SPEC® CPU2017 Integer Rate Result

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Dell Inc.

PowerEdge R6415 (AMD EPYC 7401P, 2.00GHz)

$SPECrate2017\_int\_base = 113$
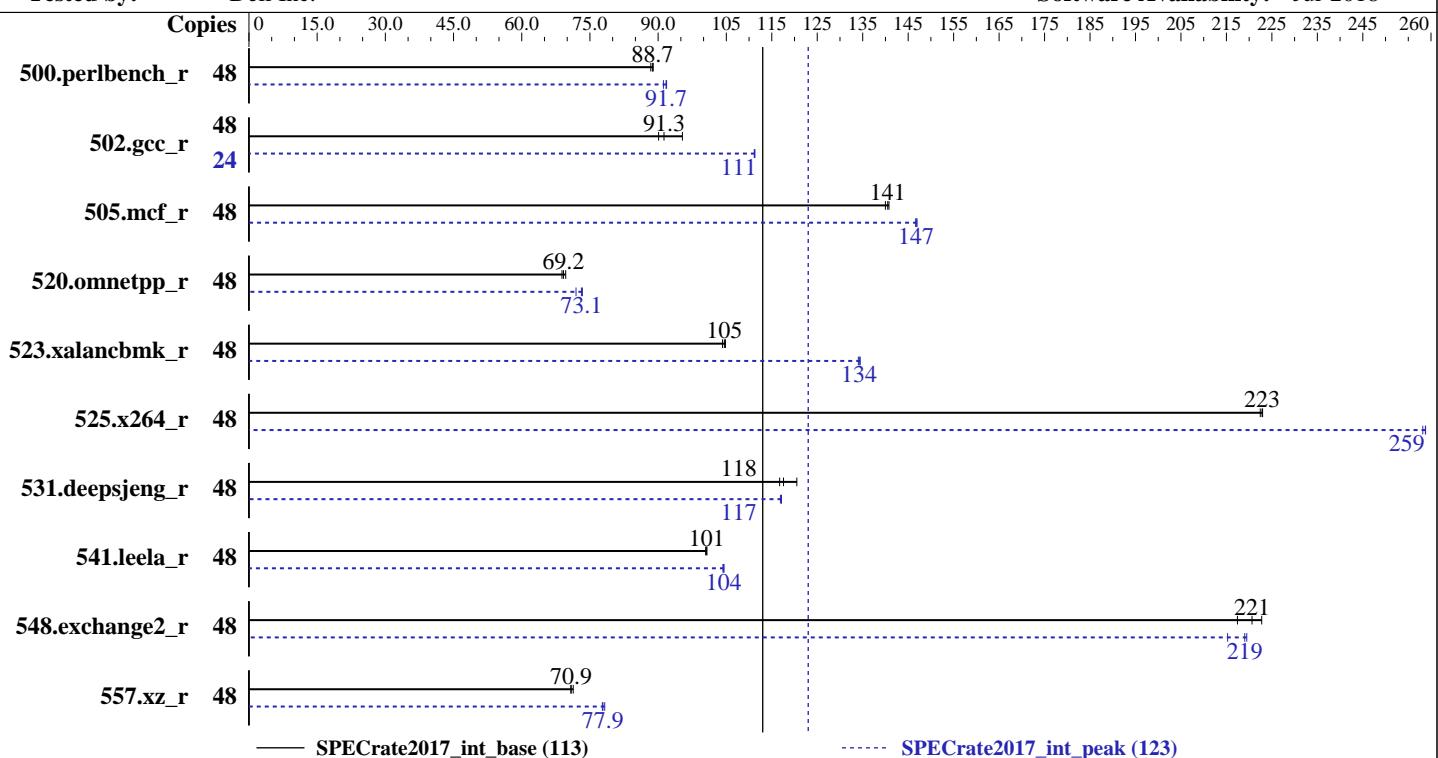
$SPECrate2017\_int\_peak = 123$

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Jul-2018

Copies		Benchmark	Value
500.perlbench_r	48	base	88.7
	48	peak	91.7
502.gcc_r	48	base	91.3
	24	peak	111
505.mcf_r	48	base	141
	48	peak	147
520.omnetpp_r	48	base	69.2
	48	peak	73.1
523.xalancbmk_r	48	base	105
	48	peak	134
525.x264_r	48	base	223
	48	peak	259
531.deepsjeng_r	48	base	118
	48	peak	117
541.leela_r	48	base	101
	48	peak	104
548.exchange2_r	48	base	221
	48	peak	219
557.xz_r	48	base	70.9
	48	peak	77.9

SPECrate2017_int_base (113) ----- SPECrate2017_int_peak (123)

Hardware

CPU Name: AMD EPYC 7401P
 Max MHz.: 3000
 Nominal: 2000
Enabled: 24 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 64 KB I + 32 KB D on chip per core
 L2: 512 KB I+D on chip per core
 L3: 64 MB I+D on chip per chip, 8 MB shared / 3 cores
 Other: None
Memory: 512 GB (8 x 64 GB 4DRx4 PC4-2667V-L)
Storage: 1 x 480 GB SATA SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP3
 kernel 4.4.126-94.22-default

Compiler: C/C++: Version 1.0.0 of AOCC
 Fortran: Version 4.8.2 of GCC
Parallel: No
Firmware: Version 1.6.7 released Oct-2018
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc: jemalloc memory allocator library
 V4.5.0

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
500.perlbench_r	48	865	88.4	859	88.9	**861**	**88.7**	48	838	91.2	**833**	**91.7**	832	91.9
502.gcc_r	48	754	90.1	**744**	**91.3**	713	95.3	24	305	111	306	111	**306**	**111**
505.mcf_r	48	551	141	554	140	**552**	**141**	48	529	147	528	147	**528**	**147**
520.omnetpp_r	48	**910**	**69.2**	915	68.9	904	69.7	48	875	71.9	859	73.3	**861**	**73.1**
523.xalancbmk_r	48	487	104	484	105	**485**	**105**	48	378	134	**378**	**134**	377	134
525.x264_r	48	**377**	**223**	378	222	377	223	48	325	259	**325**	**259**	326	258
531.deepsjeng_r	48	471	117	456	121	**468**	**118**	48	470	117	471	117	**470**	**117**
541.leela_r	48	789	101	791	100	**789**	**101**	48	762	104	761	104	**761**	**104**
548.exchange2_r	48	**570**	**221**	565	223	578	217	48	584	215	573	219	**574**	**219**
557.xz_r	48	727	71.3	732	70.8	**731**	**70.9**	48	**666**	**77.9**	667	77.7	662	78.3

SPECrate2017_int_base = 113

SPECrate2017_int_peak = 123

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

Compiler Notes

```
The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/amd-aocc/

The AOCC Gold Linker plugin was installed and used for the link stage.

The AOCC Fortran Plugin version 1.0 was used to leverage AOCC optimizers
with gfortran. It is available here:
http://developer.amd.com/amd-aocc/
```

Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu
```

(Continued on next page)

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Operating System Notes (Continued)

```
dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were
all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).

Transparent huge pages were enabled for this run (OS default)
```

General Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017-1.0.5/amd1704-rate-libs-revD/64;/home/cpu2017-1.0.5/amd1704-rate-libs-revD/32:"
MALLOC_CONF = "lg_chunk:26"


Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using RHEL 7.4
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.


jemalloc: configured and built with GCC v4.8.5
in RHEL v7.2 under default conditions.
jemalloc: sources available from jemalloc.net or
https://github.com/jemalloc/jemalloc/releases
jemalloc uses environment variable MALLOC_CONF
with values narenas and lg_chunk:
narenas: sets the maximum number of arenas to use
for automatic multiplexing
of threads and arenas.
lg_chunk: set the virtual memory chunk size (log
base 2). For example,
lg_chunk:21 sets the default chunk size to 2^21 =
2MiB.
```

Platform Notes

```
 BIOS settings:
 Memory Interleaving set to Channel Interleaving
 Virtualization Technology disabled
 System Profile set to Custom
 CPU Power Management set to Maximum Performance
 Memory Frequency set to Maximum Performance
 Turbo Boost enabled
 C States set to Autonomous
 Memory Patrol Scrub disabled
 Memory Refresh Rate set to 1x
```

(Continued on next page)

Dell Inc.

PowerEdge R6415 (AMD EPYC 7401P, 2.00GHz)

SPECrate2017_int_base = 113

SPECrate2017_int_peak = 123

CPU2017 License: 55　　　　　　　　　　　　　　　　　　　　　**Test Date:**　　　　　Nov-2018
Test Sponsor:　Dell Inc.　　　　　　　　　　　　　　　　**Hardware Availability:** Dec-2018
Tested by:　　　Dell Inc.　　　　　　　　　　　　　　　　**Software Availability:** Jul-2018

Platform Notes (Continued)

```
PCI ASPM L1 Link Power Management disabled
Determinism Slider set to Power Determinism
Sysinfo program /home/cpu2017-1.0.5/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-j270 Fri Nov 23 09:39:07 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 : AMD EPYC 7401P 24-Core Processor
      1  "physical id"s (chips)
      48 "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 : 24
      siblings  : 48
      physical 0: cores 0 1 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30

From lscpu:
    Architecture:          x86_64
    CPU op-mode(s):        32-bit, 64-bit
    Byte Order:            Little Endian
    CPU(s):                48
    On-line CPU(s) list:   0-47
    Thread(s) per core:    2
    Core(s) per socket:    24
    Socket(s):             1
    NUMA node(s):          4
    Vendor ID:             AuthenticAMD
    CPU family:            23
    Model:                 1
    Model name:            AMD EPYC 7401P 24-Core Processor
    Stepping:              2
    CPU MHz:               1996.199
    BogoMIPS:              3992.39
    Virtualization:        AMD-V
    L1d cache:             32K
    L1i cache:             64K
    L2 cache:              512K
    L3 cache:              8192K
    NUMA node0 CPU(s):     0,4,8,12,16,20,24,28,32,36,40,44
    NUMA node1 CPU(s):     1,5,9,13,17,21,25,29,33,37,41,45
    NUMA node2 CPU(s):     2,6,10,14,18,22,26,30,34,38,42,46
    NUMA node3 CPU(s):     3,7,11,15,19,23,27,31,35,39,43,47
    Flags:                 fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
```

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Platform Notes (Continued)

```
     pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm
     constant_tsc rep_good nopl nonstop_tsc extd_apicid amd_dcm aperfmperf eagerfpu pni
     pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 movbe popcnt aes xsave avx f16c
     rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
     osvw skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_l2 mwaitx arat cpb
     hw_pstate ssbd ibpb retpoline retpoline_amd npt lbrv svm_lock nrip_save tsc_scale
     vmcb_clean flushbyasid decodeassists pausefilter pfthreshold vmmcall avic fsgsbase
     bmi1 avx2 smep bmi2 rdseed adx smap clflushopt sha_ni xsaveopt xsavec xgetbv1 clzero
     irperf overflow_recov succor smca

  /proc/cpuinfo cache data
     cache size : 512 KB

  From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
  physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44
    node 0 size: 128621 MB
    node 0 free: 128458 MB
    node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45
    node 1 size: 129018 MB
    node 1 free: 128858 MB
    node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46
    node 2 size: 129018 MB
    node 2 free: 128855 MB
    node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47
    node 3 size: 129017 MB
    node 3 free: 128867 MB
    node distances:
    node   0   1   2   3
      0:  10  16  16  16
      1:  16  10  16  16
      2:  16  16  10  16
      3:  16  16  16  10

  From /proc/meminfo
    MemTotal:       528052468 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
     SUSE Linux Enterprise Server 12 SP3

  From /etc/*release* /etc/*version*
     SuSE-release:
        SUSE Linux Enterprise Server 12 (x86_64)
        VERSION = 12
```

(Continued on next page)

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Platform Notes (Continued)

```
      PATCHLEVEL = 3
      # 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-SP3"
      VERSION_ID="12.3"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp3"

 uname -a:
    Linux linux-j270 4.4.137-94.33.1.15569.1.TEST.1094643-default #1 SMP Fri Jun 15
    20:48:59 UTC 2018 (c9ad03c) x86_64 x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 CVE-2017-5754 (Meltdown):            Not affected
 CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
 CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline + IBPB

 run-level 3 Nov 23 09:23

 SPEC is set to: /home/cpu2017-1.0.5
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda4       xfs   405G   16G  389G   4% /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 Dell Inc. 1.6.7 10/29/2018
    Memory:
     8x 80CE863280CE M386A8K40BM2-CTD 64 GB 4 rank 2666
     8x Not Specified Not Specified

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
  CC  502.gcc_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
```

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Compiler Version Notes (Continued)

```
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
--------------------------------------------------------------------------


==========================================================================
 CXXC 523.xalancbmk_r(peak)
--------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
--------------------------------------------------------------------------


==========================================================================
 CC   500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
      525.x264_r(base) 557.xz_r(base, peak)
--------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
--------------------------------------------------------------------------


==========================================================================
 CXXC 520.omnetpp_r(base, peak) 523.xalancbmk_r(base) 531.deepsjeng_r(base,
      peak) 541.leela_r(base)
--------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
--------------------------------------------------------------------------


==========================================================================
 CC   500.perlbench_r(peak) 525.x264_r(peak)
--------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
--------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
CXXC 541.leela_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
------------------------------------------------------------------------------


==============================================================================
  FC  548.exchange2_r(base, peak)
------------------------------------------------------------------------------
GNU Fortran (GCC) 4.8.2
Copyright (C) 2013 Free Software Foundation, Inc.
GNU Fortran comes with NO WARRANTY, to the extent permitted by law.
You may redistribute copies of GNU Fortran
under the terms of the GNU General Public License.
For more information about these matters, see the file named COPYING
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`clang gfortran`

Base Portability Flags

500.perlbench_r: `-DSPEC_LINUX_X64 -DSPEC_LP64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LINUX -DSPEC_LP64`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`

(Continued on next page)

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Base Portability Flags (Continued)

557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
```
-flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Wl,-plugin-opt=-disable-vect-cmp
-O3 -ffast-math -march=znver1 -fstruct-layout=2
-mllvm -unroll-threshold=100 -fremap-arrays -mno-avx2
-mllvm -inline-threshold=1000 -mllvm  -disable-vect-cmp -z muldefs
-ljemalloc
```

C++ benchmarks:
```
-flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Wl,-plugin-opt=-disable-vect-cmp
-O3 -march=znver1 -mllvm -unroll-threshold=100 -finline-aggressive
-fremap-arrays -mllvm -inline-threshold=1000 -mllvm  -disable-vect-cmp
-z muldefs -ljemalloc
```

Fortran benchmarks:
```
-flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Wl,-plugin-opt=-disable-vect-cmp
-O3 -mavx -madx -funroll-loops -ffast-math -z muldefs -Ofast
-fdefault-integer-8 -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-lsr-in-nested-loop
-fplugin-arg-dragonegg-llvm-option=-enable-iv-split
-fplugin-arg-dragonegg-llvm-option=-merge-constant
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000
-fplugin-arg-dragonegg-llvm-option=-disable-vect-cmp -ljemalloc
-lgfortran -lamdlibm
```

Peak Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
clang gfortran
```

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Peak Portability Flags

500.perlbench_r: `-DSPEC_LINUX_X64 -DSPEC_LP64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LINUX -D_FILE_OFFSET_BITS=64`
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`

Peak Optimization Flags

C benchmarks:

500.perlbench_r: `-flto -Wl,-plugin-opt=-merge-constant`
`-Wl,-plugin-opt=-lsr-in-nested-loop`
`-fprofile-instr-generate`(pass 1)
`-fprofile-instr-use`(pass 2) `-Ofast -march=znver1`
`-fstruct-layout=3 -mllvm -vectorize-memory-aggressively`
`-mno-avx2 -mllvm -unroll-threshold=100 -fremap-arrays`
`-mllvm -inline-threshold=1000 -ljemalloc`

502.gcc_r: `-m32 -flto -Wl,-plugin-opt=-merge-constant`
`-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1`
`-fstruct-layout=3 -mllvm -vectorize-memory-aggressively`
`-mno-avx2 -mllvm -unroll-threshold=100 -fremap-arrays`
`-mllvm -inline-threshold=1000 -fgnu89-inline -ljemalloc`

505.mcf_r: `-flto -Wl,-plugin-opt=-merge-constant`
`-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1`
`-fstruct-layout=3 -mllvm -vectorize-memory-aggressively`
`-mno-avx2 -mllvm -unroll-threshold=100 -fremap-arrays`
`-mllvm -inline-threshold=1000 -ljemalloc`

525.x264_r: `Same as 500.perlbench_r`

557.xz_r: `Same as 505.mcf_r`

C++ benchmarks:

520.omnetpp_r: `-flto -Wl,-plugin-opt=-merge-constant`
`-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1`
`-finline-aggressive -mllvm -unroll-threshold=100`

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Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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SPECrate2017_int_peak =   123

CPU2017 License: 55		**Test Date:**	Nov-2018
Test Sponsor:	Dell Inc.	**Hardware Availability:**	Dec-2018
Tested by:	Dell Inc.	**Software Availability:**	Jul-2018

Peak Optimization Flags (Continued)

520.omnetpp_r (continued):
```
-fremap-arrays -mllvm -inline-threshold=1000 -ljemalloc
```

523.xalancbmk_r: `-m32 -flto -Wl,-plugin-opt=-merge-constant`
```
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-finline-aggressive -mllvm -unroll-threshold=100
-fremap-arrays -mllvm -inline-threshold=1000 -ljemalloc
```

531.deepsjeng_r: `Same as 520.omnetpp_r`

541.leela_r: `-flto -Wl,-plugin-opt=-merge-constant`
```
-Wl,-plugin-opt=-lsr-in-nested-loop
-fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -Ofast -march=znver1
-mllvm -unroll-count=8 -mllvm -unroll-threshold=100
-ljemalloc
```

Fortran benchmarks:
```
-flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -O3 -mavx2 -madx -funroll-loops
-ffast-math -Ofast -fdefault-integer-8 -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-lsr-in-nested-loop
-fplugin-arg-dragonegg-llvm-option=-enable-iv-split
-fplugin-arg-dragonegg-llvm-option=-merge-constant
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000
-fplugin-arg-dragonegg-llvm-option=-disable-vect-cmp -ljemalloc
-lgfortran -lamdlibm
```

Peak Other Flags

C benchmarks:

502.gcc_r: `-L/root/work/lib/jemalloc/lib32`

C++ benchmarks:

523.xalancbmk_r: `-L/root/work/lib/jemalloc/lib32`

The flags files that were used to format this result can be browsed at
 http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.2018-11-13.html
 http://www.spec.org/cpu2017/flags/gcc.2018-02-16.html

SPEC CPU2017 Integer Rate Result

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Dell Inc.

PowerEdge R6415 (AMD EPYC 7401P, 2.00GHz)

SPECrate2017_int_base = 113

SPECrate2017_int_peak = 123

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

Test Date: Nov-2018
Hardware Availability: Dec-2018
Software Availability: Jul-2018

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.2018-11-13.xml
http://www.spec.org/cpu2017/flags/gcc.2018-02-16.xml

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