



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 19

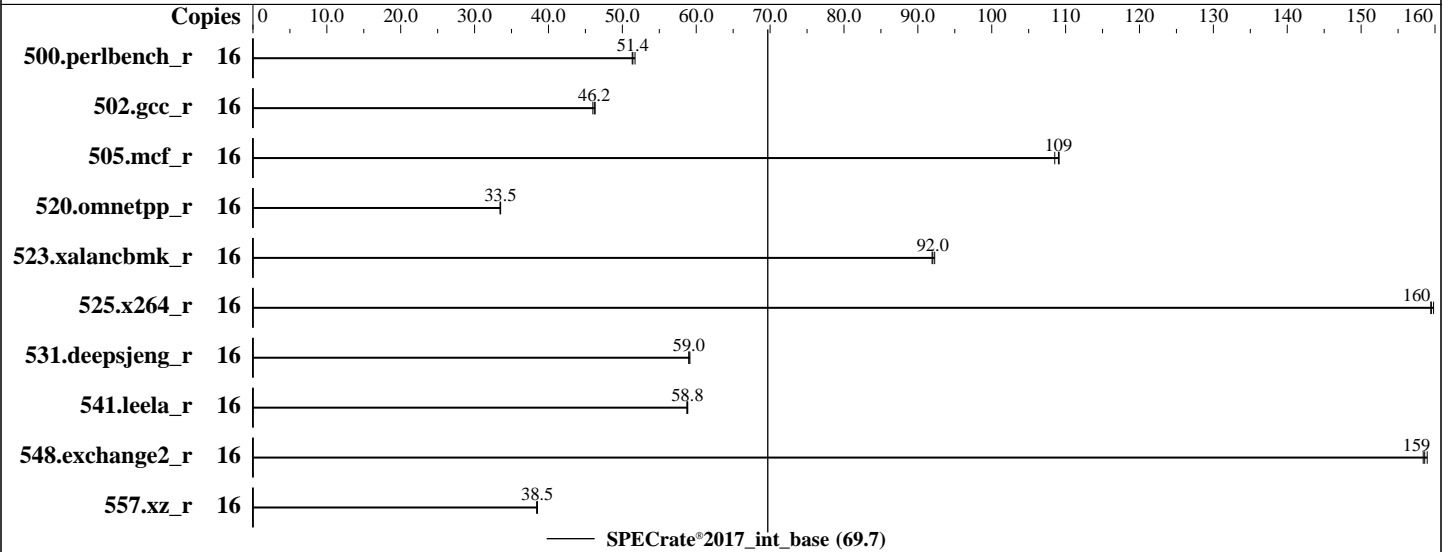
Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Dec-2021

Hardware Availability: Mar-2022

Software Availability: Jun-2021



### Hardware

CPU Name: Intel Xeon E-2388G  
 Max MHz: 5100  
 Nominal: 3200  
 Enabled: 8 cores, 1 chip, 2 threads/core  
 Orderable: 1 chip  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 512 KB I+D on chip per core  
 L3: 16 MB I+D on chip per chip  
 Other: None  
 Memory: 32 GB (2 x 16 GB 2Rx8 PC4-3200AA-E)  
 Storage: 1 x SATA M.2 SSD, 480GB  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 15 SP3 5.3.18-57-default  
 Compiler: C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;  
 Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;  
 Parallel: No  
 Firmware: Fujitsu BIOS Version V5.0.0.22 R1.30.0 for D3929-B1x. Released Mar-2022 tested as V5.0.0.22 R1.15.0 for D3929-B1x Dec-2021  
 File System: xfs  
 System State: Run level 5 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other: None  
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 19  
Test Sponsor: Fujitsu  
Tested by: Fujitsu

Test Date: Dec-2021  
Hardware Availability: Mar-2022  
Software Availability: Jun-2021

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	16	493	51.7	<b>495</b>	<b>51.4</b>	496	51.3							
502.gcc_r	16	<b>490</b>	<b>46.2</b>	489	46.3	492	46.0							
505.mcf_r	16	237	109	<b>237</b>	<b>109</b>	238	109							
520.omnetpp_r	16	628	33.4	626	33.5	<b>627</b>	<b>33.5</b>							
523.xalancbmk_r	16	184	91.9	183	92.3	<b>184</b>	<b>92.0</b>							
525.x264_r	16	<b>176</b>	<b>160</b>	175	160	176	159							
531.deepsjeng_r	16	310	59.1	<b>311</b>	<b>59.0</b>	311	59.0							
541.leela_r	16	450	58.9	<b>450</b>	<b>58.8</b>	451	58.7							
548.exchange2_r	16	264	159	<b>264</b>	<b>159</b>	265	158							
557.xz_r	16	450	38.4	449	38.5	<b>449</b>	<b>38.5</b>							

SPECrate®2017\_int\_base = 69.7

SPECrate®2017\_int\_peak = Not Run

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"  
cpupower -c all frequency-set -g performance

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH =  
"/home/PVT/speccpu-1.1.8\_b/lib/intel64:/home/PVT/speccpu-1.1.8\_b/lib/ia3  
2:/home/PVT/speccpu-1.1.8\_b/je5.0.1-32"  
MALLOCONF = "retain:true"

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM  
memory using Red Hat Enterprise Linux 8.1  
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>

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu

**Test Date:** Dec-2021  
**Hardware Availability:** Mar-2022  
**Software Availability:** Jun-2021

### General Notes (Continued)

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) is mitigated in the system as tested and documented.

### Platform Notes

BIOS configuration:

Adjacent Cache Line Prefetch = Disabled  
Package C-State limit = C6  
Per Core P State OS control mode = Disabled  
FAN Control = Full

Sysinfo program /home/PVT/speccpu-1.1.8\_b/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d  
running on localhost Sun Dec 12 15:17:57 2021

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) E-2388G CPU @ 3.20GHz
 1 "physical id"s (chips)
16 "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 2 3 4 5 6 7
```

From lscpu from util-linux 2.36.2:

```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 39 bits physical, 48 bits virtual
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 19  
Test Sponsor: Fujitsu  
Tested by: Fujitsu

Test Date: Dec-2021  
Hardware Availability: Mar-2022  
Software Availability: Jun-2021

### Platform Notes (Continued)

```

Model: 167
Model name: Intel(R) Xeon(R) E-2388G CPU @ 3.20GHz
Stepping: 1
CPU MHz: 1462.399
CPU max MHz: 5100.0000
CPU min MHz: 800.0000
BogoMIPS: 6384.00
Virtualization: VT-x
L1d cache: 384 KiB
L1i cache: 256 KiB
L2 cache: 4 MiB
L3 cache: 16 MiB
NUMA node0 CPU(s): 0-15
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected
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 bts 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 sse4_1 sse4_2 x2apic movbe popcnt
tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault
epb invpcid_single ssbd ibrs_ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority
ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid mpx avx512f
avx512dq rdseed adx smap avx512ifma clflushopt intel_pt avx512cd sha_ni avx512bw
avx512vl xsaveopt xsavec xgetbv1 xsaves dtherm ida arat pln pts hwp hwp_notify
hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes
vpclmulqdq avx512_vnni avx512_bitalg avx512_vpopcntdq rdpid fsrm md_clear flush_l1d
arch_capabilities

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	384K	12	Data	1	64	1	64
L1i	32K	256K	8	Instruction	1	64	1	64
L2	512K	4M	8	Unified	2	1024	1	64
L3	16M	16M	16	Unified	3	16384	1	64

/proc/cpuinfo cache data

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu

**Test Date:** Dec-2021  
**Hardware Availability:** Mar-2022  
**Software Availability:** Jun-2021

### Platform Notes (Continued)

cache size : 16384 KB

```
From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
node 0 size: 31582 MB
node 0 free: 30656 MB
node distances:
node 0
0: 10
```

```
From /proc/meminfo
MemTotal: 32340116 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/sys/devices/system/cpu/cpu\*/cpufreq/scaling\_governor has performance

```
From /etc/*release* /etc/*version*
os-release:
NAME="SLES"
VERSION="15-SP3"
VERSION_ID="15.3"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp3"
```

```
uname -a:
Linux localhost 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021
(ba3c2e9/lp-5d9e8aa) x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):	Not affected
CVE-2018-3620 (L1 Terminal Fault):	Not affected
Microarchitectural Data Sampling:	Not affected
CVE-2017-5754 (Meltdown):	Not affected
CVE-2018-3639 (Speculative Store Bypass):	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):	Mitigation: usercopy/swaps barriers and __user pointer sanitization

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu

**Test Date:** Dec-2021  
**Hardware Availability:** Mar-2022  
**Software Availability:** Jun-2021

### Platform Notes (Continued)

CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected

CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 5 Dec 12 12:03

SPEC is set to: /home/PVT/speccpu-1.1.8\_b  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda6 xfs 325G 61G 264G 19% /home

From /sys/devices/virtual/dmi/id  
Vendor: FUJITSU  
Product: PRIMERGY RX1330 M5  
Product Family: SERVER  
Serial: EWBVxxxxxxx

Additional information from dmidecode 3.2 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.

Memory:  
2x Samsung M391A2K43DB1-CWE 16 GB 2 rank 3200

BIOS:  
BIOS Vendor: FUJITSU // American Megatrends International, LLC.  
BIOS Version: V5.0.0.22 R1.15.0 for D3929-B1x  
BIOS Date: 12/03/2021  
BIOS Revision: 1.15

(End of data from sysinfo program)

### Compiler Version Notes

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

```
=====  
C++   | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)  
     | 541.leela_r(base)  
-----
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Dec-2021

Hardware Availability: Mar-2022

Software Availability: Jun-2021

## Compiler Version Notes (Continued)

-----  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
Fortran | 548.exchange2\_r(base)  
-----

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112\_000000  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

## 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



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Fujitsu

SPECrate®2017\_int\_base = 69.7

PRIMERGY RX1330 M5, Intel Xeon E-2388G, 3.20GHz

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Dec-2021

Hardware Availability: Mar-2022

Software Availability: Jun-2021

## Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries  
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmalloc
```

C++ benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto  
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries  
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div  
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte  
-auto -mbranches-within-32B-boundaries  
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmalloc
```

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

<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-RKL-RevC.html>

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.html](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.html)

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

<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-RKL-RevC.xml>

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml)

SPEC CPU and SPECrate 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 [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.8 on 2021-12-12 01:17:56-0500.

Report generated on 2022-01-05 13:34:22 by CPU2017 PDF formatter v6442.

Originally published on 2022-01-04.