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

$SPECint^{®}2006 =$ **Not Run**

ProLiant DL360 Gen10
(2.50 GHz, Intel Xeon Platinum 8180)

$SPECint\_base2006 =$ **81.6**

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

0   500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000 8500 9000 9500 10000   11500

```
400.perlbench    47.7
401.bzip2        28.9
403.gcc          45.9
429.mcf          81.1
445.gobmk        34.5
456.hmmer        99.2
458.sjeng        38.7
462.libquantum                                                                                   11000
464.h264ref      70.4
471.omnetpp      49.9
473.astar        40.0
483.xalancbmk    82.6
```

SPECint_base2006 = 81.6

Hardware

CPU Name:	Intel Xeon Platinum 8180
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	56 cores, 2 chips, 28 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:	38.5 MB I+D on chip per chip
Other Cache:	None
Memory:	192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)
Disk Subsystem:	1 x 480 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 17.0.0.098 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:	32/64-bit
Other Software:	Microquill SmartHeap V10.2

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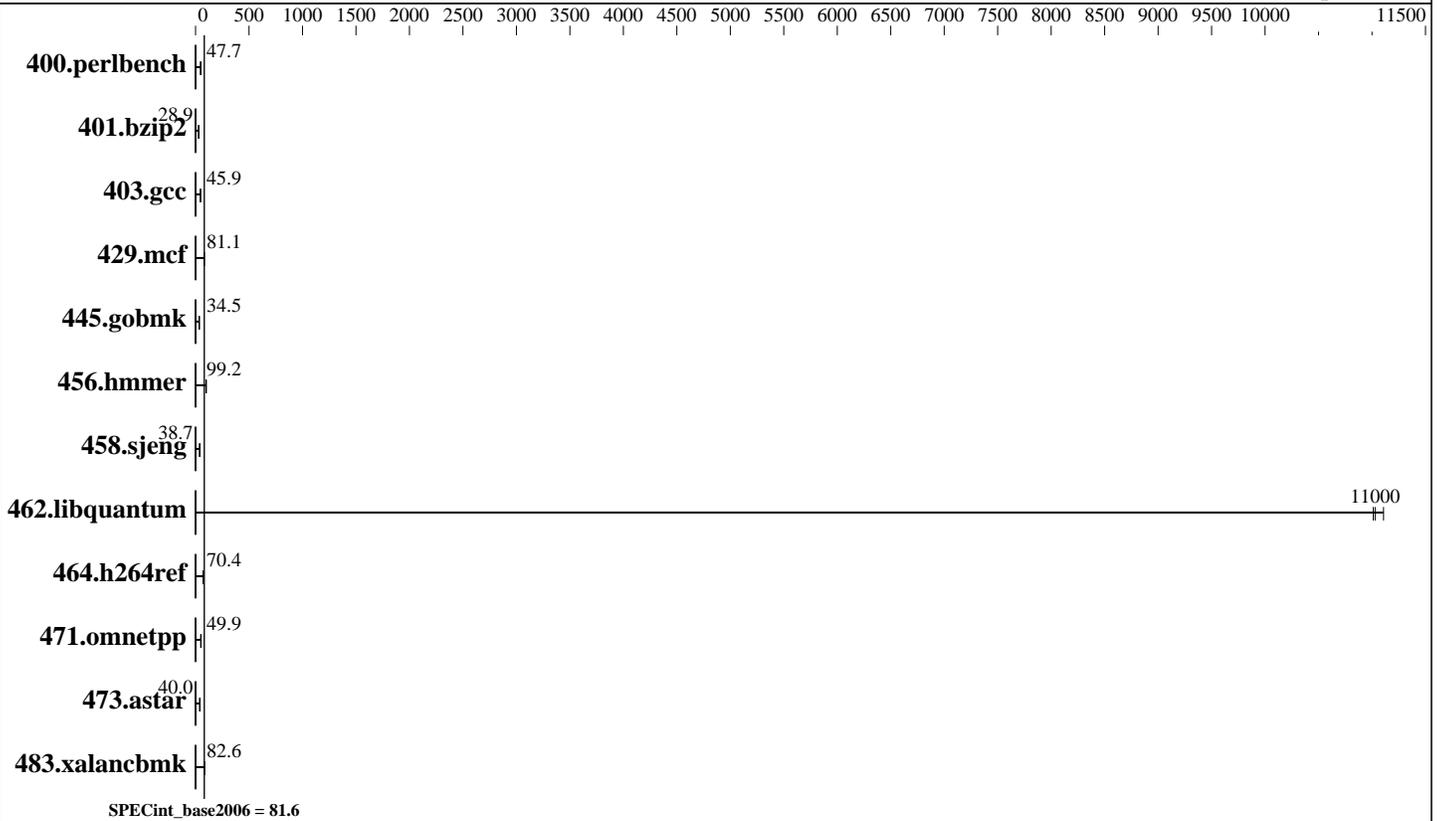
Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	204	47.8	205	47.6	**205**	**47.7**						
401.bzip2	334	28.9	**334**	**28.9**	335	28.8						
403.gcc	175	46.0	175	45.9	**175**	**45.9**						
429.mcf	115	79.3	112	81.2	**113**	**81.1**						
445.gobmk	304	34.5	**304**	**34.5**	304	34.5						
456.hmmer	94.0	99.2	94.2	99.0	**94.0**	**99.2**						
458.sjeng	313	38.7	**313**	**38.7**	313	38.7						
462.libquantum	1.87	11100	**1.88**	**11000**	1.88	11000						
464.h264ref	315	70.4	**314**	**70.4**	313	70.6						
471.omnetpp	125	49.9	**125**	**49.9**	125	50.0						
473.astar	175	40.0	176	39.9	**176**	**40.0**						
483.xalancbmk	**83.5**	**82.6**	83.3	82.8	83.6	82.5						

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
File system was mounted with noatime
IRQ balance service was stop using "service irqbalance stop"
```

Platform Notes

```
BIOS Configuration:
 Hyper-Threading set to Disabled
 Thermal Configuration set to Maximum Cooling
 LLC prefetch set to Enabled
 LLC Dead Line Allocation set to Disabled
Workload Profile set to General Peak Frequency Compute
 Energy/Performance Bias set to Maximum Performance
 Minimum Processor Idle Power Core C-state set to C1E
Workload Profile set to Custom
 Uncore Frequency Scaling set to Auto
 Sysinfo program /home/cpu2006/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on DL360G10 Fri Jul 14 04:28:08 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
```

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Hardware Availability: Sep-2017
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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz
      2 "physical id"s (chips)
      56 "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 : 28
      siblings  : 28
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
   cache size : 39424 KB

From /proc/meminfo
   MemTotal:       197747068 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 Jul 14 04:27

SPEC is set to: /home/cpu2006
   Filesystem                     Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel_dl360g10-home xfs   392G   22G  371G   6% /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 06/08/2017
   Memory:
```

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Platform Notes (Continued)

```
     24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 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 = "52"

 Binaries compiled on a system with 2x Intel Xeon E5-2699 v4 CPU + 256GB RAM
 memory using SUSE Linux Enterprise Server 12 SP1
```

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 -complex-limited-range -qopt-prefetch-issue-excl-hint
   -ansi-alias
```

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/home/cpu2006/sh10.2 -lsmartheap64
```

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-Compiler-Flags-Intel-V1.2-HSW-revJ.html
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/HPE-Compiler-Flags-Intel-V1.2-HSW-revJ.xml
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revB.xml

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

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