SPEC® CINT2006 Result

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint®_rate2006 =   1020

SPECint_rate_base2006 =   885

CPU2006 license: 55

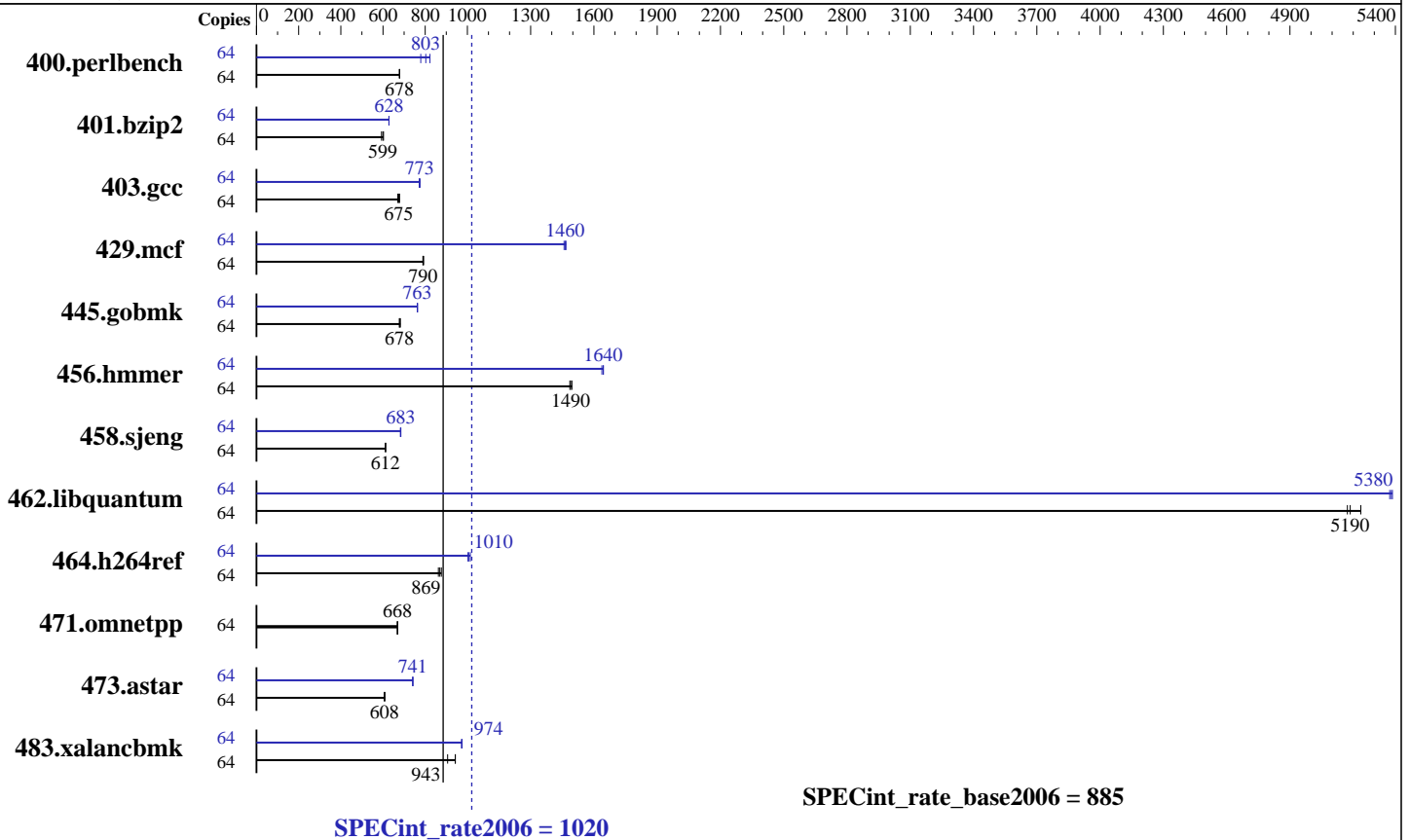**Test sponsor:** Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

SPECint_rate_base2006 = 885

SPECint_rate2006 = 1020

Benchmark	Copies	Result
400.perlbench	64	803
400.perlbench	64	678
401.bzip2	64	628
401.bzip2	64	599
403.gcc	64	773
403.gcc	64	675
429.mcf	64	1460
429.mcf	64	790
445.gobmk	64	763
445.gobmk	64	678
456.hmmer	64	1640
456.hmmer	64	1490
458.sjeng	64	683
458.sjeng	64	612
462.libquantum	64	5380
462.libquantum	64	5190
464.h264ref	64	1010
464.h264ref	64	869
471.omnetpp	64	668
473.astar	64	741
473.astar	64	608
483.xalancbmk	64	974
483.xalancbmk	64	943

Hardware

CPU Name: AMD Opteron 6282 SE

CPU Characteristics: AMD Turbo CORE technology up to 3.30 GHz

CPU MHz: 2600

FPU: Integrated

CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip

CPU(s) orderable: 2,4 chips

Primary Cache: 512 KB I on chip per chip,
64 KB I shared / 2 cores;
16 KB D on chip per core

Secondary Cache: 16 MB I+D on chip per chip, 2 MB shared / 2 cores

L3 Cache: 16 MB I+D on chip per chip, 8 MB shared / 8 cores

Other Cache: None

Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-10600R-9, ECC)

Disk Subsystem: 1 x 300 GB SAS, 10000 RPM

Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1,
Kernel 2.6.32-131.0.15.el6.x86_64

Compiler: C/C++: Version 4.2.5.2 of x86 Open64 Compiler
Suite (from AMD)

Auto Parallel: No

File System: ext4

System State: Run level 3 (Full multiuser with network)

Base Pointers: 32/64-bit

Peak Pointers: 32/64-bit

Other Software: SmartHeap 10.0 32-bit Library for Linux

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 885

CPU2006 license: 55	**Test date:** Nov-2011
Test sponsor: Dell Inc.	**Hardware Availability:** Nov-2011
Tested by: Dell Inc.	**Software Availability:** Jul-2011

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	922	678	**922**	**678**	921	679	64	803	779	**779**	**803**	760	823
401.bzip2	64	1042	593	1025	602	**1030**	**599**	64	**983**	**628**	983	628	983	628
403.gcc	64	759	679	**763**	**675**	769	670	64	668	772	664	776	**667**	**773**
429.mcf	64	**739**	**790**	740	789	736	793	64	**399**	**1460**	400	1460	398	1470
445.gobmk	64	984	682	**990**	**678**	991	678	64	880	763	**880**	**763**	880	763
456.hmmer	64	**401**	**1490**	402	1490	399	1500	64	363	1650	**363**	**1640**	365	1640
458.sjeng	64	1266	612	**1265**	**612**	1265	612	64	1134	683	**1133**	**683**	1131	685
462.libquantum	64	256	5170	**256**	**5190**	253	5240	64	**246**	**5380**	246	5390	247	5370
464.h264ref	64	**1629**	**869**	1642	863	1616	877	64	**1407**	**1010**	1397	1010	1412	1000
471.omnetpp	64	598	669	599	668	**598**	**668**	64	598	669	599	668	**598**	**668**
473.astar	64	742	606	**739**	**608**	738	609	64	606	741	**606**	**741**	606	741
483.xalancbmk	64	487	906	468	943	**469**	**943**	64	**453**	**974**	454	972	453	975

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

    Binaries were compiled on a system with 2x AMD Opteron 6276 chips + 128GB Memory using RHEL 6.1
    Huge pages, transparent Huge pages, and space randomization controlled with the following settings:
    echo 57344 > /proc/sys/vm/nr_hugepages
    mount -t hugetlbfs nodev /mnt/hugepages
    echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
    echo 0 > /proc/sys/kernel/randomize_va_space=0

Platform Notes

    'Power Management' set to 'Maximum Performance' in BIOS
    Core Boost Technology Disabled in BIOS

General Notes

    Environment variables set by runspec before the start of the run:
    HUGETLB_LIMIT = "896"
    LD_LIBRARY_PATH = "/root/cpu2006-1.1/amd1104-rate-libs-revA/32:/root/cpu2006-1.1/amd1104-rate-libs-revA/64"

SPEC CINT2006 Result

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 885

CPU2006 license: 55		**Test date:**	Nov-2011
Test sponsor: Dell Inc.		**Hardware Availability:**	Nov-2011
Tested by: Dell Inc.		**Software Availability:**	Jul-2011

General Notes (Continued)

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
http://developer.amd.com/cpu/open64

Base Compiler Invocation

C benchmarks:
     opencc

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=bdver1 -Ofast -CG:local_sched_alg=1 -INLINE:aggressive=on
     -IPA:plimit=8000 -IPA:small_pu=100 -HP:bd=2m:heap=2m -mso
     -LNO:prefetch=2

C++ benchmarks:
     -march=bdver1 -Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on
     -D__OPEN64_FAST_SET -L/root/work/libraries/SmartHeap-10/lib -lsmartheap

Peak Compiler Invocation

C benchmarks:
     opencc

C++ benchmarks:
     openCC

SPEC CINT2006 Result

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 885

CPU2006 license: 55		**Test date:**	Nov-2011
Test sponsor: Dell Inc.		**Hardware Availability:**	Nov-2011
Tested by: Dell Inc.		**Software Availability:**	Jul-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.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
    400.perlbench: -march=bdver1 -fb_create fbdata(pass 1)
                   -fb_opt fbdata(pass 2) -Ofast -LNO:prefetch=2 -LNO:opt=0
                   -IPA:plimit=20000 -OPT:unroll_times_max=8
                   -OPT:unroll_size=256 -OPT:unroll_level=2 -OPT:keep_ext=on
                   -WOPT:if_conv=0 -WOPT:sib=on -CG:local_sched_alg=1
                   -CG:unroll_fb_req=on -CG:movext_icmp=off -HP:bd=2m:heap=2m

        401.bzip2: -march=bdver1 -fb_create fbdata(pass 1)
                   -fb_opt fbdata(pass 2) -O3 -LNO:prefetch=2 -LNO:pf2=0
                   -OPT:alias=disjoint -OPT:goto=off -CG:local_sched_alg=1
                   -HP:bdt=2m:heap=2m

          403.gcc: -march=bdver1 -fb_create fbdata(pass 1)
                   -fb_opt fbdata(pass 2) -Ofast -LNO:trip_count=256
                   -CG:cmp_peep=on -CG:pre_minreg_level=2 -m32
                   -HP:bdt=2m:heap=2m -GRA:unspill=on -IPA:small_pu=200
                   -WOPT:sib=on

          429.mcf: -march=bdver1 -O3 -OPT:unroll_times_max=5 -ipa
                   -INLINE:aggressive=on -CG:gcm=off
                   -GRA:prioritize_by_density=on -m32 -HP:bdt=2m:heap=2m -mso

        445.gobmk: -march=bdver1 -fb_create fbdata(pass 1)
                   -fb_opt fbdata(pass 2) -Ofast -OPT:unroll_size=256
                   -OPT:unroll_times_max=8 -OPT:keep_ext=on -IPA:plimit=750
                   -IPA:min_hotness=300 -IPA:pu_reorder=1
                   -LNO:ignore_feedback=off -WOPT:if_conv=2 -HP:bd=2m:heap=2m

        456.hmmer: -march=bdver1 -fb_create fbdata(pass 1)
                   -fb_opt fbdata(pass 2) -Ofast -LNO:prefetch=2
                   -OPT:alias=disjoint -OPT:unroll_times_max=16
                   -OPT:unroll_size=512 -OPT:unroll_level=2 -OPT:keep_ext=on
                   -CG:cflow=0 -CG:cmp_peep=on -CG:pre_local_sched=off
                   -HP:bdt=2m:heap=2m
```

SPEC CINT2006 Result

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 885

CPU2006 license: 55		**Test date:**	Nov-2011
Test sponsor: Dell Inc.		**Hardware Availability:**	Nov-2011
Tested by: Dell Inc.		**Software Availability:**	Jul-2011

Peak Optimization Flags (Continued)

```
   458.sjeng: -march=bdver1 -fb_create fbdata(pass 1)
              -fb_opt fbdata(pass 2) -Ofast -CG:ptr_load_use=0
              -CG:divrem_opt=on -CG:movext_icmp=off -CG:locs_best=on
              -LNO:full_unroll=10 -IPA:pu_reorder=2 -HP:bd=2m:heap=2m
              -WOPT:sib=on

462.libquantum: -march=bdver1 -Ofast -mso -OPT:unroll_size=512
              -OPT:unroll_times_max=16 -LNO:prefetch=2
              -LNO:prefetch_ahead=4 -LNO:pf2=0 -CG:local_sched_alg=1
              -INLINE:aggressive=on -IPA:plimit=15000 -IPA:small_pu=100
              -HP:bdt=2m:heap=2m,limit=300

  464.h264ref: -march=bdver1 -fb_create fbdata(pass 1)
              -fb_opt fbdata(pass 2) -O3 -OPT:unroll_size=256
              -OPT:unroll_times_max=2 -IPA:plimit=20000
              -OPT:alias=disjoint -CG:ptr_load_use=0
              -CG:local_sched_alg=1 -HP:bdt=2m:heap=2m
```

C++ benchmarks:

```
  471.omnetpp: basepeak = yes

     473.astar: -march=bdver1 -fb_create fbdata(pass 1)
              -fb_opt fbdata(pass 2) -Ofast -TENV:frame_pointer=off
              -WOPT:if_conv=0 -WOPT:sib=on -CG:divrem_opt=on
              -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=bdver1 -Ofast -LNO:prefetch=2 -OPT:unroll_size=512
              -OPT:unroll_times_max=8 -D__OPEN64_FAST_SET
              -INLINE:aggressive=on -m32 -CG:cmp_peep=on
              -CG:local_sched=off -GRA:unspill=on -TENV:frame_pointer=off
              -fno-emit-exceptions
              -L/root/work/libraries/SmartHeap-10/lib -lsmartheap
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.20111122.html
http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.20111122.xml
http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.xml

Dell Inc.

PowerEdge M915
(AMD Opteron 6282 SE, 2.60 GHz)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 885

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

Test date: Nov-2011
Hardware Availability: Nov-2011
Software Availability: Jul-2011

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 Thu Jul 24 01:36:03 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 November 2011.