



# SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

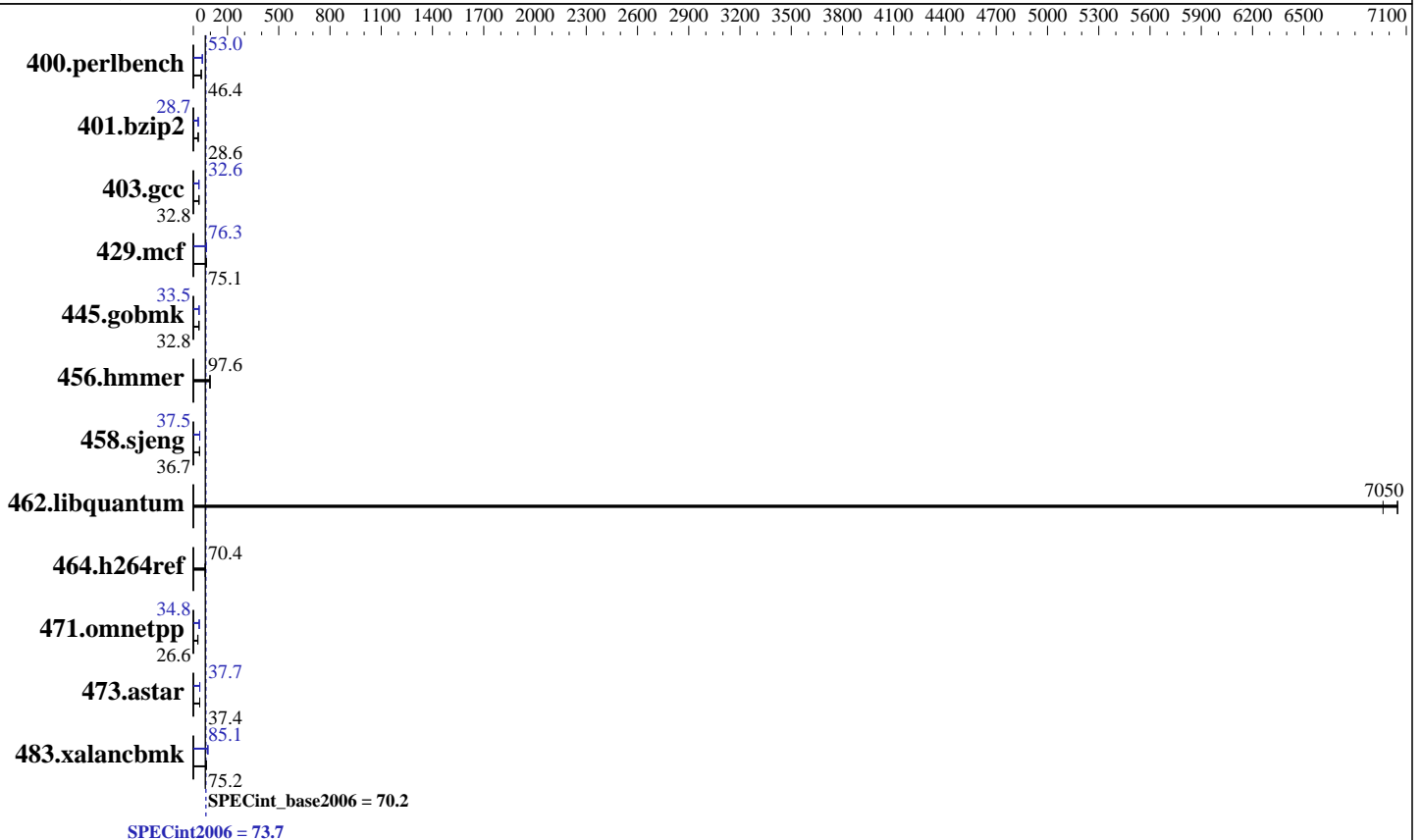
Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016



## Hardware

CPU Name: Intel Xeon Gold 6150  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 36 cores, 2 chips, 18 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: 1 MB I+D on chip per core  
 L3 Cache: 24.75 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 384 GB (12 x 32 GB 2Rx8 PC4-2666V-R)  
 Disk Subsystem: 1 x 960 GB SATA SSD  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86\_64) 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler 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 V10.2



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

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

Test date: Jun-2017  
Hardware Availability: Jul-2017  
Software Availability: Nov-2016

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>211</u></b>	<b><u>46.4</u></b>	210	46.5	211	46.2	185	52.9	184	53.0	<b><u>184</u></b>	<b><u>53.0</u></b>
401.bzip2	340	28.4	<b><u>338</u></b>	<b><u>28.6</u></b>	337	28.6	338	28.6	<b><u>336</u></b>	<b><u>28.7</u></b>	335	28.8
403.gcc	<b><u>246</u></b>	<b><u>32.8</u></b>	245	32.9	246	32.8	246	32.7	248	32.5	<b><u>247</u></b>	<b><u>32.6</u></b>
429.mcf	122	74.6	119	76.9	<b><u>121</u></b>	<b><u>75.1</u></b>	<b><u>120</u></b>	<b><u>76.3</u></b>	120	76.2	118	77.6
445.gobmk	320	32.8	320	32.8	<b><u>320</u></b>	<b><u>32.8</u></b>	313	33.5	313	33.5	<b><u>313</u></b>	<b><u>33.5</u></b>
456.hmmer	<b><u>95.6</u></b>	<b><u>97.6</u></b>	95.6	97.6	95.7	97.5	<b><u>95.6</u></b>	<b><u>97.6</u></b>	95.6	97.6	95.7	97.5
458.sjeng	331	36.6	<b><u>329</u></b>	<b><u>36.7</u></b>	329	36.7	323	37.5	<b><u>323</u></b>	<b><u>37.5</u></b>	323	37.5
462.libquantum	<b><u>2.94</u></b>	<b><u>7050</u></b>	2.94	7050	2.98	6960	<b><u>2.94</u></b>	<b><u>7050</u></b>	2.94	7050	2.98	6960
464.h264ref	314	70.5	320	69.1	<b><u>314</u></b>	<b><u>70.4</u></b>	314	70.5	320	69.1	<b><u>314</u></b>	<b><u>70.4</u></b>
471.omnetpp	<b><u>235</u></b>	<b><u>26.6</u></b>	235	26.6	244	25.6	180	34.8	<b><u>180</u></b>	<b><u>34.8</u></b>	183	34.2
473.astar	188	37.4	188	37.4	<b><u>188</u></b>	<b><u>37.4</u></b>	187	37.6	<b><u>186</u></b>	<b><u>37.7</u></b>	186	37.7
483.xalancbmk	92.0	75.0	<b><u>91.7</u></b>	<b><u>75.2</u></b>	90.7	76.1	81.3	84.9	81.1	85.1	<b><u>81.1</u></b>	<b><u>85.1</u></b>

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:  
Sub NUMA Cluster disabled  
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  
Logical Processor enabled  
CPU Interconnect Bus Link Power Management disabled  
PCI ASPM L1 Link Power Management disabled  
Sysinfo program /root/cpu2006-1.2\_ic17u3/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux-fx60 Fri Jun 2 15:01:38 2017  
Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016

## Platform Notes (Continued)

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) Gold 6150 CPU @ 2.70GHz
 2 "physical id"s (chips)
 72 "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 : 18
  siblings  : 36
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 25344 KB

```

```

From /proc/meminfo
MemTotal:      394867844 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"

```

```

uname -a:
Linux linux-fx60 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jun 1 10:26

```

SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  909G  8.7G  900G   1% /

```

Additional information from dmidecode:

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



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-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. 1.0.2 05/31/2017

Memory:

2x 002C00B3002C 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz  
10x 002C0632002C 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz  
4x 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\_icl7u3/lib/ia32:/root/cpu2006-1.2\_icl7u3/lib/intel64:/root/cpu2006-1.2\_icl7u3/sh10.2"

OMP\_NUM\_THREADS = "36"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default.

Filesystem page cache cleared with:

shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run

## 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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016

## Base Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch  
-auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh10.2 -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\_2017/linux/lib/ia32

445.gobmk: icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

C++ benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

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: -D\_FILE\_OFFSET\_BITS=64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016

## Peak Portability Flags (Continued)

```

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

```

## Peak Optimization Flags

C benchmarks:

```

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

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

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
          -qopt-malloc-options=3 -auto-ilp32

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

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
            -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2)

456.hmmer: basepeak = yes

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
            -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

```

C++ benchmarks:

```

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
              -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -qopt-ra-region-strategy=block
              -Wl,-z,muldefs -L/sh10.2 -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 73.7

PowerEdge C6420 (Intel Xeon Gold 6150, 2.70 GHz)

SPECint\_base2006 = 70.2

CPU2006 license: 55

Test date: Jun-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016

## Peak Optimization Flags (Continued)

483.xalanbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-Wl,-z,muldefs -L/sh10.2 -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-ic17.0-official-linux64-revF.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.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 Wed Aug 23 13:13:18 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 22 August 2017.