# SPEC® CINT2006 Result

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## Hewlett Packard Enterprise

(Test Sponsor: HPE)

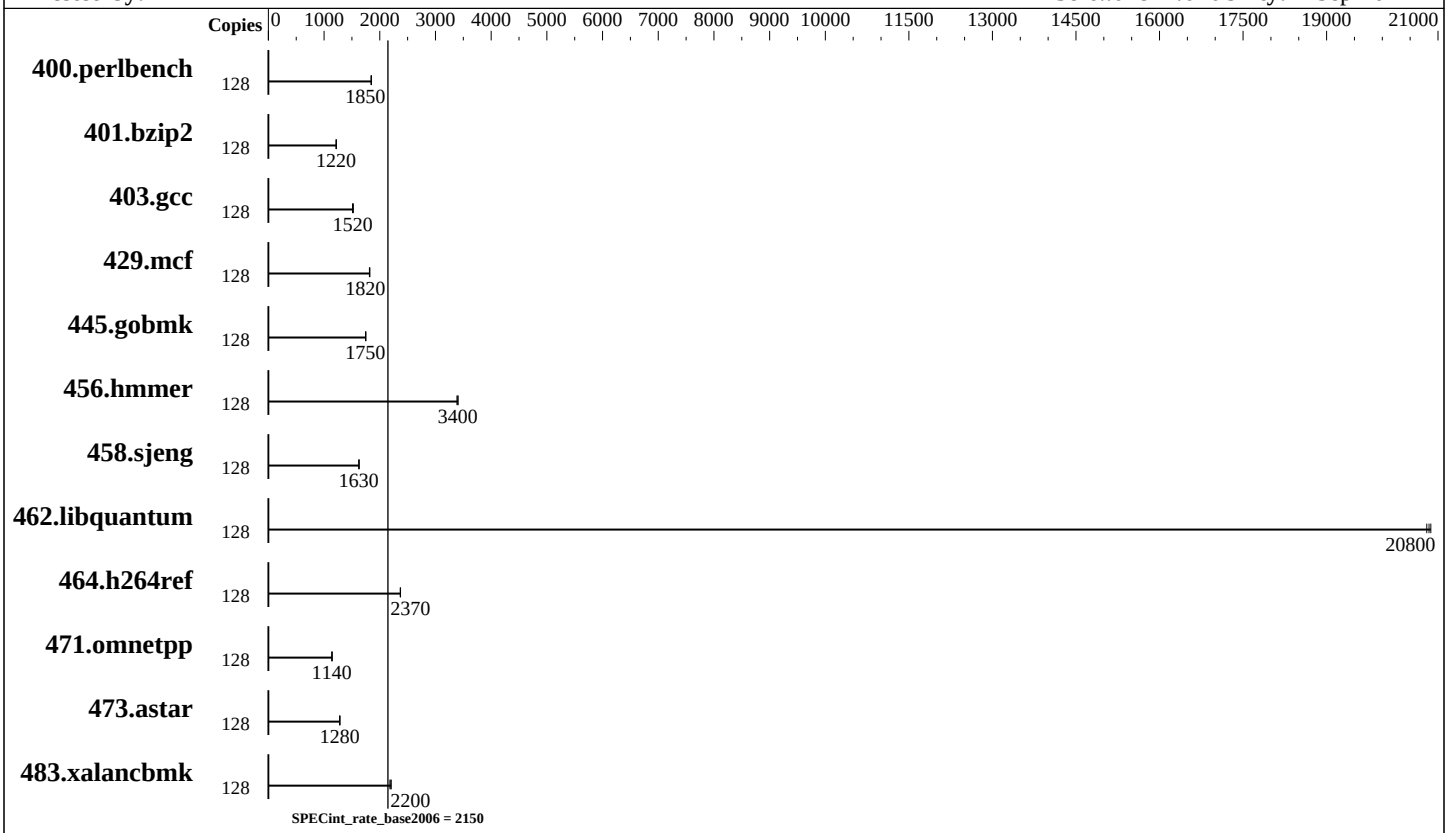
ProLiant DL385 Gen10
(2.00 GHz, AMD EPYC 7501)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 2150

**CPU2006 license:** 3
**Test sponsor:** HPE
**Tested by:** HPE

**Test date:** Dec-2017
**Hardware Availability:** Nov-2017
**Software Availability:** Sep-2017




### Hardware

| | |
|---|---|
| CPU Name: | AMD EPYC 7501 |
| CPU Characteristics: | AMD Turbo CORE technology up to 3.00 GHz |
| CPU MHz: | 2000 |
| FPU: | Integrated |
| CPU(s) enabled: | 64 cores, 2 chips, 32 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 / 4 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 | 128 | 678 | 1840 | 676 | 1850 | **677** | **1850** | | | | | | | |
| 401.bzip2 | 128 | 1015 | 1220 | **1014** | **1220** | 1013 | 1220 | | | | | | | |
| 403.gcc | 128 | 682 | 1510 | 676 | 1520 | **679** | **1520** | | | | | | | |
| 429.mcf | 128 | **642** | **1820** | 644 | 1810 | 641 | 1820 | | | | | | | |
| 445.gobmk | 128 | 768 | 1750 | **768** | **1750** | 769 | 1750 | | | | | | | |
| 456.hmmer | 128 | 353 | 3390 | 351 | 3400 | **351** | **3400** | | | | | | | |
| 458.sjeng | 128 | **953** | **1630** | 953 | 1620 | 951 | 1630 | | | | | | | |
| 462.libquantum | 128 | **127** | **20800** | 128 | 20800 | 127 | 20900 | | | | | | | |
| 464.h264ref | 128 | 1194 | 2370 | **1195** | **2370** | 1196 | 2370 | | | | | | | |
| 471.omnetpp | 128 | 699 | 1140 | 702 | 1140 | **701** | **1140** | | | | | | | |
| 473.astar | 128 | 702 | 1280 | **700** | **1280** | 700 | 1280 | | | | | | | |
| 483.xalancbmk | 128 | 401 | 2200 | 405 | 2180 | **401** | **2200** | | | | | | | |

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"
```

Continued on next page

## 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.

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