### SPEC® CFP2006 Result

#### Hewlett Packard Enterprise

- **Test Sponsor:** HPE
- **ProLiant DL380 Gen10**
  - (2.50 GHz, Intel Xeon Platinum 8180)
- **CPU2006 license:** 3
- **Test date:** Jun-2017
- **Test sponsor:** HPE
- **Hardware Availability:** Sep-2017
- **Tested by:** HPE
- **Software Availability:** May-2017

#### SPECfp®2006 = Not Run

**SPECfp_base2006 = 146**

<table>
<thead>
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### 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:** 28 cores, 1 chip, 28 cores/chip
- **CPU(s) orderable:** 1.2 chip(s)
- **Primary Cache:** 32 KB L1 + 32 KB D on chip per core
- **Secondary Cache:** 1 MB L1+D on chip per core

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP2 Kerne1 4.4.21-68-default
- **Compiler:** C/C++: Version 17.0.4.196 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.4.196 of Intel Fortran Compiler for Linux
- **Auto Parallel:** Yes
- **File System:** btrfs
- **System State:** Run level 3 (multi-user)
### SPEC CFP2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(2.50 GHz, Intel Xeon Platinum 8180)

**SPECfp2006 = Not Run**

**SPECfp_base2006 = 146**

#### CPU2006 license: 3  
**Test sponsor:** HPE  
**Tested by:** HPE

- **L3 Cache:** 38.5 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 96 GB (12 x 8 GB 2Rx8 PC4-2666V-R)  
- **Disk Subsystem:** 1 x 450 GB SATA SSD, RAID 0  
- **Other Hardware:** None

- **Base Pointers:** 64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** None

**Test date:** Jun-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** May-2017

#### Results Table

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</table>

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 service stopped using: "systemctl stop irqbalance.service"

### Platform Notes

**BIOS Configuration:**  
Hyper-Threading set to Disabled  
Thermal Configuration set to Maximum Cooling  
LLC Dead Line Allocation set to Disabled  
XPT Prefetch set to Disabled  
Workload Profile set to General Peak Frequency Compute

Continued on next page
Platform Notes (Continued)

Energy/Performance Bias set to Maximum Performance
Sysinfo program /spec_cpu/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on local Tue Jun 27 01:58:24 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
  1 "physical id"s (chips)
  28 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
to following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
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
cache size : 39424 KB

From /proc/meminfo
MemTotal:       98451040 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

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

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.
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"

uname -a:
Linux local 4.4.21-68-default #1 SMP Tue Oct 18 18:19:37 UTC 2016 (63cf368)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jun 27 01:54

Continued on next page
SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
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CPU2006 license: 3
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Platform Notes (Continued)

SPEC is set to: /spec_cpu/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdb3 btrfs 445G 83G 359G 19% /

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 U30 06/08/2017
Memory:
12x UNKNOWN NOT AVAILABLE
12x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 96 GB and the dmidecode description should have one line reading as:
12x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/spec_cpu/cpu2006/lib/ia32:/spec_cpu/cpu2006/lib/intel64:/spec_cpu/cpu2006/sh10.2"
OMP_NUM_THREADS = "28"

Binaries compiled on a system with 2x Intel Xeon Platinum 8180 CPU + 384GB RAM
memory using Redhat Enterprise Linux 7.3

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
Hewlett Packard Enterprise
(Test Sponsor: HPE)
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Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamepp: -DSPEC_CPU_LP64
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.lessh3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
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
-ansi-alias -fp-model fast=2

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ansi-alias
-fp-model fast=2

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-fp-model fast=2

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-ansi-alias -fp-model fast=2

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-revK.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-revK.xml
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revB.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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