### SPEC® CFP2006 Result

**Dell Inc.**

PowerEdge R740 (Intel Xeon Gold 6128, 3.40 GHz)  
**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 745**

<table>
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<th>Test sponsor: Dell Inc.</th>
<th>CPU2006 license: 55</th>
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<td></td>
<td>Hardware Availability: Jul-2017</td>
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#### 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  
- **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  
  4.4.21-69-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:** No  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)

#### Performance Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
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<tr>
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</tr>
<tr>
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| L3 Cache: | 19.25 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 384 GB (24 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 |

### Results Table

<table>
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<tr>
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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

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Dell Inc.

PowerEdge R740 (Intel Xeon Gold 6128, 3.40 GHz)

SPECfp_rate2006 = Not Run
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CPU2006 license: 55
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Tested by: Dell Inc.

Test date: May-2017
Hardware Availability: Jul-2017
Software Availability: Nov-2016

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 ASPM L1 Link Power Management disabled
Sysinfo program /root/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
rising on linux-wwko Mon May 29 20:13:00 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
cautions.)
  cpu cores : 6
  siblings : 12
  physical 0: cores 0 6 9 10 11 13
  physical 1: cores 0 6 9 10 11 13
- cache size : 19712 KB

From /proc/meminfo

- MemTotal: 394867840 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"

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Platform Notes (Continued)

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 May 29 16:14

SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      xfs   892G  9.2G  883G   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 05/16/2017
Memory:
  18x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz
  6x 00CE0632000CE M393A2K43BB1-CTD 16 GB 2 rank 2666 MHz

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.:
  numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc -m64

C++ benchmarks:
  icpc -m64

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**Base Compiler Invocation (Continued)**

Fortran benchmarks:

```fortran
ifort -m64
```

Benchmarks using both Fortran and C:

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

**Base Portability Flags**

- `410.bwaves`: `-DSPEC_CPU_LP64`
- `416.games`: `-DSPEC_CPU_LP64`
- `433.milc`: `-DSPEC_CPU_LP64`
- `435.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**:

```c
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

**C++ benchmarks**:

```c
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

**Fortran benchmarks**:

```fortran
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
```

Benchmarks using both Fortran and C:

```c
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
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The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.  