## SPEC® CFP2006 Result

### Dell Inc.

PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)

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

**Test date**: May-2016
**Hardware Availability**: Mar-2016
**Software Availability**: Nov-2015

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**Hardware**

- **CPU Name**: Intel Xeon E5-2660 v4
- **CPU Characteristics**: Intel Turbo Boost Technology up to 3.20 GHz
- **CPU MHZ**: 2000
- **FPU**: Integrated
- **CPU(s) enabled**: 28 cores, 2 chips, 14 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**: 256 KB I+D on chip per core

**Software**

- **Operating System**: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
- **Compiler**: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
- **Auto Parallel**: No
- **File System**: xfs

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Continued on next page
## Dell Inc.

PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)

**Copyright 2006-2016 Standard Performance Evaluation Corporation**

### SPEC CFP2006 Result

- **SPECfp_rate2006 = Not Run**
- **SPECfp_rate_base2006 = 854**

**CPU2006 license:** 55  
**Test date:** May-2016  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Mar-2016

**Tested by:** Dell Inc.  
**Software Availability:** Nov-2015

**L3 Cache:** 35 MB I+D on chip per chip  
**System State:** Run level 3 (multi-user)

**Other Cache:** None  
**Base Pointers:** 32/64-bit

**Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)  
**Peak Pointers:** 32/64-bit

**Disk Subsystem:** 400 GB SSD  
**Other Software:** None

**Other Hardware:** None  
**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

### Results Table

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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:**
  - Snoop Mode set to Opportunistic Snoop Broadcast
  - Virtualization Technology disabled

Continued on next page
Dell Inc.  

PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)  

**SPEC CFP2006 Result**  

**SPECfp_rate2006 =** Not Run  

**SPECfp_rate_base2006 =** 854  

**CPU2006 license:** 55  
**Test date:** May-2016  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Mar-2016  
**Tested by:** Dell Inc.  
**Software Availability:** Nov-2015

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**Platform Notes (Continued)**

CPU Performance set to HW Pstates  
C1E disabled  
Cstates set to Autonomous  
Memory Patrol Scrub disabled  
Energy Efficient Turbo disabled  
Energy Efficient Policy set to Balanced Performance  

Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914  
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1  
running on localhost.localdomain Thu May  5 20:48:40 2016

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) CPU E5-2660 v4@ 2.00GHz  
2 "physical id"s (chips)  
56 "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 : 14  
siblings : 28  
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14  
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14  
cache size : 35840 KB

From /proc/meminfo  
MemTotal: 528281568 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*  
os-release:  
NAME="Red Hat Enterprise Linux Server"  
VERSION="7.2 (Maipo)"  
ID="rhel"  
ID_LIKE="fedora"  
VERSION_ID="7.2"  
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"  
ANSI_COLOR="0;31"  
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"  
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)  

uname -a:  
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux  
run-level 3 May 5 14:23

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# SPEC CFP2006 Result

Dell Inc.

PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)

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## Platform Notes (Continued)

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 373G 8.4G 364G 3% /

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. 2.0.1 02/12/2016
Memory:
16x 00AD063200AD HMA84GR7MFR4N-UH 32 GB 2 rank 2400 MHz
8x Not Specified Not Specified

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64
SPEC CFP2006 Result

Dell Inc.
PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)  SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 =  854

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

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

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.games: -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
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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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-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-ic16.0-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml
## SPEC CFP2006 Result

**Dell Inc.**

**PowerEdge R630 (Intel Xeon E5-2660 v4, 2.00 GHz)**

<table>
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| CPU2006 license: 55       | Test date:               |
| Test sponsor: Dell Inc.   | May-2016                  |
| Tested by: Dell Inc.      | Hardware Availability:   |
|                           | Mar-2016                  |
|                           | Software Availability:   |
|                           | Nov-2015                  |

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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.
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