Dell Inc.

PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPEClnt®2006 = 60.6
SPEClnt_base2006 = 58.0

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

Test date: Jan-2015
Hardware Availability: Apr-2015
Software Availability: Apr-2015

Hardware

CPU Name: Intel Xeon E5-2660 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 200 GB SSD SATA
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 3.12.28-4-default
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0
Dell Inc.

PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint2006 = 60.6
SPECint_base2006 = 58.0

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Peak</th>
<th>Ratio</th>
<th>Seconds Peak</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>255</td>
<td>38.3</td>
<td>253</td>
<td>38.6</td>
<td>252</td>
<td>38.7</td>
<td>223</td>
<td>43.8</td>
<td>222</td>
<td>43.9</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>415</td>
<td>23.3</td>
<td>413</td>
<td>23.3</td>
<td>414</td>
<td>23.3</td>
<td>410</td>
<td>23.5</td>
<td>410</td>
<td>23.5</td>
</tr>
<tr>
<td>403.gcc</td>
<td>247</td>
<td>32.6</td>
<td>247</td>
<td>32.6</td>
<td>247</td>
<td>32.5</td>
<td>247</td>
<td>32.6</td>
<td>247</td>
<td>32.5</td>
</tr>
<tr>
<td>429.mcf</td>
<td>159</td>
<td>57.3</td>
<td>157</td>
<td>58.2</td>
<td>154</td>
<td>59.0</td>
<td>159</td>
<td>57.3</td>
<td>157</td>
<td>58.2</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>384</td>
<td>27.3</td>
<td>384</td>
<td>27.3</td>
<td>385</td>
<td>27.3</td>
<td>385</td>
<td>27.3</td>
<td>385</td>
<td>27.3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>144</td>
<td>65.0</td>
<td>144</td>
<td>64.9</td>
<td>144</td>
<td>65.0</td>
<td>144</td>
<td>65.0</td>
<td>144</td>
<td>65.0</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>374</td>
<td>32.4</td>
<td>374</td>
<td>32.4</td>
<td>374</td>
<td>32.3</td>
<td>373</td>
<td>32.4</td>
<td>373</td>
<td>32.5</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.73</td>
<td>5560</td>
<td>3.69</td>
<td>5610</td>
<td>3.72</td>
<td>5580</td>
<td>3.73</td>
<td>5560</td>
<td>3.69</td>
<td>5610</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>468</td>
<td>47.2</td>
<td>467</td>
<td>47.4</td>
<td>468</td>
<td>47.2</td>
<td>467</td>
<td>47.4</td>
<td>467</td>
<td>47.4</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>210</td>
<td>29.7</td>
<td>212</td>
<td>29.5</td>
<td>212</td>
<td>29.5</td>
<td>147</td>
<td>42.5</td>
<td>147</td>
<td>42.6</td>
</tr>
<tr>
<td>473.astar</td>
<td>222</td>
<td>31.6</td>
<td>222</td>
<td>31.7</td>
<td>221</td>
<td>31.8</td>
<td>220</td>
<td>32.0</td>
<td>219</td>
<td>32.0</td>
</tr>
<tr>
<td>483.xalancbk</td>
<td>117</td>
<td>59.2</td>
<td>114</td>
<td>60.5</td>
<td>116</td>
<td>59.7</td>
<td>114</td>
<td>60.6</td>
<td>114</td>
<td>60.7</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:
Snoop Mode set to Home Snoop
Virtualization Technology disabled
System Profile set to Custom
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-8qjr Wed Jan 21 12:58:08 2015

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)
- 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.)

Continued on next page
Dell Inc.
PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint2006 = 60.6
SPECint_base2006 = 58.0

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

Test date: Jan-2015
Hardware Availability: Apr-2015
Software Availability: Apr-2015

Platform Notes (Continued)

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 : 25600 KB

From /proc/meminfo
MemTotal: 132187004 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 0
  # This file is deprecated and will be removed in a future service pack or
  # release.
  # Please check /etc/os-release for details about this release.

os-release:
  NAME="SLES"
  VERSION="12"
  VERSION_ID="12"
  PRETTY_NAME="SUSE Linux Enterprise Server 12"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
Linux linux-8qjr 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 21 11:52

SPEC is set to: /root/cpu2006-1.2

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
reads system data which is "intended to allow hardware to be accurately
determined", but the intent may not be met, as there are frequent changes to
hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 0.4.0 01/08/2015
Memory:
  8x 00CE00B300CE M393A2G40D80-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Dell Inc.  
PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint2006 = 60.6  
SPECint_base2006 = 58.0

CPU2006 license: 55  
Test date: Jan-2015
Test sponsor: Dell Inc.  
Hardware Availability: Apr-2015
Tested by: Dell Inc.  
Software Availability: Apr-2015

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
OMP_NUM_THREADS = "20"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:
- icc -m64

C++ benchmarks:
- icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
- Wl,-z,muldefs -L/sh -lsmartheap64
Dell Inc. PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

Dell Inc. PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint2006 = 60.6
SPECint_base2006 = 58.0

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

Test date: Jan-2015
Hardware Availability: Apr-2015
Software Availability: Apr-2015

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m64
```

```
400.perlbench: icc -m32 -L/opt/intel/compiler_xe_2015/lib/ia32
```

```
445.gobmk: icc -m32 -L/opt/intel/compiler_xe_2015/lib/ia32
```

C++ benchmarks (except as noted below):

```
icpc -m32 -L/opt/intel/compiler_xe_2015/lib/ia32
```

```
473.astar: icpc -m64
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -xCORE-AVX2(pas2) -prof-gen(pas2) -ipo(pas2)
-O3(pas2) -no-prec-div(pas2) -prof-use(pas2)
-opt-prefetch -ansi-alias
```

```
401.bzip2: -xCORE-AVX2(pas2) -prof-gen(pas2) -ipo(pas2)
-O3(pas2) -no-prec-div -prof-use(pas2) -auto-ilp32
-opt-prefetch -ansi-alias
```

Continued on next page
Dell Inc.

PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)

SPECint2006 = 60.6
SPECint_base2006 = 58.0

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

Test date: Jan-2015
Hardware Availability: Apr-2015
Software Availability: Apr-2015

Peak Optimization Flags (Continued)

403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
            -ansi-alias
456.hmmer: basepeak = yes
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
462.libquantum: basepeak = yes
464.h264ref: basepeak = yes

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)
            -opt-ra-region-strategy=block -ansi-alias
            -Wl,-z,muldefs -L/sh -lsmartheap
473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
               -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

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/Intel-ic15.0-official-linux64.html
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/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.xml
## Dell Inc.

**PowerEdge FC430 (Intel Xeon E5-2660 v3, 2.60 GHz)**

<table>
<thead>
<tr>
<th><strong>CPU2006 license</strong></th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test sponsor</strong></td>
<td>Dell Inc.</td>
</tr>
<tr>
<td><strong>Tested by</strong></td>
<td>Dell Inc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SPECint2006</strong> =</th>
<th>60.6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECint_base2006</strong> =</td>
<td>58.0</td>
</tr>
</tbody>
</table>

- **Test date:** Jan-2015
- **Hardware Availability:** Apr-2015
- **Software Availability:** Apr-2015

---

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.

Report generated on Wed Apr 8 11:04:01 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 7 April 2015.