



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

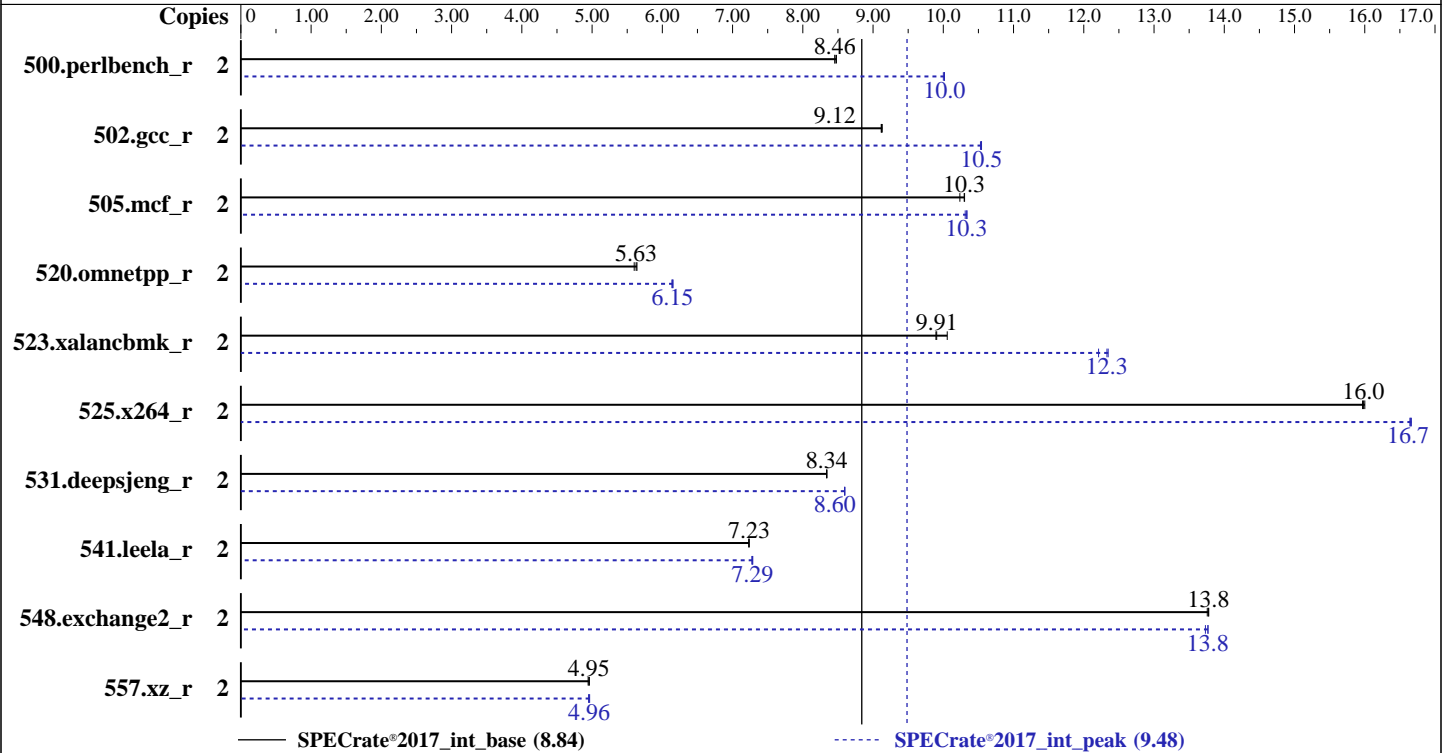
SPECrate®2017\_int\_base = 8.84

### Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006  
Test Sponsor: NEC Corporation  
Tested by: NEC Corporation

Test Date: Oct-2019  
Hardware Availability: Nov-2019  
Software Availability: Aug-2019



### Hardware

CPU Name: Intel Celeron G4930  
Max MHz: 3200  
Nominal: 3200  
Enabled: 2 cores, 1 chip  
Orderable: 1 chip  
Cache L1: 32 KB I + 32 KB D on chip per core  
L2: 256 KB I+D on chip per core  
L3: 2 MB I+D on chip per chip  
Other: None  
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E, running at 2400)  
Storage: 1 x 2 TB SATA, 7200 RPM  
Other: None

### Software

OS: Red Hat Enterprise Linux Server release 7.7 (Maipo)  
Kernel 3.10.0-1062.el7.x86\_64  
Compiler: C/C++: Version 19.0.0.117 of Intel C/C++ Compiler Build 20180804 for Linux;  
Fortran: Version 19.0.0.117 of Intel Fortran Compiler Build 20180804 for Linux  
Parallel: No  
Firmware: NEC BIOS Version F01 08/21/2019 released Nov-2019  
File System: ext4  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: --



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

SPECrate®2017\_int\_base = 8.84

## Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006  
Test Sponsor: NEC Corporation  
Tested by: NEC Corporation

Test Date: Oct-2019  
Hardware Availability: Nov-2019  
Software Availability: Aug-2019

### Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	2	376	8.46	376	8.48	<b>376</b>	<b>8.46</b>	2	318	10.0	318	10.0	<b>318</b>	<b>10.0</b>
502.gcc_r	2	310	9.13	<b>311</b>	<b>9.12</b>	311	9.12	2	<b>269</b>	<b>10.5</b>	269	10.5	269	10.5
505.mcf_r	2	314	10.3	316	10.2	<b>314</b>	<b>10.3</b>	2	313	10.3	<b>313</b>	<b>10.3</b>	313	10.3
520.omnetpp_r	2	465	5.64	<b>466</b>	<b>5.63</b>	469	5.60	2	<b>427</b>	<b>6.15</b>	426	6.15	428	6.14
523.xalancbmk_r	2	<b>213</b>	<b>9.91</b>	213	9.90	210	10.1	2	171	12.3	173	12.2	<b>171</b>	<b>12.3</b>
525.x264_r	2	219	16.0	<b>219</b>	<b>16.0</b>	219	16.0	2	210	16.7	<b>210</b>	<b>16.7</b>	210	16.6
531.deepsjeng_r	2	275	8.34	275	8.34	<b>275</b>	<b>8.34</b>	2	267	8.60	267	8.60	<b>267</b>	<b>8.60</b>
541.leela_r	2	458	7.24	<b>458</b>	<b>7.23</b>	458	7.23	2	455	7.27	455	7.29	<b>455</b>	<b>7.29</b>
548.exchange2_r	2	380	13.8	381	13.8	<b>380</b>	<b>13.8</b>	2	382	13.7	<b>381</b>	<b>13.8</b>	381	13.8
557.xz_r	2	435	4.96	437	4.94	<b>436</b>	<b>4.95</b>	2	<b>436</b>	<b>4.96</b>	436	4.95	435	4.97

SPECrate®2017\_int\_base = **8.84**

SPECrate®2017\_int\_peak = **9.48**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"  
IRQ balance service was stopped using "systemctl stop irqbalance.service"

### General Notes

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

```
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
```

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

Yes: 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.

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

SPECrate®2017\_int\_base = 8.84

## Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Oct-2019

Hardware Availability: Nov-2019

Software Availability: Aug-2019

### General Notes (Continued)

jemalloc, a general purpose malloc implementation  
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5  
sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

### Platform Notes

BIOS Settings:

VT-x: Disabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9

running on t110j Sun Oct 27 12:12:29 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) Celeron(R) G4930 CPU @ 3.20GHz

1 "physical id"s (chips)

2 "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 : 2

siblings : 2

physical 0: cores 0 1

From lscpu:

Architecture: x86\_64

CPU op-mode(s): 32-bit, 64-bit

Byte Order: Little Endian

CPU(s): 2

On-line CPU(s) list: 0,1

Thread(s) per core: 1

Core(s) per socket: 2

Socket(s): 1

NUMA node(s): 1

Vendor ID: GenuineIntel

CPU family: 6

Model: 158

Model name: Intel(R) Celeron(R) G4930 CPU @ 3.20GHz

Stepping: 11

CPU MHz: 3108.593

CPU max MHz: 3200.0000

CPU min MHz: 800.0000

BogoMIPS: 6384.00

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

SPECrate®2017\_int\_base = 8.84

### Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Tested by:** NEC Corporation

**Test Date:** Oct-2019  
**Hardware Availability:** Nov-2019  
**Software Availability:** Aug-2019

## Platform Notes (Continued)

```

Virtualization:      VT-x
L1d cache:          32K
L1i cache:          32K
L2 cache:           256K
L3 cache:           2048K
NUMA node0 CPU(s):  0,1
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
aperfmpperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg cx16
xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave rdrand
lahf_lm abm 3dnowprefetch epb intel_pt ssbd ibrs ibpb stibp tpr_shadow vnmi
flexpriority ept vpid fsgsbase tsc_adjust smep erms invpcid mpx rdseed smap
clflushopt xsaveopt xsavec xgetbv1 dtherm arat pln pts hwp hwp_notify hwp_act_window
hwp_epp md_clear spec_ctrl intel_stibp flush_lld

```

```

/proc/cpuinfo cache data
cache size : 2048 KB

```

```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1
node 0 size: 65441 MB
node 0 free: 63570 MB
node distances:
node    0
 0:    10

```

```

From /proc/meminfo
MemTotal:      65880436 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.7 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.7"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.7 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.7 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.7 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.7:ga:server

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

SPECrate®2017\_int\_base = 8.84

## Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Tested by:** NEC Corporation

**Test Date:** Oct-2019  
**Hardware Availability:** Nov-2019  
**Software Availability:** Aug-2019

### Platform Notes (Continued)

```
uname -a:
Linux t110j 3.10.0-1062.el7.x86_64 #1 SMP Thu Jul 18 20:25:13 UTC 2019 x86_64 x86_64
x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

```
CVE-2017-5754 (Meltdown):          Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: Load fences, __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Full retpoline, IBPB
```

```
run-level 3 Oct 27 12:06
```

SPEC is set to: /home/cpu2017

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext4  1.8T   40G  1.7T   3% /
```

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 American Megatrends Inc. F01 08/21/2019

Memory:

4x Samsung M391A2K43BB1-CTD 16 GB 2 rank 2667

(End of data from sysinfo program)

### Compiler Version Notes

```
=====  
C      | 502.gcc_r(peak)  
-----
```

```
Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----
```

```
=====  
C      | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)  
      | 525.x264_r(base, peak) 557.xz_r(base, peak)  
-----
```

```
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## NEC Corporation

SPECrate®2017\_int\_base = 8.84

### Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Tested by:** NEC Corporation

**Test Date:** Oct-2019  
**Hardware Availability:** Nov-2019  
**Software Availability:** Aug-2019

## Compiler Version Notes (Continued)

=====  
C | 502.gcc\_r(peak)  
-----

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
525.x264\_r(base, peak) 557.xz\_r(base, peak)

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 523.xalancbmk\_r(peak)  
-----

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base)  
531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 523.xalancbmk\_r(peak)  
-----

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base)  
531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate®2017\_int\_base = 8.84

Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006  
Test Sponsor: NEC Corporation  
Tested by: NEC Corporation

Test Date: Oct-2019  
Hardware Availability: Nov-2019  
Software Availability: Aug-2019

## Compiler Version Notes (Continued)

Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

-----  
Fortran | 548.exchange2\_r(base, peak)

-----  
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 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:  
-Wl,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate®2017\_int\_base = 8.84

Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Oct-2019

Hardware Availability: Nov-2019

Software Availability: Aug-2019

## Base Optimization Flags (Continued)

C++ benchmarks:

```
-Wl,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc
```

Fortran benchmarks:

```
-Wl,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte  
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m64 -std=c11
```

```
502.gcc_r: icc -m32 -std=c11 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.0.117/linux/compiler/lib/ia32_lin
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

```
523.xalancbmk_r: icpc -m32 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.0.117/linux/compiler/lib/ia32_lin
```

Fortran benchmarks:

```
ifort -m64
```

## 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: -D_FILE_OFFSET_BITS=64 -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 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate®2017\_int\_base = 8.84

Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Oct-2019

Hardware Availability: Nov-2019

Software Availability: Aug-2019

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xSSE4.2 -O3 -no-prec-div -qopt-mem-layout-trans=3  
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib  
-ljemalloc
```

```
502.gcc_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xSSE4.2 -O3 -no-prec-div -qopt-mem-layout-trans=3  
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

```
505.mcf_r: -w1,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib  
-ljemalloc
```

```
525.x264_r: -w1,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -fno-alias  
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

557.xz\_r: Same as 505.mcf\_r

C++ benchmarks:

```
520.omnetpp_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xSSE4.2 -O3 -no-prec-div -qopt-mem-layout-trans=3  
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
523.xalancbmk_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xSSE4.2 -O3 -no-prec-div -qopt-mem-layout-trans=3  
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

531.deepsjeng\_r: Same as 520.omnetpp\_r

541.leela\_r: Same as 520.omnetpp\_r

Fortran benchmarks:

```
-w1,-z,muldefs -xSSE4.2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte  
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0-official-linux64.2019-01-15.html>

<http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-T110j-RevE.html>



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate®2017\_int\_base = 8.84

Express5800/T110j (Intel Celeron G4930)

SPECrate®2017\_int\_peak = 9.48

**CPU2017 License:** 9006

**Test Sponsor:** NEC Corporation

**Tested by:** NEC Corporation

**Test Date:** Oct-2019

**Hardware Availability:** Nov-2019

**Software Availability:** Aug-2019

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic19.0-official-linux64.2019-01-15.xml>

<http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-T110j-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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.0.5 on 2019-10-26 23:12:29-0400.

Report generated on 2019-11-12 14:59:59 by CPU2017 PDF formatter v6255.

Originally published on 2019-11-12.