**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge M630 (Intel Xeon E5-2660 v3, 2.60 GHz)

| SPECint rate2006 | 904 |
| SPECint rate_base2006 | 875 |

**CPU2006 license:** 55

**Test date:** Oct-2014

**Hardware Availability:** Dec-2014

**Test sponsor:** Dell Inc.

**Software Availability:** Jan-2014

**Tested by:** Dell Inc.

**Software**

| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago) |
| File System: | ext4 |
| Auto Parallel: | No |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.0 |

**Hardware**

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Operating System:</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Red Hat Enterprise Linux Server release 6.5 (Santiago)</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>Compiler:</td>
</tr>
<tr>
<td>FPU:</td>
<td>Clang++: Version 14.0.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>Auto Parallel:</td>
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<tr>
<td>CPU(s) orderable:</td>
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</tr>
<tr>
<td>Primary Cache:</td>
<td>File System:</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>ext4</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>System State:</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Memory:</td>
<td>Base Pointers:</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>Peak Pointers:</td>
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</tbody>
</table>

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>40</td>
<td>585</td>
<td>668</td>
<td>584</td>
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<td>668</td>
<td>40</td>
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<td>401.bzip2</td>
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<td>888</td>
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<td>403.gcc</td>
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<td>483</td>
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<td>674</td>
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<td>445.gobmk</td>
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<td>705</td>
<td>595</td>
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<td>577</td>
<td>487</td>
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<tr>
<td>483.xalancbmk</td>
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<td>288</td>
<td>960</td>
<td>288</td>
<td>957</td>
<td>289</td>
<td>957</td>
<td>40</td>
<td>288</td>
<td>960</td>
<td>288</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

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)
Dell Inc.
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**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: 264436916 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 24 22:10

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 730G 9.7G 683G 2% /

Additional information from dmidecode:
- BIOS Dell Inc. 1.0.1 10/15/2014
- Memory:
  - 8x 000000000000 Not Specified 2133 MHz 1 rank
  - 16x 002C00B3002C 36ASF2G72PZ-2G1A1 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
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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:
  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
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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
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Peak Optimization Flags (Continued)

```
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

```
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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Tested with SPEC CPU2006 v1.2.
Originally published on 2 December 2014.