## Dell Inc. PowerEdge R740 (Intel Xeon Gold 5115, 2.40 GHz)

### SPECfp®_rate2006 = Not Run

| SPECfp_rate_base2006 = 871 |

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

### Hardware
- **CPU Name:** Intel Xeon Gold 5115  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz  
- **CPU MHz:** 2400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 20 cores, 2 chips, 10 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

### 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; 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)

### Copy Percentages

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copy Percentage</th>
</tr>
</thead>
</table>
| 410.bwaves | 80%  
| 416.gamess | 81.2%  
| 433.milc | 82.0%  
| 434.zeusmp | 85%  
| 435.gromacs | 861%  
| 436.cactusADM | 88.5%  
| 437.leslie3d | 8.12%  
| 444.namd | 86.9%  
| 447.dealII | 109.0%  
| 450.soplex | 1150%  
| 453.povray | 122.0%  
| 454.calculix | 122.0%  
| 459.GemsFDTD | 53.8%  
| 465.tonto | 88.1%  
| 470.lbm | 110.7%  
| 481.wrf | 116.6%  
| 482.sphinx3 | 76.8%  

**SPECfp_rate_base2006 = 871**
SPEC CFP2006 Result

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L3 Cache: 13.75 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2400 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

Benchmark | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
410.bwaves | 40 | 675 | 805 | 676 | 805 | 675 | 805 | | | | | | | |
416.gamess | 40 | 964 | 813 | 964 | 812 | 966 | 811 | | | | | | | |
433.milc | 40 | 448 | 820 | 448 | 820 | 448 | 820 | | | | | | | |
434.zeusmp | 40 | 336 | 1080 | 334 | 1090 | 335 | 1090 | | | | | | | |
435.gromacs | 40 | 297 | 961 | 297 | 960 | 297 | 961 | | | | | | | |
436.cactusADM | 40 | 424 | 1130 | 423 | 1130 | 423 | 1130 | | | | | | | |
437.leslie3d | 40 | 648 | 580 | 669 | 562 | 651 | 577 | | | | | | | |
444.namd | 40 | 480 | 669 | 480 | 669 | 480 | 669 | | | | | | | |
447.dealII | 40 | 353 | 1300 | 354 | 1290 | 352 | 1300 | | | | | | | |
450.soplex | 40 | 587 | 568 | 586 | 569 | 587 | 569 | | | | | | | |
453.povray | 40 | 185 | 1150 | 187 | 1140 | 182 | 1170 | | | | | | | |
454.calculix | 40 | 270 | 1220 | 269 | 1230 | 270 | 1220 | | | | | | | |
459.GemsFDFTD | 40 | 789 | 538 | 788 | 538 | 788 | 538 | | | | | | | |
465.tonto | 40 | 447 | 881 | 455 | 865 | 446 | 883 | | | | | | | |
470.lbm | 40 | 515 | 1070 | 515 | 1070 | 515 | 1070 | | | | | | | |
481.wrf | 40 | 461 | 970 | 463 | 966 | 463 | 965 | | | | | | | |
482.sphinx3 | 40 | 1017 | 766 | 1016 | 768 | 1015 | 768 | | | | | | | |

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.

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SPEC CFP2006 Result

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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 /home/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-bgfp Fri Jun 23 14:40:01 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 5115 CPU @ 2.40GHz
  2 "physical id"s (chips)
  40 "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 : 10
  siblings : 20
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 14080 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:
  NAME="SLES"
  VERSION="12-SP2"
  VERSION_ID="12.2"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
  ID="sles"

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Dell Inc.
PowerEdge R740 (Intel Xeon Gold 5115, 2.40 GHz)

**SPEC CFP2006 Result**

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**Platform Notes (Continued)**

```bash
ansi -a:
  (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 23 09:17
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 2400 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 numaclt 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
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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
### Dell Inc.

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