Dell Inc.

PowerEdge R740 (Intel Xeon Gold 6136, 3.00 GHz)

SPEC® CFP2006 Result

SPECfp®_rate2006 = Not Run
SPECfp_rate_base2006 = 1190

Dell Inc.

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

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

HPC Workload Benchmark Suite for CPU Performance Evaluation

Dell Inc.

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

Operating System: SUSE Linux Enterprise Server 12 SP2
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)

Dell Inc.

410.bwaves 48
416.gamess 48
433.milc 48
434.zeusmp 48
435.gromacs 48
436.cactusADM 48
437.leslie3d 48
444.namd 48
447.dealII 48
450.soplex 48
453.povray 48
454.calculix 48
459.GemsFDTD 48
465.tonto 48
470.lbm 48
481.wrf 48
482.sphinx3 48

Hardware

Software
Dell Inc.

PowerEdge R740 (Intel Xeon Gold 6136, 3.00 GHz)

SPEC CFP2006 Result

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---

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L3 Cache: 24.75 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

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<th>Copies</th>
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<th>Ratio</th>
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</table>

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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

Page 2
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)
- running on linux-wwko Sat May 27 22:25:36 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 4 9 10 16 18 19 25 26
- physical 1: cores 0 1 2 3 8 9 10 11 18 19 24 27
- cache size : 25344 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"

Continued on next page
**SPEC CFP2006 Result**

**Dell Inc.**

PowerEdge R740 (Intel Xeon Gold 6136, 3.00 GHz)

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

**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 27 18:00
```

```
SPEC is set to: /root/cpu2006-1.2_ic17u3
```

**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.

**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
```

Continued on next page
SPEC CFP2006 Result

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

C++ benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
**Dell Inc.**  

PowerEdge R740 (Intel Xeon Gold 6136, 3.00 GHz)  

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</table>

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

http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revB.xml

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

Tested with SPEC CPU2006 v1.2.