Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(2.10 GHz, Intel Xeon Platinum 8170)  

**SPECint®2006** = Not Run  
**SPECint_base2006** = 78.9

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

<table>
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<tr>
<th>Benchmark</th>
<th>Score</th>
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<tr>
<td>perlbench</td>
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<tr>
<td>bzip2</td>
<td>28.2</td>
</tr>
<tr>
<td>gcc</td>
<td>45.0</td>
</tr>
<tr>
<td>mcf</td>
<td>79.9</td>
</tr>
<tr>
<td>gobmk</td>
<td>33.7</td>
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<tr>
<td>hammer</td>
<td>96.3</td>
</tr>
<tr>
<td>sjeng</td>
<td>37.4</td>
</tr>
<tr>
<td>libquantum</td>
<td>83.0</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon Platinum 8170  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHz:** 2100  
- **FPU:** Integrated  
- **CPU(s) enabled:** 52 cores, 2 chips, 26 cores/Chip  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 1 MB I+D on chip per core  
- **L3 Cache:** 35.75 MB I+D on chip per core  
- **Memory:** 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)  
- **Disk Subsystem:** 1 x 960 GB SATA SSD, RAID 0  

**Software**

- **Operating System:** Red Hat Enterprise Linux Server 7.3 (Maipo), Kernel 3.10.0-514.6.1.el7.x86_64  
- **Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux  
- **Auto Parallel:** Yes  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 32/64-bit  
- **Peak Pointers:** Not Applicable  
- **Other Software:** Microquill SmartHeap V10.2
**SPEC CINT2006 Result**

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### Results Table

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<thead>
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</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 DL380-sys2-RHEL73 Thu Sep 28 15:19:14 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
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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) Platinum 8170 CPU @ 2.10GHz
- 2 "physical id"s (chips)
- 52 "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: 26
  - siblings: 26
  - physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28 29
  - physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28 29
- cache size: 36608 KB

From /proc/meminfo
- MemTotal: 197569560 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 DL380-sys2-RHEL73 3.10.0-514.6.1.el17.x86_64 #1 SMP Sat Dec 10 11:15:38 EST 2016 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 28 15:15

SPEC is set to: /cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 889G 29G 861G 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 = "52"

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
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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
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Base Optimization Flags (Continued)

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-revD.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-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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