks:

```
-fastsse -Msmartalloc=huge:150 -Mfprelaxed --zc_eh -Mipa=fast
-Mipa=inline -tp barcelona -Bstatic_pgi
```

Base Other Flags

C benchmarks:

```
-Mipa=jobs:4
```

C++ benchmarks:

```
-Mipa=jobs:4
```

Peak Compiler Invocation

C benchmarks (except as noted below):

```
pgcc
```

```
400.perlbench: pathcc
```

```
403.gcc: pathcc
```

```
445.gobmk: pathcc
```

```
464.h264ref: pathcc
```

C++ benchmarks (except as noted below):

```
pathCC
```

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Peak Compiler Invocation (Continued)

473.astar: pgcpp

Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmr: -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) -Ofast -IPA:plimit=20000 -LNO:opt=0
               -WOPT:if_conv=0 -CG:local_sched_alg=1

401.bzip2: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2) -fastsse -O4
           -Msmartalloc=huge:150 -Mprefetch=t0 -Mnounroll
           -tp barcelona-64 -Bstatic_pgi

403.gcc: -march=barcelona -fb_create fbdata(pass 1)
          -fb_opt fbdata(pass 2) -O3 -OPT:Ofast -m32

429.mcf: -fastsse -Msmartalloc=huge:150 -Mipa=fast -Mipa=inline:1
          -tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
           -fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict
           -LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmr: -fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:150
           -Msafeptr -Mprefetch=t0 -Mfprelaxed -Mipa=const -Mipa=ptr
           -Mipa=arg -Mipa=inline -tp barcelona-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
           -Mipa=inline:1(pass 2) -Mipa=noarg(pass 2) -fastsse
           -Msmartalloc=huge:150 -Mfprelaxed -tp barcelona-64
           -Bstatic_pgi

462.libquantum: -fastsse -Munroll=m:8 -Msmartalloc=huge:150
                -Mprefetch=distance:4 -Mfprelaxed -Mipa=fast -Mipa=inline
                -Mipa=noarg -tp barcelona-64 -Bstatic_pgi

```

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Peak Optimization Flags (Continued)

464.h264ref: -march=barcelona -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: -march=barcelona -Ofast -CG:gcm=off -INLINE:aggressive=on
-OPT:alias=disjoint -WOPT:if_conv=0 -m32 -lsmarheap

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
-Mipa=inline:6(pass 2) -fastsse -O4 -Msmartalloc=huge:150
-Msafeptr=global -Mfprelaxed --zc_eh -tp barcelona
-Bstatic_pgi

483.xalancbmk: -march=barcelona -Ofast -OPT:unroll_times_max=8
-CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0 -m32
-lsmarheap

Peak Other Flags

C benchmarks:

429.mcf: -Mipa=jobs:4

456.hmmer: -Mipa=jobs:4

458.sjeng: -Mipa=jobs:4(pass 2)

462.libquantum: -Mipa=jobs:4

C++ benchmarks (except as noted below):

-L/root/work/libraries/SmartHeap-8.1/lib

473.astar: -Mipa=jobs:4(pass 2)

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

<http://www.spec.org/cpu2006/flags/amd729gh-flags.html>

<http://www.spec.org/cpu2006/flags/amd-platform.20090713.html>

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

<http://www.spec.org/cpu2006/flags/amd729gh-flags.xml>

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