



SPEC® CINT2006 Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL385 Gen10
(2.00 GHz, AMD EPYC 7401)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 1820

CPU2006 license: 3

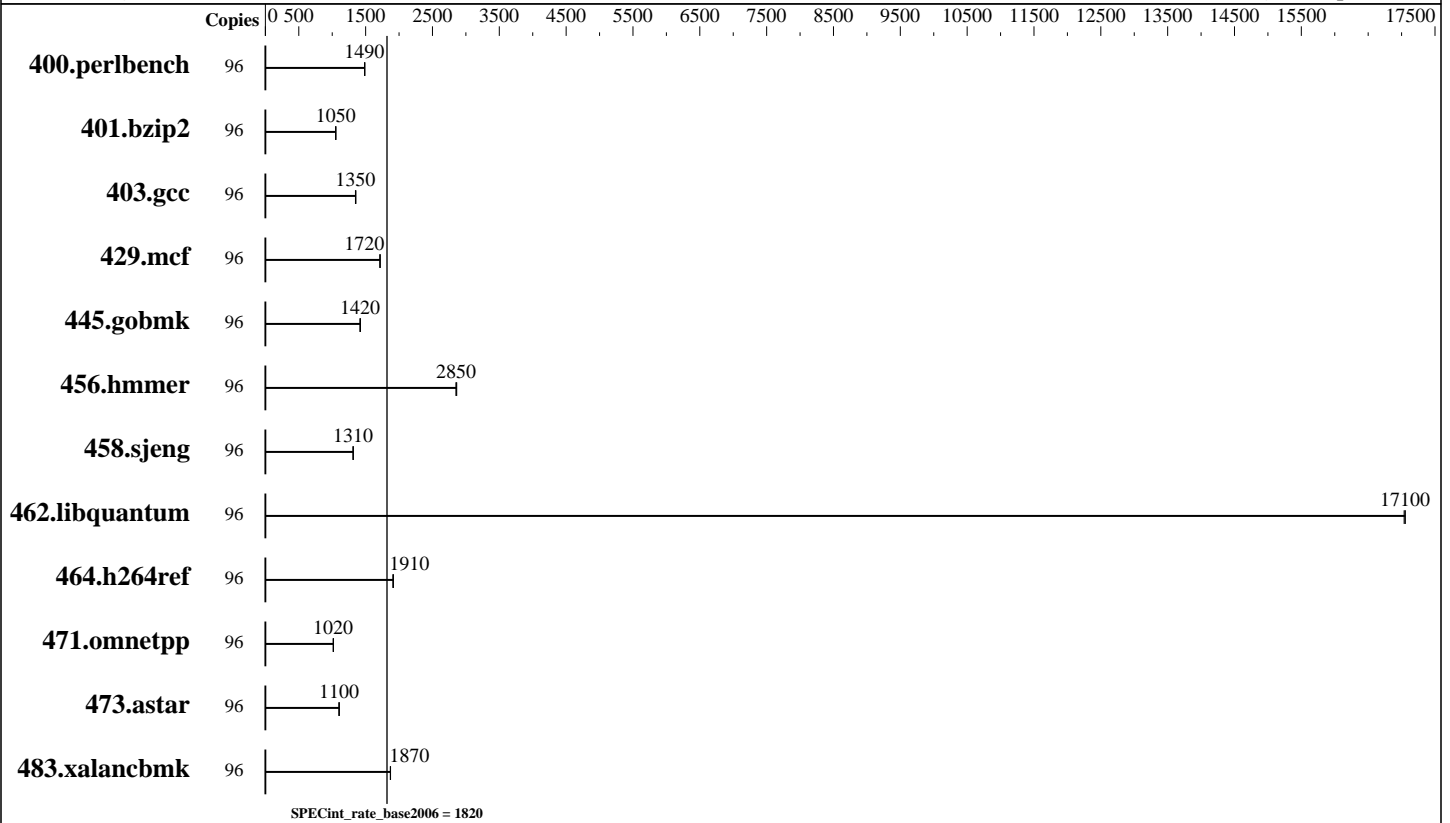
Test sponsor: HPE

Tested by: HPE

Test date: Nov-2017

Hardware Availability: Nov-2017

Software Availability: Sep-2017



Hardware

CPU Name: AMD EPYC 7401
 CPU Characteristics: AMD Turbo CORE technology up to 3.00 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 48 cores, 2 chips, 24 cores/chip, 2 threads/core
 CPU(s) orderable: 1, 2 chip(s)
 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 / 3 cores
 Other Cache: None
 Memory: 1 TB (16 x 64 GB 4Rx4 PC4-2666V-L)
 Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0
 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: Not Applicable
 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	96	<u>631</u>	<u>1490</u>	631	1490	631	1490							
401.bzip2	96	878	1060	881	1050	<u>880</u>	<u>1050</u>							
403.gcc	96	570	1360	573	1350	<u>573</u>	<u>1350</u>							
429.mcf	96	510	1720	511	1710	<u>510</u>	<u>1720</u>							
445.gobmk	96	<u>710</u>	<u>1420</u>	708	1420	711	1420							
456.hammer	96	313	2860	314	2850	<u>314</u>	<u>2850</u>							
458.sjeng	96	<u>884</u>	<u>1310</u>	883	1320	885	1310							
462.libquantum	96	117	17000	<u>117</u>	<u>17100</u>	117	17100							
464.h264ref	96	1109	1920	<u>1111</u>	<u>1910</u>	1113	1910							
471.omnetpp	96	589	1020	<u>591</u>	<u>1020</u>	591	1020							
473.astar	96	<u>611</u>	<u>1100</u>	610	1100	612	1100							
483.xalancbmk	96	354	1870	<u>354</u>	<u>1870</u>	354	1870							

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

Set vm/nr_hugepages=86016 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

Platform Notes

BIOS Configuration:
Thermal Configuration set to Maximum Cooling
Performance Determinism set to Power Deterministic
Memory Patrol Scrubbing set to Disabled
Workload Profile set to General Throughput Compute
Minimum Processor Idle Power Core C-State set to C6 State
Processor Power and Utilization Monitoring set to Disabled

General Notes

Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "896"
LD_LIBRARY_PATH = "/home/cpu2006/amd1603-rate-libs-revB/32:/home/cpu2006/amd1603-rate-libs-revB/64"

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General Notes (Continued)

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/>

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:
-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/HPE-Platform-Flags-AMD-V1.2-EPYC-revD.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/HPE-Platform-Flags-AMD-V1.2-EPYC-revD.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 Thu Feb 8 18:07:12 2018 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 January 2018.