## Dell Inc.

### PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Hardware Availability:** Sep-2017  
**Software Availability:** Nov-2016  

### SPECfp\_rate2006 = 1180  
**SPECfp\_rate_base2006 = 1140**

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**Hardware**

- **CPU Name:** Intel Xeon Gold 6136  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHz:** 3000  
- **FPU:** Integrated  
- **CPU(s) enabled:** 24 cores, 2 chips, 12 cores/chip, 2 threads/core  
- **CPU(s) orderable:** 1,2 chip  
- **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 SP2 (x86_64)  
  4.4.16-56-default  
- **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:** btrfs  
- **System State:** Run level 3 (multi-user)
Dell Inc.

PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

CPU2006 license: 55
Test sponsor: Dell Inc.
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L3 Cache: 24.75 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 960 GB SATA SSD
Other Hardware: None

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

SPEC CFP2006 Result

Dell Inc. PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

SPECfp_rate2006 = 1180
SPECfp_rate_base2006 = 1140

Test date: Sep-2017
Hardware Availability: Sep-2017
Software Availability: Nov-2016

Results Table

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</tbody>
</table>

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

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"

Platform Notes

BIOS settings:
Sub NUMA Cluster enabled
Virtualization Technology disabled

Continued on next page
Platform Notes (Continued)

System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to autonomous
C1E disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub disabled
Logical Processor enabled
CPU Interconnect Bus Link Power Management disabled
PCI ASPI L1 Link Power Management disabled
Sysinfo program /root/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-u8yg Wed Sep  6 13:11:35 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 6136 CPU @ 3.00GHz
  2 "physical id"s (chips)
  48 "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 : 12
  siblings : 24
  physical 0: cores 0 1 2 3 8 9 10 11 18 19 24 27
  physical 1: cores 0 1 2 3 4 9 10 16 18 19 25 26
  cache size : 25344 KB

From /proc/meminfo
  MemTotal:       196687100 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

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"
SPEC CFP2006 Result

Dell Inc.

PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

SPECfp_rate2006 = 1180
SPECfp_rate_base2006 = 1140

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Sep-2017
Hardware Availability: Sep-2017
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Platform Notes (Continued)

uname -a:
   Linux linux-u8yg 4.4.16-56-default #1 SMP Mon Aug 8 14:24:26 UTC 2016
   (5b281a8) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 6 04:37

SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem     Type   Size  Used Avail Use% Mounted on
/dev/sda1      btrfs  921G   17G  902G   2% /

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 Dell Inc. 1.0.0 08/10/2017
Memory:
   12x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz
   4x Not Specified Not Specified

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = */root/cpu2006-1.2_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/sh10.2*

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
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
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
   icc -m64

C++ benchmarks:
   icpc -m64

Fortran benchmarks:
   ifort -m64

Continued on next page
Dell Inc.

PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

| SPECfp_rate2006 = | 1180 |
| SPECfp_rate_base2006 = | 1140 |

CPU2006 license: 55
Test sponsor: Dell Inc.
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Test date: Sep-2017
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Software Availability: Nov-2016

Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64
```
Dell Inc. PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

SPECfp_rate2006 = 1180
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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
   icpc -m64

   450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

Fortran benchmarks:
   ifort -m64

Benchmarks using both Fortran and C:
   icc -m64 ifort -m64

Peak Portability Flags

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<tr>
<th>Benchmark</th>
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Peak Optimization Flags

C benchmarks:
   433.milc: basepeak = yes
   470.lbm: basepeak = yes
   482.sphinx3: basepeak = yes

C++ benchmarks:
   444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
              -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -fno-alias -auto-ilp32
              -qopt-mem-layout-trans=3

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Dell Inc.

PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)

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CPU2006 license: 55
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Peak Optimization Flags (Continued)

447. dealII: basepeak = yes
450. soplex: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
   -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -qopt-malloc-options=3
   -qopt-mem-layout-trans=3
453. povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
   -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -unroll4 -qopt-mem-layout-trans=3

Fortran benchmarks:

410. bwaves: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
416. gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
   -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434. zeusmp: basepeak = yes
437. leslie3d: Same as 410. bwaves

459. GemsFDTD: basepeak = yes
465. tonto: basepeak = yes

Benchmarks using both Fortran and C:

435. gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
   -par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32
   -qopt-mem-layout-trans=3
436. cactusADM: basepeak = yes
454. calculix: basepeak = yes
481. wrf: basepeak = yes

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

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
# SPEC CFP2006 Result

**Dell Inc.**  
PowerEdge FC640 (Intel Xeon Gold 6136, 3.00 GHz)  

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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.  
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