Hewlett Packard Enterprise (Test Sponsor: HPE)
ProLiant DL380 Gen10 (2.70 GHz, Intel Xeon Platinum 8168)

SPECint®2006 = Not Run
SPECint_base2006 = 78.2

CPU2006 license: 3
Tested by: HPE

Hardware
CPU Name: Intel Xeon Platinum 8168
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 2700
FPU: Integrated
CPU(s) enabled: 48 cores, 2 chips, 24 cores/chip
CPU(s) orderable: 1, 2 chip(s)
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 33 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 960 GB SATA SSD, RAID 0
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 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: 32/64-bit
Other Software: Microquill SmartHeap V10.2
Hewlett Packard Enterprise
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ProLiant DL380 Gen10
(2.70 GHz, Intel Xeon Platinum 8168)

SPEC CINT2006 Result

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SPECint2006 = Not Run
SPECint_base2006 = 78.2

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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<td>400.perlbench</td>
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<td>401.bzip2</td>
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<td>343</td>
<td>28.2</td>
<td>343</td>
<td>28.2</td>
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<tr>
<td>403.gcc</td>
<td>182</td>
<td>44.2</td>
<td>182</td>
<td>44.2</td>
<td>182</td>
<td>44.1</td>
</tr>
<tr>
<td>429.mcf</td>
<td>114</td>
<td>80.1</td>
<td>116</td>
<td>78.5</td>
<td>114</td>
<td>80.1</td>
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<td>33.6</td>
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<tr>
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<td></td>
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<tr>
<td>458.sjeng</td>
<td>325</td>
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<td>37.2</td>
<td>324</td>
<td>37.4</td>
</tr>
<tr>
<td>462.libquantum</td>
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<td>2.17</td>
<td>9540</td>
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<td>471.omnetpp</td>
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<td>143</td>
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<td>473.astar</td>
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<td>81.8</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 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 s1-8176-RHEL73U Mon Oct 2 17:37:52 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

Hewlett Packard Enterprise
(Test Sponsor: HPE)
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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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

Platform Notes (Continued)

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

From /proc/cpuinfo

- model name : Intel(R) Xeon(R) Platinum 8168 CPU @ 2.70GHz
- 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 s1-8176-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 2 17:33

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
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.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
# SPEC CINT2006 Result

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| Test date: | Oct-2017 |
| Hardware Availability: | Oct-2017 |
| Software Availability: | Jul-2017 |

## 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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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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