SPEC® CPU2017 Floating Point Rate Result

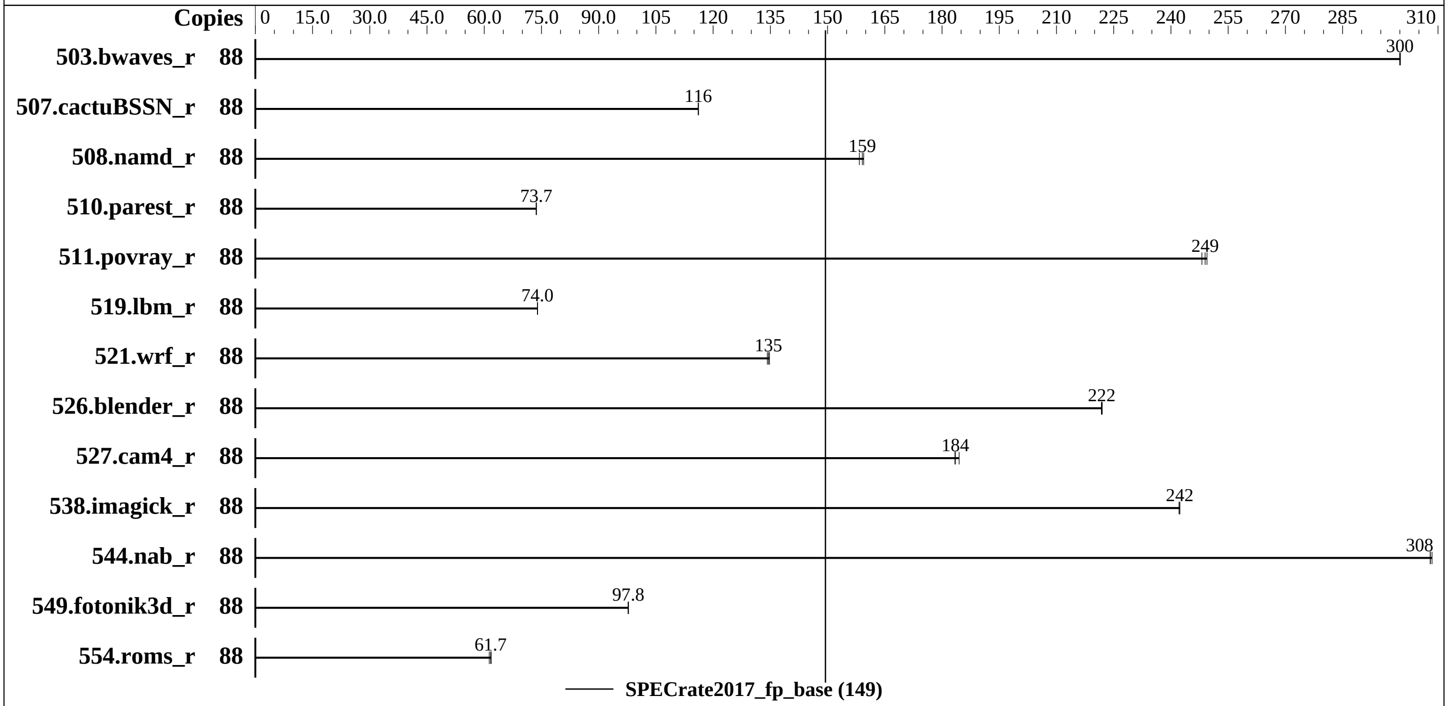
Fujitsu

PRIMERGY RX2560 M2, Intel Xeon E5-2699A v4, 2.40GHz

SPECrate2017_fp_base = 149

SPECrate2017_fp_peak = Not Run

CPU2017 License:	19	**Test Date:**	Dec-2016
Test Sponsor:	Fujitsu	**Hardware Availability:**	Oct-2016
Tested by:	Fujitsu	**Software Availability:**	Nov-2016



Hardware

CPU Name:	Intel Xeon E5-2699A v4
Max MHz.:	3600
Nominal:	2400
Enabled:	44 cores, 2 chips, 2 threads/core
Orderable:	1,2 chips
Cache L1:	32 KB I + 32 KB D on chip per core
L2:	256 KB I+D on chip per core
L3:	55 MB I+D on chip per chip
Other:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Storage:	1 x 960GB, SAS3, SSD
Other:	None

Software

OS:	SUSE Linux Enterprise Server 12 SP2 RC2 4.4.19-60-default
Compiler:	C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
Parallel:	No
Firmware:	Fujitsu R1.7.0
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	Not Applicable
Other:	Microquill SmartHeap V10.2

SPEC CPU2017 Floating Point Rate Result

Fujitsu

PRIMERGY RX2560 M2, Intel Xeon E5-2699A v4, 2.40GHz

SPECrate2017_fp_base = 149

SPECrate2017_fp_peak = Not Run

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu
Test Date: Dec-2016
Hardware Availability: Oct-2016
Software Availability: Nov-2016

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	88	2942	300	**2941**	**300**	2940	300							
507.cactuBSSN_r	88	**959**	**116**	960	116	959	116							
508.namd_r	88	**525**	**159**	524	159	528	158							
510.parest_r	88	**3126**	**73.7**	3128	73.6	3124	73.7							
511.povray_r	88	**825**	**249**	824	249	828	248							
519.lbm_r	88	**1254**	**74.0**	1254	74.0	1254	74.0							
521.wrf_r	88	1469	134	**1465**	**135**	1463	135							
526.blender_r	88	604	222	604	222	**604**	**222**							
527.cam4_r	88	839	183	834	184	**839**	**184**							
538.imagick_r	88	**903**	**242**	904	242	903	242							
544.nab_r	88	481	308	480	308	**481**	**308**							
549.fotonik3d_r	88	3510	97.7	**3507**	**97.8**	3506	97.8							
554.roms_r	88	**2267**	**61.7**	2262	61.8	2280	61.3							

SPECrate2017_fp_base = 149

SPECrate2017_fp_peak = Not Run

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

Submit Notes

```
The config file option 'submit' was used.
```

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:
LD_LIBRARY_PATH = "/home/spec/cpu2017/lib/ia32:/home/spec/cpu2017/lib/intel64:/home/spec/cpu2017/sh10.2"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled by default
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runcpu command invoked through numactl i.e.:
 numactl --interleave=all runcpu <etc>
```

Platform Notes

```
BIOS configuration:
Energy Performance = Performance
Utilization Profile = Unbalanced
QPI snoop mode: Cluster on Die
    COD Enable = Enabled, Early Snoop = Disabled, Home Snoop Dir OSB = Disabled
CPU C1E Support = Disabled
Sysinfo program /home/spec/cpu2017/Docs/sysinfo
Rev: r5007 of 2016-11-15 fc8dc82f217779bedfed4d694d580ba9
running on linux-tw9h Sun Dec 11 00:49:27 2016

This section contains SUT (System Under Test) info as seen by some common
utilities.
For more information on this section, see
http://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2699A v4 @ 2.40GHz
      2 "physical id"s (chips)
      88 "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 : 22
      siblings  : 44
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
      28
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
      28
   cache size : 28160 KB

The view from numactl --hardware follows.  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 4 5 6 7 8 9 10 44 45 46 47 48 49 50 51 52 53 54
  node 0 size: 64200 MB
  node 0 free: 57255 MB
  node 1 cpus: 11 12 13 14 15 16 17 18 19 20 21 55 56 57 58 59 60 61 62 63 64 65
  node 1 size: 64508 MB
  node 1 free: 59837 MB
  node 2 cpus: 22 23 24 25 26 27 28 29 30 31 32 66 67 68 69 70 71 72 73 74 75 76
  node 2 size: 64508 MB
  node 2 free: 59849 MB
  node 3 cpus: 33 34 35 36 37 38 39 40 41 42 43 77 78 79 80 81 82 83 84 85 86 87
  node 3 size: 64384 MB
  node 3 free: 59723 MB
  node distances:
  node   0   1   2   3
```

(Continued on next page)

Platform Notes (Continued)

```
     0:  10  11  21  21
     1:  11  10  21  21
     2:  21  21  10  11
     3:  21  21  11  10

 From /proc/meminfo
    MemTotal:       263784808 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 12 SP2

 From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 12 (x86_64)
       VERSION = 12
       PATCHLEVEL = 2
       # This file is deprecated and will be removed in a future service pack or
       release.
       # Please check /etc/os-release for details about this release.
    os-release:
       NAME="SLES"
       VERSION="12-SP2"
       VERSION_ID="12.2"
       PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
       ID="sles"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:12:sp2"

 uname -a:
    Linux linux-tw9h 4.4.19-60-default #1 SMP Fri Aug 26 12:54:34 UTC 2016
    (a3a3ea6) x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Dec 10 17:42

 SPEC is set to: /home/spec/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda3      xfs   852G   22G  830G   3% /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. V5.0.0.11 R1.7.0 for D3289-B1x
   04/21/2016
```

(Continued on next page)

Platform Notes (Continued)

```
   Memory:
    8x NO DIMM NO DIMM
    16x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
CC   507.cactuBSSN_r(base) 511.povray_r(base) 519.lbm_r(base) 521.wrf_r(base)
     526.blender_r(base) 527.cam4_r(base) 538.imagick_r(base) 544.nab_r(base)
------------------------------------------------------------------------------
icc (ICC) 17.0.0 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
CXXC 507.cactuBSSN_r(base) 508.namd_r(base) 510.parest_r(base)
     511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
icpc (ICC) 17.0.0 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
FC   503.bwaves_r(base) 507.cactuBSSN_r(base) 521.wrf_r(base)
     527.cam4_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
------------------------------------------------------------------------------
ifort (IFORT) 17.0.0 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icc -m64 -std=c11`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

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

(Continued on next page)

Base Compiler Invocation (Continued)

Benchmarks using both C and C++:
`icpc -m64 icc -m64 -std=c11`

Benchmarks using Fortran, C, and C++:
`icpc -m64 icc -m64 -std=c11 ifort -m64`

Base Portability Flags

503.bwaves_r: `-DSPEC_LP64`
507.cactuBSSN_r: `-DSPEC_LP64`
508.namd_r: `-DSPEC_LP64`
510.parest_r: `-DSPEC_LP64`
511.povray_r: `-DSPEC_LP64`
519.lbm_r: `-DSPEC_LP64`
521.wrf_r: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
526.blender_r: `-DSPEC_LP64 -DSPEC_LINUX -funsigned-char`
527.cam4_r: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
538.imagick_r: `-DSPEC_LP64`
544.nab_r: `-DSPEC_LP64`
549.fotonik3d_r: `-DSPEC_LP64`
554.roms_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch -qopt-mem-layout-trans=3`

C++ benchmarks:
`-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch -qopt-mem-layout-trans=3 -L/sh10.2 -lsmartheap64`

Fortran benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3 -nostandard-realloc-lhs`

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch -qopt-mem-layout-trans=3 -nostandard-realloc-lhs`

(Continued on next page)

Base Optimization Flags (Continued)

Benchmarks using both C and C++:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch -qopt-mem-layout-trans=3 -L/sh10.2 -lsmartheap64

Benchmarks using Fortran, C, and C++:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch -qopt-mem-layout-trans=3 -nostandard-realloc-lhs -L/sh10.2 -lsmartheap64

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic17.0-official-linux64-revD.html
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevD.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic17.0-official-linux64-revD.xml
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevD.xml

Tested with SPEC CPU2017 v0.904.0 on 2016-12-10 10:49:26-0500.
Report generated on 2018-10-31 12:41:04 by CPU2017 PS formatter v6067.
Originally published on 2017-06-19.