Dell Inc.

PowerEdge R430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint\_rate2006 = 904
SPECint\_rate\_base2006 = 877

**Hardware**

<table>
<thead>
<tr>
<th>Spec</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2660 v3</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2600</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>20 cores, 2 chips, 10 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 300 GB 10000 RPM SAS</td>
</tr>
<tr>
<td>Other Hardware:</td>
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</tr>
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</table>

**Software**

<table>
<thead>
<tr>
<th>Spec</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>
SPEC CINT2006 Result

Dell Inc.
PowerEdge R430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint_rate2006 = 904
SPECint_rate_base2006 = 877

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
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<td>579</td>
<td>675</td>
<td>576</td>
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<td><strong>676</strong></td>
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<td>830</td>
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<td>828</td>
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<td>401.bzip2</td>
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<td>403.gcc</td>
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<td><strong>673</strong></td>
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<td><strong>673</strong></td>
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<td>668</td>
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<td>429.mcf</td>
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<td>1180</td>
<td>311</td>
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<td><strong>311</strong></td>
<td><strong>1170</strong></td>
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<td>445.gobmk</td>
<td>40</td>
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<td>456.hmmer</td>
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<tr>
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<td>462.libquantum</td>
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<td><strong>97.4</strong></td>
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<td>464.h264ref</td>
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<td><strong>1020</strong></td>
<td>865</td>
<td>1020</td>
<td>873</td>
<td>1010</td>
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<td><strong>851</strong></td>
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<td>1070</td>
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<tr>
<td>471.omnetpp</td>
<td>40</td>
<td><strong>539</strong></td>
<td><strong>463</strong></td>
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<td>463</td>
<td>537</td>
<td>466</td>
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<td>480</td>
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<td>473.astar</td>
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<tr>
<td>483.xalancbmk</td>
<td>40</td>
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<td><strong>287</strong></td>
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<td>965</td>
<td>287</td>
<td>961</td>
<td><strong>287</strong></td>
<td><strong>961</strong></td>
</tr>
</tbody>
</table>

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 Cluster on Die
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Custom
Memory Patrol Scrub set to Disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 $$ e86d102572650a6e4d596a3ce98f191
running on localhost.localdomain Sat Oct 11 16:18:05 2014

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 v3 @ 2.60GHz
2 "physical id"s (chips)
Continued on next page
Dell Inc.

PowerEdge R430 (Intel Xeon E5-2660 v3, 2.60 GHz)

**SPEC CINT2006 Result**

**SPECint_rate2006 = 904**

**SPECint_rate_base2006 = 877**

**CPU2006 license:** 55

**Test date:** Oct-2014

**Test sponsor:** Dell Inc.

**Hardware Availability:** Dec-2014

**Tested by:** Dell Inc.

**Software Availability:** Jan-2014

---

**Platform Notes (Continued)**

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 : 12800 KB

From /proc/meminfo

MemTotal: 132054288 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 11 15:40

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 271G 9.7G 248G 4% /

Additional information from dmidecode:
BIOS Dell Inc. 0.3.17 10/03/2014
Memory:
4x 000000000000 Not Specified 2133 MHz 1 rank
8x 002C00B3002C 36ASP2G72PZ-2G1A2 16 GB 2133 MHz 2 rank

(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 Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:

Continued on next page
## SPEC CINT2006 Result

**Dell Inc.**  
PowerEdge R430 (Intel Xeon E5-2660 v3, 2.60 GHz)  

<table>
<thead>
<tr>
<th>SPECint rate2006</th>
<th>904</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint rate base2006</td>
<td>877</td>
</tr>
</tbody>
</table>

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

**Test date:** Oct-2014  
**Hardware Availability:** Dec-2014  
**Software Availability:** Jan-2014

### General Notes (Continued)

- echo 1> /proc/sys/vm/drop_caches  
- runspec command invoked through numacll i.e.:  
  numactl --interleave=all runspec <etc>

### Base Compiler Invocation

- C benchmarks:  
  - icc -m32
- C++ benchmarks:  
  - icpc -m32

### Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32  
- 462.libquantum: -DSPEC_CPU_LINUX  
- 483.xalancbmk: -DSPEC_CPU_LINUX

### Base Optimization Flags

- C benchmarks:  
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
  - -opt-mem-layout-trans=3
- C++ benchmarks:  
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
  - -opt-mem-layout-trans=3 -W1,-z,muldefs -L/sh -lsmartheap

### Base Other Flags

- C benchmarks:  
  - 403.gcc: -Dalloca=_alloca

### Peak Compiler Invocation

- C benchmarks (except as noted below):  
  - icc -m32  
  - 400.perlbench: icc -m64

Continued on next page
SPEC CINT2006 Result

Dell Inc.

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SPECint_rate2006 = 904
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CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
CPU2006 license: Test date: Oct-2014
Test sponsor: Hardware Availability: Dec-2014
Tested by: Software Availability: Jan-2014

Peak Compiler Invocation (Continued)

401.bzip2: icc -m64
458.sjeng: icc -m64
C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:
400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32
401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3
456.hmmer: basepeak = yes
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

Continued on next page
Dell Inc.
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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

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/Dell-Platform-Settings-V1.2-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revE.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.
Originally published on 2 December 2014.