# SPEC® CINT2006 Result

## Hewlett Packard Enterprise

**Test Sponsor:** HPE  
**ProLiant DL360 Gen10**  
(1.80 GHz, Intel Xeon Silver 4108)

**SPECint®2006 =** Not Run  
**SPECint_base2006 =** 58.0

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Nov-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Oct-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Apr-2017</td>
</tr>
</tbody>
</table>

### CPU2006 license:
3

### Test sponsor:
HPE

### Tested by:
HPE

### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>Red Hat Enterprise Linux Server release 7.3 (Maipo), Kernel 3.10.0-514.el7.x86_64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon Silver 4108</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.00 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>1800</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>16 cores, 2 chips, 8 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1, 2 chip(s)</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>11 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>192 GB (24 x 8 GB 2Rx8 PC4-2666V-R, running at 2400)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 600 GB SATA SSD, RAID 0</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### SPECint_base2006 = 58.0

### Test Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>17.8</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>33.2</td>
</tr>
<tr>
<td>403.gcc</td>
<td>34.8</td>
</tr>
<tr>
<td>429.mcf</td>
<td>67.2</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>26.91</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>78.2</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>30.2</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>53.6</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>24.3</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>51.0</td>
</tr>
<tr>
<td>473.astar</td>
<td>64.1</td>
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</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>483.xalancbmk</td>
<td>4310</td>
</tr>
</tbody>
</table>
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(1.80 GHz, Intel Xeon Silver 4108)

SPECint2006 = Not Run
SPECint_base2006 = 58.0

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
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<td>37.8</td>
<td>259</td>
<td>37.8</td>
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<tr>
<td>401.bzip2</td>
<td>416</td>
<td>23.2</td>
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<td>23.2</td>
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<tr>
<td>403.gcc</td>
<td>231</td>
<td>34.9</td>
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<td>445.gobmk</td>
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<tr>
<td>456.hmmer</td>
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<tr>
<td>462.libquantum</td>
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</tr>
<tr>
<td>473.astar</td>
<td>226</td>
<td>31.0</td>
<td>227</td>
<td>31.0</td>
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<td>108</td>
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<td>64.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled by default
Fsfsystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
irqbalance disabled with "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"

Platform Notes

BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
Memory Patrol Scrubbing set to Disabled
LLC Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Workload Profile set to General Peak Frequency Compute
Energy/Performance Bias set to Maximum Performance
Workload Profile set to Custom
NUMA Group Size Optimization set to Flat
Uncore Frequency scaling set to Auto

Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on DL360G10 Thu Nov 9 02:03:33 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(1.80 GHz, Intel Xeon Silver 4108)

CPU2006 license: 3
Test sponsor: HPE
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Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) Silver 4108 CPU @ 1.80GHz
  2 "physical id"s (chips)
  16 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The
  following excerpts from /proc/cpuinfo might not be reliable. Use with
  caution.)
  cpu cores : 8
  siblings : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 11264 KB

From /proc/meminfo
  MemTotal: 197752264 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.3 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="7.3"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
    ANSI_COLOR="0;31"
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
  Linux DL360G10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 9 01:51

SPEC is set to: /home/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel_dl360g10-home xfs 504G 37G 467G 8% /home

Additional information from dmidecode:

  Warning: Use caution when you interpret this section. The 'dmidecode' program
  reads system data which is "intended to allow hardware to be accurately
  determined", but the intent may not be met, as there are frequent changes to
  hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS HPE U32 09/29/2017
  Memory: 

Continued on next page
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Platform Notes (Continued)
24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz, configured at 2400 MHz
(End of data from sysinfo program)

General Notes
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2

Base Compiler Invocation
C benchmarks:
  icc -m64
C++ benchmarks:
  icpc -m64

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
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags
C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch -auto-p32
C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
### SPEC CINT2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10  
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**CPU2006 license:** 3  
**Test sponsor:** HPE  
**Tested by:** HPE

**Test date:** Nov-2017  
**Hardware Availability:** Oct-2017  
**Software Availability:** Apr-2017

### Base Other Flags

**C benchmarks:**

403.gcc: -Dalloca=_alloca

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

- [http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.html](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.html)

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

- [http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.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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