Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL560 Gen10
(2.80 GHz, Intel Xeon Gold 6143)

SPEC® CFP2006 Result

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SPECfp®2006 = Not Run
SPECfp_base2006 = 139

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

Test date: Nov-2017
Hardware Availability: Dec-2017
Software Availability: Apr-2017

410.bwaves
416.gamess
433.milc
434.zeusmp
435.gromacs
436.cactusADM
437.leslie3d
444.namd
447.dealII
450.soplex
453.povray
454.calculix
459.GemsFDTD
465.tonto
470.lbm
481.wrf
482.sphinx3

SPECfp_base2006 = 139

Hardware
CPU Name: Intel Xeon Gold 6143
CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip
CPU(s) orderable: 1, 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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<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
IRQ balance service was stop using "service irqbalance stop"
Tuned-adm profile was set to Throughput-Performance

Platform Notes
BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
LLC Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
### Platform Notes (Continued)

- Stale A to S set to Enabled
- 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
- Sysinfo program `/home/cpu2006/config/sysinfo.rev6993`
- Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
- running on DL560G10 Thu Nov 30 05:22:11 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 6143 CPU @ 2.80GHz
   4 "physical id"s (chips)
   64 "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 : 16
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 22528 KB
```

From `/proc/meminfo`

```
MemTotal:   395925056 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

From `/etc/*release* /etc/*version*`

```
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 DL560G10 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
```

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Platform Notes (Continued)

run-level 3 Nov 30 03:07
SPEC is set to: /home/cpu2006
/home/cpu2006
/dev/mapper/rhel_dl560g10-home xfs 839G 37G 803G 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 U34 09/29/2017
Memory:
48x 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/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
OMP_NUM_THREADS = "64"

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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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/Intel-ic17.0-official-linux64-revF.html
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.html

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-revH.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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