Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(1.70 GHz, Intel Xeon Bronze 3106)

SPECfp®2006 = Not Run
SPECfp_base2006 = 74.0

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

Hardware
CPU Name: Intel Xeon Bronze 3106
CPU Characteristics:
CPU MHz: 1700
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 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

Software
Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
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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http://www.spec.org/
**SPEC CFP2006 Result**

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<table>
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<tr>
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<td>36.3</td>
<td>537</td>
<td>36.3</td>
</tr>
</tbody>
</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 Throughtput-Performance

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**Platform Notes**

- BIOS Configuration:  
  - Thermal Configuration set to Maximum Cooling  
  - LLC Prefetch set to Enabled 
  - LLC Dead Line Allocation set to Disabled

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CPU2006 license: 3
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Test date: Dec-2017
Hardware Availability: Nov-2017
Software Availability: Apr-2017

Platform Notes (Continued)

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 (b5e8d4eb51ed287f98696cbe290c1)
running on SY480_M3_RHEL Thu Dec 7 08:05:21 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) Bronze 3106 CPU @ 1.70GHz
  2 "physical id"s (chips)
  16 "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 : 8
siblings : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 11264 KB

From /proc/meminfo
MemTotal: 395933088 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 SY480_M3_RHEL 3.10.0-514.e17.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 7 08:00

SPEC is set to: /home/cpu2006

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Platform Notes (Continued)

Filesystem            Type  Size  Used Avail Use% Mounted on  
/dev/mapper/rhel-home xfs   392G   25G  368G   7% /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 I42 11/14/2017  
Memory:  
24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2133 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 = "16"

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
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64 -nofor_main
435.gromacs: -DSPEC_CPU_LP64

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

### Base Portability Flags (Continued)

- 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` `-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-SKX-revH.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/HPE-Platform-Flags-Intel-V1.2-SKX-revH.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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