SPEC® CINT2006 Result

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Hewlett Packard Enterprise

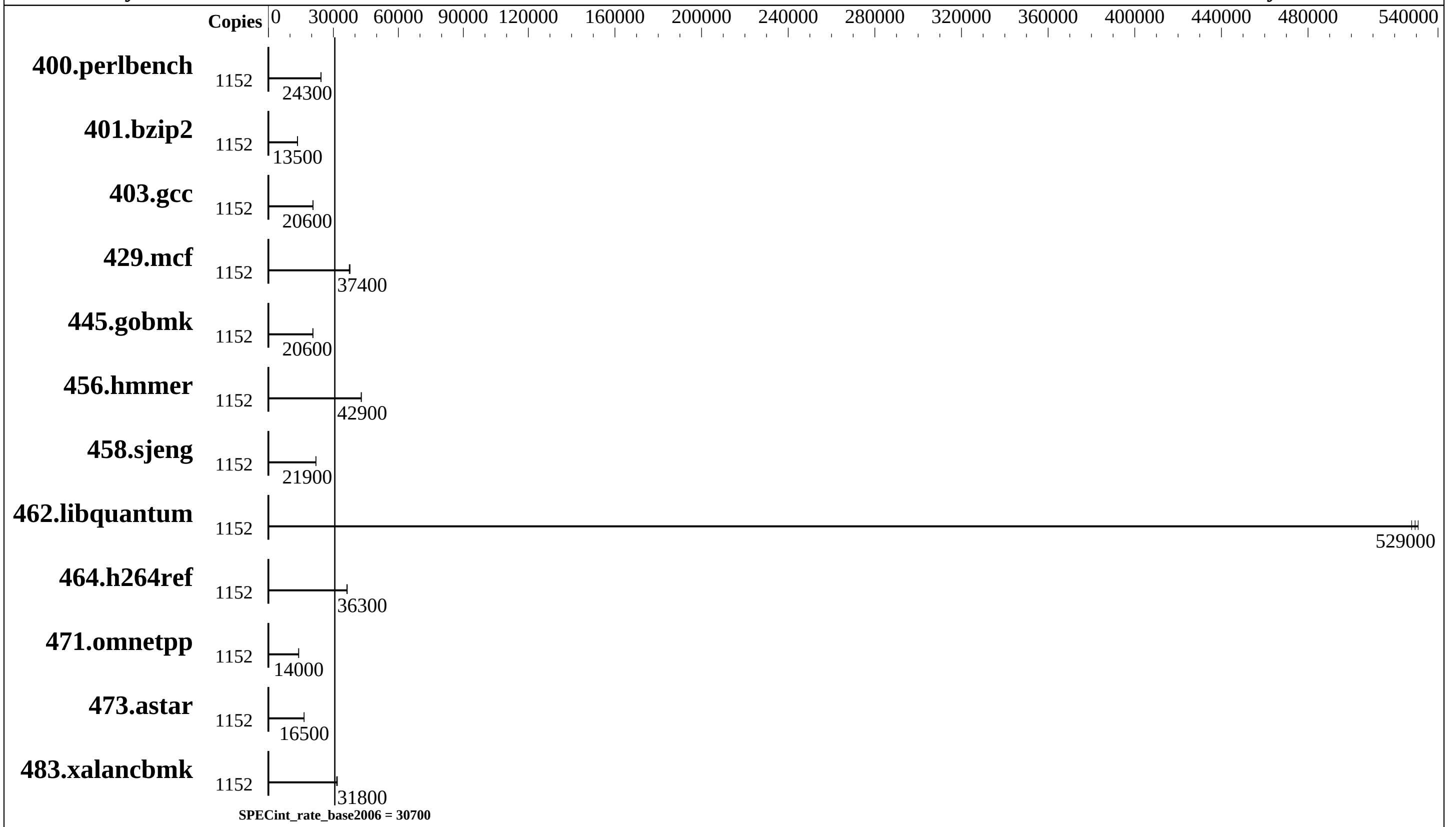
(Test Sponsor: HPE)

Superdome Flex
(3.00 GHz, Intel Xeon Gold 6154)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 30700

CPU2006 license: 3		**Test date:**	Dec-2017
Test sponsor:	HPE	**Hardware Availability:**	Mar-2018
Tested by:	HPE	**Software Availability:**	Mar-2018



Hardware

CPU Name:	Intel Xeon Gold 6154
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	576 cores, 32 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4 to 32 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	24.75 MB I+D on chip per chip
Other Cache:	None
Memory:	12 TB (384 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem:	12 TB tmpfs
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 (x86_64) SP2, Kernel 4.4.74-92.38-default
Compiler:	C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
Auto Parallel:	No
File System:	tmpfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	Not Applicable
Other Software:	Microquill SmartHeap V10.2, HPE Foundation Software 1.0, Build 717a270.sles12sp2-1709012000

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	1152	**463**	**24300**	464	24200	462	24300							
401.bzip2	1152	**825**	**13500**	822	13500	828	13400							
403.gcc	1152	449	20700	452	20500	**450**	**20600**							
429.mcf	1152	278	37700	**281**	**37400**	281	37300							
445.gobmk	1152	590	20500	**587**	**20600**	587	20600							
456.hmmer	1152	250	43000	**251**	**42900**	251	42800							
458.sjeng	1152	**636**	**21900**	636	21900	636	21900							
462.libquantum	1152	**45.1**	**529000**	45.2	528000	45.0	531000							
464.h264ref	1152	704	36200	**702**	**36300**	700	36400							
471.omnetpp	1152	**514**	**14000**	516	14000	513	14000							
473.astar	1152	**489**	**16500**	490	16500	489	16500							
483.xalancbmk	1152	250	31800	253	31400	**250**	**31800**							

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 with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
The tmpfs filesystem was set up with:
   mkdir -p /dev/shm/cpu2006-32S
   mount -t tmpfs -o size=12288G,rw tmpfs /dev/shm/cpu2006-32S
```

Platform Notes

```
Rack Management Controller setting:
   modify npar pnum=0 ras=hpc

Sysinfo program /dev/shm/cpu2006-32S/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on uv4test35-sys Mon Dec 11 10:08:20 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
```

Continued on next page

Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) Gold 6154 CPU @ 3.00GHz
      32 "physical id"s (chips)
      1152 "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 : 18
      siblings  : 36
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 8: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 9: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 10: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 11: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 12: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 13: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 14: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 15: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 16: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 17: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 18: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 19: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 20: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 21: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 22: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 23: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 24: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 25: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 26: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 27: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 28: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 29: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 30: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 31: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 25344 KB

From /proc/meminfo
   MemTotal:       12293889700 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

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

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Platform Notes (Continued)

```
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.
   hpe-foundation-release: HPE Foundation Software 1.0, Build
   717a270.sles12sp2-1709012000
   hpe-mpi-release: HPE MPI 1.2, Build 718a13.sles12sp2-1710021900
   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"
   sgi-release: SGI Performance Suite 1.16

uname -a:
   Linux uv4test35-sys 4.4.74-92.38-default #1 SMP Tue Sep 12 19:43:46 UTC 2017
   (545c055) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 10 17:38

SPEC is set to: /dev/shm/cpu2006-32S
   Filesystem     Type   Size  Used Avail Use% Mounted on
   tmpfs          tmpfs   12T  2.0G   12T   1% /dev/shm/cpu2006-32S
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.


(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/dev/shm/cpu2006-32S/lib/ia32:/dev/shm/cpu2006-32S/lib/intel64:/dev/shm/cpu2006-32S/sh10.2"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
```

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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
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-Superdome_Flex-RevA.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-Superdome_Flex-RevA.xml

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