### Specint®2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.10 GHz, Intel Xeon Platinum 8160)

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>77.3</td>
</tr>
</tbody>
</table>

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

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

#### Hardware

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 perlbench</td>
<td>46.4</td>
</tr>
<tr>
<td>401 bzip2</td>
<td>44.3</td>
</tr>
<tr>
<td>403 gcc</td>
<td>78.2</td>
</tr>
<tr>
<td>429 mcf</td>
<td>96.2</td>
</tr>
<tr>
<td>445 gobmk</td>
<td>37.3</td>
</tr>
<tr>
<td>456 hmmer</td>
<td>33.6</td>
</tr>
<tr>
<td>458 sjeng</td>
<td>8610</td>
</tr>
<tr>
<td>462 libquantum</td>
<td>67.7</td>
</tr>
<tr>
<td>464 h264ref</td>
<td>44.0</td>
</tr>
<tr>
<td>471 omnetpp</td>
<td>39.0</td>
</tr>
<tr>
<td>473 astar</td>
<td>82.6</td>
</tr>
<tr>
<td>483 xalancbmk</td>
<td></td>
</tr>
</tbody>
</table>

**SPECint_base2006 = 77.3**

#### Software

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 7.3 (Maipo), Kernel 3.10.0-514.6.1.el7.x86_64</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>

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
## 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>
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</thead>
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<td>210</td>
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<td>403.gcc</td>
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<td>33.6</td>
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<td>458.sjeng</td>
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<td>324</td>
<td>37.3</td>
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<tr>
<td>462.libquantum</td>
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<td>8830</td>
<td>2.43</td>
<td>8520</td>
<td>2.41</td>
<td>8610</td>
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<tr>
<td>464.h264ref</td>
<td>327</td>
<td>67.7</td>
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<td>67.8</td>
<td>327</td>
<td>67.6</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>139</td>
<td>45.0</td>
<td>143</td>
<td>43.8</td>
<td>142</td>
<td>44.0</td>
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<tr>
<td>473.astar</td>
<td>180</td>
<td>39.0</td>
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<td>38.9</td>
<td>180</td>
<td>39.0</td>
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<tr>
<td>483.xalancbmk</td>
<td>83.5</td>
<td>82.6</td>
<td>83.8</td>
<td>82.4</td>
<td>83.5</td>
<td>82.6</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 Hyperthreading set to Disabled
- Thermal Configuration set to Maximum Cooling
- Memory Patrol Scrubbing set to Disabled
- LLC Prefetcher 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
- Uncore Frequency Scaling set to Auto
- Workload Profile set to Custom
- NUMA Group Size Optimization set to Flat

Sysinfo program /cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on s1-DL380-RHEL73U Fri Oct  6 10:19:30 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page
SPEC CINT2006 Result

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ProLiant DL380 Gen10
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SPECint2006 = Not Run
SPECint_base2006 = 77.3

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

Platform Notes (Continued)

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

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) Platinum 8160 CPU @ 2.10GHz
  2 "physical id"s (chips)
  48 "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 : 24
  siblings : 24
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
             27 28 29
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
             27 28 29
  cache size : 33792 KB

From /proc/meminfo
  MemTotal:       197570088 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 s1-DL380-RHEL73U 3.10.0-514.6.1.el7.x86_64 #1 SMP Sat Dec 10 11:15:38
  EST 2016 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 6 09:45

SPEC is set to: /cpu2006
  Filesystem  Type Size Used Avail Use% Mounted on
  /dev/sdb4   xfs 889G 28G 862G 4% /

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.

Continued on next page
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Platform Notes (Continued)

BIOS HPE U30 09/29/2017
Memory:
24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 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 = "/cpu2006/lib/ia32:/cpu2006/lib/intel64:/cpu2006/sh10.2"
OMP_NUM_THREADS = "48"

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.perlbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
  401.hzip2: -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

Continued on next page
### Base Optimization Flags (Continued)

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-W1,-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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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-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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