## SPECint® CINT2006 Result

**Dell Inc.**

PowerEdge R730 (Intel Xeon E5-2630 v3, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>686</td>
<td>662</td>
</tr>
</tbody>
</table>

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

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2630 v3</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2400</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, running at 1866 MHz)</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>Component</th>
<th>Details</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 14.0.0.0.80 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext3</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 E5-2630 v3, 2.40 GHz)

SPECint_rate2006 = 686
SPECint_rate_base2006 = 662

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

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base</th>
<th></th>
<th></th>
<th></th>
<th>Peak</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
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<tr>
<td>400.perlbench</td>
<td>32</td>
<td>637</td>
<td>491</td>
<td>635</td>
<td>493</td>
<td>637</td>
<td>491</td>
<td>32</td>
<td>520</td>
<td>602</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>32</td>
<td>957</td>
<td>323</td>
<td>959</td>
<td>322</td>
<td>960</td>
<td>322</td>
<td>32</td>
<td>914</td>
<td>338</td>
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<td>403.mcf</td>
<td>32</td>
<td>507</td>
<td>508</td>
<td>511</td>
<td>504</td>
<td>509</td>
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<td>507</td>
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<tr>
<td>429.gcc</td>
<td>32</td>
<td>776</td>
<td>433</td>
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<td>775</td>
<td>433</td>
<td>32</td>
<td>754</td>
<td>445</td>
</tr>
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<td>456.hmmer</td>
<td>32</td>
<td>314</td>
<td>951</td>
<td>315</td>
<td>948</td>
<td>312</td>
<td>957</td>
<td>32</td>
<td>308</td>
<td>968</td>
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<td>458.sjeng</td>
<td>32</td>
<td>842</td>
<td>460</td>
<td>843</td>
<td>459</td>
<td>842</td>
<td>460</td>
<td>32</td>
<td>814</td>
<td>476</td>
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<td>462.libquantum</td>
<td>32</td>
<td>97.9</td>
<td>6770</td>
<td>98.7</td>
<td>6720</td>
<td>97.7</td>
<td>6780</td>
<td>32</td>
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<td>768</td>
<td>939</td>
<td>754</td>
<td>946</td>
<td>749</td>
<td>32</td>
<td>890</td>
<td>796</td>
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<tr>
<td>471.omnetpp</td>
<td>32</td>
<td>548</td>
<td>365</td>
<td>550</td>
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<td>549</td>
<td>364</td>
<td>32</td>
<td>520</td>
<td>385</td>
</tr>
<tr>
<td>473.astar</td>
<td>32</td>
<td>612</td>
<td>367</td>
<td>613</td>
<td>367</td>
<td>609</td>
<td>369</td>
<td>32</td>
<td>612</td>
<td>367</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>297</td>
<td>744</td>
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<td>744</td>
<td>296</td>
<td>746</td>
<td>32</td>
<td>297</td>
<td>744</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 Early Snoop
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d10272650a6e4d596a3cee98f191
running on linux-fm7q Mon Aug 4 05:03:19 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 E5-2630 v3 @ 2.40GHz
2 "physical id"s (chips)
32 "processors"

Continued on next page
**SPEC CINT2006 Result**

**Dell Inc.**  
PowerEdge R730 (Intel Xeon E5-2630 v3, 2.40 GHz)  

| SPECint_rate2006 | 686 | Test date: Aug-2014 |
| SPECint_rate_base2006 | 662 | Hardware Availability: Sep-2014 |

**CPU2006 license:** 55  
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**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: 264441052 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
- SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release*/etc/*version*
- SuSE-release:
  - VERSION = 11
  - PATCHLEVEL = 3

uname -a:
- Linux linux-fm7q 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 Aug 4 04:57 last=S

**SPEC is set to:** /root/cpu2006-1.2  
**Filesystem**  
<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>ext3</td>
<td>228G</td>
<td>11G</td>
<td>217G</td>
<td>5%</td>
<td>/</td>
</tr>
</tbody>
</table>

**Additional information from dmidecode:**
  - BIOS Dell Inc. 0.3.30 07/23/2014
  - Memory:
    - 4x 00AD00B300AD HMA42GR7MFR4N-TFTD 16 GB 1867 MHz
    - 6x 00AD063200AD HMA42GR7MFR4N-TFT1 16 GB 1867 MHz
    - 6x 00CE00B300CE M393A2G40DB0-CPB 16 GB 1867 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:

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### General Notes (Continued)

- echo always > /sys/kernel/mm/transparent_hugepage/enabled
- Filesystem page cache cleared with:
  - echo 1> /proc/sys/vm/drop_caches
  - numactl 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

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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

Continued on next page
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,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-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

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For other inquiries, please contact webmaster@spec.org.

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