# Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2124, 3.30GHz

<table>
<thead>
<tr>
<th>SPECspeed2017_fp_base</th>
<th>SPECspeak2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.0</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Hardware Availability:** Nov-2018  
**Software Availability:** Sep-2018

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeak2017_fp_base (26.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s 4</td>
<td>79.3</td>
</tr>
<tr>
<td>607.cactuBSSN_s 4</td>
<td>37.3</td>
</tr>
<tr>
<td>619.lbm_s 4</td>
<td>16.2</td>
</tr>
<tr>
<td>621.wrf_s 4</td>
<td>30.3</td>
</tr>
<tr>
<td>627.cam4_s 4</td>
<td>17.7</td>
</tr>
<tr>
<td>628.pop2_s 4</td>
<td>30.7</td>
</tr>
<tr>
<td>638.imagick_s 4</td>
<td>18.7</td>
</tr>
<tr>
<td>644.nab_s 4</td>
<td>34.5</td>
</tr>
<tr>
<td>649.fotonik3d_s 4</td>
<td>17.9</td>
</tr>
<tr>
<td>654.roms_s 4</td>
<td>15.3</td>
</tr>
</tbody>
</table>

## Hardware
- **CPU Name:** Intel Xeon E-2124  
- **Max MHz.:** 4300  
- **Nominal:** 3300  
- **Enabled:** 4 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:** 8 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)  
- **Storage:** 1 x SATA M.2 SSD, 240 GB  
- **Other:** None

## Software
- **OS:** Red Hat Enterprise Linux Server release 7.5 (Maipo)  
  3.10.0-862.el7.x86_64  
- **Compiler:** C/C++: Version 19.0.0.117 of Intel C/C++  
  Compiler for Linux:  
  Fortran: Version 19.0.0.117 of Intel Fortran  
  Compiler for Linux
- **Parallel:** Yes  
- **Firmware:** Fujitsu BIOS Version V5.0.0.13 R1.4.0 for D3673-A1x. Released Nov-2018 tested as V5.0.0.13 R1.0.0 for D3673-A1x Sep-2018
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** Not Applicable  
- **Other:** None
SPEC CPU2017 Floating Point Speed Result

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SPECspeed2017_fp_peak = Not Run

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>4</td>
<td>744</td>
<td>79.3</td>
<td>744</td>
<td>79.3</td>
<td>744</td>
<td>79.3</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>4</td>
<td>446</td>
<td>37.4</td>
<td>449</td>
<td>37.2</td>
<td>447</td>
<td>37.3</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>4</td>
<td>324</td>
<td>16.2</td>
<td>324</td>
<td>16.2</td>
<td>323</td>
<td>16.2</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>4</td>
<td>436</td>
<td>30.3</td>
<td>436</td>
<td>30.3</td>
<td>438</td>
<td>30.2</td>
</tr>
<tr>
<td>627.cam4_s</td>
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<td>500</td>
<td>17.7</td>
<td>500</td>
<td>17.7</td>
<td>500</td>
<td>17.7</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>4</td>
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<td>30.6</td>
<td>386</td>
<td>30.7</td>
<td>386</td>
<td>30.7</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>4</td>
<td>774</td>
<td>18.6</td>
<td>773</td>
<td>18.7</td>
<td>770</td>
<td>18.7</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>4</td>
<td>506</td>
<td>34.5</td>
<td>507</td>
<td>34.5</td>
<td>506</td>
<td>34.5</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>4</td>
<td>510</td>
<td>17.9</td>
<td>510</td>
<td>17.9</td>
<td>510</td>
<td>17.9</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>4</td>
<td>1029</td>
<td>15.3</td>
<td>1029</td>
<td>15.3</td>
<td>1031</td>
<td>15.3</td>
</tr>
</tbody>
</table>

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"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
OMP_STACKSIZE = "192M"
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-ic19/ic19.0-lib/intel64"
Binaries compiled on a system with 1x Intel Xeon E-2186G CPU + 64GB RAM
memory using Red Hat Enterprise Linux Server release 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.

Page 2 Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/
**Fujitsu**

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<table>
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<tr>
<td>SPECspeed2017_fp_peak</td>
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**CPU2017 License:** 19

**Test Date:** Nov-2018

**Test Sponsor:** Fujitsu

**Tested by:** Fujitsu

**Hardware Availability:** Nov-2018

**Software Availability:** Sep-2018

---

### Platform Notes

**BIOS configuration:**

Energy Efficient Turbo = Disabled

Sysinfo program /home/Benchmark/speccpu2017-ic19/bin/sysinfo

Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bccc091c0f

running on localhost.localdomain Tue Nov 6 14:12:03 2018

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) E-2124 CPU @ 3.30GHz
  1 "physical id"s (chips)
  4 "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: 4
  siblings: 4
  physical 0: cores 0 1 2 3
```

---

From `/lscpu`:

```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Xeon(R) E-2124 CPU @ 3.30GHz
Stepping: 10
CPU MHz: 4179.785
CPU max MHz: 4300.0000
CPU min MHz: 800.0000
BogoMIPS: 6624.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0-3
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)
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Platform Notes (Continued)

lm constant_tsc art arch_perfmon pebs bts rep_good nop1 xtopology nonstop_tsc
aperfmpref eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 sse3 sdbg
fma cx16 xtrr pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch epb intel_pt tpr_shadow vmx
flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm
mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1 ibpb ibrs stibp dtherm ida
arat pln pts hwp hwp_notify hwp_act_window hwp_epp spec_ctrl intel_stibp

/cache data

From /proc/cpuinfo

cache size : 8192 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 2 3
node 0 size: 65278 MB
node 0 free: 63213 MB
node distances:

node 0
0: 10

From /proc/meminfo

MemTotal: 65546112 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.5 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.5"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.5:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-862.el7.x86_64 #1 SMP Wed Mar 21 18:14:51 EDT 2018
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 6 14:10

SPEC is set to: /home/Benchmark/speccpu2017-ic19

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Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/mapper/rhel-home</td>
<td>xfs</td>
<td>150G</td>
<td>59G</td>
<td>92G</td>
<td>40%</td>
<td>/home</td>
</tr>
</tbody>
</table>

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. V5.0.0.13 R1.0.0 for D3673-A1x 09/14/2018
Memory: 4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

==================================================================================================
 CC  619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
------------------------------------------------------------------------------
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==================================================================================================
 FC  607.cactuBSSN_s(base)
------------------------------------------------------------------------------
icpc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==================================================================================================
 FC  603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)
------------------------------------------------------------------------------
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==================================================================================================
 CC  621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)
------------------------------------------------------------------------------
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)
Compiler Version Notes (Continued)

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

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian -assume byterecl
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP

Fortran benchmarks:
-DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp

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Base Optimization Flags (Continued)

Fortran benchmarks (continued):
- nostandard-realloc-lhs  -align array32byte

Benchmarks using both Fortran and C:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -qopt-prefetch  -ffinite-math-only
- qopt-mem-layout-trans=3  -gopenmp  -DSPEC_OPENMP
- nostandard-realloc-lhs  -align array32byte

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -qopt-prefetch  -ffinite-math-only
- qopt-mem-layout-trans=3  -gopenmp  -DSPEC_OPENMP
- nostandard-realloc-lhs  -align array32byte

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevB.xml

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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