**SPEC CPU®2017 Floating Point Speed Result**

**NEC Corporation**

**Express5800/T110j (Intel Celeron G4930)**

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
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<tr>
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<td>11.9</td>
<td>12.1</td>
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<tr>
<td>607.cactuBSSN_s</td>
<td>11.9</td>
<td>12.1</td>
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<tr>
<td>619.lbm_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
<tr>
<td>638.imagick_s</td>
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<td>12.1</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>11.9</td>
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<tr>
<td>649.fotonik3d_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>11.9</td>
<td>12.1</td>
</tr>
</tbody>
</table>

**Specifications**

**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)
- 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: Yes
- 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: 64-bit
- Other: None
- Power Management: --
SPEC CPU®2017 Floating Point Speed Result

NEC Corporation

Express5800/T110j (Intel Celeron G4930)

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

Results Table

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<tr>
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<th>Base</th>
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<td>9.74</td>
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<td></td>
</tr>
</tbody>
</table>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
OMP_STACKSIZE = "192M"

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.
NEC Corporation

Express5800/T110j (Intel Celeron G4930)

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

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

BIOS Settings:
VT-x: Disabled
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on t110j Mon Oct 28 11:07:26 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: 3158.007
  CPU max MHz: 3200.0000
  CPU min MHz: 800.0000
  BogoMIPS: 6384.00
  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

(Continued on next page)
Platform Notes (Continued)

```
lm constant_tsc art arch_perfmon pebs bts rep_good nop1 xttopology nonstop_tsc
aperfmpref eagerfu pni pclmulqdq dts64 monitor ds_cpl vmx est tm2 sse3 sdbg cx16
xtrr pdcn pcsd 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 fsqgbase tsc_adjust smp erms invpcid mpx rdseed smap
ciflushopt xsaveopt xgetbv1 dtherm arat pln pts hwp hwp_notify hwp_act_window
hwp_epp md_clear spec_ctrl intel_stibp flush_l1d
```

```
/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: 63573 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

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
```

(Continued on next page)
NEC Corporation
Express5800/T110j (Intel Celeron G4930)

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

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)
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 28 11:01
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

 Compiler Version Notes
==============================================================================
C               | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
| 644.nab_s(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.
------------------------------------------------------------------------------

Compiler Version Notes
==============================================================================
C++ , C, Fortran  | 607.cactuBSNN_s(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.
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.
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.
------------------------------------------------------------------------------

Fortran  | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)

(Continued on next page)
## NEC Corporation

**Express5800/T110j (Intel Celeron G4930)**

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>11.9</th>
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<tr>
<td>SPECspeed®2017_fp_peak</td>
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**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Test Date:** Oct-2019  
**Tested by:** NEC Corporation  
**Hardware Availability:** Nov-2019  
**Software Availability:** Aug-2019

### Compiler Version Notes (Continued)

<table>
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<th>654.roms_s(base, peak)</th>
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| 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. |

<table>
<thead>
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<th>Fortran, C</th>
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<tr>
<td>621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)</td>
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</table>

| 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:**

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

**Fortran benchmarks:**

```shell
ifort -m64
```

**Benchmarks using both Fortran and C:**

```shell
ifort -m64 icc -m64 -std=c11
```

**Benchmarks using Fortran, C, and C++:**

```shell
icpc -m64 icc -m64 -std=c11 ifort -m64
```

### Base Portability Flags

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian -assume byterecl
638.imagick_s: -DSPEC_LP64
```

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result
Copyright 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation
Express5800/T110j (Intel Celeron G4930)

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2019
Tested by: NEC Corporation
Hardware Availability: Nov-2019
Software Availability: Aug-2019

Base Portability Flags (Continued)

644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP

Fortran benchmarks:
-DSPEC_OPENMP -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-nostandard-realloc-lhs -align array32byte

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte

Benchmarks using Fortran, C, and C++:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64
SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/T110j (Intel Celeron G4930)

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

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

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP

644.nab_s: Same as 638.imagick_s

Fortran benchmarks:

603.bwaves_s: -prof-gen(pass 1) -prof-use(pass 2) -DSPEC_SUPPRESS_OPENMP
-DSPEC_OPENMP -O2 -xSSE4.2 -qopt-prefetch -ipo -O3
-no-prec-div -ffinite-math-only -qopt-mem-layout-trans=3
-qopenmp -nostandard-realloc-lhs -align array32byte

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: -prof-gen(pass 1) -prof-use(pass 2) -O2 -xSSE4.2
-qopt-prefetch -ipo -O3 -no-prec-div -ffinite-math-only
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte

627.cam4_s: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte

628.pop2_s: Same as 621.wrf_s

Benchmarks using Fortran, C, and C++:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte
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**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Tested by:** NEC Corporation  

**SPECspeed®2017_fp_base = 11.9**  
**SPECspeed®2017_fp_peak = 12.1**  

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

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:


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