**SPEC® CFP2006 Result**

**Dell Inc.**
PowerEdge R940
(Intel Xeon Gold 6152, 2.10 GHz)

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECfp2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>147</td>
<td>139</td>
</tr>
<tr>
<td>416.gamess</td>
<td>1350</td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>383</td>
<td></td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>1350</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>36.5</td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>55.6</td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>52.1</td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>78.7</td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>71.0</td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>68.4</td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>41.4</td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>64.2</td>
<td></td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>SPECfp_base2006 = 139</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon Gold 6152</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.70 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2100</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>88 cores, 4 chips, 22 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2,4 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

**Continued on next page**
**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.83</td>
<td>1730</td>
<td>8.00</td>
<td>1700</td>
<td>7.80</td>
<td>1740</td>
<td>7.83</td>
<td>1730</td>
<td>8.00</td>
<td>1700</td>
</tr>
<tr>
<td>410.bwaves</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>124</td>
<td>125</td>
<td>127</td>
<td>124</td>
<td>125</td>
<td>125</td>
<td>124</td>
<td>125</td>
<td>124</td>
<td>125</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>47.8</td>
<td>49.5</td>
<td>48.7</td>
<td>47.8</td>
<td>49.5</td>
<td>48.7</td>
<td>47.8</td>
<td>49.5</td>
<td>47.8</td>
<td>49.5</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>163</td>
<td>162</td>
<td>162</td>
<td>163</td>
<td>162</td>
<td>162</td>
<td>163</td>
<td>162</td>
<td>163</td>
<td>162</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>8.93</td>
<td>8.88</td>
<td>8.78</td>
<td>8.93</td>
<td>8.88</td>
<td>8.78</td>
<td>8.93</td>
<td>8.88</td>
<td>8.78</td>
<td>8.88</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>24.1</td>
<td>24.5</td>
<td>24.5</td>
<td>24.1</td>
<td>24.5</td>
<td>24.1</td>
<td>24.5</td>
<td>24.5</td>
<td>24.5</td>
<td>24.5</td>
</tr>
<tr>
<td>444.namd</td>
<td>225</td>
<td>225</td>
<td>225</td>
<td>220</td>
<td>225</td>
<td>225</td>
<td>220</td>
<td>225</td>
<td>220</td>
<td>225</td>
</tr>
<tr>
<td>447.dealII</td>
<td>160</td>
<td>158</td>
<td>158</td>
<td>160</td>
<td>158</td>
<td>160</td>
<td>158</td>
<td>160</td>
<td>158</td>
<td>160</td>
</tr>
<tr>
<td>450.soplex</td>
<td>161</td>
<td>160</td>
<td>160</td>
<td>161</td>
<td>160</td>
<td>160</td>
<td>161</td>
<td>160</td>
<td>161</td>
<td>160</td>
</tr>
<tr>
<td>453.povray</td>
<td>76.3</td>
<td>76.4</td>
<td>76.4</td>
<td>76.3</td>
<td>76.4</td>
<td>76.3</td>
<td>76.3</td>
<td>76.3</td>
<td>76.3</td>
<td>76.3</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>76.3</td>
<td>77.2</td>
<td>77.2</td>
<td>76.3</td>
<td>77.2</td>
<td>76.3</td>
<td>66.4</td>
<td>66.4</td>
<td>66.4</td>
<td>66.4</td>
</tr>
<tr>
<td>465.tonto</td>
<td>239</td>
<td>238</td>
<td>238</td>
<td>239</td>
<td>238</td>
<td>239</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>470.lbm</td>
<td>4.33</td>
<td>4.32</td>
<td>4.32</td>
<td>4.33</td>
<td>4.32</td>
<td>4.33</td>
<td>4.33</td>
<td>4.33</td>
<td>4.33</td>
<td>4.33</td>
</tr>
<tr>
<td>481.wrf</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
<td>82.1</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</td>
<td>304</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"

**Platform Notes**

- BIOS settings:
  - Logical Processor Disabled
  - Virtualization Technology Disabled
  - Sub NUMA Cluster Disabled
  - System Profile set to Custom
  - CPU Performance set to Maximum Performance
  - C1E Disabled
  - C States set to Autonomous
  - Uncore Frequency set to Dynamic
  - Memory Patrol Scrub Disabled

Continued on next page
SPEC CFP2006 Result

Dell Inc.
PowerEdge R940
(Intel Xeon Gold 6152, 2.10 GHz)

SPECfp2006 = 147
SPECfp_base2006 = 139

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

Platform Notes (Continued)

Energy Efficiency Policy set to Performance
CPU Interconnect Bus Link Power Management Disabled
PCI ASPM L1 Link Power Management Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-apb2 Fri Oct 23 04:11:39 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 6152 CPU @ 2.10GHz
4 "physical id"s (chips)
88 "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 : 22
siblings : 22
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
cache size : 30976 KB

From /proc/meminfo
MemTotal: 791225344 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"
ID="sles"

Continued on next page
SPEC CFP2006 Result

Dell Inc.
PowerEdge R940
(Intel Xeon Gold 6152, 2.10 GHz)

SPECfp2006 = 147
SPECfp_base2006 = 139

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

Platform Notes (Continued)

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 Oct 23 04:11
SPEC is set to: /home/cpu2006
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda4      xfs   796G   17G  779G   3% /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 Dell Inc. 1.1.7 08/10/2017
Memory:
    12x 002C00B3002C 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666 MHz
    12x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz
    24x 00CE063200CE M393A2K43BB1-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
OMP_NUM_THREADS = "88"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/transparent_hugepage/enabled
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

Continued on next page
Dell Inc.
PowerEdge R940
(Intel Xeon Gold 6152, 2.10 GHz)

SPECfp2006 = 147
SPECfp_base2006 = 139

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

Test date: Oct-2017
Hardware Availability: Sep-2017
Software Availability: Apr-2017

Base Compiler Invocation (Continued)

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
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 -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

Peak Compiler Invocation

C benchmarks:
icc -m64

Continued on next page
Peak Compiler Invocation (Continued)

C++ benchmarks:
   icpc -m64

Fortran benchmarks:
   ifort -m64

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

Peak Portability Flags

Same as Base Portability Flags

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-AVX2(pass 2)
   -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
   -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(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-

Continued on next page
Dell Inc.
PowerEdge R940
(Intel Xeon Gold 6152, 2.10 GHz)

SPECfp2006 = 147
SPECfp_base2006 = 139

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: Oct-2017
Hardware Availability: Sep-2017
Software Availability: Apr-2017

Peak Optimization Flags (Continued)

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll12 -inline-level=0
-qopt-prefetch -parallel
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -inline-callloc -qopt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:
435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-1lp32
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 and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Originally published on 21 December 2017.