



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 65.1

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

SPECint\_base2006 = 62.3

CPU2006 license: 55

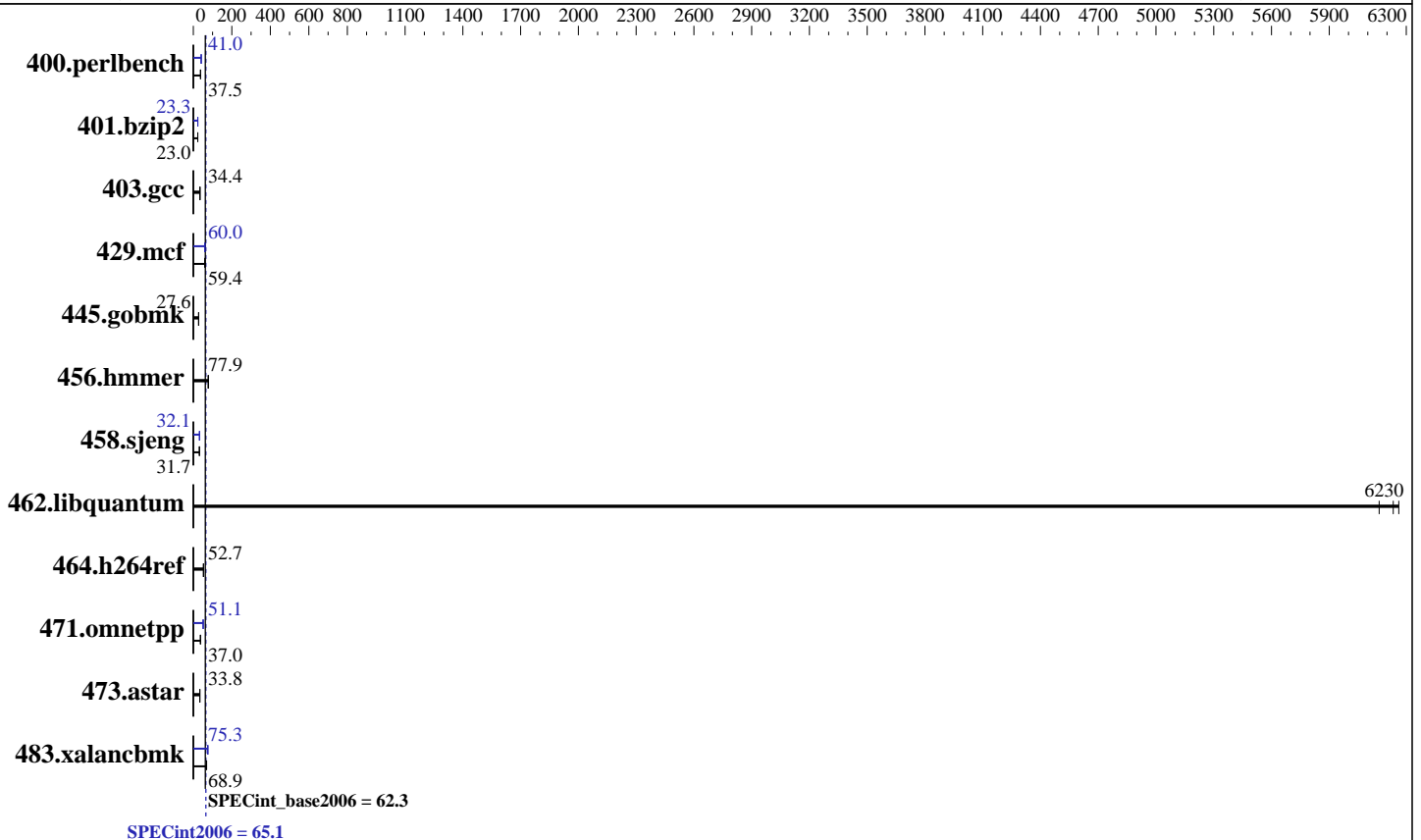
Test date: Apr-2016

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Mar-2016



## 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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>260</u></b>	<b><u>37.5</u></b>	260	37.6	261	37.5	<b><u>239</u></b>	<b><u>41.0</u></b>	238	41.0	239	40.9
401.bzip2	419	23.0	<b><u>419</u></b>	<b><u>23.0</u></b>	416	23.2	<b><u>415</u></b>	<b><u>23.3</u></b>	414	23.3	416	23.2
403.gcc	234	34.4	<b><u>234</u></b>	<b><u>34.4</u></b>	235	34.2	234	34.4	<b><u>234</u></b>	<b><u>34.4</u></b>	235	34.2
429.mcf	152	60.0	<b><u>153</u></b>	<b><u>59.4</u></b>	154	59.2	151	60.4	<b><u>152</u></b>	<b><u>60.0</u></b>	152	59.9
445.gobmk	379	27.6	<b><u>380</u></b>	<b><u>27.6</u></b>	380	27.6	379	27.6	<b><u>380</u></b>	<b><u>27.6</u></b>	380	27.6
456.hammer	<b><u>120</u></b>	<b><u>77.9</u></b>	120	78.0	120	77.7	<b><u>120</u></b>	<b><u>77.9</u></b>	120	78.0	120	77.7
458.sjeng	382	31.7	<b><u>381</u></b>	<b><u>31.7</u></b>	381	31.8	<b><u>377</u></b>	<b><u>32.1</u></b>	376	32.1	377	32.1
462.libquantum	3.31	6260	3.36	6160	<b><u>3.32</u></b>	<b><u>6230</u></b>	3.31	6260	3.36	6160	<b><u>3.32</u></b>	<b><u>6230</u></b>
464.h264ref	<b><u>420</u></b>	<b><u>52.7</u></b>	420	52.7	419	52.9	<b><u>420</u></b>	<b><u>52.7</u></b>	420	52.7	419	52.9
471.omnetpp	163	38.3	<b><u>169</u></b>	<b><u>37.0</u></b>	171	36.5	<b><u>122</u></b>	<b><u>51.1</u></b>	122	51.4	123	51.0
473.astar	<b><u>208</u></b>	<b><u>33.8</u></b>	207	33.8	210	33.5	<b><u>208</u></b>	<b><u>33.8</u></b>	207	33.8	210	33.5
483.xalancbmk	<b><u>100</u></b>	<b><u>68.9</u></b>	101	68.5	99.8	69.1	<b><u>93.3</u></b>	<b><u>73.9</u></b>	<b><u>91.7</u></b>	<b><u>75.3</u></b>	90.4	76.3

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

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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

## 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:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-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:
Linux linux-9j5l 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(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

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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

## 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

445.gobmk: -DSPEC\_CPU\_LP64

456.hmmmer: -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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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 -lsmarthheap64

## 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 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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

## 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

456.hmmer: basepeak = yes

458.sjeng: -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) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -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-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmarheap

473.astar: basepeak = yes

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias -Wl,-z,muldefs -L/sh -lsmarheap

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 65.1

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

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml>

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](mailto: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.