SPEC® CINT2006 Result
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Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Silver 4112)

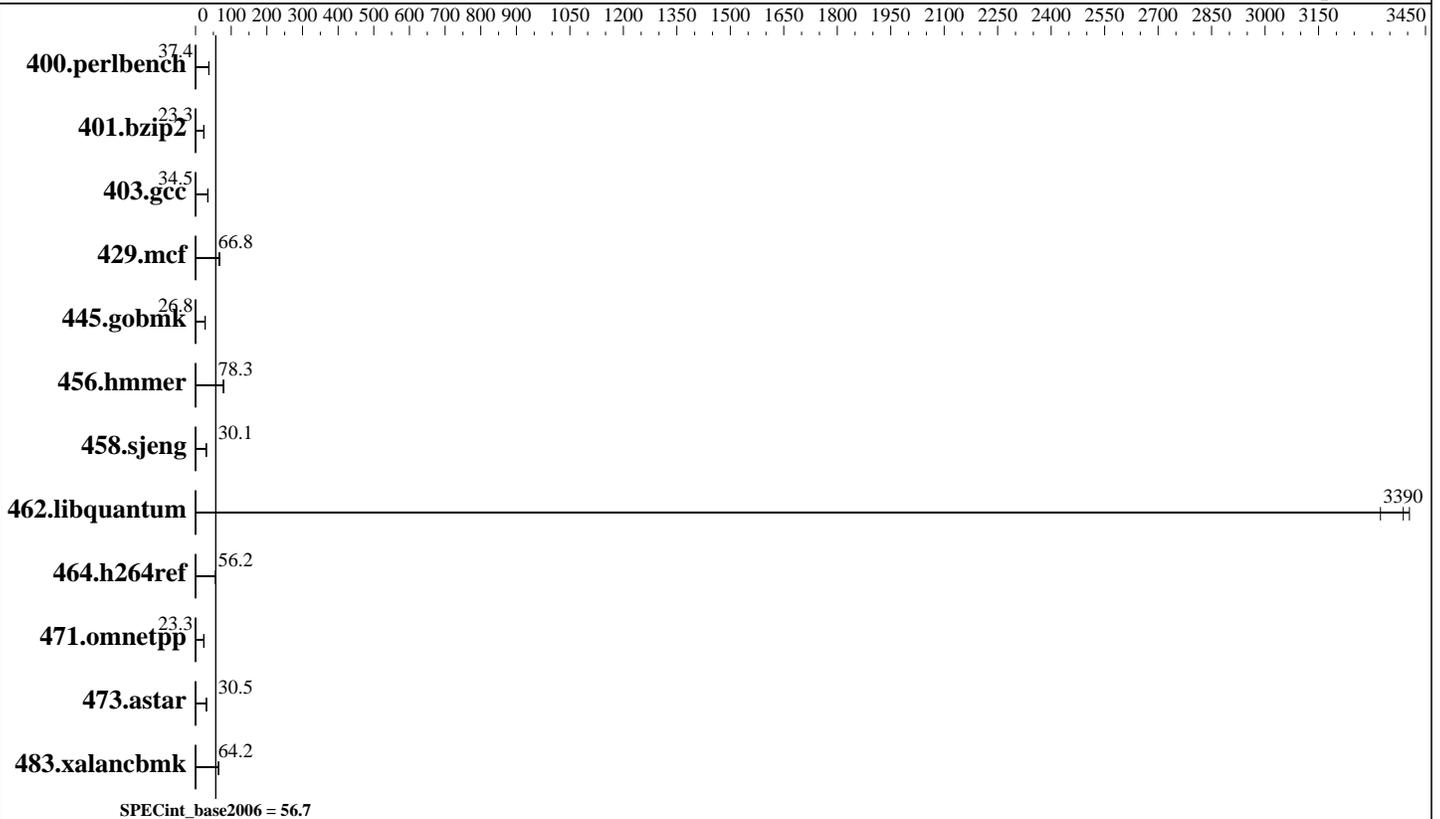$SPECint^®2006 =$ **Not Run**

$SPECint\_base2006 =$ **56.7**

CPU2006 license: 3	**Test date:** Oct-2017
Test sponsor: HPE	**Hardware Availability:** Oct-2017
Tested by: HPE	**Software Availability:** Apr-2017

0 100 200 300 400 500 600 700 800 900 1050 1200 1350 1500 1650 1800 1950 2100 2250 2400 2550 2700 2850 3000 3150   3450

Benchmark	Value
400.perlbench	37.4
401.bzip2	23.3
403.gcc	34.5
429.mcf	66.8
445.gobmk	26.8
456.hmmer	78.3
458.sjeng	30.1
462.libquantum	3390
464.h264ref	56.2
471.omnetpp	23.3
473.astar	30.5
483.xalancbmk	64.2

SPECint_base2006 = 56.7

Hardware

CPU Name:	Intel Xeon Silver 4112
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	192 GB (24 x 8 GB 2Rx8 PC4-2666V-R, running at 2400)
Disk Subsystem:	1 x 600 GB SATA SSD, RAID 0
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.3 (Maipo) Kernel 3.10.0-514.el7.x86_64
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

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	261	37.4	261	37.5	**261**	**37.4**						
401.bzip2	**413**	**23.3**	413	23.3	414	23.3						
403.gcc	233	34.6	233	34.5	**233**	**34.5**						
429.mcf	134	67.9	138	66.1	**137**	**66.8**						
445.gobmk	391	26.8	**391**	**26.8**	391	26.8						
456.hmmer	119	78.4	**119**	**78.3**	119	78.1						
458.sjeng	401	30.1	**402**	**30.1**	402	30.1						
462.libquantum	**6.12**	**3390**	6.09	3400	6.23	3320						
464.h264ref	395	56.1	**394**	**56.2**	393	56.3						
471.omnetpp	268	23.4	**268**	**23.3**	268	23.3						
473.astar	**230**	**30.5**	230	30.5	231	30.4						
483.xalancbmk	107	64.2	**107**	**64.2**	107	64.3						

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
irqbalance disabled with "systemctl stop irqbalance"
tuned profile set wtih "tuned-adm profile throughput-performance"
```

Platform Notes

```
BIOS Configuration:
 Intel Hyperthreading set to Disabled
 Thermal Configuration set to Maximum Cooling
 LLC Prefetcher set to Enabled
 LLC Dead Line Allocation set to Disabled
 Stale A to S 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
  Uncore Frequency scaling set to Auto
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on DL360G10 Tue Oct 24 06:51:41 2017

 This section contains SUT (System Under Test) info as seen by
 some common utilities.  To remove or add to this section, see:
```

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Software Availability: Apr-2017

Platform Notes (Continued)

```
     http://www.spec.org/cpu2006/Docs/config.html#sysinfo

   From /proc/cpuinfo
      model name : Intel(R) Xeon(R) Silver 4112 CPU @ 2.60GHz
         2 "physical id"s (chips)
         8 "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 : 4
         siblings  : 4
         physical 0: cores 1 2 4 5
         physical 1: cores 0 2 3 4
      cache size : 8448 KB

   From /proc/meminfo
      MemTotal:       197753316 kB
      HugePages_Total:        0
      Hugepagesize:        2048 kB

   From /etc/*release* /etc/*version*
      os-release:
         NAME="Red Hat Enterprise Linux Server"
         VERSION="7.3 (Maipo)"
         ID="rhel"
         ID_LIKE="fedora"
         VERSION_ID="7.3"
         PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
         ANSI_COLOR="0;31"
         CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
      redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
      system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

   uname -a:
      Linux DL360G10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
      x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Oct 24 06:48

   SPEC is set to: /home/cpu2006
      Filesystem                     Type  Size  Used Avail Use% Mounted on
      /dev/mapper/rhel_dl360g10-home xfs   504G   37G  467G   8% /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 U32 09/29/2017
      Memory:
```
                                Continued on next page

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Platform Notes (Continued)

```
    24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz, configured at 2400 MHz

  (End of data from sysinfo program)
```

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 = "8"

 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
      445.gobmk: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
    462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
      464.h264ref: -DSPEC_CPU_LP64
      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
```

C++ benchmarks:
```
     -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
     -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
```

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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-revD.html

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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-revD.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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