**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge R540 (Intel Xeon Silver 4116, 2.10 GHz)  

<table>
<thead>
<tr>
<th>SPECint®2006 =</th>
<th>Not Run</th>
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<tr>
<td>SPECint_base2006 =</td>
<td>59.1</td>
</tr>
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**CPU2006 license:** 55  
**Test date:** Aug-2017  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Sep-2017  
**Tested by:** Dell Inc.  
**Software Availability:** Apr-2017

### Performance:

<table>
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</tr>
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<td>458.sjeng</td>
</tr>
<tr>
<td>462.libquantum</td>
</tr>
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</table>

### Hardware

**CPU Name:** Intel Xeon Silver 4116  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz  
**CPU MHz:** 2100  
**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  
**L3 Cache:** 16.5 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2400 MT/s)  
**Disk Subsystem:** 1 x 1 TB SATA 7200 RPM  
**Other Hardware:** None

### 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  
**Auto Parallel:** Yes  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32/64-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** Microquill SmartHeap V10.2
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Results Table

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<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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</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"

Platform Notes

BIOS settings:
Sub NUMA Cluster disabled
Virtualization Technology disabled
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Energy Efficient Turbo 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)
runtime on linux-28u4 Tue Aug 29 18:45:45 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

Continued on next page
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Platform Notes (Continued)

model name : Intel(R) Xeon(R) Silver 4116 CPU @ 2.10GHz
  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 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
  cache size : 16896 KB

From /proc/meminfo
  MemTotal: 196687620 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:
    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"

uname -a:
    (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 29 18:43

SPEC is set to: /root/cpu2006-1.2_ic17u3
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda2 xfs 927G 9.1G 918G 1% /

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.

Continued on next page
## Platform Notes (Continued)

BIOS Dell Inc. 1.0.0 08/10/2017  
Memory:  
- 8x 002C00B3002C 18ASF2G72PD2-2G6D1 16 GB 2 rank 2666 MHz, configured at 2400 MHz  
- 4x 002C0632002C 18ASF2G72PD2-2G6D1 16 GB 2 rank 2666 MHz, configured at 2400 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:  
- KMP_AFFINITY = "granularity=fine,scatter"  
- LD_LIBRARY_PATH = "/root/cpu2006-1.2_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/sh10.2"  
- OMP_NUM_THREADS = "24"  

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

## Base Compiler Invocation

C benchmarks:  
- icc -m64  

C++ benchmarks:  
- icpc -m64

## Base Portability Flags

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Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

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

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