# Dell Inc.

PowerEdge FC430 (Intel Xeon E5-2650 v3, 2.30 GHz)

| SPECint®2006 = | 55.8 |
| SPECint_base2006 = | 53.3 |

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

### Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2650 v3</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.00 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2300</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>20 cores, 2 chips, 10 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>25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 200 GB SSD SATA</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
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</table>

### Software

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 15.0.0.0.090 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</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>32/64-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>
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</tbody>
</table>
SPEC CINT2006 Result

Dell Inc.

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SPECint2006 = 55.8

SPECint_base2006 = 53.3

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
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<tbody>
<tr>
<td></td>
<td>Base</td>
<td></td>
<td>Peak</td>
<td></td>
<td>Base</td>
<td></td>
<td>Peak</td>
<td></td>
<td>Base</td>
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<tr>
<td>400.perlbench</td>
<td>280</td>
<td>34.9</td>
<td>280</td>
<td>34.9</td>
<td>247</td>
<td>39.6</td>
<td>246</td>
<td>39.7</td>
<td>247</td>
<td>39.5</td>
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<tr>
<td>403.gcc</td>
<td>265</td>
<td>30.4</td>
<td>264</td>
<td>30.5</td>
<td>263</td>
<td>30.6</td>
<td>265</td>
<td>30.4</td>
<td>264</td>
<td>30.5</td>
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<tr>
<td>429.mcf</td>
<td>167</td>
<td>54.8</td>
<td>165</td>
<td>55.2</td>
<td>168</td>
<td>54.3</td>
<td>167</td>
<td>54.8</td>
<td>165</td>
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<tr>
<td>445.gobmk</td>
<td>424</td>
<td>24.7</td>
<td>423</td>
<td>24.8</td>
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<td>24.7</td>
<td>422</td>
<td>24.9</td>
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<tr>
<td>456.hmmer</td>
<td>158</td>
<td>59.1</td>
<td>158</td>
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<td>158</td>
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<tr>
<td>458.sjeng</td>
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<td>29.4</td>
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<td>29.1</td>
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<td>462.libquantum</td>
<td>3.91</td>
<td>5300</td>
<td>3.99</td>
<td>5200</td>
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<td>464.h264ref</td>
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<td>42.8</td>
<td>517</td>
<td>42.8</td>
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<td>471.omnetpp</td>
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<td>28.0</td>
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<td>40.2</td>
<td>154</td>
<td>40.6</td>
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<tr>
<td>473.astar</td>
<td>243</td>
<td>28.9</td>
<td>242</td>
<td>29.0</td>
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<td>238</td>
<td>29.5</td>
<td>238</td>
<td>29.5</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>130</td>
<td>53.3</td>
<td>125</td>
<td>55.4</td>
<td>127</td>
<td>54.3</td>
<td>124</td>
<td>55.7</td>
<td>123</td>
<td>56.2</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-ly8c Thu Jan 22 14:47:56 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 E5-2650 v3 @ 2.30GHz
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.)
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CPU2006 license: 55
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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: 132186916 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-ly8c 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 22 14:42

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 M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Dell Inc.

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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
**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge FC430 (Intel Xeon E5-2650 v3, 2.30 GHz)

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**CPU2006 license:** 55  
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**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/composer_xe_2015/lib/ia32`
- 445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):

```
icpc -m32 -L/opt/intel/composer_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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -ansi-alias
```

```
401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias
```

Continued on next page
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
# SPEC CINT2006 Result

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

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