Dell Inc.
PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)

SPECfp®2006 = 116
SPECfp_base2006 = 112

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

CPU Name: Intel Xeon E5-2697A v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 32 cores, 2 chips, 16 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 7.1 (Maipo) 3.10.0-229.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: Yes
File System: xfs

Continued on next page
Results Table

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<td>74.3</td>
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</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

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

Platform Notes

BIOS settings:
Snoop Mode set to Home Snoop
Virtualization Technology disabled
System Profile set to Performance
Memory Patrol Scrub disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $ $e3fbb8667b5a285932ceab81e28219e1$
running on localhost.localdomain Mon Dec 28 09:18:08 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page
Dell Inc. PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)  

**SPECfp2006 = 116**  
**SPECfp_base2006 = 112**

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

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**Platform Notes (Continued)**

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 E5-2697A v4 @ 2.60GHz  
  2 "physical id"s (chips)  
  64 "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 : 16  
  siblings : 32  
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
  cache size : 40960 KB

From /proc/meminfo  
  MemTotal: 528282996 kB  
  HugePages_Total: 0  
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*  
  os-release:  
    NAME="Red Hat Enterprise Linux Server"  
    VERSION="7.1 (Maipo)"  
    ID="rhel"  
    ID_LIKE="fedora"  
    VERSION_ID="7.1"  
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"  
    ANSI_COLOR="0;31"  
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"  
    redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)  
    system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)  

uname -a:  
  Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38 
  EST 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 28 03:53 last=5

SPEC is set to: /root/cpu2006-1.2  
  Filesystem Type Size Used Avail Use% Mounted on  
  /dev/sda2 xfs 200G 20G 181G 10% /

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. 1.7.11 12/07/2015  
Continued on next page
SPEC CFP2006 Result

Dell Inc.
PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)

SPECfp2006 = 116
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Hardware Availability: Mar-2016
Software Availability: Mar-2016

Platform Notes (Continued)

Memory:
16x 00CE00B300CE M393A4K40BB1-CRC 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:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
OMP_NUM_THREADS = "32"

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

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

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

Continued on next page
Dell Inc.

PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)

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Software Availability: Mar-2016

Base Portability Flags (Continued)

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 -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags
Dell Inc.

PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)

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CPU2006 license: 55
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Test sponsor: Dell Inc.
Hardware Availability: Mar-2016
Tested by: Dell Inc.
Software Availability: Mar-2016

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -03(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) prof-use(pass 2) -fno-alias
           -auto-ilp32

447.dealII: basepeak = yes
450.soplex: basepeak = yes

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -ipo(pass 2) -03(pass 2) -no-prec-div(pass 2)
            -par-num-threads=1(pass 1) prof-use(pass 2) -unroll2
            -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
               -ipo(pass 2) -03(pass 2) -no-prec-div(pass 2)
               -par-num-threads=1(pass 1) prof-use(pass 2) -unroll2
               -inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -ipo(pass 2) -03(pass 2) -no-prec-div(pass 2)
            -par-num-threads=1(pass 1) prof-use(pass 2) -inline-calloc
            -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

Continued on next page
Dell Inc.

PowerEdge T630 (Intel Xeon E5-2697A v4, 2.60 GHz)

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CPU2006 license: 55
Test sponsor: Dell Inc.
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Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-llp32 -ansi-alias
481.wrf: basepeak = yes

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

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

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