## SPEC® CFP2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)

**ProLiant DL360 Gen10**  
(3.00 GHz, Intel Xeon Gold 6136)

<table>
<thead>
<tr>
<th>Test date:</th>
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**SPECfp®2006** = Not Run  
**SPECfp_base2006** = 148

### CPU2006 license: 3  
Tested by: HPE

### Hardware

| 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;  
| File System: | Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux |
| Auto Parallel: | Yes |
| File System: | xfs |

| CPU Name: | Intel Xeon Gold 6136 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.70 GHz |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 24 cores, 2 chips, 12 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 |

### Test Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<tr>
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**SPECfp_base2006** = 148

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Results Table

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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 with "tuned-adm profile throughput-performance"

Platform Notes

BIOS Configuration:
  Intel Hyperthreading set to Disabled
  Thermal Configuration set to Maximum Cooling
  Memory Patrol Scrubbing set to Disabled
  LLC Prefetcher set to Enabled

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## SPEC CFP2006 Result

### Hewlett Packard Enterprise

[Test Sponsor: HPE]

ProLiant DL360 Gen10
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**CPU2006 license:** 3  
**Test sponsor:** HPE  
**Tested by:** HPE  
**Test date:** Oct-2017  
**Hardware Availability:** Oct-2017  
**Software Availability:** Apr-2017

### Platform Notes (Continued)

- LLC Dead Line Allocation set to Disabled
- Workload Profile set to General Peak Frequency Compute
- Energy/Performance Bias set to Maximum Performance
- Uncore Frequency Scaling set to Auto
- Workload Profile set to Custom
- NUMA Group Size Optimization set to Flat

Sysinfo program /home/specuser/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
runtime on dl360gen10rhel73 Thu Oct 12 12:41:44 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) Gold 6136 CPU @ 3.00GHz  
- 2 "physical id"s (chips)  
- 24 "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 : 12  
  - siblings : 12  
  - physical 0: cores 0 1 2 3 8 9 10 11 18 19 24 27  
  - physical 1: cores 0 1 2 3 8 9 10 11 18 19 24 27  
- cache size : 25344 KB

From /proc/meminfo

- MemTotal: 197573264 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)  

uname -a:

- Linux dl360gen10rhel73 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 12 12:04  

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SPECfp2006 = Not Run
SPECfp_base2006 = 148

CPU2006 license: 3
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Tested by: HPE

Platform Notes (Continued)

SPEC is set to: /home/specuser/cpu2006
Filesystem            Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   392G   20G  373G   5% /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:
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=core,compact"
LD_LIBRARY_PATH = "/home/specuser/cpu2006/lib/ia32:/home/specuser/cpu2006/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/specuser/cpu2006/sh10.2"
OMP_NUM_THREADS = "24"

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

Fortran benchmarks:
  ifort -m64

Benchmarks using both Fortran and C:
  icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64

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**SPEC CFP2006 Result**

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### Base Portability Flags (Continued)

- 433.milc: -DSPEC_CPU_LP64
- 434.zeusmp: -DSPEC_CPU_LP64
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64
- 447.dealII: -DSPEC_CPU_LP64
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64 -nofor_main
- 454.calculix: -DSPEC_CPU_LP64 -nofor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64
- 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
- 482.sphinx3: -DSPEC_CPU_LP64

### Base Optimization Flags

**C benchmarks:**
- -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

**C++ benchmarks:**
- -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

**Fortran benchmarks:**
- -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

**Benchmarks using both Fortran and C:**
- -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

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-SKK-revD.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-SKK-revD.xml
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For other inquiries, please contact webmaster@spec.org.

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