Hewlett Packard Enterprise

ProLiant BL460c Gen10
(3.40 GHz, Intel Xeon Gold 6128)

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

Copies

400.perlbench 24  575
401.bzip2 24  362
403.gcc 24  606
429.mcf 24  1100
445.gobmk 24  479
456.hmmer 24  1150
458.sjeng 24  508
462.libquantum 24
464.h264ref 24  867
471.omnetpp 24  368
473.astar 24  454
483.xalancbmk 24  1030

SPECint_rate_base2006 = 810

Hardware

CPU Name: Intel Xeon Gold 6128
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3400
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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: 19.25 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 480 GB SATA SSD, RAID 0
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP2
Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux;
          Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
Auto Parallel: No
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: None

SPEC CINT2006 Result

SPECint®_rate2006 = Not Run
SPECint_rate_base2006 = 810

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info@spec.org
http://www.spec.org/
**SPEC CINT2006 Result**

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<thead>
<tr>
<th>CPU2006 license: 3</th>
<th>Test date: Dec-2017</th>
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<tbody>
<tr>
<td>Test sponsor: HPE</td>
<td>Hardware Availability: Oct-2017</td>
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**Results Table**

<table>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

**Submit Notes**

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

**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  
runcpec command invoked through numactl i.e.:  
umactl --interleave=all runspec <etc>  
irqbalance disabled with "service irqbalance stop"  
tuned profile set wth "tuned-adm profile throughput-performance"  
VM Dirty ratio was set to 40 using "echo 40 > /proc/sys/vm/dirty_ratio"  
Numa balancing was disabled using "echo 0 > /proc/sys/kernel/numa_balancing"

**Platform Notes**

BIOS Configuration:
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 Throughput Compute  
Minimum Processor Idle Power Core C-State set to C1E State  
Sysinfo program /home/cpu2006/config/sysinfo.rev6993  
Continued on next page
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CPU2006 license: 3  
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Platform Notes (Continued)  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux-h3xn Thu Dec  7 13:49:23 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  

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz  
  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 : 6  
  siblings : 12  
  physical 0: cores 0 6 9 10 11 13  
  physical 1: cores 0 6 9 10 11 13  
  cache size : 19712 KB  

From /proc/meminfo  
MemTotal: 197748796 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB  

/usr/bin/lsb_release -d  
SUSE Linux Enterprise Server 12 SP2  

From /etc/*release* /etc/*version*  
SuSE-release:  
  SUSE Linux Enterprise Server 12 (x86_64)  
  VERSION = 12  
  PATCHLEVEL = 2  
  # This file is deprecated and will be removed in a future service pack or release.  
  # Please check /etc/os-release for details about this release.  
  os-release:  
    NAME="SLES"  
    VERSION="12-SP2"  
    VERSION_ID="12.2"  
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"  
    ID="sles"  
    ANSI_COLOR="0;32"  
    CPE_NAME="cpe:/o:suse:sles:12:sp2"  

uname -a:  
Linux linux-h3xn 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016  
(9464f67) x86_64 x86_64 x86_64 GNU/Linux  
run-level 3 Dec 7 13:44  
SPEC is set to: /home/cpu2006  
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Platform Notes (Continued)

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 405G 109G 297G 27% /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 09/29/2017
Memory:
4x UNKNOWN NOT AVAILABLE
12x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz

(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:
LD_LIBRARY_PATH = "'/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"

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 -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64

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### Base Portability Flags (Continued)

471.omnetpp: -D_FILE_OFFSET_BITS=64

473.astar: -D_FILE_OFFSET_BITS=64

483.xalancbmk: -D_FILE_OFFSET BITS=64 -DSPEC_CPU_LINUX

### Base Optimization Flags

**C benchmarks:**

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch

-qopt-mem-layout-trans=3

**C++ benchmarks:**

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch

-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

### 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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