**Fujitsu**

PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 237</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak = Not Run</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Dec-2019</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>May-2019</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>May-2019</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6262V
- **Max MHz:** 3600
- **Nominal:** 1900
- **Enabled:** 48 cores, 2 chips, 2 threads/core
- **Orderable:** 1,2 chips
- **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
- **Cache:** None
- **Memory:** 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R, running at 2400)
- **Storage:** 1 x SATA M.2 SSD, 150 GB
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15 4.12.14-25.28-default
- **Compiler:** C/C++: Version 19.0.4.227 of Intel C/C++ Compiler Build 20190416 for Linux;
  Fortran: Version 19.0.4.227 of Intel Fortran Compiler Build 20190416 for Linux
- **Parallel:** No
- **Firmware:** Fujitsu BIOS Version V5.0.0.14 R1.15.0 for D3384-B1x, released Oct-2019
- **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 |

<table>
<thead>
<tr>
<th>Test</th>
<th>Copies</th>
<th>SPECrate®2017_int_base (237)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>96</td>
<td>193</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>96</td>
<td>292</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>96</td>
<td>165</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>96</td>
<td>248</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>96</td>
<td>507</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>96</td>
<td>201</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>96</td>
<td>183</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>96</td>
<td>458</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>96</td>
<td>161</td>
</tr>
</tbody>
</table>
SPEC CPU®2017 Integer Rate Result

Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

SPECrate®2017_int_base = 237
SPECrate®2017_int_peak = Not Run

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>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbenc_r</td>
<td>96</td>
<td>869</td>
<td>176</td>
<td>870</td>
<td>176</td>
<td>870</td>
<td>176</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>96</td>
<td>713</td>
<td>191</td>
<td>704</td>
<td>193</td>
<td>703</td>
<td>193</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>96</td>
<td>530</td>
<td>293</td>
<td>532</td>
<td>292</td>
<td>532</td>
<td>292</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>96</td>
<td>767</td>
<td>164</td>
<td>765</td>
<td>165</td>
<td>766</td>
<td>165</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>96</td>
<td>407</td>
<td>249</td>
<td>409</td>
<td>248</td>
<td>412</td>
<td>246</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td>96</td>
<td>332</td>
<td>507</td>
<td>332</td>
<td>507</td>
<td>332</td>
<td>506</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>96</td>
<td>549</td>
<td>200</td>
<td>548</td>
<td>201</td>
<td>548</td>
<td>201</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>96</td>
<td>859</td>
<td>185</td>
<td>867</td>
<td>183</td>
<td>875</td>
<td>182</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>96</td>
<td>549</td>
<td>458</td>
<td>549</td>
<td>458</td>
<td>549</td>
<td>459</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>96</td>
<td>644</td>
<td>161</td>
<td>643</td>
<td>161</td>
<td>643</td>
<td>161</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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"
Kernel Boot Parameter set with: nohz_full=1-95

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/Benchmark/SPECCPU2017-1.1.0/lib/intel64:/home/Benchmark/SPECCPU2017-1.1.0/lib/ia32:/home/Benchmark/SPECCPU2017-1.1.0/je5.0.1-32"

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/Benchmark/SPECCPU2017-1.1.0/lib/intel64"

Binaries compiled on a system with 1x Intel Core i9-799X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5
Transparent Huge Pages enabled by default

(Continued on next page)
Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

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

General Notes (Continued)

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>

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:
Intel Virtualization Technology = Disabled
VT-d = Disabled
CPU C1E Support = Disabled
LLC Dead Line Alloc = Disabled
LLC prefetch = Enabled
Patrol Scrub = Disabled
WR CRC feature Control = Disabled
Fan Control = Full

Sysinfo program /home/Benchmark/SPECCPU2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed1b16e646a485a0011
running on linux-871b Tue Dec 10 14:37:06 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
  2 "physical id"s (chips)
  96 "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 4 5 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 4 5 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

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

**Fujitsu**

PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>237</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 19

**Test Sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test Date:** Dec-2019

**Hardware Availability:** May-2019

**Software Availability:** May-2019

---

**Platform Notes (Continued):**

- **Byte Order:** Little Endian
- **CPU(s):** 96
- **On-line CPU(s) list:** 0-95
- **Thread(s) per core:** 2
- **Core(s) per socket:** 24
- **Socket(s):** 2
- **NUMA node(s):** 4
- **Vendor ID:** GenuineIntel
- **CPU family:** 6
- **Model:** 85
- **Model name:** Intel(R) Xeon(R) Gold 6262V CPU @ 1.90GHz
- **Stepping:** 7
- **CPU MHz:** 1900.000
- **CPU max MHz:** 3600.0000
- **CPU min MHz:** 800.0000
- **BogoMIPS:** 3800.00
- **Virtualization:** VT-x
- **L1d cache:** 32K
- **L1i cache:** 32K
- **L2 cache:** 1024K
- **L3 cache:** 33792K
- **NUMA node0 CPU(s):** 0-2, 6-8, 12-14, 18-20, 48-50, 54-56, 60-62, 66-68
- **NUMA node1 CPU(s):** 3-5, 9-11, 15-17, 21-23, 27-29, 33-35, 39-41, 45-47, 72-74, 78-80, 84-86, 90-92
- **NUMA node2 CPU(s):** 24-26, 30-32, 36-38, 42-44, 48-50, 54-56, 60-62, 66-68
- **NUMA node3 CPU(s):** 27-29, 33-35, 39-41, 45-47, 75-77, 81-83, 87-89, 93-95

**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 pdelgb 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 cdp_l3 invpcid_single intel_pinn ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vmi flexpriority ept vpid fsgsbase tsc_adjunct mcm hle avx2 smep bmi2 ibrm invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsaves xsavec xgetbv1 xsaves cqm_llc cqm_occupa_llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req kpu ospke avx512_vnni flush_lld arch_capabilities`

/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:** 4 nodes (0-3)
- **node 0 cpus:** 0 1 2 6 7 8 12 13 14 18 19 20 48 49 50 54 55 56 60 61 62 66 67 68
- **node 0 size:** 192038 MB
- **node 0 free:** 191698 MB

(Continued on next page)
Platform Notes (Continued)

node 1 cpus: 3 4 5 9 10 11 15 16 17 21 22 23 51 52 53 57 58 59 63 64 65 69 70 71
node 1 size: 193502 MB
node 1 free: 193124 MB
node 2 cpus: 24 25 26 30 31 32 36 37 38 42 43 44 72 73 74 78 79 80 84 85 86 90 91 92
node 2 size: 193531 MB
node 2 free: 193207 MB
node 3 cpus: 27 28 29 33 34 35 39 40 41 45 46 47 75 76 77 81 82 83 87 88 89 93 94 95
node 3 size: 193529 MB
node 3 free: 193213 MB
node distances:
  node 0 1 2 3
  0: 10 11 21 21
  1: 11 10 21 21
  2: 21 21 10 11
  3: 21 21 11 10

From /proc/meminfo
MemTotal:       791144432 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"

uname -a:
Linux linux-871b 4.12.14-25.28-default #1 SMP Wed Jan 16 20:00:47 UTC 2019 (dd6077c)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: No status reported
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Vulnerable
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

run-level 3 Dec 10 09:07

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

**Fujitsu**  
PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base =</th>
<th>237</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak =</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 19  
**Test Date:** Dec-2019  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Hardware Availability:** May-2019  
**Software Availability:** May-2019

#### Platform Notes (Continued)

SPEC is set to: /home/Benchmark/SPECCPU2017-1.1.0  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda2 xfs 140G 46G 95G 33% /

From /sys/devices/virtual/dmi/id  
BIOS: FUJITSU // American Megatrends Inc. V5.0.0.14 R1.15.0 for D3384-B1x  
10/17/2019  
Vendor: FUJITSU  
Product: PRIMERGY RX2540 M5  
Product Family: SERVER  
Serial: YMSQXXXXXX

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.  
Memory:  
24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2400

(End of data from sysinfo program)

#### Compiler Version Notes

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>525.x264_r(base) 557.xz_r(base)</td>
</tr>
</tbody>
</table>

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>C++</th>
<th>520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>541.leela_r(base)</td>
</tr>
</tbody>
</table>

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>Fortran</th>
<th>548.exchange2_r(base)</th>
</tr>
</thead>
</table>

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)

(Continued on next page)
Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

SPECRate®2017_int_base = 237
SPECRate®2017_int_peak = Not Run

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

Test Date: Dec-2019
Hardware Availability: May-2019
Software Availability: May-2019

Compiler Version Notes (Continued)

64, Version 19.0.4.227 Build 20190416
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:
-W1, -z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

C++ benchmarks:
-W1, -z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

(Continued on next page)
Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Gold 6262V, 1.90 GHz

SPECrate®2017_int_base = 237
SPECrate®2017_int_peak = Not Run

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

Test Date: Dec-2019
Hardware Availability: May-2019
Software Availability: May-2019

Base Optimization Flags (Continued)

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_2019.4.227/linux/compiler/lib/intel64
-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-CSL-RevE.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.

Tested with SPEC CPU®2017 v1.1.0 on 2019-12-10 00:37:05-0500.
Report generated on 2020-01-08 12:07:30 by CPU2017 PDF formatter v6255.
Originally published on 2020-01-07.