Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(1.70 GHz, Intel Xeon Bronze 3104)

SPECint\_rate\_2006 = Not Run
SPECint\_rate\_base\_2006 = 324

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

**Test date:** Dec-2017
**Hardware Availability:** Oct-2017
**Software Availability:** Sep-2017

<table>
<thead>
<tr>
<th>SPECint_rate Base2006</th>
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<tbody>
<tr>
<td>400.perlbench</td>
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</table>

**Hardware**

- **CPU Name:** Intel Xeon Bronze 3104
- **CPU Characteristics:**
  - **CPU MHz:** 1700
  - **FPU:** Integrated
  - **CPU(s) enabled:** 12 cores, 2 chips, 6 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:** 8.25 MB I+D on chip per chip
  - **Other Cache:** None
  - **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2133)
  - **Disk Subsystem:** 1 x 480 GB SATA SSD, RAID 0
  - **Other Hardware:** None

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP2
  - Kernel 4.4.21-69-default
- **Compiler:** C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux
- **Auto Parallel:** No
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32-bit
- **Peak Pointers:** Not Applicable
- **Other Software:** Microquill SmartHeap V10.2
SPEC CINT2006 Result

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Results Table

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<tr>
<th>Benchmark</th>
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<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
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<td>179</td>
<td>464</td>
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<td>463</td>
</tr>
</tbody>
</table>

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
runspec command invoked through numactl i.e.:
   numactl --interleave=all runspec <etc>
irqbalance disabled with "service irqbalance stop"
tuned profile set with "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
   Workload Profile set to Custom

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SPEC CINT2006 Result

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Platform Notes (Continued)

Sub-NUMA Clustering set to Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on sy480_hjp_suse Sun Dec 10 09:33:58 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) Bronze 3104 CPU @ 1.70GHz
2 "physical id"s (chips)
12 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 6
siblings : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 8448 KB

From /proc/meminfo
MemTotal: 395933012 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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 sy480_hjp_suse 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 10 09:33

SPEC is set to: /home/cpu2006

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Platform Notes (Continued)

/dev/sda3      xfs   407G  117G  291G  29% /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 I42 09/27/2017
Memory:
24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/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_2018.0.082/linux/lib/ia32

C++ benchmarks:  
  icpc -m32 -L/opt/intel/compilers_and_libraries_2018.0.082/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
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### Base Optimization Flags

**C benchmarks:**
- `xCORE-AVX512`  
- `-ipo`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-qopt-mem-layout-trans=3`

**C++ benchmarks:**
- `xCORE-AVX512`  
- `-ipo`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-qopt-mem-layout-trans=3`  
- `-Wl,-z,muldefs`  
- `-L/home/cpu2006/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/HPE-Platform-Flags-Intel-V1.2-SKX-revH.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/HPE-Platform-Flags-Intel-V1.2-SKX-revH.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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