SPEC® CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant BL460c Gen10
(2.60 GHz, Intel Xeon Gold 6142)

SPECint®2006 = Not Run
SPECint_base2006 = 74.9

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

400.perlbench 60.4
401.bzip2 29.3
403.gcc 13.2
429.mcf 78.1
445.gobmk 34.1
456.hmmer 96.4
458.sjeng 36.7
462.libquantum
464.h264ref 69.7
471.omnetpp 35.1
473.astar 38.9
483.xalancbmk 80.5

SPECint_base2006 = 74.9

Hardware
CPU Name: Intel Xeon Gold 6142
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHZ: 2600
FPU: Integrated
CPU(s) enabled: 32 cores, 2 chips, 16 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: 22 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 2 x 480 GB SATA SSD, RAID 0
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 7.4 (Maipo)
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
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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
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<td>46.4</td>
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<td>28.3</td>
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</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
IRQ balance service was stop using "service irqbalance stop"
Tuned-adm profile was set to Throughput-Performance

**Platform Notes**

BIOS Configuration:
- Intel Hyperthreading 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

Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on bl460c16 Mon Dec 4 08:28:23 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

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CPU2006 license: 3
Test sponsor: HPE
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Test date: Dec-2017
Hardware Availability: Nov-2017
Software Availability: Sep-2017

Platform Notes (Continued)

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6142 CPU @ 2.60GHz
  2 "physical id"s (chips)
  32 "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 : 16
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 22528 KB

From /proc/meminfo
MemTotal:       197749752 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
os-release:
  NAME="Red Hat Enterprise Linux Server"
  VERSION="7.4 (Maipo)"
  ID="rhel"
  ID_LIKE="fedora"
  VARIANT="Server"
  VARIANT_ID="server"
  VERSION_ID="7.4"
  PRETTY_NAME="Red Hat Enterprise Linux Server 7.4 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.4:ga:server
uname -a:
  Linux bl460c16 3.10.0-693.el7.x86_64 #1 SMP Thu Jul 6 19:56:57 EDT 2017
  x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Dec 4 08:24

SPEC is set to: /home/cpu2006
Filesystem            Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   839G   26G  813G   4% /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 I41 11/14/2017
Memory:
  4x UNKNOWN NOT AVAILABLE
  12x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz
Continued on next page
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Platform Notes (Continued)

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 192 GB and the dmidecode description should have one line reading as:
12x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz

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 = "32"

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
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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-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

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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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