**SPEC CPU®2017 Integer Rate Result**

**Fujitsu**

PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

<table>
<thead>
<tr>
<th>Software</th>
<th><strong>SPECrate®2017_int_base</strong> = 183</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECrate®2017_int_peak</strong> = Not Run</td>
<td></td>
</tr>
</tbody>
</table>

---

**Hardware**

<table>
<thead>
<tr>
<th>Copies</th>
<th>0</th>
<th>15.0</th>
<th>30.0</th>
<th>45.0</th>
<th>60.0</th>
<th>75.0</th>
<th>90.0</th>
<th>105.0</th>
<th>120.0</th>
<th>135.0</th>
<th>150.0</th>
<th>165.0</th>
<th>180.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>64</td>
<td>0</td>
<td>358</td>
<td>370</td>
<td>350</td>
<td>340</td>
<td>330</td>
<td>320</td>
<td>310</td>
<td>300</td>
<td>290</td>
<td>280</td>
<td>270</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>64</td>
<td>0</td>
<td>139</td>
<td>149</td>
<td>140</td>
<td>130</td>
<td>120</td>
<td>110</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>64</td>
<td>0</td>
<td>245</td>
<td>245</td>
<td>235</td>
<td>225</td>
<td>215</td>
<td>205</td>
<td>195</td>
<td>185</td>
<td>175</td>
<td>165</td>
<td>155</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>64</td>
<td>0</td>
<td>126</td>
<td>126</td>
<td>116</td>
<td>106</td>
<td>96</td>
<td>86</td>
<td>76</td>
<td>66</td>
<td>56</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>64</td>
<td>0</td>
<td>320</td>
<td>320</td>
<td>310</td>
<td>300</td>
<td>290</td>
<td>280</td>
<td>270</td>
<td>260</td>
<td>250</td>
<td>240</td>
<td>230</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>64</td>
<td>0</td>
<td>339</td>
<td>339</td>
<td>329</td>
<td>319</td>
<td>309</td>
<td>299</td>
<td>289</td>
<td>279</td>
<td>269</td>
<td>259</td>
<td>249</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>64</td>
<td>0</td>
<td>152</td>
<td>152</td>
<td>142</td>
<td>132</td>
<td>122</td>
<td>112</td>
<td>102</td>
<td>92</td>
<td>82</td>
<td>72</td>
<td>62</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>64</td>
<td>0</td>
<td>137</td>
<td>137</td>
<td>127</td>
<td>117</td>
<td>107</td>
<td>97</td>
<td>87</td>
<td>77</td>
<td>67</td>
<td>57</td>
<td>47</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>64</td>
<td>0</td>
<td>366</td>
<td>366</td>
<td>356</td>
<td>346</td>
<td>336</td>
<td>326</td>
<td>316</td>
<td>306</td>
<td>296</td>
<td>286</td>
<td>276</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>64</td>
<td>0</td>
<td>123</td>
<td>123</td>
<td>113</td>
<td>103</td>
<td>93</td>
<td>83</td>
<td>73</td>
<td>63</td>
<td>53</td>
<td>43</td>
<td>33</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>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</td>
</tr>
<tr>
<td>Firmware:</td>
<td>Fujitsu BIOS for D3384-B1x. Version V5.0.0.14 R1.13.0 released Aug-2019</td>
</tr>
<tr>
<td>Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Power Management:</td>
<td>--</td>
</tr>
</tbody>
</table>

---

CPU Name: Intel Xeon Gold 5218  
Max MHz: 3900  
Nominal: 2300  
Enabled: 32 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: 22 MB I+D on chip per chip  
Other: None  
Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R, running at 2666)  
Storage: 1 x SATA M.2 SSD, 240 GB  
Other: None
### Fujitsu

PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date:</td>
<td>Oct-2019</td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>CPU:</td>
<td>2.30 GHz</td>
</tr>
</tbody>
</table>

**SPEC CPU®2017 Integer Rate Result**

<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>64</td>
<td>731</td>
<td>139</td>
<td>734</td>
<td>139</td>
<td>731</td>
<td>139</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>64</td>
<td>604</td>
<td>150</td>
<td>608</td>
<td>149</td>
<td>610</td>
<td>149</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>64</td>
<td>421</td>
<td>245</td>
<td>423</td>
<td>245</td>
<td>422</td>
<td>245</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>64</td>
<td>667</td>
<td>126</td>
<td>666</td>
<td>126</td>
<td>666</td>
<td>126</td>
</tr>
<tr>
<td>523.xalanbmkm_r</td>
<td>64</td>
<td>322</td>
<td>210</td>
<td>323</td>
<td>210</td>
<td>322</td>
<td>210</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>64</td>
<td>332</td>
<td>338</td>
<td>331</td>
<td>331</td>
<td>331</td>
<td>331</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>64</td>
<td>482</td>
<td>152</td>
<td>481</td>
<td>152</td>
<td>481</td>
<td>152</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>64</td>
<td>772</td>
<td>137</td>
<td>772</td>
<td>137</td>
<td>772</td>
<td>137</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>64</td>
<td>458</td>
<td>366</td>
<td>458</td>
<td>366</td>
<td>458</td>
<td>366</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>64</td>
<td>563</td>
<td>123</td>
<td>563</td>
<td>123</td>
<td>563</td>
<td>123</td>
</tr>
</tbody>
</table>

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
</tr>
<tr>
<td>500.perlbench_r</td>
<td>64</td>
<td>731</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>64</td>
<td>604</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>64</td>
<td>421</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>64</td>
<td>667</td>
</tr>
<tr>
<td>523.xalanbmkm_r</td>
<td>64</td>
<td>322</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>64</td>
<td>332</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>64</td>
<td>482</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>64</td>
<td>772</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>64</td>
<td>458</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>64</td>
<td>563</td>
</tr>
</tbody>
</table>

**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=1-63

**General Notes**

Environment variables set by runcpu before the start of the run:

LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-1.0.5/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

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.

(Continued on next page)
**Fujitsu**

PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

**SPECraten®2017_int_base = 183**

**SPECraten®2017_int_peak = Not Run**

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

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

---

**General Notes (Continued)**

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:
Patrol Scrub = Disabled
DCU Ip Prefetcher = Disabled
DCU Streamer Prefetcher = Disabled
Fan Control = Full
Stale Atos = Enable
WR CRC feature Control = Disabled

Sysinfo program /home/Benchmark/speccpu2017-1.0.5/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on RX2530M5-AD-544 Fri Oct 18 20:31:21 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 5218 CPU @ 2.30GHz
  2 "physical id"s (chips)
  64 "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 : 16
siblings : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

From lscpu:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                64
On-line CPU(s) list:   0-63
Thread(s) per core:    2
Core(s) per socket:    16
Socket(s):             2
NUMA node(s):          4
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 85
Model name:            Intel(R) Xeon(R) Gold 5218 CPU @ 2.30GHz
Stepping:              6
```

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

Fujitsu
PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

SPECrater®2017_int_base = 183
SPECrater®2017_int_peak = Not Run

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

CPU MHz: 2300.000
CPU max MHz: 3900.0000
CPU min MHz: 1000.0000
BogoMIPS: 4600.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0-3, 8-11, 32-35, 40-43
NUMA node1 CPU(s): 4-7, 12-15, 36-39, 44-47
NUMA node2 CPU(s): 16-19, 24-27, 48-51, 56-59
NUMA node3 CPU(s): 20-23, 28-31, 52-55, 60-63
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 art arch_perfmon pebs bts rep_good nopl xtopology

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 8 9 10 11 32 33 34 35 40 41 42 43
node 0 size: 191888 MB
node 0 free: 189681 MB
node 1 cpus: 4 5 6 7 12 13 14 15 36 37 38 39 44 45 46 47
node 1 size: 193532 MB
node 1 free: 193288 MB
node 2 cpus: 16 17 18 19 24 25 26 27 48 49 50 51 56 57 58 59
node 2 size: 193532 MB
node 2 free: 193310 MB
node 3 cpus: 20 21 22 23 28 29 30 31 52 53 54 55 60 61 62 63
node 3 size: 193291 MB
node 3 free: 193055 MB
node distances:
  node 0 1 2 3
  0: 10 11 21 21

(Continued on next page)
Fujitsu

PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

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

SPEC®2017_int_base = 183
SPEC®2017_int_peak = Not Run

Platform Notes (Continued)

1:  11  10  21  21
2:  21  21  10  11
3:  21  21  11  10

From /proc/meminfo
MemTotal:       790780044 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 RX2530M5-AD-544 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-2017-5754 (Meltdown): Not affected
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 Oct 18 19:16

SPEC is set to: /home/Benchmark/speccpu2017-1.0.5

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda5      xfs   191G   75G  116G  40% /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 FUJITSU // American Megatrends Inc. V5.0.0.14 R1.13.0 for D3383-B1x
08/29/2019

Memory:
23x Micron 36ASF4G72PZ-2G9E2 32 GB 2 rank 2933, configured at 2666
1x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2666

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

Fujitsu
PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

<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>
</tbody>
</table>

SPECrates:
- SPECrate®2017_int_base = 183
- SPECrate®2017_int_peak = Not Run

Platform Notes (Continued)
(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 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.

C++
| 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 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 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 19.0.4.227 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
SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Fujitsu
PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz

SPECratenumber =

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>183</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

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_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/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_2019.4.227/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
<table>
<thead>
<tr>
<th>SPEC CPU®2017 Integer Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fujitsu</strong></td>
</tr>
<tr>
<td>PRIMERGY RX2530 M5, Intel Xeon Gold 5218, 2.30 GHz</td>
</tr>
<tr>
<td>SPECrate®2017_int_base = 183</td>
</tr>
<tr>
<td>SPECrate®2017_int_peak = Not Run</td>
</tr>
<tr>
<td>CPU2017 License: 19</td>
</tr>
<tr>
<td>Test Sponsor: Fujitsu</td>
</tr>
<tr>
<td>Tested by: Fujitsu</td>
</tr>
<tr>
<td>Test Date: Oct-2019</td>
</tr>
<tr>
<td>Hardware Availability: May-2019</td>
</tr>
<tr>
<td>Software Availability: May-2019</td>
</tr>
</tbody>
</table>

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 v1.0.5 on 2019-10-18 07:31:20-0400.
Originally published on 2019-11-12.