



# SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint®2006 = 78.1**

**SPECint\_base2006 = 74.8**

CPU2006 license: 55

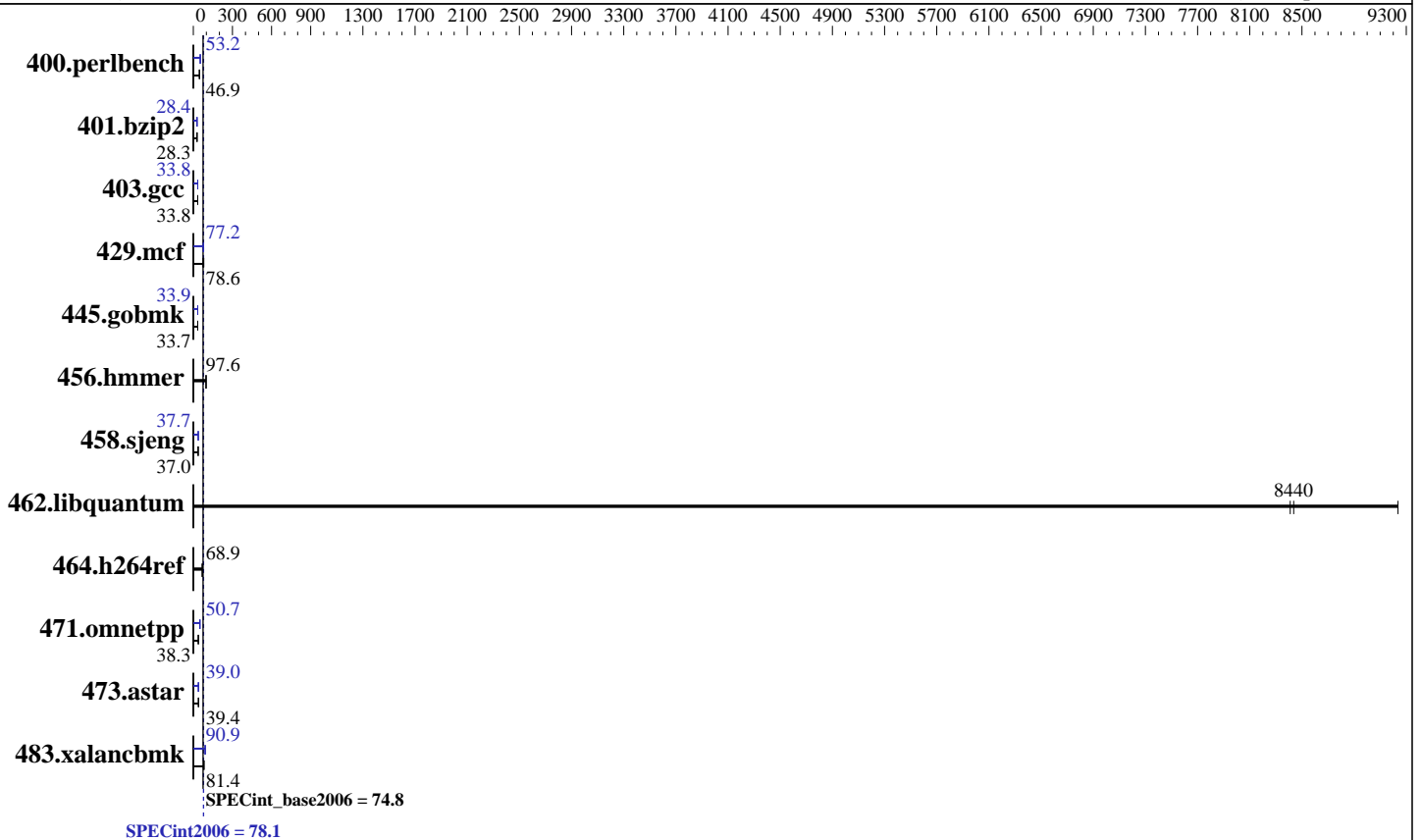
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Oct-2017

Hardware Availability: Sep-2017

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 6148  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 80 cores, 4 chips, 20 cores/chip  
 CPU(s) orderable: 2,4 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: 27.5 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 768 GB (48 x 16 GB 2Rx8 PC4-2666V-R)  
 Disk Subsystem: 1 x 900 GB 15K RPM SAS12  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 12 (x86\_64) SP2  
 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: xfs  
 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.

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

SPECint2006 = **78.1**

SPECint\_base2006 = **74.8**

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

Test date: Oct-2017  
Hardware Availability: Sep-2017  
Software Availability: Apr-2017

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	208	47.0	209	46.7	<b><u>208</u></b>	<b><u>46.9</u></b>	183	53.3	<b><u>184</u></b>	<b><u>53.2</u></b>	184	53.2
401.bzip2	341	28.3	341	28.3	<b><u>341</u></b>	<b><u>28.3</u></b>	<b><u>340</u></b>	<b><u>28.4</u></b>	340	28.4	340	28.4
403.gcc	238	33.8	238	33.8	<b><u>238</u></b>	<b><u>33.8</u></b>	236	34.1	239	33.7	<b><u>238</u></b>	<b><u>33.8</u></b>
429.mcf	124	73.7	<b><u>116</u></b>	<b><u>78.6</u></b>	114	80.3	118	77.0	117	78.0	<b><u>118</u></b>	<b><u>77.2</u></b>
445.gobmk	312	33.7	<b><u>312</u></b>	<b><u>33.7</u></b>	311	33.7	310	33.8	<b><u>310</u></b>	<b><u>33.9</u></b>	310	33.9
456.hammer	<b><u>95.6</u></b>	<b><u>97.6</u></b>	95.6	97.6	95.4	97.8	<b><u>95.6</u></b>	<b><u>97.6</u></b>	95.6	97.6	95.4	97.8
458.sjeng	<b><u>327</u></b>	<b><u>37.0</u></b>	327	37.0	327	37.0	<b><u>321</u></b>	<b><u>37.7</u></b>	<b><u>321</u></b>	<b><u>37.7</u></b>	<b><u>321</u></b>	<b><u>37.7</u></b>
462.libquantum	2.46	8410	<b><u>2.46</u></b>	<b><u>8440</u></b>	2.24	9240	<b><u>2.46</u></b>	<b><u>8410</u></b>	<b><u>2.46</u></b>	<b><u>8440</u></b>	2.24	9240
464.h264ref	321	69.0	322	68.8	<b><u>321</u></b>	<b><u>68.9</u></b>	321	69.0	322	68.8	<b><u>321</u></b>	<b><u>68.9</u></b>
471.omnetpp	<b><u>163</u></b>	<b><u>38.3</u></b>	160	39.1	165	37.8	<b><u>123</u></b>	<b><u>50.7</u></b>	121	51.5	128	48.7
473.astar	<b><u>178</u></b>	<b><u>39.4</u></b>	178	39.4	178	39.4	<b><u>180</u></b>	<b><u>39.0</u></b>	<b><u>181</u></b>	<b><u>38.8</u></b>	<b><u>180</u></b>	<b><u>39.0</u></b>
483.xalancbmk	87.4	78.9	<b><u>84.8</u></b>	<b><u>81.4</u></b>	83.7	82.5	<b><u>76.6</u></b>	<b><u>90.0</u></b>	<b><u>75.9</u></b>	<b><u>90.9</u></b>	75.2	91.8

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:  
 Logical Processor Disabled  
 Virtualization Technology Disabled  
 Sub NUMA Cluster Disabled  
 System Profile set to Custom  
 CPU Performance set to Maximum Performance  
 C1E Disabled  
 C States set to Autonomous  
 Uncore Frequency set to Dynamic  
 Memory Patrol Scrub Disabled  
 Energy Efficiency Policy set to Performance  
 CPU Interconnect Bus Link Power Management Disabled  
 PCI ASPM L1 Link Power Management Disabled  
 Sysinfo program /home/cpu2006/config/sysinfo.rev6993  
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
 running on linux-ehog Tue Oct 17 03:55:15 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint2006 = 78.1**

**SPECint\_base2006 = 74.8**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Oct-2017

**Hardware Availability:** Sep-2017

**Software Availability:** Apr-2017

## Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz

4 "physical id"s (chips)

80 "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 : 20

siblings : 20

physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

physical 2: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

physical 3: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

cache size : 28160 KB

From /proc/meminfo

MemTotal: 791225344 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb\_release -d

SUSE Linux Enterprise Server 12 SP2

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-ehog 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 Oct 17 03:55

SPEC is set to: /home/cpu2006

Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda4 xfs 796G 17G 779G 3% /home

Additional information from dmidecode:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint2006 = 78.1**

**SPECint\_base2006 = 74.8**

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

**Test date:** Oct-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** Apr-2017

## Platform Notes (Continued)

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. 1.1.7 08/10/2017

Memory:

48x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact"

LD\_LIBRARY\_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"

OMP\_NUM\_THREADS = "80"

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



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint2006 = 78.1**

**SPECint\_base2006 = 74.8**

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

**Test date:** Oct-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** Apr-2017

## Base Portability Flags (Continued)

483.xalanbmk: -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



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint2006 = 78.1**

**SPECint\_base2006 = 74.8**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Oct-2017

**Hardware Availability:** Sep-2017

**Software Availability:** Apr-2017

## 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.**

PowerEdge R940  
(Intel Xeon Gold 6148, 2.40 GHz)

**SPECint2006 = 78.1**

**SPECint\_base2006 = 74.8**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Oct-2017

**Hardware Availability:** Sep-2017

**Software Availability:** Apr-2017

## Peak Optimization Flags (Continued)

483.xalancbmk: -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-revD.20171221.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-revD.20171221.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 Thu Dec 21 17:10:36 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 21 December 2017.