**SPEC® CFP2006 Result**

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

**ProLiant DL580 Gen10**
(2.50 GHz, Intel Xeon Platinum 8180)

**SPECfp®2006 = Not Run**
**SPECfp_base2006 = 143**

<table>
<thead>
<tr>
<th>SPECfp Base2006</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>649</td>
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<tr>
<td>416.gamess</td>
<td>50.6</td>
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<tr>
<td>433.milc</td>
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<td>434.zeusmp</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
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<td>444.namd</td>
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<td>447.dealII</td>
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<td>450.soplex</td>
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<td>453.povray</td>
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<td>454.calculix</td>
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<tr>
<td>459.GemsFDTD</td>
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<tr>
<td>465.tonto</td>
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<td>470.lbm</td>
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<tr>
<td>481.wrf</td>
<td>81.7</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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:** 112 cores, 4 chips, 28 cores/chip
- **CPU(s) orderable:** 2,4 chip(s)
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 1 MB I+D on chip per core

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

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CPU2006 license: 3
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L3 Cache: 38.5 MB I+D on chip per chip
Other Cache: None
Memory: 768 GB (48 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 800 GB SATA SSD, RAID 0
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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

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
Stale A to S set to Enabled
Memory patrol scrubbing set to disabled

Continued on next page
Platform Notes (Continued)

AHS PCI logging level set to Minimal logging
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 DL580G10 Sat Sep 16 00:55:23 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) Platinum 8180 CPU @ 2.50GHz
  4 "physical id"s (chips)
  112 "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
  physical 2: 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 3: 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:       792278088 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)

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Test date: Sep-2017
Hardware Availability: Sep-2017
Software Availability: Apr-2017

Platform Notes (Continued)

uname -a:
    Linux DL580G10 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 Sep 15 22:46

SPEC is set to: /home/cpu2006

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 U34 08/18/2017
    Memory:
        48x UNKNOWN NOT AVAILABLE 16 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/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
OMP_NUM_THREADS = "19"

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
## SPEC CFP2006 Result

### Hewlett Packard Enterprise

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### Base Portability Flags

- 410.bwaves: -DSPEC_CPU_LP64
- 416.gamec: -DSPEC_CPU_LP64
- 433.milc: -DSPEC_CPU_LP64
- 434.zeusmp: -DSPEC_CPU_LP64
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- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64
- 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG
- 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`

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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-SKX-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-SKX-revD.xml

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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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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