**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)

<table>
<thead>
<tr>
<th>Test sponsor:</th>
<th>Dell Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 55

**Test date:** Oct-2014

**Hardware Availability:** Dec-2014

**Software Availability:** Jan-2014

**SPECint_rate2006 = 999**

**SPECint_rate_base2006 = 968**

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 6.5 (Santiago)
- **Compiler:** C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
- **Auto Parallel:** No
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.0

**Hardware**

- **CPU Name:** Intel Xeon E5-2670 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.10 GHz
- **CPU MHZ:** 2300
- **FPU:** Integrated
- **CPU(s) enabled:** 24 cores, 2 chips, 12 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:** 30 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
- **Disk Subsystem:** 1 x 300 GB 15000 RPM SAS
- **Other Hardware:** None

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>999</td>
<td>968</td>
</tr>
<tr>
<td>401.bzip2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>1360</td>
<td>1360</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>1350</td>
<td>1350</td>
</tr>
<tr>
<td>456.hmmer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td></td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>1150</td>
<td>1130</td>
</tr>
<tr>
<td>464.h264ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>1050</td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Copies**

- 48 copies of each benchmark were run.

---

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
### Dell Inc.

**PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)**

**SPEC CINT2006 Result**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>636</td>
<td>737</td>
<td>635</td>
<td>739</td>
<td>636</td>
<td>738</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>48</td>
<td>961</td>
<td>482</td>
<td>958</td>
<td>483</td>
<td>968</td>
<td>484</td>
</tr>
<tr>
<td>403.gcc</td>
<td>48</td>
<td>523</td>
<td>739</td>
<td>519</td>
<td>745</td>
<td>519</td>
<td>745</td>
</tr>
<tr>
<td>429.mcf</td>
<td>48</td>
<td>328</td>
<td>1340</td>
<td>322</td>
<td>1360</td>
<td>322</td>
<td>1360</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>777</td>
<td>648</td>
<td>777</td>
<td>648</td>
<td>777</td>
<td>648</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>48</td>
<td>332</td>
<td>1350</td>
<td>332</td>
<td>1350</td>
<td>330</td>
<td>1360</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>48</td>
<td>843</td>
<td>689</td>
<td>845</td>
<td>688</td>
<td>845</td>
<td>687</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>48</td>
<td>108</td>
<td>250</td>
<td>108</td>
<td>250</td>
<td>108</td>
<td>250</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>48</td>
<td>937</td>
<td>900</td>
<td>940</td>
<td>910</td>
<td>940</td>
<td>910</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>548</td>
<td>547</td>
<td>552</td>
<td>543</td>
<td>552</td>
<td>543</td>
</tr>
<tr>
<td>473.astar</td>
<td>48</td>
<td>645</td>
<td>926</td>
<td>640</td>
<td>926</td>
<td>641</td>
<td>926</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>316</td>
<td>1050</td>
<td>316</td>
<td>1050</td>
<td>316</td>
<td>1050</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 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu Oct 16 02:36:22 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 E5-2670 v3 @ 2.30GHz
- 2 "physical id"s (chips)
Dell Inc.
PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECint_rate2006 = 999
SPECint_rate_base2006 = 968

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

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

Platform Notes (Continued)

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 : 15360 KB

From /proc/meminfo
MemTotal: 264436912 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 16 02:35

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 289G 9.7G 265G 4% /

Additional information from dmidecode:
BIOS Dell Inc. 1.0.0 10/13/2014
Memory:
8x 000000000000 Not Specified 2133 MHz 1 rank
8x 00AD00B300AD HMA42GR7MF4N-TFTD 16 GB 2133 MHz 2 rank
8x 00CE00B300CE M393A2G40DB0-CPB 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

Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECint_rate2006 = 999
SPECint_rate_base2006 = 968

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)

Filesystem page cache cleared with:
  echo 1>/proc/sys/vm/drop_caches
runspec command invoked through numactl 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 -Wl,-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
### Dell Inc.

PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)  

**SPECint_rate2006 = 999**  
**SPECint_rate_base2006 = 968**

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

---

### Peak Compiler Invocation (Continued)

- 401.bzip2: `icc -m64`
- 456.hmmer: `icc -m64`
- 458.sjeng: `icc -m64`

C++ benchmarks:  
- icpc `-m32`

---

### Peak Portatility Flags

- 400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
- 401.bzip2: `-DSPEC_CPU_LP64`
- 456.hmmer: `-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.mc: `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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
- 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`

Continued on next page
Dell Inc.
PowerEdge M630 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECint_rate2006 = 999
SPECint_rate_base2006 = 968

Peak Optimization Flags (Continued)

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

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

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.
Originally published on 2 December 2014.