



# SPEC® CINT2006 Result

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## Dell Inc.

## SPECint®\_rate2006 = Not Run

### PowerEdge R640 (Intel Xeon Gold 6148, 2.40 GHz)

## SPECint\_rate\_base2006 = 1950

CPU2006 license: 55

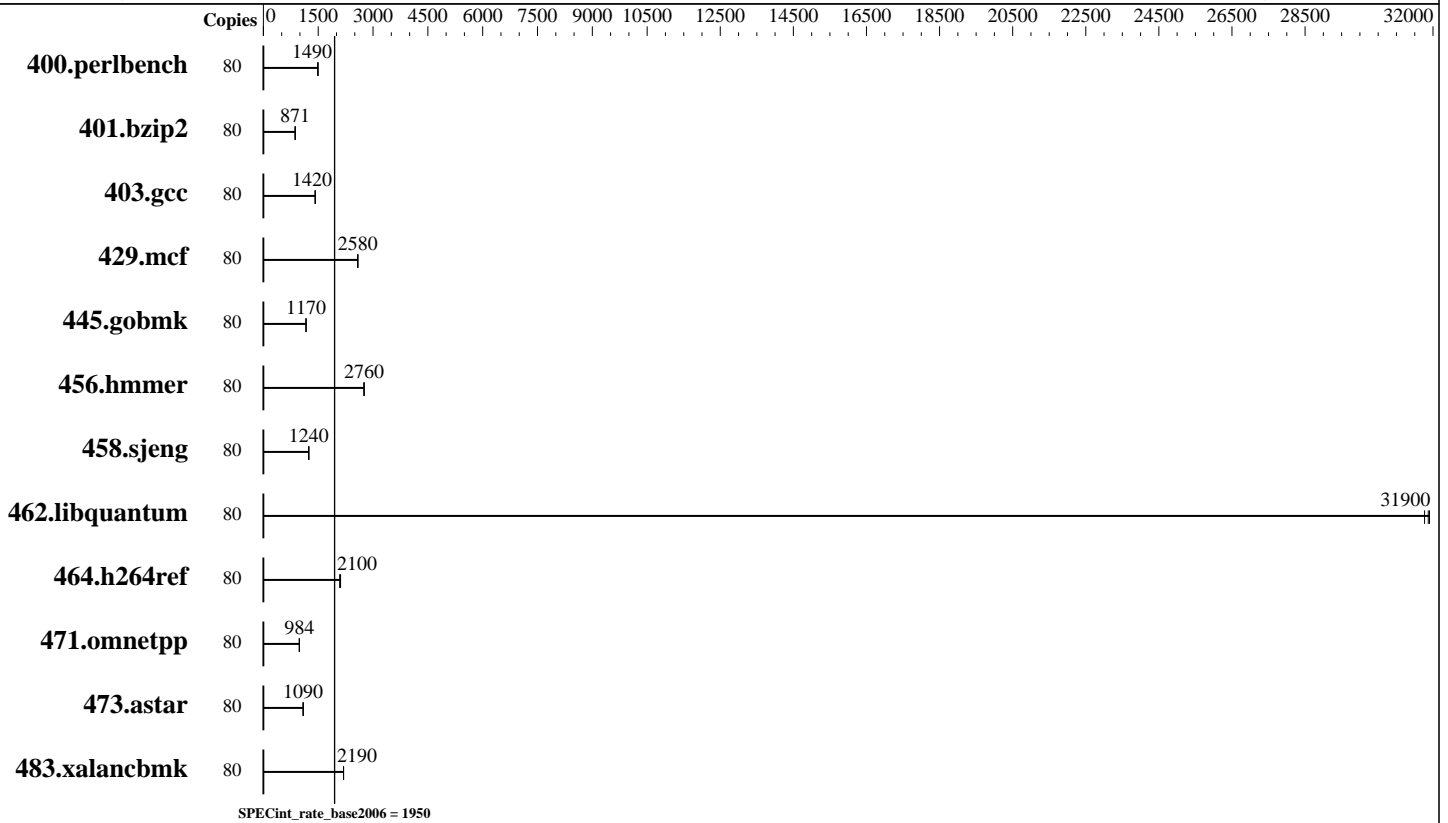
Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Jul-2017

Tested by: Dell Inc.

Software Availability: Nov-2016



### 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: 40 cores, 2 chips, 20 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: 27.5 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 384 GB (24 x 16 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  
 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++  
 Compiler for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	<u>525</u>	<u>1490</u>	526	1490	522	1500							
401.bzip2	80	884	874	891	867	<u>887</u>	<u>871</u>							
403.gcc	80	455	1420	<u>454</u>	<u>1420</u>	453	1420							
429.mcf	80	<u>282</u>	<u>2580</u>	282	2580	282	2580							
445.gobmk	80	<u>719</u>	<u>1170</u>	718	1170	720	1170							
456.hammer	80	271	2760	<u>271</u>	<u>2760</u>	271	2750							
458.sjeng	80	779	1240	779	1240	<u>779</u>	<u>1240</u>							
462.libquantum	80	52.2	31800	52.0	31900	<u>52.0</u>	<u>31900</u>							
464.h264ref	80	838	2110	848	2090	<u>842</u>	<u>2100</u>							
471.omnetpp	80	508	984	<u>508</u>	<u>984</u>	508	985							
473.astar	80	517	1090	515	1090	<u>515</u>	<u>1090</u>							
483.xalancbmk	80	252	2190	252	2190	<u>252</u>	<u>2190</u>							

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 enabled  
Virtualization Technology disabled  
System Profile set to Custom  
CPU Performance set to Maximum Performance  
C States set to autonomous  
C1E 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-bo7a Fri Aug 4 10:17:49 2017

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## 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 6148 CPU @ 2.40GHz
 2 "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     : 40
  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
cache size     : 28160 KB

```

```

From /proc/meminfo
MemTotal:      394736736 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-bo7a 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 Aug 4 10:15

```

SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   892G  36G  857G   4% /

```

Additional information from dmidecode:

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## 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. 1.0.8 07/11/2017

Memory:

24x 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:

LD\_LIBRARY\_PATH = "/root/cpu2006-1.2\_ic17u3/lib/ia32:/root/cpu2006-1.2\_ic17u3/lib/intel64:/root/cpu2006-1.2\_ic17u3/sh10.2"

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

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

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -D\_FILE\_OFFSET\_BITS=64

403.gcc: -D\_FILE\_OFFSET\_BITS=64

429.mcf: -D\_FILE\_OFFSET\_BITS=64

445.gobmk: -D\_FILE\_OFFSET\_BITS=64

456.hmmer: -D\_FILE\_OFFSET\_BITS=64

458.sjeng: -D\_FILE\_OFFSET\_BITS=64

462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

464.h264ref: -D\_FILE\_OFFSET\_BITS=64

471.omnetpp: -D\_FILE\_OFFSET\_BITS=64

473.astar: -D\_FILE\_OFFSET\_BITS=64

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## Base Portability Flags (Continued)

483.xalanbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

## Base 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>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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