



SPEC® CINT2006 Result

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Dell Inc.

PowerEdge R7425
(AMD EPYC 7601, 2.20 GHz)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 2220

CPU2006 license: 55

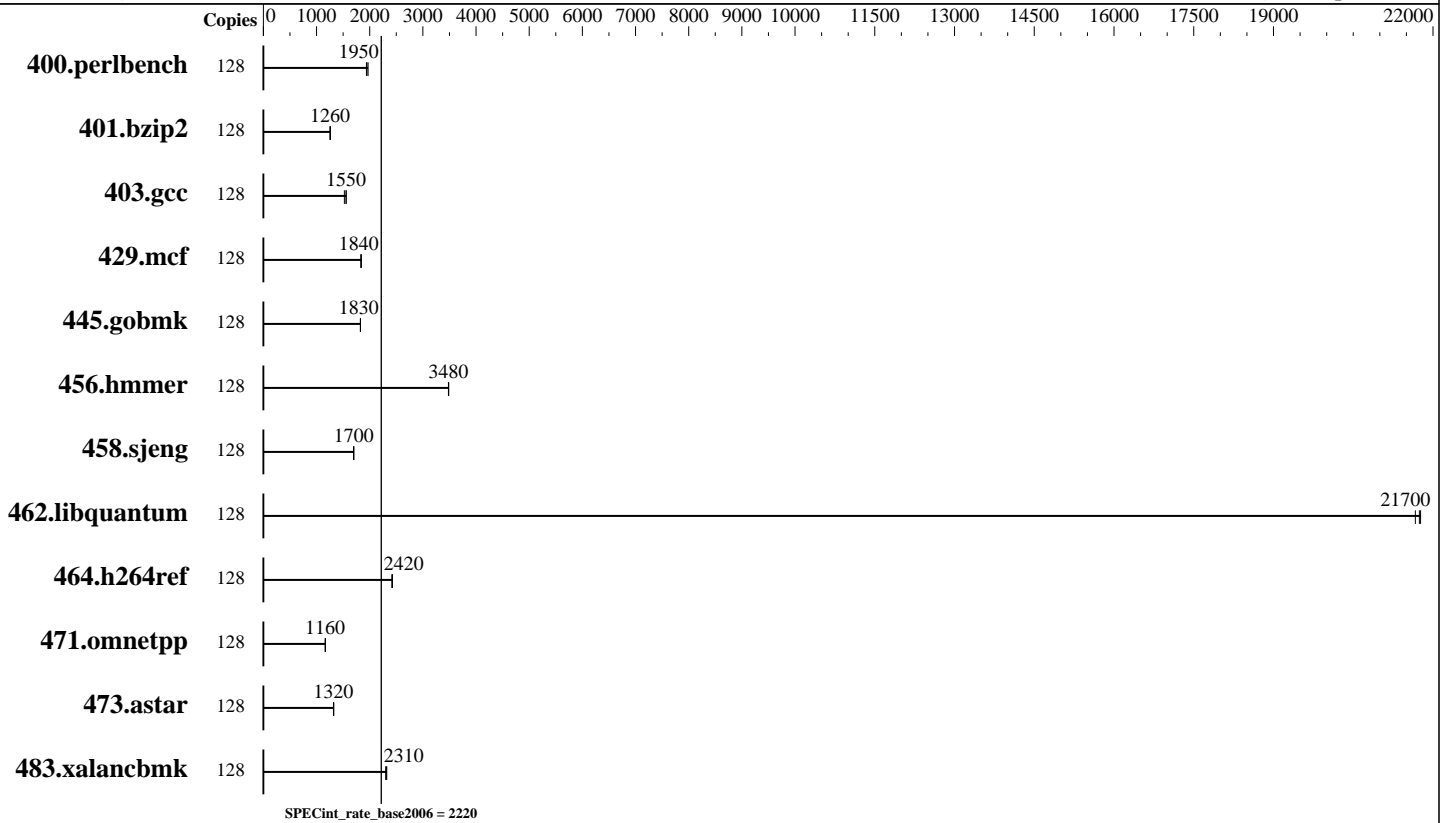
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2017

Hardware Availability: Dec-2017

Software Availability: Sep-2017



Hardware

CPU Name: AMD EPYC 7601
 CPU Characteristics: AMD Turbo CORE technology up to 3.20 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 64 cores, 2 chips, 32 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 64 KB I + 32 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 64 MB I+D on chip per chip, 8 MB shared / 4 cores
 Other Cache: None
 Memory: 1 TB (16 x 64 GB 4Rx4 PC4-2666V-L)
 Disk Subsystem: 1 x 960 GB SATA SSD
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP3
 Kernel 4.4.73-5-default
 Compiler: C/C++: Version 4.5.2.1 of x86 Open64 Compiler Suite (from AMD)
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap 10.0 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	128	635	1970	645	1940	642	1950							
401.bzip2	128	980	1260	984	1250	983	1260							
403.gcc	128	661	1560	663	1550	676	1520							
429.mcf	128	636	1840	636	1840	634	1840							
445.gobmk	128	736	1830	735	1830	735	1830							
456.hammer	128	343	3480	343	3480	343	3480							
458.sjeng	128	910	1700	914	1700	911	1700							
462.libquantum	128	122	21700	122	21700	122	21800							
464.h264ref	128	1167	2430	1171	2420	1169	2420							
471.omnetpp	128	686	1170	687	1160	687	1160							
473.astar	128	681	1320	678	1320	682	1320							
483.xalancbmk	128	381	2320	384	2300	382	2310							

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

runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu

Transparent huge pages were enabled for this run (OS default)

Set vm/nr_hugepages=114688 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

Platform Notes

BIOS settings:
Memory Interleaving set to Channel Interleaving
Virtualization Technology disabled

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Platform Notes (Continued)

System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost enabled
C States disabled
Memory Patrol Scrub disabled
Memory Refresh Rate set to 1x
PCI ASPM L1 Link Power Management disabled

General Notes

Environment variables set by runspec before the start of the run:

HUGETLB_LIMIT = "896"

LD_LIBRARY_PATH = "/home/cpu2006_o64/amd1603-rate-libs-revA/32:/home/cpu2006_o64/amd1603-rate-libs-revA/64"

The binaries were built with the x86 Open64 Compiler Suite, which is only available from (and supported by) AMD at <http://developer.amd.com/tools-and-sdks/cpu-development/x86-open64-compiler-suite/>. Binaries were compiled on a system with 2x AMD Opteron 6378 chips + 128GB Memory using RHEL 6.3

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, <http://www.spec.org/osg/policy.html>

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Base Compiler Invocation

C benchmarks:
openc

C++ benchmarks:
openCC



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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:

-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
-march=bdver1 -mno-fma4 -mno-xop -mno-tbm

C++ benchmarks:

-Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on -D__OPEN64_FAST_SET
-march=bdver1 -mno-fma4 -mno-xop -mno-tbm
-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/x86-openflags-rate-revA-I.html>
<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revD.20171221.html>

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

<http://www.spec.org/cpu2006/flags/x86-openflags-rate-revA-I.xml>
<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revD.20171221.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 v1.2.
Report generated on Tue Feb 20 18:12:11 2018 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 February 2018.