SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base = 425

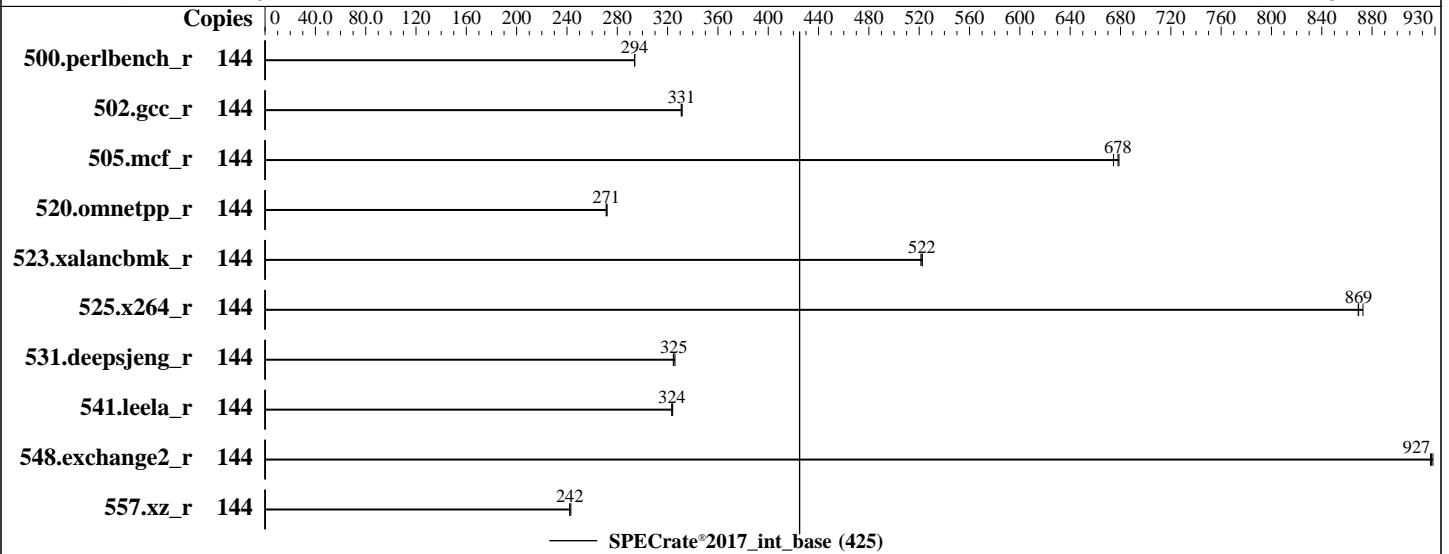SPECrate®2017_int_peak = Not Run

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

Copies scale: 0 40.0 80.0 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 800 840 880 930

Benchmark	Copies	Value
500.perlbench_r	144	294
502.gcc_r	144	331
505.mcf_r	144	678
520.omnetpp_r	144	271
523.xalancbmk_r	144	522
525.x264_r	144	869
531.deepsjeng_r	144	325
541.leela_r	144	324
548.exchange2_r	144	927
557.xz_r	144	242

——— SPECrate®2017_int_base (425)

Hardware

CPU Name: Intel Xeon Platinum 8352V
 Max MHz: 3500
 Nominal: 2100
Enabled: 72 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 54 MB I+D on chip per chip
 Other: None
Memory: 1 TB (32 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)
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

Standard Performance Evaluation Corporation (info@spec.org)
https://www.spec.org/

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base = 425

SPECrate®2017_int_peak = Not Run

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

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	144	**780**	**294**	780	294	780	294							
502.gcc_r	144	**616**	**331**	615	332	616	331							
505.mcf_r	144	345	674	**343**	**678**	343	679							
520.omnetpp_r	144	**696**	**271**	695	272	697	271							
523.xalancbmk_r	144	**291**	**522**	292	521	291	522							
525.x264_r	144	290	869	**290**	**869**	289	873							
531.deepsjeng_r	144	**508**	**325**	506	326	509	325							
541.leela_r	144	736	324	738	323	**737**	**324**							
548.exchange2_r	144	406	928	**407**	**927**	407	926							
557.xz_r	144	**642**	**242**	642	242	640	243							
SPECrate®2017_int_base =		**425**												
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=1-143

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:/h
    ome/PVT/speccpu-1.1.8/je5.0.1-32"
MALLOC_CONF = "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.:

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base = 425

SPECrate®2017_int_peak = Not Run

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

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

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
UPI Prefetch = Disabled
FAN Control = Full


Sysinfo program /home/PVT/speccpu-1.1.8/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Thu Jun  3 12:48:33 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 8352V CPU @ 2.10GHz
      2  "physical id"s (chips)
      144 "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 : 36
      siblings  : 72
      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 32 33 34 35
      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 32 33 34 35


From lscpu from util-linux 2.32.1:
      Architecture:        x86_64
      CPU op-mode(s):      32-bit, 64-bit
      Byte Order:          Little Endian
      CPU(s):              144
```

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base = 425

SPECrate®2017_int_peak = Not Run

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Jun-2021

Hardware Availability: Jun-2021

Software Availability: Aug-2020

Platform Notes (Continued)

```
        On-line CPU(s) list: 0-143
        Thread(s) per core:  2
        Core(s) per socket:  36
        Socket(s):           2
        NUMA node(s):        2
        Vendor ID:           GenuineIntel
        CPU family:          6
        Model:               106
        Model name:          Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
        Stepping:            6
        CPU MHz:             2500.000
        CPU max MHz:         3500.0000
        CPU min MHz:         800.0000
        BogoMIPS:            4200.00
        Virtualization:      VT-x
        L1d cache:           48K
        L1i cache:           32K
        L2 cache:            1280K
        L3 cache:            55296K
        NUMA node0 CPU(s):   0-35,72-107
        NUMA node1 CPU(s):   36-71,108-143
        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
    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 xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
    cqm_mbm_local wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp
    hwp_pkg_req avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni
    avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d
    arch_capabilities

 /proc/cpuinfo cache data
    cache size : 55296 KB

 From numactl --hardware
 WARNING: a numactl 'node' might or might not correspond to a physical chip.
   available: 2 nodes (0-1)
   node 0 cpus: 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 32 33 34 35 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
   93 94 95 96 97 98 99 100 101 102 103 104 105 106 107
   node 0 size: 515501 MB
   node 0 free: 514246 MB
```

(Continued on next page)

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base =   425

SPECrate®2017_int_peak = Not Run

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Jun-2021

Hardware Availability: Jun-2021

Software Availability: Aug-2020

Platform Notes (Continued)

```
   node 1 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
   61 62 63 64 65 66 67 68 69 70 71 108 109 110 111 112 113 114 115 116 117 118 119 120
   121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142
   143
   node 1 size: 516048 MB
   node 1 free: 515550 MB
   node distances:
   node   0   1
     0:  10  20
     1:  20  10

From /proc/meminfo
   MemTotal:        1056306704 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

uname -a:
   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):                    Not affected
CVE-2018-3639 (Speculative Store Bypass):    Mitigation: Speculative Store
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base = 425

SPECrate®2017_int_peak = Not Run

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

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

Platform Notes (Continued)

```
                                                 Bypass disabled via prctl and
                                                 seccomp
  CVE-2017-5753 (Spectre variant 1):             Mitigation: usercopy/swapgs
                                                 barriers and __user pointer
                                                 sanitization
  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 Jun 3 12:43


  SPEC is set to: /home/PVT/speccpu-1.1.8
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sdb3      xfs   330G  101G  230G  31% /home


  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, configured at 2933


  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)
```

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) C Compiler for applications running on Intel(R) 64, Version
  19.1.2.275 Build 20200604
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base =   425

SPECrate®2017_int_peak = Not Run

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

Compiler Version Notes (Continued)

```
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)
--------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version
  19.1.2.275 Build 20200604
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------


==========================================================================
Fortran | 548.exchange2_r(base)
--------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.2.275 Build 20200623
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

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 2017-2021 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M6, Intel Xeon Platinum 8352V, 2.10GHz

SPECrate®2017_int_base =   425

SPECrate®2017_int_peak = Not Run

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

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

http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-ICL-RevA.html
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-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-ICL-RevA.xml
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.xml

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 2021-06-03 12:48:32-0400.
Report generated on 2021-06-22 17:07:05 by CPU2017 PDF formatter v6442.
Originally published on 2021-06-22.