Dell Inc.

PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz) SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 466

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

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

Hardware

<table>
<thead>
<tr>
<th>SPECfp_rate_base2006</th>
<th>466</th>
</tr>
</thead>
</table>

Software

<table>
<thead>
<tr>
<th>Operating System: SUSE Linux Enterprise Server 12 SP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
</tr>
<tr>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>File System: xfs</td>
</tr>
<tr>
<td>System State: Run level 3 (multi-user)</td>
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</tbody>
</table>

Copies

<table>
<thead>
<tr>
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<th>466</th>
</tr>
</thead>
</table>
Dell Inc.

PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)

SPEC CFP2006 Result

Dell Inc.

PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp_rate2006 =  Not Run

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L3 Cache: 11 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2133 MT/s)
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>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>273</td>
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<td>459.GemsFDTD</td>
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<td>465.tonto</td>
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<td>482.sphinx3</td>
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<td>349</td>
<td>891</td>
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</tr>
</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:
Virtualization Technology disabled
System Profile set to Custom
## Dell Inc.

### PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)

<table>
<thead>
<tr>
<th>SPECfp_rate2006</th>
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<th>CPU2006 license:</th>
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<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
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<tr>
<td>Test date:</td>
<td>Jun-2017</td>
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<td>Hardware Availability:</td>
<td>Jul-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Nov-2016</td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

- 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
- CPU Interconnect Bus Link Power Management disabled
- PCI ASPM L1 Link Power Management disabled
- Sysinfo program /home/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
- Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
- running on linux-bgfp Tue Jun 27 16:15:21 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) Bronze 3106 CPU @ 1.70GHz
- 2 "physical id"s (chips)
- 16 "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 : 8
  - siblings : 8
- physical 0: cores 0 1 2 3 4 5 6 7
- physical 1: cores 0 1 2 3 4 5 6 7
- cache size : 11264 KB

From `/proc/meminfo`

- MemTotal: 395506684 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"
ANSI_COLOR="0;32"
```

Continued on next page
Dell Inc.

PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)

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Platform Notes (Continued)

CPE_NAME="cpe:/o:suse:sles:12:sp2"

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

run-level 3 Jun 27 11:27

SPEC is set to: /home/cpu2006-1.2_ic17u3

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 405G 8.9G 396G 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. 1.0.5 06/19/2017
Memory:
   24x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz, configured at 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006-1.2_ic17u3/lib/ia32:/home/cpu2006-1.2_ic17u3/lib/intel64:/home/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

Fortran benchmarks:
    ifort -m64

Continued on next page
Dell Inc.

PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)

**SPECfp_rate2006** = Not Run

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### Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```bash
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:

```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

#### C++ benchmarks:

```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

#### Fortran benchmarks:

```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
```

#### Benchmarks using both Fortran and C:

```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

The flags files that were used to format this result can be browsed at

### SPEC CFP2006 Result

#### Dell Inc.

**PowerEdge R740 (Intel Xeon Bronze 3106, 1.70 GHz)**

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

- [Intel ic17.0-official-linux64-revF.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml)
- [Dell-Platform-Flags-PowerEdge14G-revC.xml](http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.xml)

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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.  