Hewlett Packard Enterprise
ProLiant DL380 Gen10
(3.40 GHz, Intel Xeon Gold 6128)

SPECfp®_rate2006 =  Not Run
SPECfp_rate_base2006 = 788

Hardware
CPU Name: Intel Xeon Gold 6128
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3400
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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

Software
Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP2
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: No
File System: xfs
System State: Run level 3 (multi-user)
**SPEC CFP2006 Result**

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
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(3.40 GHz, Intel Xeon Gold 6128)

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**Test Sponsor:** HPE  
**Test date:** Nov-2017  
**Hardware Availability:** Oct-2017  
**Software Availability:** Apr-2017

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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>24</td>
<td>355</td>
<td>919</td>
<td>354</td>
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<tr>
<td>416.gamess</td>
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<td>689</td>
<td>682</td>
<td>691</td>
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<td>692</td>
<td>679</td>
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<td>433.milc</td>
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<td>230</td>
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<td>434.reusmp</td>
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<td>435.gromacs</td>
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<td>970</td>
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<td>437.leslie3d</td>
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<td>530</td>
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<td>362</td>
<td>532</td>
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<td>459.GemsFDTD</td>
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<td>465.tonto</td>
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<td>810</td>
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<td>470.lbm</td>
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<td>866</td>
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<tr>
<td>481.wrf</td>
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<td>1080</td>
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<td>1080</td>
<td>245</td>
<td>1090</td>
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<tr>
<td>482.sphinx3</td>
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<td>672</td>
<td>696</td>
<td>669</td>
<td>699</td>
<td>670</td>
<td>698</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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**Submit Notes**

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

---

**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  
runcp command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
irqbalance disabled with "service irqbalance stop"  
tuned profile set with "tuned-adm profile throughput-performance"  
Continued on next page
**SPEC CFP2006 Result**

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

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

Operating System Notes (Continued)

VM Dirty ratio was set to 40 using "echo 40 > /proc/sys/vm/dirty_ratio"
Numa balancing was disabled using "echo 0 > /proc/sys/kernel/numa_balancing"

Platform Notes

BIOS Configuration:
- Thermal Configuration set to Maximum Cooling
- LLC Prefetch set to Enabled
- LLC Dead Line Allocation set to Disabled
- Memory Patrol Scrubbing set to Disabled
- Workload Profile set to General Throughput Compute
- Minimum Processor Idle Power Core C-State set to C1E

Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4ed51ed28d7f98696cbe290c1)
running on d1380gen10-2 Wed Nov 8 21:52:57 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 6128 CPU @ 3.40GHz
- 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: 6
  - siblings: 12
  - physical: cores 0 6 9 10 11 13
  - physical 1: cores 0 6 9 10 11 13
- cache size: 19712 KB

From /proc/meminfo
- MemTotal: 197556248 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"

Continued on next page
## Hewlett Packard Enterprise

**Test Sponsor:** HPE  
**ProLiant DL380 Gen10**  
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### Platform Notes (Continued)

```
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:
    (9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

**run-level 3 Nov 8 21:52**

**SPEC is set to:** /home/cpu2006

### General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = 
```

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
  ```

(Continued on next page)
Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64
```

Base Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -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.leslie3d: -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 -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

**C++ benchmarks:**

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

**Fortran benchmarks:**

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

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-revF.html
## SPEC CFP2006 Result

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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-revF.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.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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