**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

**SPECint®2006 = 65.1**
**SPECint_base2006 = 62.3**

- **CPU2006 license:** 55
- **Test sponsor:** Dell Inc.
- **Tested by:** Dell Inc.
- **Test date:** Apr-2016
- **Hardware Availability:** Jun-2016
- **Software Availability:** Mar-2016

### Hardware

- **CPU Name:** Intel Xeon E5-4655 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz
- **CPU MHZ:** 2500
- **FPU:** Integrated
- **CPU(s) enabled:** 32 cores, 4 chips, 8 cores/chip, 2 threads/core
- **CPU(s) orderable:** 2,4 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:** 30 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 512 GB (32 x 16 GB 2Rx8 PC4-2400T-R)
- **Disk Subsystem:** 1 x 800 GB SATA SSD
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
- **Compiler:** C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
- **Auto Parallel:** Yes
- **File System:** btrfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.2

---

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Dell Inc.

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

SPECint2006 = 65.1
SPECint_base2006 = 62.3

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

<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>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>260</td>
<td>37.5</td>
<td>260</td>
<td>37.6</td>
<td>261</td>
<td>37.5</td>
<td>239</td>
<td>41.0</td>
<td>238</td>
<td>41.0</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>419</td>
<td>23.0</td>
<td>419</td>
<td>23.0</td>
<td>416</td>
<td>23.2</td>
<td>415</td>
<td>23.3</td>
<td>414</td>
<td>23.3</td>
</tr>
<tr>
<td>403.gcc</td>
<td>234</td>
<td>34.4</td>
<td>234</td>
<td>34.4</td>
<td>235</td>
<td>34.2</td>
<td>234</td>
<td>34.4</td>
<td>234</td>
<td>34.4</td>
</tr>
<tr>
<td>429.mcf</td>
<td>152</td>
<td>60.0</td>
<td>153</td>
<td>59.4</td>
<td>154</td>
<td>59.2</td>
<td>151</td>
<td>60.4</td>
<td>152</td>
<td>60.0</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>379</td>
<td>27.6</td>
<td>380</td>
<td>27.6</td>
<td>380</td>
<td>27.6</td>
<td>379</td>
<td>27.6</td>
<td>380</td>
<td>27.6</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>120</td>
<td>77.9</td>
<td>120</td>
<td>78.0</td>
<td>120</td>
<td>77.7</td>
<td>120</td>
<td>77.9</td>
<td>120</td>
<td>77.7</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>382</td>
<td>31.7</td>
<td>381</td>
<td>31.7</td>
<td>381</td>
<td>31.7</td>
<td>377</td>
<td>32.1</td>
<td>376</td>
<td>32.1</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.31</td>
<td>6260</td>
<td>3.36</td>
<td>6160</td>
<td>3.32</td>
<td>6230</td>
<td>3.31</td>
<td>6260</td>
<td>3.36</td>
<td>6160</td>
</tr>
<tr>
<td>464.bzip2</td>
<td>420</td>
<td>52.7</td>
<td>420</td>
<td>52.7</td>
<td>419</td>
<td>52.9</td>
<td>420</td>
<td>52.7</td>
<td>420</td>
<td>52.7</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>163</td>
<td>38.3</td>
<td>169</td>
<td>37.0</td>
<td>171</td>
<td>36.5</td>
<td>122</td>
<td>51.1</td>
<td>122</td>
<td>51.4</td>
</tr>
<tr>
<td>473.astar</td>
<td>208</td>
<td>33.8</td>
<td>207</td>
<td>33.8</td>
<td>210</td>
<td>33.5</td>
<td>208</td>
<td>33.8</td>
<td>207</td>
<td>33.8</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>100</td>
<td>68.9</td>
<td>101</td>
<td>68.5</td>
<td>99.8</td>
<td>69.1</td>
<td>93.3</td>
<td>73.9</td>
<td>91.7</td>
<td>75.3</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 Opportunistic Snoop Broadcast
Virtualization Technology disabled
System Profile set to custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Energy Efficient Turbo disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-9j5l Mon Apr 18 01:10:17 2016

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

Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

SPECint2006 = 65.1
SPECint_base2006 = 62.3

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

Test date: Apr-2016
Hardware Availability: Jun-2016
Software Availability: Mar-2016

Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-4655 v4 @ 2.50GHz
    4 "physical id"s (chips)
    64 "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 : 8
    siblings : 16
    physical 0: cores 0 1 3 5 8 10 12 13
    physical 1: cores 0 1 3 5 8 10 12 13
    physical 2: cores 0 1 3 5 8 10 12 13
    physical 3: cores 0 1 3 5 8 10 12 13
  cache size : 30720 KB

From /proc/meminfo
  MemTotal:        529326752 kB
  HugePages_Total:       0
  Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*
  SuSE-release:
    NAME="SLES"
    VERSION="12-SP1"
    VERSION_ID="12.1"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME=cpe:/o:suse:sles:12:sp1"

uname -a:
  (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 18 01:08

SPEC is set to: /root/cpu2006-1.2
  Filesystem   Type   Size  Used Avail Use% Mounted on
  /dev/sda2    xfs   225G  8.6G  217G  4% /
Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

SPECint2006 = 65.1
SPECint_base2006 = 62.3

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

Test date: Apr-2016
Hardware Availability: Jun-2016
Software Availability: Mar-2016

Platform Notes (Continued)

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. 2.0.1 03/31/2016
Memory:
16x 00AD00B300AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
16x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz
16x Not Specified Not Specified

(End of data from sysinfo program)

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 = "32"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
memory using RedHat EL 7.1
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
443.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
Dell Inc.  
PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)  

**SPECint2006 = 65.1**  
**SPECint_base2006 = 62.3**

**CPU2006 license: 55**  
**Test date: Apr-2016**  
**Test sponsor: Dell Inc.**  
**Hardware Availability: Jun-2016**  
**Tested by: Dell Inc.**  
**Software Availability: Mar-2016**

---

### 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`

---

### 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/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

C++ benchmarks (except as noted below):

- `icpc`  
- `-m32`  

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

---

### Peak Portability Flags

- `400.perlbench`: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`  
- `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`: `-D_FILE_OFFSET_BITS=64`  
- `473.astar`: `-DSPEC_CPU_LP64`  
- `483.xalancbmk`: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
Dell Inc.

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

SPECint2006 = 65.1
SPECint_base2006 = 62.3

CPU2006 license: 55
Test sponsor: Dell Inc.
Test date: Apr-2016
Tested by: Dell Inc.
Hardware Availability: Jun-2016
Software Availability: Mar-2016

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-ansi-alias

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

403.gcc: basepeak = yes

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: basepeak = yes

462.libquantum: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Daalloca=_alloca
# SPEC CINT2006 Result

**Dell Inc.**

PowerEdge M830 (Intel Xeon E5-4655 v4, 2.50 GHz)

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>65.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>62.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2006 license: 55</th>
<th>Test date:</th>
<th>Apr-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Dell Inc.</td>
<td>Hardware Availability:</td>
<td>Jun-2016</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability:</td>
<td>Mar-2016</td>
</tr>
</tbody>
</table>

The flags files that were used to format this result can be browsed at


You can also download the XML flags sources by saving the following links:


---

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 Tue Jun 28 17:30:13 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 June 2016.