SPEC® CINT2006 Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

Synergy 480 Gen10
(1.70 GHz, Intel Xeon Bronze 3106)

$SPECint^{®}_rate2006 = $ Not Run

SPECint_rate_base2006 = 431

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

	Copies	Result
400.perlbench	16	320
401.bzip2	16	186
403.gcc	16	331
429.mcf	16	623
445.gobmk	16	234
456.hmmer	16	617
458.sjeng	16	271
462.libquantum	16	4570
464.h264ref	16	520
471.omnetpp	16	244
473.astar	16	243
483.xalancbmk	16	615

SPECint_rate_base2006 = 431

Hardware

CPU Name:	Intel Xeon Bronze 3106
CPU Characteristics:	
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	11 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

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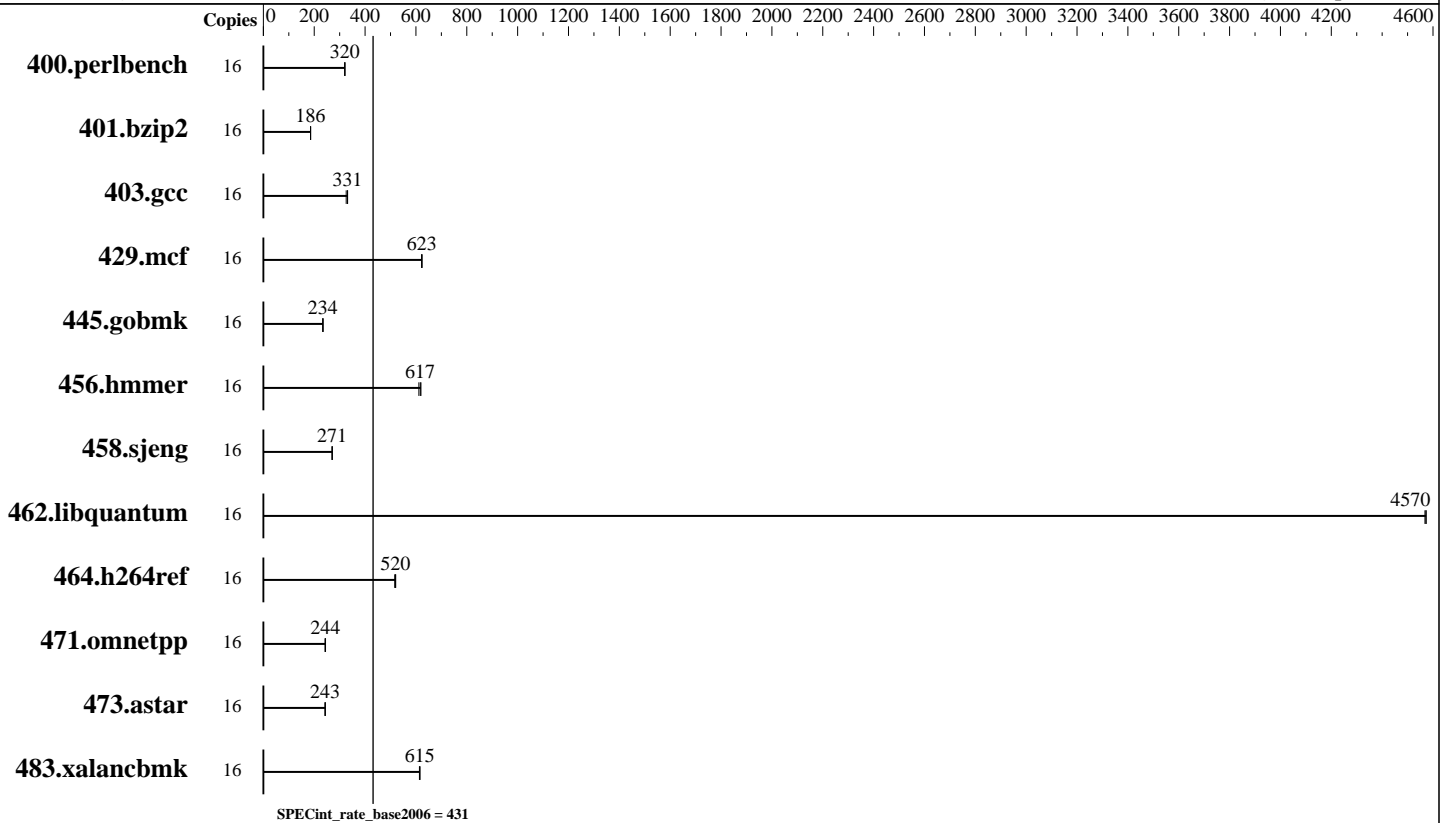
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Results Table

Benchmark		Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	488	320	488	320	**488**	**320**							
401.bzip2	16	**832**	**186**	832	185	831	186							
403.gcc	16	389	331	395	326	**389**	**331**							
429.mcf	16	234	624	234	622	**234**	**623**							
445.gobmk	16	**717**	**234**	717	234	717	234							
456.hmmer	16	244	612	**242**	**617**	241	620							
458.sjeng	16	716	270	**716**	**271**	715	271							
462.libquantum	16	72.5	4570	72.6	4570	**72.5**	**4570**							
464.h264ref	16	686	516	**681**	**520**	681	520							
471.omnetpp	16	413	242	409	244	**409**	**244**							
473.astar	16	**462**	**243**	462	243	462	243							
483.xalancbmk	16	**180**	**615**	179	616	180	614							

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 wtih "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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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_m3_sles Sat Dec  9 00:08:08 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 3106 CPU @ 1.70GHz
       2 "physical id"s (chips)
       16 "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 : 8
       siblings  : 8
       physical 0: cores 0 1 2 3 4 5 6 7
       physical 1: cores 0 1 2 3 4 5 6 7
    cache size : 11264 KB

 From /proc/meminfo
    MemTotal:       395932480 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_m3_sles 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 9 00:06

 SPEC is set to: /home/cpu2006
    Filesystem      Type   Size   Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
      /dev/sda4      xfs    405G    63G   343G   16% /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 11/14/2017
    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
       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
      471.omnetpp: -D_FILE_OFFSET_BITS=64
        473.astar: -D_FILE_OFFSET_BITS=64
    483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

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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/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/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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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