Dell Inc.

PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz) SPECint®2006 = 59.6
SPECint_base2006 = 57.1

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

Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016


SPECint2006 = 59.6
SPECint_base2006 = 57.1

Hardware

CPU Name: Intel Xeon E5-2650 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x 500 GB 7200 RPM SATA
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
Compiler: CIC++: 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
SPEC CINT2006 Result

Dell Inc.

PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECint2006 = 59.6
SPECint_base2006 = 57.1

Dell Inc.

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>286</td>
<td>34.1</td>
<td>289</td>
<td>33.8</td>
<td>289</td>
<td>33.8</td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>462</td>
<td>20.9</td>
<td>464</td>
<td>20.8</td>
<td>464</td>
<td>20.8</td>
<td></td>
</tr>
<tr>
<td>403.mcf</td>
<td>251</td>
<td>32.1</td>
<td>250</td>
<td>32.2</td>
<td>251</td>
<td>32.1</td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>161</td>
<td>56.5</td>
<td>163</td>
<td>56.0</td>
<td>178</td>
<td>51.2</td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>417</td>
<td>25.1</td>
<td>418</td>
<td>25.1</td>
<td>418</td>
<td>25.1</td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>132</td>
<td>70.8</td>
<td>132</td>
<td>70.8</td>
<td>132</td>
<td>70.8</td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>417</td>
<td>29.0</td>
<td>417</td>
<td>29.0</td>
<td>417</td>
<td>29.0</td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.70</td>
<td>5600</td>
<td>3.76</td>
<td>5520</td>
<td>3.74</td>
<td>5550</td>
<td>3.70</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>456</td>
<td>48.5</td>
<td>455</td>
<td>48.6</td>
<td>458</td>
<td>48.3</td>
<td>456</td>
</tr>
<tr>
<td>471.onmetpp</td>
<td>178</td>
<td>35.1</td>
<td>168</td>
<td>37.1</td>
<td>171</td>
<td>36.6</td>
<td>171</td>
</tr>
<tr>
<td>473.astar</td>
<td>229</td>
<td>30.7</td>
<td>229</td>
<td>30.7</td>
<td>228</td>
<td>30.8</td>
<td>229</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>107</td>
<td>64.8</td>
<td>114</td>
<td>60.5</td>
<td>114</td>
<td>60.4</td>
<td>101</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 Custom
CPU Power Management set to Maximum Performance
Energy Efficient Turbo disabled
Memory Patrol Scrub disabled
Cstates autonomous/C1E enabled
Energy Efficient Policy set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed Mar 16 03:25:14 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 E5-2650 v4@ 2.20GHz
Continued on next page
Dell Inc.

PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECint2006 = 59.6
SPECint_base2006 = 57.1

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

Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

Platform Notes (Continued)

2 "physical id"s (chips)
48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 12
siblings : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 264040556 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 Mar 16 03:21

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 256G 10G 247G 4% /

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 002C0632002C 18ASF2G72PDZ-2G3B1 16 GB 2 rank 2400 MHz
8x Not Specified Not Specified

(End of data from sysinfo program)
SPEC CINT2006 Result

Dell Inc. PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECint2006 = 59.6
SPECint_base2006 = 57.1

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

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 = "24"

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
Dell Inc.

PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECint2006 = 59.6
SPECint_base2006 = 57.1

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

Test date: Mar-2016
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 -DSPEC_CPU_LINUX
462.libquantum: -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: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-prefetch
-ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 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

Continued on next page
Dell Inc.
PowerEdge R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECint2006 = 59.6
SPECint_base2006 = 57.1

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

Test date: Mar-2016
Hardware Availability: Mar-2016
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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
               -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:

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 R630 (Intel Xeon E5-2650 v4, 2.20 GHz)

**SPECint2006 = 59.6**

**SPECint_base2006 = 57.1**

**CPU2006 license:** 55

**Test date:** Mar-2016

**Test sponsor:** Dell Inc.

**Hardware Availability:** Mar-2016

**Tested by:** Dell Inc.

**Software Availability:** Mar-2016

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Apr 5 14:55:52 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 April 2016.