Dell Inc. PowerEdge FC630 (Intel Xeon E5-2623 v3, 3.00 GHz)

| SPECint_rate2006 | 423 |
| SPECint_rate_base2006 | 408 |

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

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

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**Hardware**

<table>
<thead>
<tr>
<th>Spec</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2623 v3</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>3000</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>8 cores, 2 chips, 4 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>10 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 500 GB 7200 RPM SATA</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

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**Software**

<table>
<thead>
<tr>
<th>Spec</th>
<th>Value</th>
</tr>
</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 14.0.0.0.080 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 FC630 (Intel Xeon E5-2623 v3, 3.00 GHz)

### SPECint_rate2006 = 423

<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>16</td>
<td>510</td>
<td>307</td>
<td>507</td>
<td>308</td>
<td>512</td>
<td>306</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>16</td>
<td>794</td>
<td>194</td>
<td>797</td>
<td>194</td>
<td>795</td>
<td>194</td>
</tr>
<tr>
<td>403.gcc</td>
<td>16</td>
<td>425</td>
<td>303</td>
<td>419</td>
<td>307</td>
<td>421</td>
<td>306</td>
</tr>
<tr>
<td>429.mcf</td>
<td>16</td>
<td>270</td>
<td>540</td>
<td>269</td>
<td>543</td>
<td>271</td>
<td>538</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>16</td>
<td>613</td>
<td>274</td>
<td>613</td>
<td>274</td>
<td>613</td>
<td>274</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>16</td>
<td>246</td>
<td>606</td>
<td>250</td>
<td>598</td>
<td>249</td>
<td>599</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>16</td>
<td>657</td>
<td>295</td>
<td>670</td>
<td>289</td>
<td>670</td>
<td>289</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>16</td>
<td>79.3</td>
<td>4180</td>
<td>77.8</td>
<td>4260</td>
<td>77.4</td>
<td>4280</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>16</td>
<td>754</td>
<td>470</td>
<td>728</td>
<td>486</td>
<td>749</td>
<td>473</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>16</td>
<td>481</td>
<td>208</td>
<td>481</td>
<td>208</td>
<td>487</td>
<td>209</td>
</tr>
<tr>
<td>473.astar</td>
<td>16</td>
<td>484</td>
<td>232</td>
<td>485</td>
<td>232</td>
<td>486</td>
<td>231</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>16</td>
<td>238</td>
<td>465</td>
<td>237</td>
<td>466</td>
<td>238</td>
<td>465</td>
</tr>
</tbody>
</table>

### Results 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
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 Mon Oct 27 11:23:29 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 E5-2623 v3 @ 3.00GHz
- 2 "physical id"s (chips)

Continued on next page
**Dell Inc.**

**PowerEdge FC630 (Intel Xeon E5-2623 v3, 3.00 GHz)**

**SPEC CINT2006 Result**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>423</th>
</tr>
</thead>
<tbody>
<tr>
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<td>408</td>
</tr>
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</table>

**CPU2006 license:** 55  
**Test date:** Oct-2014

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**Platform Notes (Continued)**

16 "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 : 4  
- siblings : 8  
- physical 0: cores 0 1 2 3  
- physical 1: cores 0 1 2 3  
- cache size : 10240 KB

From /proc/meminfo

- MemTotal:  264437528 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 27 11:13

SPEC is set to: /root/cpu2006-1.2

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda2</td>
<td>ext4</td>
<td>363G</td>
<td>9.7G</td>
<td>335G</td>
<td>3%</td>
<td>/</td>
</tr>
</tbody>
</table>

Additional information from dmidecode:

- BIOS Dell Inc. 1.0.1 10/15/2014  
- Memory:
  - 8x 000000000000 Not Specified  1867 MHz 1 rank  
  - 16x 002C00B3002C 36ASF2G72P2-2G1A2  16 GB 1867 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/lib64:/root/cpu2006-1.2/lib32:

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:

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General Notes (Continued)

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

Base Compiler Invocation

C benchmarks:
```plaintext
icc -m32
```

C++ benchmarks:
```plaintext
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:
```plaintext
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:
```plaintext
-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:
```plaintext
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```plaintext
icc -m32
```

```
400.perlbench: icc -m64
```

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Peak Compiler Invocation (Continued)

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  

462.libquantum: basepeak = yes  

Continued on next page
**Peak Optimization Flags (Continued)**

For the C++ benchmarks:

```
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.xalanchbmk: basepeak = yes
```

**Peak Other Flags**

For the 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