



# SPEC® CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

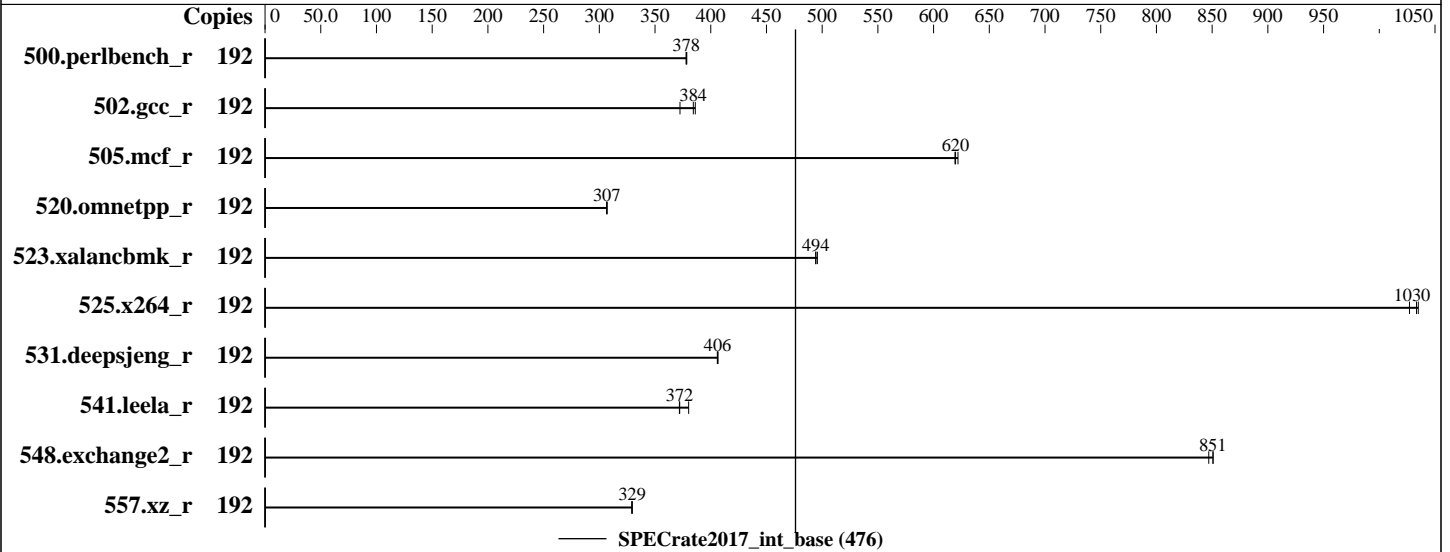
(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019



## Hardware

CPU Name: Intel Xeon Gold 6262V  
Max MHz.: 3600  
Nominal: 1900  
Enabled: 96 cores, 4 chips, 2 threads/core  
Orderable: 2, 4 chip(s)  
Cache L1: 32 KB I + 32 KB D on chip per core  
L2: 1 MB I+D on chip per core  
L3: 33 MB I+D on chip per chip  
Other: None  
Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R, running at 2400)  
Storage: 1 x 480 GB SATA SSD, RAID 0  
Other: None

## Software

OS: SUSE Linux Enterprise Server 15 (x86\_64)  
Kernel 4.12.14-23-default  
Compiler: C/C++: Version 19.0.2.187 of Intel C/C++ Compiler Build 20190117 for Linux;  
Fortran: Version 19.0.2.187 of Intel Fortran Compiler Build 20190117 for Linux  
Parallel: No  
Firmware: HPE BIOS Version I43 04/18/2019 released Apr-2019  
File System: btrfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other: None



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	192	808	379	<b>809</b>	<b>378</b>	809	378							
502.gcc_r	192	730	372	<b>707</b>	<b>384</b>	704	386							
505.mcf_r	192	499	622	<b>501</b>	<b>620</b>	501	619							
520.omnetpp_r	192	822	307	<b>821</b>	<b>307</b>	821	307							
523.xalancbmk_r	192	409	496	<b>410</b>	<b>494</b>	410	494							
525.x264_r	192	327	1030	<b>325</b>	<b>1030</b>	325	1040							
531.deepsjeng_r	192	542	406	541	406	<b>542</b>	<b>406</b>							
541.leela_r	192	855	372	<b>854</b>	<b>372</b>	836	380							
548.exchange2_r	192	594	847	591	851	<b>591</b>	<b>851</b>							
557.xz_r	192	630	329	<b>629</b>	<b>329</b>	629	329							

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

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"
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3 > /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
```

## General Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2017\_u2/lib/ia32:/home/cpu2017\_u2/lib/intel64"

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5  
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019

## General Notes (Continued)

is mitigated in the system as tested and documented.

## Platform Notes

BIOS Configuration:

Thermal Configuration set to Maximum Cooling  
Memory Patrol Scrubbing set to Disabled  
LLC Prefetch set to Enabled  
LLC Dead Line Allocation set to Disabled  
Enhanced Processor Performance set to Enabled  
Workload Profile set to General Throughput Compute  
Workload Profile set to Custom  
Energy/Performance Bias set to Balanced Performance  
Sysinfo program /home/cpu2017\_u2/bin/sysinfo  
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
running on sy660-gen10 Thu Jun 27 03:43:44 2019

SUT (System Under Test) info as seen by some common utilities.

For more information on this section, see  
<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 6262V CPU @ 1.90GHz
 4 "physical id"s (chips)
192 "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      : 24
siblings       : 48
physical 0:    : cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 1:    : cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 2:    : cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 3:    : cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
```

From lscpu:

```
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          192
On-line CPU(s) list: 0-191
Thread(s) per core: 2
Core(s) per socket: 24
Socket(s):       4
NUMA node(s):   8
Vendor ID:       GenuineIntel
CPU family:      6
```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019

## Platform Notes (Continued)

```

Model: 85
Model name: Intel(R) Xeon(R) Gold 6262V CPU @ 1.90GHz
Stepping: 7
CPU MHz: 1900.000
BogoMIPS: 3800.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 33792K
NUMA node0 CPU(s): 0-11,96-107
NUMA node1 CPU(s): 12-23,108-119
NUMA node2 CPU(s): 24-35,120-131
NUMA node3 CPU(s): 36-47,132-143
NUMA node4 CPU(s): 48-59,144-155
NUMA node5 CPU(s): 60-71,156-167
NUMA node6 CPU(s): 72-83,168-179
NUMA node7 CPU(s): 84-95,180-191
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc art arch_perfmon pebs rep_good nopl xtopology nonstop_tsc cpuid
aperfperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3
sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt
tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault
epb cat_l3 cdp_l3 invpcid_single intel_ppin mba tpr_shadow vnmi flexpriority ept
vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a
avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
ibpb ibrs stibp dtherm ida arat pln pts pku ospke avx512_vnni arch_capabilities ssbd

```

```

/proc/cpuinfo cache data
cache size : 33792 KB

```

```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 8 nodes (0-7)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 96 97 98 99 100 101 102 103 104 105 106 107
node 0 size: 96276 MB
node 0 free: 95729 MB
node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 108 109 110 111 112 113 114 115 116
117 118 119
node 1 size: 96763 MB
node 1 free: 96527 MB
node 2 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 120 121 122 123 124 125 126 127 128
129 130 131
node 2 size: 96763 MB
node 2 free: 96627 MB

```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019

## Platform Notes (Continued)

```

node 3 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 132 133 134 135 136 137 138 139 140
141 142 143
node 3 size: 96763 MB
node 3 free: 96636 MB
node 4 cpus: 48 49 50 51 52 53 54 55 56 57 58 59 144 145 146 147 148 149 150 151 152
153 154 155
node 4 size: 96763 MB
node 4 free: 96591 MB
node 5 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 156 157 158 159 160 161 162 163 164
165 166 167
node 5 size: 96763 MB
node 5 free: 96629 MB
node 6 cpus: 72 73 74 75 76 77 78 79 80 81 82 83 168 169 170 171 172 173 174 175 176
177 178 179
node 6 size: 96734 MB
node 6 free: 96603 MB
node 7 cpus: 84 85 86 87 88 89 90 91 92 93 94 95 180 181 182 183 184 185 186 187 188
189 190 191
node 7 size: 96553 MB
node 7 free: 96438 MB
node distances:
node  0  1  2  3  4  5  6  7
 0:  10  21  31  31  31  31  31  31
 1:  21  10  31  31  31  31  31  31
 2:  31  31  10  21  31  31  31  31
 3:  31  31  21  10  31  31  31  31
 4:  31  31  31  31  10  21  31  31
 5:  31  31  31  31  21  10  31  31
 6:  31  31  31  31  31  31  10  21
 7:  31  31  31  31  31  31  21  10

```

From /proc/meminfo

```

MemTotal:      791943028 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

From /etc/\*release\* /etc/\*version\*

```

os-release:
NAME="SLES"
VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3

**Test Sponsor:** HPE

**Tested by:** HPE

**Test Date:** Jun-2019

**Hardware Availability:** Apr-2019

**Software Availability:** Feb-2019

## Platform Notes (Continued)

uname -a:

```
Linux sy660-gen10 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b)
x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

```
CVE-2017-5754 (Meltdown): Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation,
IBPB, IBRS_FW
```

run-level 3 Jun 27 03:43

SPEC is set to: /home/cpu2017\_u2

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdb2       btrfs    445G  125G  320G  28% /home
```

Additional information from dmidecode follows. 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 HPE I43 04/18/2019

Memory:

```
24x UNKNOWN NOT AVAILABLE
24x UNKNOWN NOT AVAILABLE 32 GB 2 rank 2933, configured at 2400
```

(End of data from sysinfo program)

## Compiler Version Notes

```
=====  
CC 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)
557.xz_r(base)
```

```
-----  
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.2.187 Build 20190117  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
```

```
=====  
CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
541.leela_r(base)
```

```
-----  
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.2.187 Build 20190117  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Jun-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019

## Compiler Version Notes (Continued)

FC 548.exchange2\_r(base)

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.2.187 Build 20190117  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

## Base Portability Flags

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64  
502.gcc\_r: -DSPEC\_LP64  
505.mcf\_r: -DSPEC\_LP64  
520.omnetpp\_r: -DSPEC\_LP64  
523.xalancbmk\_r: -DSPEC\_LP64 -DSPEC\_LINUX  
525.x264\_r: -DSPEC\_LP64  
531.deepsjeng\_r: -DSPEC\_LP64  
541.leela\_r: -DSPEC\_LP64  
548.exchange2\_r: -DSPEC\_LP64  
557.xz\_r: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**Synergy 660 Gen10**

(1.90 GHz, Intel Xeon Gold 6262V)

SPECrate2017\_int\_base = 476

SPECrate2017\_int\_peak = Not Run

**CPU2017 License:** 3

**Test Sponsor:** HPE

**Tested by:** HPE

**Test Date:** Jun-2019

**Hardware Availability:** Apr-2019

**Software Availability:** Feb-2019

## Base Optimization Flags (Continued)

C++ benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc
```

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.html>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-CLX-revB.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.xml>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-CLX-revB.xml>

SPEC is a registered trademark 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 [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU2017 v1.0.5 on 2019-06-27 04:43:43-0400.

Report generated on 2019-07-30 16:35:51 by CPU2017 PDF formatter v6067.

Originally published on 2019-07-30.