# SPEC® CINT2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
Synergy 480 Gen10  
(2.30 GHz, Intel Xeon Gold 5118)  

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>63.9</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3  
**Test date:** Dec-2017  
**Hardware Availability:** Nov-2017  
**Test sponsor:** HPE  
**Software Availability:** Apr-2017  
**Tested by:** HPE

## Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 5118</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>2300</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 2 chips, 12 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>16.5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 480 GB SATA SSD, RAID 0</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

## Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 7.3 (Maipo)</td>
</tr>
<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>
Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

SPECint2006 = Not Run
SPECint_base2006 = 63.9

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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>242</td>
<td>40.4</td>
<td>242</td>
<td>40.4</td>
<td>242</td>
<td>40.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>391</td>
<td>24.7</td>
<td>391</td>
<td>24.7</td>
<td>391</td>
<td>24.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>213</td>
<td>37.9</td>
<td>212</td>
<td>37.9</td>
<td>213</td>
<td>37.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>133</td>
<td>68.4</td>
<td>133</td>
<td>68.6</td>
<td>133</td>
<td>68.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>363</td>
<td>28.9</td>
<td>363</td>
<td>28.9</td>
<td>363</td>
<td>28.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>112</td>
<td>83.6</td>
<td>111</td>
<td>83.8</td>
<td>111</td>
<td>83.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>377</td>
<td>32.1</td>
<td>377</td>
<td>32.1</td>
<td>377</td>
<td>32.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.53</td>
<td>5870</td>
<td>3.51</td>
<td>5910</td>
<td>3.52</td>
<td>5880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>368</td>
<td>60.2</td>
<td>367</td>
<td>60.2</td>
<td>368</td>
<td>60.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>225</td>
<td>27.8</td>
<td>224</td>
<td>27.9</td>
<td>225</td>
<td>27.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>210</td>
<td>33.4</td>
<td>208</td>
<td>33.7</td>
<td>208</td>
<td>33.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>99.5</td>
<td>69.4</td>
<td>99.2</td>
<td>69.6</td>
<td>99.5</td>
<td>69.4</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
Filesystem 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 Hyper-Threading set to Disabled
Thermal Configuration set to Maximum Cooling
LLC Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Memory Patrol Scrubbing 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 SY480_M3_RHEL Thu Dec 21 15:01:55 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
http://www.spec.org/cpu2006/Docs/config.html#sysinfo
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

**SPECint2006 =** Not Run
**SPECint_base2006 =** 63.9

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

---

**Platform Notes (Continued)**

From /proc/cpuinfo

- model name: Intel(R) Xeon(R) Gold 5118 CPU @ 2.30GHz
- 2 "physical id"s (chips)
- 24 "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: 12
  - siblings: 12
  - physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  - physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
- cache size: 16896 KB

From /proc/meminfo

- MemTotal: 395931452 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

- 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"

uname -a:

```
Linux SY480_M3_RHEL 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 Dec 21 14:57

SPEC is set to: /home/cpu2006

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/mapper/rhel-home</td>
<td>xfs</td>
<td>392G</td>
<td>25G</td>
<td>368G</td>
<td>7%</td>
<td>/home</td>
</tr>
</tbody>
</table>

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 I42 11/14/2017
Memory:
24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2400 MHz

Continued on next page
Spec CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

SPECint2006 = Not Run
SPECint_base2006 = 63.9

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

Platform Notes (Continued)

(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 = "24"

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

No: 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.htm.

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:
   icc -m64
C++ benchmarks:
   icpc -m64
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

<table>
<thead>
<tr>
<th>CPU2006 license: 3</th>
<th>Test date: Dec-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: HPE</td>
<td>Hardware Availability: Nov-2017</td>
</tr>
<tr>
<td>Tested by: HPE</td>
<td>Software Availability: Apr-2017</td>
</tr>
</tbody>
</table>

**SPECint2006 = Not Run**

**SPECint_base2006 = 63.9**

---

**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

---

**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/Intel-ic17.0-official-linux64-revF.html
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.html

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

http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.xml
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

| SPECint2006 = | Not Run |
| SPECint_base2006 = | 63.9 |

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

| Test date: | Dec-2017 |
| Hardware Availability: | Nov-2017 |
| Software Availability: | Apr-2017 |

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 13 June 2018.