## SPEC CPU®2017 Integer Rate Result

**Fujitsu**  
PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

**SPECrate®2017_int_base** = 414  
**SPECrate®2017_int_peak** = Not Run

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017_int_base (414)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>279</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>325</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>663</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>269</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>507</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>829</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>124</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>317</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>908</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>232</td>
</tr>
</tbody>
</table>

### Hardware

**CPU Name:** Intel Xeon Platinum 8352Y  
**Max MHz:** 3400  
**Nominal:** 2200  
**Enabled:** 64 cores, 2 chips, 2 threads/core  
**Orderable:** 1.2 chips  
**Cache L1:** 32 KB I + 48 KB D on chip per core  
**Cache L2:** 1.25 MB I+D on chip per core  
**Cache L3:** 48 MB I+D on chip per chip  
**Other:** None  
**Memory:** 1 TB (32 x 32 GB 2Rx4 PC4-3200AA-R)  
**Storage:** 1 x SATA M.2 SSD, 480GB  
**Other:** None

### Software

**OS:** Red Hat Enterprise Linux release 8.2 (Ootpa)  
4.18.0-193.el8.x86_64  
**Compiler:** C/C++: Version 19.1.2.275 of Intel  
C/C++ Compiler for Linux;  
Fortran: Version 19.1.2.275 of Intel Fortran Compiler for Linux  
**Parallel:** No  
**Firmware:** Fujitsu BIOS Version V1.0.0.0 R1.6.0 for D3891-A1x. Released Jun-2021  
tested as V1.0.0.0 R1.2.0 for D3891-A1x Apr-2021  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit  
**Peak Pointers:** Not Applicable  
**Other:** None  
**Power Management:** BIOS set to prefer performance at the cost of additional power usage

**CPU2017 License:** 19  
**Test Date:** May-2021  
**Test Sponsor:** Fujitsu  
**Hardware Availability:** Jun-2021  
**Tested by:** Fujitsu  
**Software Availability:** Aug-2020
Fujitsu
PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

SPEC CPU®2017 Integer Rate Result

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>128</td>
<td>730</td>
<td>279</td>
<td>729</td>
<td>279</td>
<td>730</td>
<td>279</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>128</td>
<td>558</td>
<td>325</td>
<td>556</td>
<td>326</td>
<td>558</td>
<td>325</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>128</td>
<td>312</td>
<td>662</td>
<td>312</td>
<td>664</td>
<td>312</td>
<td>663</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>128</td>
<td>626</td>
<td>268</td>
<td>623</td>
<td>269</td>
<td>622</td>
<td>270</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>128</td>
<td>267</td>
<td>507</td>
<td>266</td>
<td>507</td>
<td>266</td>
<td>508</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>128</td>
<td>271</td>
<td>828</td>
<td>270</td>
<td>829</td>
<td>270</td>
<td>829</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>128</td>
<td>455</td>
<td>322</td>
<td>452</td>
<td>324</td>
<td>453</td>
<td>324</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>128</td>
<td>669</td>
<td>317</td>
<td>669</td>
<td>317</td>
<td>671</td>
<td>316</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>128</td>
<td>369</td>
<td>908</td>
<td>370</td>
<td>905</td>
<td>369</td>
<td>908</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>128</td>
<td>597</td>
<td>232</td>
<td>598</td>
<td>231</td>
<td>594</td>
<td>233</td>
</tr>
</tbody>
</table>

SPECRate®2017_int_base = 414
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"
Kernel Boot Parameter set with : nohz_full=1-127

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
    "/home/PVT/speccpu-1.1.8/lib/intel64:/home/PVT/speccpu-1.1.8/lib/ia32:/home/PVT/speccpu-1.1.8/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 Redhat Enterprise Linux 8.0
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.
General Notes (Continued)

numactl --interleave=all runcpu <etc>
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:
DCU Streamer Prefetcher = Disabled
CPU C1E Support = Disabled
Package C State Limit = C2
UPI Link Frequency Select = 10.4 GT/s
XPT Prefetch = Enabled
LLC Prefetch = Enabled
SNC = Enable SNC2
UPI Prefetch = Disabled
FAN Control = Full

Sysinfo program /home/PVT/speccpu-1.1.8/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d
running on localhost.localdomain Wed May 19 10:54:35 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) Platinum 8352Y CPU @ 2.20GHz
  2 "physical id"s (chips)
  128 "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 : 32
siblings : 64
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian

(Continued on next page)
SPEC CPU®2017 Integer Rate Result

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

SPECrate®2017_int_base = 414
SPECrate®2017_int_peak = Not Run

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

Test Date: May-2021
Hardware Availability: Jun-2021
Software Availability: Aug-2020

Platform Notes (Continued)

CPU(s): 128
On-line CPU(s) list: 0-127
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8352Y CPU @ 2.20GHz
Stepping: 6
CPU MHz: 2803.835
CPU max MHz: 3400.0000
CPU min MHz: 800.0000
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 49152K
NUMA node0 CPU(s): 0-15,64-79
NUMA node1 CPU(s): 16-31,80-95
NUMA node2 CPU(s): 32-47,96-111
NUMA node3 CPU(s): 48-63,112-127

Flags: fpu vme de pse tsc msr pae mce cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf 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 invpcid_single ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsxopt xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_kkg_req avx512vbm vmpk pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_lld

/proc/cpuinfo cache data
  cache size : 49152 KB

From numactl --hardware
  WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

(Continued on next page)
### SPEC CPU®2017 Integer Rate Result

**Fujitsu**

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

<table>
<thead>
<tr>
<th>CPU2017 License</th>
<th>Test Date: May-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu

<table>
<thead>
<tr>
<th>Hardware Availability</th>
<th>Software Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-2021</td>
<td>Aug-2020</td>
</tr>
</tbody>
</table>

**SPECrate®2017_int_base = 414**  
**SPECrate®2017_int_peak = Not Run**

---

**Platform Notes (Continued)**

```plaintext
node 0 size: 257461 MB  
node 0 free: 257032 MB  
node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95  
node 1 size: 258013 MB  
node 1 free: 257222 MB  
node 2 cpus: 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111  
node 2 size: 258040 MB  
node 2 free: 257799 MB  
node 3 cpus: 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127  
node 3 size: 258038 MB  
node 3 free: 257798 MB  
node distances:  
node 0 1 2 3  
0: 10 11 20 20  
1: 11 10 20 20  
2: 20 20 10 11  
3: 20 20 11 10
```

From `/proc/meminfo`

- MemTotal: 1056311480 kB  
- HugePages_Total: 0  
- Hugepagesize: 2048 kB

/sbin/tuned-adm active  
Current active profile: throughput-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

From `/etc/*release*/etc/*version*`

```
os-release:  
NAME="Red Hat Enterprise Linux"  
VERSION="8.2 (Ootpa)"  
ID="rhel"  
ID_LIKE="fedora"  
VERSION_ID="8.2"  
PLATFORM_ID="platform:el8"  
PRETTY_NAME="Red Hat Enterprise Linux 8.2 (Ootpa)"  
ANSI_COLOR="0;31"  
redhat-release: Red Hat Enterprise Linux release 8.2 (Ootpa)  
system-release: Red Hat Enterprise Linux release 8.2 (Ootpa)  
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga
```
### Fujitsu

**PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz**

| SPECrate\(^\text{®} \text{2017}_{\text{int_base}}\) | 414 |
| SPECrate\(^\text{®} \text{2017}_{\text{int_peak}}\) | Not Run |

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test Date:** May-2021  
**Hardware Availability:** Jun-2021  
**Software Availability:** Aug-2020

---

**Platform Notes (Continued)**

Linux localhost.localdomain 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 UTC 2020  
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):** Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- **CVE-2018-3639 (Speculative Store Bypass):** Mitigation: usercopy/swapsgs barriers and __user pointer sanitation
- **CVE-2017-5753 (Spectre variant 1):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- **CVE-2020-0543 (Special Register Buffer Data Sampling):** No status reported
- **CVE-2019-11135 (TSX Asynchronous Abort):** Not affected

run-level 3 May 19 10:52

SPEC is set to: /home/PVT/speccpu-1.1.8

FROM /sys/devices/virtual/dmi/id

| Vendor: | FUJITSU |
| Product: | PRIMERGY RX2540 M6 |
| Product Family: | SERVER |
| Serial: | EWAAxxxxxx |

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:

- 32x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200

BIOS:

- BIOS Vendor: FUJITSU
- BIOS Version: V1.0.0.0 R1.2.0 for D3891-A1x
- BIOS Date: 04/01/2021
- BIOS Revision: 1.2
- Firmware Revision: 3.20

(End of data from sysinfo program)
SPECCPU®2017 Integer Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

Fujitsu
PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

SPECrate®2017_int_base = 414
SPECrate®2017_int_peak = Not Run

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

Test Date: May-2021
Hardware Availability: Jun-2021
Software Availability: Aug-2020

Compiler Version Notes
==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) C Compiler for applications running on Intel(R) 64, Version 19.1.2.275 Build 20200604</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
<tr>
<td></td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 19.1.2.275 Build 20200604</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
<tr>
<td></td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.2.275 Build 20200623</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
<tr>
<td></td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Base Compiler Invocation</td>
</tr>
<tr>
<td></td>
<td>C benchmarks:</td>
</tr>
<tr>
<td></td>
<td>icc</td>
</tr>
<tr>
<td></td>
<td>C++ benchmarks:</td>
</tr>
<tr>
<td></td>
<td>icpc</td>
</tr>
<tr>
<td></td>
<td>Fortran benchmarks:</td>
</tr>
<tr>
<td></td>
<td>ifort</td>
</tr>
<tr>
<td></td>
<td>Base Portability Flags</td>
</tr>
<tr>
<td></td>
<td>500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64</td>
</tr>
<tr>
<td></td>
<td>502.gcc_r: -DSPEC_LP64</td>
</tr>
<tr>
<td></td>
<td>505.mcf_r: -DSPEC_LP64</td>
</tr>
<tr>
<td></td>
<td>520.omnetpp_r: -DSPEC_LP64</td>
</tr>
</tbody>
</table>

(Continued on next page)
SPEC CPU®2017 Integer Rate Result

Fujitsu
PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

SPECCrate®2017_int_base = 414
SPECCrate®2017_int_peak = Not Run

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

CPU2017 License: 19
Test Date: May-2021
Hardware Availability: Jun-2021
Software Availability: Aug-2020

Base Portability Flags (Continued)

523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leea_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX2 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2020.3.275/linux/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2020.3.275/linux/compiler/lib/intel64_lin
-lqkmalloc

Fortran benchmarks:
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX2 -O3 -ipo -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries
-L/usr/local/IntelCompiler19/compilers_and_libraries_2020.3.275/linux/compiler/lib/intel64_lin
-lqkmalloc

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

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-ICL-RevA.xml
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.xml
<table>
<thead>
<tr>
<th>SPEC CPU®2017 Integer Rate Result</th>
</tr>
</thead>
</table>

**Fujitsu**

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352Y, 2.20GHz

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>414</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 19  |  **Test Date:** May-2021  
**Test Sponsor:** Fujitsu |  **Hardware Availability:** Jun-2021  
**Tested by:** Fujitsu |  **Software Availability:** Aug-2020

---

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.

Tested with SPEC CPU®2017 v1.1.8 on 2021-05-19 10:54:35-0400.
Report generated on 2021-06-22 17:07:05 by CPU2017 PDF formatter v6442.
Originally published on 2021-06-22.