**Dell Inc.**

PowerEdge R740 (Intel Xeon Bronze 3104, 1.70 GHz)

**SPEC® CFP2006 Result**

**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 350**

---

**Hardware**

<table>
<thead>
<tr>
<th>Test</th>
<th>CPU Name:</th>
<th>CPU Characteristics:</th>
<th>CPU MHZ:</th>
<th>FPU:</th>
<th>CPU(s) enabled:</th>
<th>CPU(s) orderable:</th>
<th>Primary Cache:</th>
<th>Secondary Cache:</th>
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<tbody>
<tr>
<td>Dell</td>
<td>Intel Xeon Bronze 3104</td>
<td></td>
<td>1700</td>
<td>Integrated</td>
<td>12 cores, 2 chips, 6 cores/chip</td>
<td>1,2 chip</td>
<td>32 KB I + 32 KB D on chip per core</td>
<td>1 MB I+D on chip per core</td>
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</table>

**Software**

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

---

**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**CPU2006 license:** 55  
**Test date:** Jun-2017  
**Hardware Availability:** Jul-2017  
**Software Availability:** Nov-2016  

---

**SPEC CFP2006 Result**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECfp_rate_base2006</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>20.0</td>
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<tr>
<td>416.gamess</td>
<td>12</td>
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<td>433.milc</td>
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<td>435.gromacs</td>
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<td>437.leslie3d</td>
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<td>444.namd</td>
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<td>180</td>
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<tr>
<td>447.dealII</td>
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<td>450.soplex</td>
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<td>453.povray</td>
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<td>454.calculix</td>
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<td>459.GemsFDTD</td>
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<tr>
<td>465.tonto</td>
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**SPECfp_rate_base2006 = 350**

---

**Continued on next page**
Dell Inc.  
PowerEdge R740 (Intel Xeon Bronze 3104, 1.70 GHz)  

**SPEC CFP2006 Result**  

**Dell Inc.**  
PowerEdge R740 (Intel Xeon Bronze 3104, 1.70 GHz)  

---

**SPECfp_rate2006 = Not Run**  
**SPECfp_rate_base2006 = 350**

---

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Jun-2017  
**Hardware Availability:** Jul-2017  
**Software Availability:** Nov-2016  

**L3 Cache:** 8.25 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  

**L3 Cache:** 8.25 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  

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**Results Table**

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</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

Continued on next page
Dell Inc. PowerEdge R740 (Intel Xeon Bronze 3104, 1.70 GHz)

<table>
<thead>
<tr>
<th>SPEC CFP2006 Result</th>
<th></th>
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<tbody>
<tr>
<td>SPECfp_rate2006 =</td>
<td>Not Run</td>
</tr>
<tr>
<td>SPECfp_rate_base2006 =</td>
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</tr>
</tbody>
</table>

**CPU2006 license:** 55
**Test date:** Jun-2017
**Hardware Availability:** Jul-2017
**Test sponsor:** Dell Inc.
**Software Availability:** Nov-2016
**Tested by:** Dell Inc.

### 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 Wed Jun 28 15:35:30 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 3104 CPU @ 1.70GHz
- 2 "physical id"s (chips)
- 12 "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 : 6
  - siblings : 6
  - physical 0: cores 0 1 2 3 4 5
  - physical 1: cores 0 1 2 3 4 5
  - cache size : 8448 KB

**From /proc/meminfo**
- MemTotal: 395506688 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 3104, 1.70 GHz)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 350

CPU2006 license: 55
Test date: Jun-2017
Test sponsor: Dell Inc.
Hardware Availability: Jul-2017
Tested by: Dell Inc.
Software Availability: Nov-2016

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 28 10:49

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 3104, 1.70 GHz)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 350

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

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

Base Compiler Invocation (Continued)

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 -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Benchmarks using both Fortran and C:
-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
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html
## SPEC CFP2006 Result

**Dell Inc.**

PowerEdge R740 (Intel Xeon Bronze 3104, 1.70 GHz)

### SPECfp

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### Details

- **CPU2006 license:** 55
- **Test sponsor:** Dell Inc.
- **Tested by:** Dell Inc.
- **Test date:** Jun-2017
- **Hardware Availability:** Jul-2017
- **Software Availability:** Nov-2016

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


---

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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.