Dell Inc.
PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)

SPECint®2006 = 67.4
SPECint_base2006 = 64.7

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

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
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2

Hardware
CPU Name: Intel Xeon E5-2637 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3500
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 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
L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x 120 GB SATA SSD
Other Hardware: None
Dell Inc.
PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)

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Results Table

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<thead>
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<th>Ratio</th>
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<td>458.sjeng</td>
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<td>80.9</td>
<td>85.3</td>
</tr>
</tbody>
</table>

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

Submit Notes

The config file option 'submit' was used.

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
System Profile set to Performance
Memory Patrol Scrub disabled
C1E/Cstates enabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Tue Dec 1 17:22:29 2015

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 E5-2637 v4@ 3.50GHz
  2 "physical id"s (chips)
  16 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
Dell Inc.  
PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)

SPECint2006 = 67.4  
SPECint_base2006 = 64.7

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

Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

  cpu cores : 4
  siblings : 8
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
  cache size : 15360 KB

From /proc/meminfo
  MemTotal: 528283084 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 1 17:21

SPEC is set to: /root/cpu2006-1.2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda2 xfs 102G 7.0G 95G 7% /

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. 1.7.10 11/20/2015
   Memory:
     16x 00CE00B300CE M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz
     8x Not Specified Not Specified

(End of data from sysinfo program)
SPEC CINT2006 Result

Dell Inc.  
PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)  

SPECint2006 = 67.4  
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General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
OMP_NUM_THREADS = "8"

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

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64
**SPEC CINT2006 Result**

Dell Inc.  
PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)  

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

### Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

### Peak Compiler Invocation

C benchmarks (except as noted below):

icc `-m64`

400.perlbench: icc `-m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

C++ benchmarks (except as noted below):

icpc `-m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

473.astar: icpc `-m64`

### Peak Portability Flags

400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`

401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

429.mcf: `-DSPEC_CPU_LP64`

445.gobmk: `-DSPEC_CPU_LP64`

456.hmmer: `-DSPEC_CPU_LP64`

458.sjeng: `-DSPEC_CPU_LP64`

462.libquantum: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

464.h264ref: `-DSPEC_CPU_LP64`

471.omnetpp: `-D_FILE_OFFSET_BITS=64`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

### Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1`  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch  
-ansi-alias

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1`  
-ipo(pass 2) -O3(pass 2) -no-prec-div  
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32  
-opt-prefetch -ansi-alias
Dell Inc.

PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)

**SPEC CINT2006 Result**

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CPU2006 license: 55
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Software Availability: Mar-2016

### Peak Optimization Flags (Continued)

- 403.gcc: basepeak = yes
- 429.mcf: basepeak = yes
- 445.gobmk: basepeak = yes
- 456.hmmer: basepeak = yes
- 458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
- 462.libquantum: basepeak = yes
- 464.h264ref: basepeak = yes

C++ benchmarks:

- 471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2)
  -opt-ra-region-strategy=block
  -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap
- 473.astar: basepeak = yes
- 483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

### Peak Other Flags

- 403.gcc: -Dalloca=_alloca

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
### Dell Inc.

#### PowerEdge R730 (Intel Xeon E5-2637 v4, 3.50 GHz)

<table>
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<tr>
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For other inquiries, please contact webmaster@spec.org.

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