## SPECint® CINT2006 Result

**Dell Inc.**

PowerEdge R730 (Intel Xeon E5-2667 v3, 3.20 GHz)

<table>
<thead>
<tr>
<th>SPECint®_rate2006</th>
<th>843</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>814</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2667 v3</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.60 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3200</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 2 chips, 8 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>20 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 300 GB 15000 RPM SAS</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 14.0.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext2</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 R730 (Intel Xeon E5-2667 v3, 3.20 GHz)

<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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>32</td>
<td>489</td>
<td>640</td>
<td>493</td>
<td>634</td>
<td>493</td>
<td>634</td>
<td>493</td>
<td>634</td>
<td>493</td>
<td>634</td>
</tr>
<tr>
<td>bzip2</td>
<td>32</td>
<td>775</td>
<td>398</td>
<td>776</td>
<td>398</td>
<td>776</td>
<td>398</td>
<td>776</td>
<td>398</td>
<td>776</td>
<td>398</td>
</tr>
<tr>
<td>gcc</td>
<td>32</td>
<td>423</td>
<td>609</td>
<td>424</td>
<td>608</td>
<td>424</td>
<td>608</td>
<td>424</td>
<td>608</td>
<td>424</td>
<td>608</td>
</tr>
<tr>
<td>mcf</td>
<td>32</td>
<td>274</td>
<td>1070</td>
<td>274</td>
<td>1060</td>
<td>274</td>
<td>1060</td>
<td>274</td>
<td>1060</td>
<td>274</td>
<td>1060</td>
</tr>
<tr>
<td>gobmk</td>
<td>32</td>
<td>608</td>
<td>552</td>
<td>609</td>
<td>551</td>
<td>609</td>
<td>551</td>
<td>609</td>
<td>551</td>
<td>609</td>
<td>551</td>
</tr>
<tr>
<td>hammer</td>
<td>32</td>
<td>248</td>
<td>1210</td>
<td>247</td>
<td>1210</td>
<td>246</td>
<td>1210</td>
<td>246</td>
<td>1210</td>
<td>246</td>
<td>1210</td>
</tr>
<tr>
<td>sjeng</td>
<td>32</td>
<td>651</td>
<td>595</td>
<td>650</td>
<td>596</td>
<td>650</td>
<td>596</td>
<td>650</td>
<td>596</td>
<td>650</td>
<td>596</td>
</tr>
<tr>
<td>libquantum</td>
<td>32</td>
<td>78.9</td>
<td>8410</td>
<td>79.9</td>
<td>8300</td>
<td>79.9</td>
<td>8300</td>
<td>79.9</td>
<td>8300</td>
<td>79.9</td>
<td>8300</td>
</tr>
<tr>
<td>h264ref</td>
<td>32</td>
<td>757</td>
<td>935</td>
<td>753</td>
<td>940</td>
<td>753</td>
<td>940</td>
<td>753</td>
<td>940</td>
<td>753</td>
<td>940</td>
</tr>
<tr>
<td>omnetpp</td>
<td>32</td>
<td>476</td>
<td>420</td>
<td>478</td>
<td>418</td>
<td>478</td>
<td>418</td>
<td>478</td>
<td>418</td>
<td>478</td>
<td>418</td>
</tr>
<tr>
<td>astar</td>
<td>32</td>
<td>498</td>
<td>451</td>
<td>498</td>
<td>451</td>
<td>498</td>
<td>451</td>
<td>498</td>
<td>451</td>
<td>498</td>
<td>451</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>32</td>
<td>248</td>
<td>889</td>
<td>248</td>
<td>889</td>
<td>248</td>
<td>889</td>
<td>248</td>
<td>889</td>
<td>248</td>
<td>889</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 Performance

Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Fri Jun 20 15:11:04 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 E5-2667 v3 @ 3.20GHz
  - 2 "physical id"s (chips)
  - 32 "processors"

Continued on next page
Platform Notes (Continued)

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 : 8
- siblings : 16
- physical 0: cores 0 1 2 3 4 5 6 7
- physical 1: cores 0 1 2 3 4 5 6 7
- cache size : 20480 KB

From /proc/meminfo

- MemTotal: 264572220 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d

- SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*

- SuSE-release: SUSE Linux Enterprise Server 11 (x86_64)
- VERSION = 11
- PATCHLEVEL = 3

uname -a:

- Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
- x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 20 14:44 last=S

SPEC is set to: /root/cpu2006-1.2

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      ext2  267G  8.8G  257G   4% /

Additional information from dmidecode:

- BIOS Dell Inc. 0.3.24 06/12/2014
- Memory:
  - 1x 00AD00B300AD HMA42GR7MFR4N-TFTD 16 GB 2133 MHz
  - 8x 00AD063200AD HMA42GR7MFR4N-TFT1 16 GB 2133 MHz
  - 7x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2133 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:

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:
Dell Inc.  
PowerEdge R730 (Intel Xeon E5-2667 v3, 3.20 GHz)  

SPECint_rate2006 = 843  
SPECint_rate_base2006 = 814  

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

Test date: Jun-2014  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014  

General Notes (Continued)  

- echo always > /sys/kernel/mm/transparent_hugepage/enabled  
- 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  

Continued on next page
Peak Compiler Invocation (Continued)

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: 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
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.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: -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
Dell Inc.

PowerEdge R730 (Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 = 843
SPECint_rate_base2006 = 814

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

Test date: Jun-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Peak Optimization Flags (Continued)

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

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldeps
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalanchmk: 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-revD.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-revD.xml