## Dell Inc.

PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>515</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>535</td>
</tr>
</tbody>
</table>

### CPU2017 License: 55

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Dell Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by</td>
<td>Dell Inc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Date</th>
<th>Apr-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability</td>
<td>May-2021</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Feb-2021</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017_int_base (515)</th>
<th>SPECrate®2017_int_peak (535)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r 152</td>
<td>434</td>
<td>633</td>
</tr>
<tr>
<td>502.gcc_r 152</td>
<td>374</td>
<td></td>
</tr>
<tr>
<td>505.mcf_r 152</td>
<td>461</td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r 152</td>
<td>261</td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r 152</td>
<td>433</td>
<td>1130</td>
</tr>
<tr>
<td>525.x264_r 152</td>
<td></td>
<td>1180</td>
</tr>
<tr>
<td>531.deepsjeng_r 152</td>
<td>437</td>
<td></td>
</tr>
<tr>
<td>541.leela_r 152</td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r 152</td>
<td>289</td>
<td></td>
</tr>
<tr>
<td>557.xz_r 152</td>
<td>281</td>
<td></td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>OS</th>
<th>Red Hat Enterprise Linux 8.3 (Ootpa) 4.18.0-240.15.1.el8_3.x86_64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>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; C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux</td>
</tr>
<tr>
<td>Parallel</td>
<td>No</td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 1.1.2 released Apr-2021</td>
</tr>
<tr>
<td>File System</td>
<td>tmpfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 5 (graphical multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
<tr>
<td>Power Management</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage; jemalloc memory allocator V5.0.1</td>
</tr>
</tbody>
</table>

### CPU Name: Intel Xeon Platinum 8368

| Max MHz | 3400 |
| Nominal | 2400 |
| Enabled | 76 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 | 57 MB I+D on chip per chip |
| Other | None |
| Memory | 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R) |
| Storage | 225 GB on tmpfs |
| Other | None |

| Power Management | BIOS and OS set to prefer performance at the cost of additional power usage; jemalloc memory allocator V5.0.1 |
## Dell Inc.  
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)  

![SPEC CPU®2017 Integer Rate Result](https://www.spec.org/)  

<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
<th>Test Date: Apr-2021</th>
<th>Hardware Availability: May-2021</th>
<th>Software Availability: Feb-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Tested by: Dell Inc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.perlbench_r</td>
<td>152</td>
<td>645</td>
<td>375</td>
<td>646</td>
<td>375</td>
<td>152</td>
<td>557</td>
<td>435</td>
<td>558</td>
<td>434</td>
<td></td>
<td></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>152</td>
<td>576</td>
<td>374</td>
<td>574</td>
<td>375</td>
<td>152</td>
<td>467</td>
<td>461</td>
<td>466</td>
<td>462</td>
<td></td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>152</td>
<td>310</td>
<td>792</td>
<td>311</td>
<td>791</td>
<td>152</td>
<td>310</td>
<td>792</td>
<td>311</td>
<td>791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>152</td>
<td>762</td>
<td>262</td>
<td>763</td>
<td>261</td>
<td>152</td>
<td>762</td>
<td>262</td>
<td>763</td>
<td>261</td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>152</td>
<td>254</td>
<td>633</td>
<td>253</td>
<td>635</td>
<td>152</td>
<td>254</td>
<td>633</td>
<td>253</td>
<td>635</td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td>152</td>
<td>236</td>
<td>1130</td>
<td>236</td>
<td>1130</td>
<td>152</td>
<td>226</td>
<td>1180</td>
<td>226</td>
<td>1180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>152</td>
<td>402</td>
<td>433</td>
<td>402</td>
<td>433</td>
<td>152</td>
<td>402</td>
<td>433</td>
<td>402</td>
<td>433</td>
<td></td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>152</td>
<td>577</td>
<td>437</td>
<td>575</td>
<td>438</td>
<td>152</td>
<td>577</td>
<td>437</td>
<td>575</td>
<td>438</td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>152</td>
<td>340</td>
<td>1170</td>
<td>338</td>
<td>1180</td>
<td>152</td>
<td>340</td>
<td>1170</td>
<td>338</td>
<td>1180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>152</td>
<td>569</td>
<td>289</td>
<td>568</td>
<td>289</td>
<td>152</td>
<td>583</td>
<td>282</td>
<td>583</td>
<td>281</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECrate®2017_int_base = 515**  
**SPECrate®2017_int_peak = 535**

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"

### Environment Variables Notes

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

```
LD_LIBRARY_PATH = "/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/lib/ia32:/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/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

Filesysten 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>
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

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.

Benchmark run from a 225 GB ramdisk created with the cmd: "mount -t tmpfs -o size=225G tmpfs /mnt/ramdisk"

Platform Notes

BIOS Settings:
Sub NUMA Cluster : 2-Way Clustering
Virtualization Technology : Disabled

System Profile : Custom
CPU Power Management : Maximum Performance
C1E : Disabled
C States : Autonomous
Memory Patrol Scrub : Disabled
Energy Efficiency Policy : Performance
CPU Interconnect Bus Link
Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.5-ic2021.1/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Mon Apr 19 15:37:06 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 8368 CPU @ 2.40GHz
  2 "physical id"s (chips)
  152 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

(Continued on next page)
Dell Inc.
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 515
SPECrate®2017_int_peak = 535

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Apr-2021
Tested by: Dell Inc.
Hardware Availability: May-2021
Software Availability: Feb-2021

Platform Notes (Continued)

cpu cores : 38
siblings : 76
physical 0: cores 0 1 2 3 4 5 6 7 8 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 36 37
physical 1: cores 0 1 2 3 4 5 6 7 8 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 36 37

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 152
On-line CPU(s) list: 0-151
Thread(s) per core: 2
Core(s) per socket: 38
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8368 CPU @ 2.40GHz
Stepping: 6
CPU MHz: 3199.769
BogoMIPS: 4800.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 58368K
NUMA node0 CPU(s):
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58
,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110
NUMA node1 CPU(s):
1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59
,61,63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95,97,99,101,103,105,107,109,111
,113,115,117,119,121,123,125,127,129,131,133,135,137,139,141,143,145,147,149,151
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 ptdbg ndtsc

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

**Dell Inc.**

PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>515</td>
<td>535</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Apr-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

#### Platform Notes (Continued)

```
dtherm ida arat pln pts avx512v bmi umip pku ospe avx512_v bmi2 g fni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_lid arch_capabilities
```

```
/proc/cpuinfo cache data  
cache size : 58368 KB
```

```text
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 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150  
node 0 size: 239378 MB  
node 0 free: 241263 MB  
node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101 103 105 107 109 111 113 115 117 119 121 123 125 127 129 131 133 135 137 139 141 143 145 147 149 151  
node 1 size: 241882 MB  
node 1 free: 256372 MB  
node distances:
  node   0   1
  0:  10  20
  1:  20  10
```

```text
From /proc/meminfo  
MemTotal:       527787404 kB  
HugePages_Total:       0  
Hugepagesize:       2048 kB  
```

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

```
From /etc/*release* /etc/*version*  
  os-release:  
    NAME="Red Hat Enterprise Linux"
    VERSION="8.3 (Ootpa)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="8.3"
    PLATFORM_ID="platform:el8"
    PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
    ANSI_COLOR="0;31"
    redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
    system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga
```

(Continued on next page)
Platform Notes (Continued)

uname -a:
    Linux localhost.localdomain 4.18.0-240.15.1.el8_3.x86_64 #1 SMP Wed Feb 3 03:12:15 EST 2021 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/swapgs barriers and __user pointer sanitation
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 Apr 19 15:34

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.5-ic2021.1
    Filesystem     Type   Size  Used Avail Use% Mounted on
tmpf$   tmpfs    225G   6.9G  219G   4% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R750 xa
Product Family: PowerEdge
Serial: 1234567

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:
    16x 002C069D002C 18ASF4G72PDZ-3G2E1 32 GB 2 rank 3200
    16x Not Specified Not Specified

BIOS:
    BIOS Vendor: Dell Inc.
    BIOS Version: 1.1.2
    BIOS Date: 04/09/2021
    BIOS Revision: 1.1
### SPEC CPU®2017 Integer Rate Result

**Dell Inc.**  
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
<th>SPECrate®2017_int_base = 515</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>SPECrate®2017_int_peak = 535</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Test Date: Apr-2021</td>
</tr>
<tr>
<td>Hardware Availability: May-2021</td>
<td>Software Availability: Feb-2021</td>
</tr>
</tbody>
</table>

#### Platform Notes (Continued)

(End of data from sysinfo program)

#### Compiler Version Notes

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbench_r(peak) 557.xz_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

| C | 502.gcc_r(peak) |
|----------------|
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

| C | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 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. |

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbench_r(peak) 557.xz_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

| C | 502.gcc_r(peak) |
|----------------|
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

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

### Dell Inc.

PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 515</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak = 535</td>
</tr>
</tbody>
</table>

#### CPU2017 License:
55

#### Test Date:
Apr-2021

#### Test Sponsor:
Dell Inc.

#### Tested by:
Dell Inc.

#### Hardware Availability:
May-2021

#### Software Availability:
Feb-2021

### Compiler Version Notes (Continued)

<table>
<thead>
<tr>
<th>C</th>
<th>perlbench_r(base) gcc_r(base) mcf_r(base, peak) x264_r(base, peak) xz_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>perlbench_r(peak) xz_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>gcc_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>perlbench_r(base) gcc_r(base) mcf_r(base, peak) x264_r(base, peak) xz_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++</th>
<th>omnetpp_r(base, peak) xalancbmk_r(base, peak) deepsjeng_r(base, peak) leela_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
</tr>
<tr>
<td></td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fortran</th>
<th>exchange2_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
</tr>
</tbody>
</table>

(Continued on next page)
Dell Inc.
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

SPECrate®2017_int_base = 515
SPECrate®2017_int_peak = 535

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Apr-2021
Hardware Availability: May-2021
Software Availability: Feb-2021

Compiler Version Notes (Continued)

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

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-fflto -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
-1qkmalloc

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

(Continued on next page)
**Base Optimization Flags (Continued)**

C++ benchmarks (continued):
- -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

**Peak Compiler Invocation**

C benchmarks (except as noted below):
- icx

500.perlbench_r: icc

557.xz_r: icc

C++ benchmarks:
- icpx

Fortran benchmarks:
- ifort

**Peak Portability Flags**

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
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
Dell Inc.
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

SPEC CPU®2017 Integer Rate Result

SPECrate®2017_int_base = 515
SPECrate®2017_int_peak = 535

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2021
Hardware Availability: May-2021
Software Availability: Feb-2021

Peak Optimization Flags

C benchmarks:

500.perlbench_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2)
-xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-strict-overflow
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

502.gcc_r: -m32
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto
-Ofast(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
-O3 -ffast-math -qopt-mem-layout-trans=4 -fno-alias
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

557.xz_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-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:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

548.exchange2_r: basepeak = yes
SPEC CPU®2017 Integer Rate Result

Dell Inc.
PowerEdge R750 xa (Intel Xeon Platinum 8368, 2.40 GHz)

SPECrater®2017_int_base = 515
SPECrater®2017_int_peak = 535

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2021
Hardware Availability: May-2021
Software Availability: Feb-2021

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/Intel-ic2021-official-linux64_revA.xml

SPEC CPU and SPECrater 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 v1.1.5 on 2021-04-19 03:37:06-0400.
Originally published on 2021-05-18.