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memory-2990-ecc

AMD Ryzen Threadripper 2950X 16-Core testing with a ASRock X399 Taichi (P3.30 BIOS) and AMD Radeon PRO WX 3100 4096MB on Arch Linux via the Phoronix Test Suite.

Automated Executive Summary

First Run to check Phoronix had the most wins, coming in first place for 60% of the tests.

Based on the geometric mean of all complete results, the fastest (AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon) was 1.321x the speed of the slowest (2990WX + GSkill 2933 128gb 2k interleave). First Run to check Phoronix was 0.994x the speed of AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon, 2990WX + Crucial 2666 ECC 128gb was 0.949x the speed of First Run to check Phoronix, 2950X + GSkill 3200 32gb NUMA Mode was 0.96x the speed of 2990WX + Crucial 2666 ECC 128gb, 2990WX + GSKill 2933 128gb was 0.94x the speed of 2950X + GSkill 3200 32gb NUMA Mode, 2950X + GSkill 3200 32gb was 0.982x the speed of 2990WX + GSKill 2933 128gb, 2990WX + GSkill 2933 128gb 256b interleave was 0.963x the speed of 2950X + GSkill 3200 32gb, 2990WX + GSkill 2933 128gb BIOS 3.33 was 0.993x the speed of 2990WX + GSkill 2933 128gb 256b interleave, 2990WX + GSkill 2933 128gb 2k interleave was 0.947x the speed of 2990WX + GSkill 2933 128gb BIOS 3.33.

Test Systems:

AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon

Processor: AMD Ryzen Threadripper 2990WX 32-Core @ 3.00GHz (32 Cores / 64 Threads), Motherboard: Gigabyte X399 AORUS XTREME-CF (Tx4 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: Samsung SSD 960 PRO 512GB + 1200GB INTEL SSDPEDMW012T4, Graphics: AMD Radeon 8192MB, Audio: Realtek ALC1220, Monitor: DELL U2410, Network: Intel I210 Gigabit Connection + Intel Wireless 8265 / 8275

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc2-generic (x86_64) 20180902, Desktop: GNOME Shell 3.28.3, Display Server: X Server 1.19.6, Display Driver: amdgpu 18.0.1, OpenGL: 4.5 Mesa 18.0.5 (), Compiler: GCC 8.2.0, File-System: ext4, Screen Resolution: 1920x1200

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp Protection

2990WX + GSKill 2933 128gb

Processor: AMD Ryzen Threadripper 2990X 32-Core @ 3.00GHz (32 Cores / 64 Threads), Motherboard: ASRock X399 Professional Gaming (L3.33 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: 250GB Samsung SSD 850 + 8GB DataTraveler 2.0 + 480GB INTEL SSDPED1D480GA, Graphics: NV132 11264MB, Audio: NVIDIA GP104 HD Audio, Monitor: DP-3412UM + DP_FREESYNC, Network: Aquantia AQC107 NBase-T/IEEE + Intel Dual Band Wireless-AC 3168NGW

OS: Fedora 28, Kernel: 4.17.19-200.trlocal.fc28.x86_64 (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.0.5, Compiler: GCC 8.1.1 20180712 + Clang 6.0.1, File-System: ext4, Screen Resolution: 2560x1440

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,lto --enable-libmpx --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: SELinux + __user pointer sanitization + Full AMD retpoline IBPB Protection

2950X + GSkill 3200 32gb

2950X + GSkill 3200 32gb NUMA Mode

Processor: AMD Ryzen Threadripper 2950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: Gigabyte X399 DESIGNARE EX-CF (F10 BIOS), Chipset: AMD Family 17h, Memory: 32768MB, Disk: 480GB INTEL SSDPED1D480GA, Graphics: Sapphire AMD Radeon RX Vega 8192MB, Audio: Realtek ALC1220, Monitor: DP-3412UM + DP_FREESYNC, Network: Intel I211 Gigabit Connection + Intel Wireless 8265 / 8275

OS: Fedora 28, Kernel: 4.17.19-200.trlocal.fc28.x86_64 (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 18.0.5 (LLVM 6.0.0), Compiler: GCC 8.1.1 20180712 + Clang 6.0.1, File-System: ext4, Screen Resolution: 5760x2160

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,lto --enable-libmpx --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only

--with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: SELinux + __user pointer sanitization + Full AMD retpoline IBPB Protection

2990WX + Crucial 2666 ECC 128gb

Processor: AMD Ryzen Threadripper 2990WX 32-Core @ 3.00GHz (32 Cores / 64 Threads), Motherboard: Gigabyte X399 AORUS XTREME-CF (Tx4 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: 480GB INTEL SSDPED1D480GA + Samsung SSD 960 PRO 512GB, Graphics: AMD Radeon 8192MB, Audio: Realtek ALC1220, Monitor: DP-3412UM + DP_FREESYNC, Network: Intel I210 Gigabit Connection + Intel Wireless 8265 / 8275

OS: Fedora 28, Kernel: 4.17.19-200.trlocal.fc28.x86_64 (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 18.0.5, Compiler: GCC 8.1.1 20180712 + Clang 6.0.1, File-System: ext4, Screen Resolution: 5760x2160

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,lto --enable-libmpx --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: SELinux + __user pointer sanitization + Full AMD retpoline IBPB Protection

2990WX + GSkill 2933 128gb BIOS 3.33

2990WX + GSkill 2933 128gb 256b interleave

Processor: AMD Ryzen Threadripper 2990X 32-Core @ 3.00GHz (32 Cores / 64 Threads), Motherboard: ASRock X399 Professional Gaming (L3.33 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: 8002GB Western Digital WD80EFZX-68U + 480GB INTEL SSDPED1D480GA, Graphics: AMD Radeon 8192MB, Audio: Realtek ALC1220, Monitor: DP-3412UM + DP_FREESYNC, Network: Aquantia AQC107 NBase-T/IEEE + Intel Dual Band Wireless-AC 3168NGW

OS: Fedora 28, Kernel: 4.18.11-200.fc28.x86_64 (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 18.0.5 (LLVM 6.0.1), Compiler: GCC 8.1.1 20180712 + Clang 6.0.1, File-System: ext4, Screen Resolution: 1920x1200

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,lto --enable-libmpx --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: SELinux + __user pointer sanitization + Full AMD retpoline IBPB Protection

2990WX + GSkill 2933 128gb 2k interleave

Processor: AMD Ryzen Threadripper 2990X 32-Core @ 3.00GHz (32 Cores / 64 Threads), Motherboard: ASRock X399 Professional Gaming (L3.33 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: 8002GB Western Digital WD80EFZX-68U + 480GB INTEL SSDPED1D480GA, Graphics: AMD Radeon 8192MB, Audio: Realtek ALC1220, Monitor: DP-3412UM + DP_FREESYNC, Network: Aquantia AQC107 NBase-T/IEEE + Intel Dual Band Wireless-AC 3168NGW

OS: Fedora 28, Kernel: 4.18.11-200.fc28.x86_64 (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 18.0.5 (LLVM 6.0.1), Compiler: GCC 8.1.1 20180712 + Clang 6.0.1, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,lto --enable-libmpx --enable-multilib

--enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: acpi-cpufreq performance
Security Notes: SELinux + __user pointer sanitization + Full AMD retpoline IBPB Protection

First Run to check Phoronix

Processor: AMD Ryzen Threadripper 2950X 16-Core @ 3.50GHz (16 Cores / 32 Threads), Motherboard: ASRock X399 Taichi (P3.30 BIOS), Chipset: AMD Family 17h, Memory: 129024MB, Disk: 2 x 4001GB Western Digital WD4003FFBX-6 + 4 x 960GB INTEL SSDSC2KG96 + 2 x Samsung SSD 960 PRO 512GB, Graphics: AMD Radeon PRO WX 3100 4096MB, Audio: AMD Device aae0, Monitor: ASUS MG279, Network: Intel I211 Gigabit Connection + Intel Dual Band Wireless-AC 3168NGW

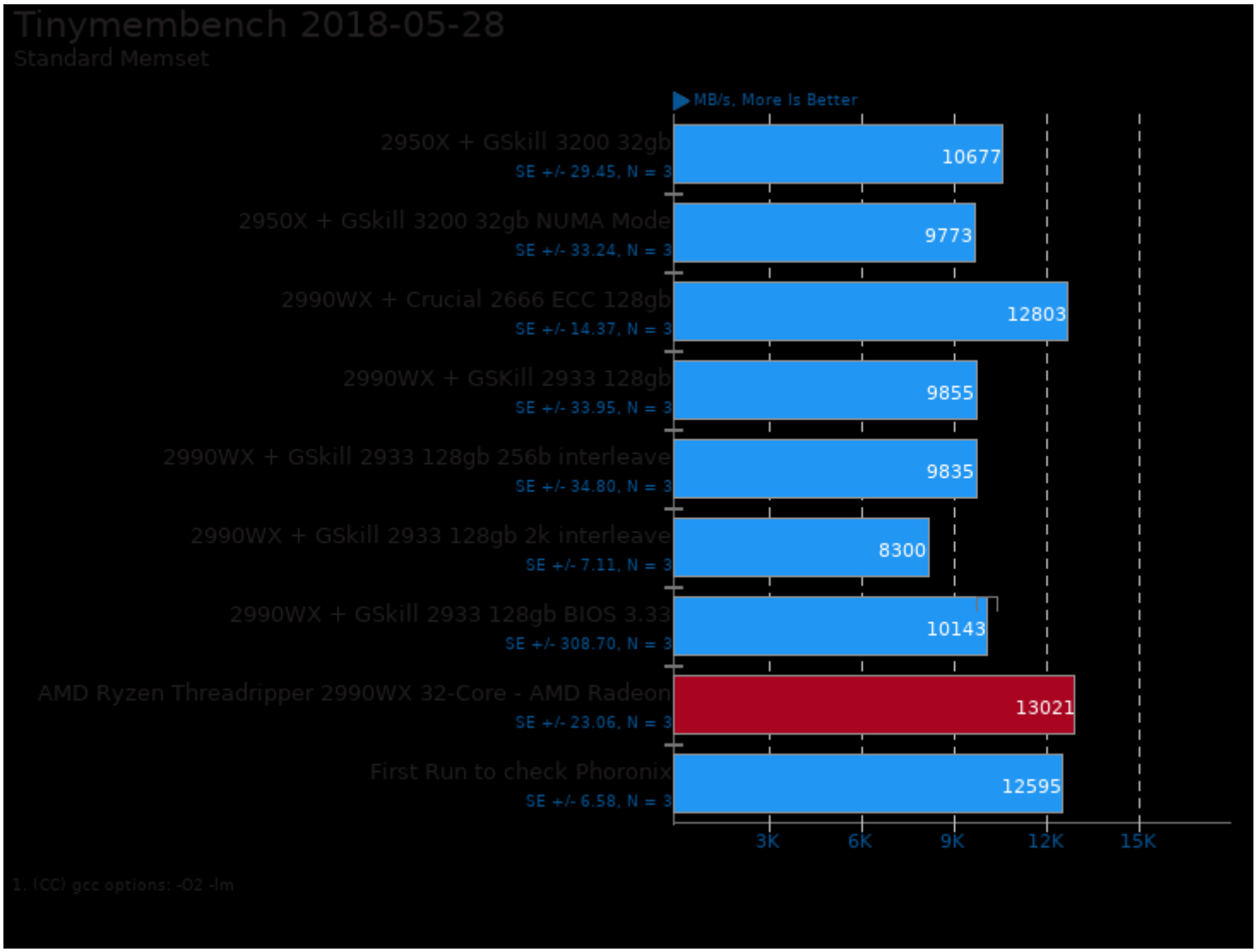
OS: Arch Linux, Kernel: 4.19.2-arch1-1-ARCH (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.20.1, Display Driver: modesetting 1.20.1, Compiler: GCC 8.2.1 20180831, File-System: ext4, Screen Resolution: 2560x1440

Kernel Notes: kvm.ignore_msrs=1
Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-werror --enable-__cxa_atexit --enable-cet=auto --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --enable-install-libiberty --enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++ --enable-libmpx --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-isl --with-linker-hash-style=gnu
Processor Notes: Scaling Governor: acpi-cpufreq schedutil
Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp

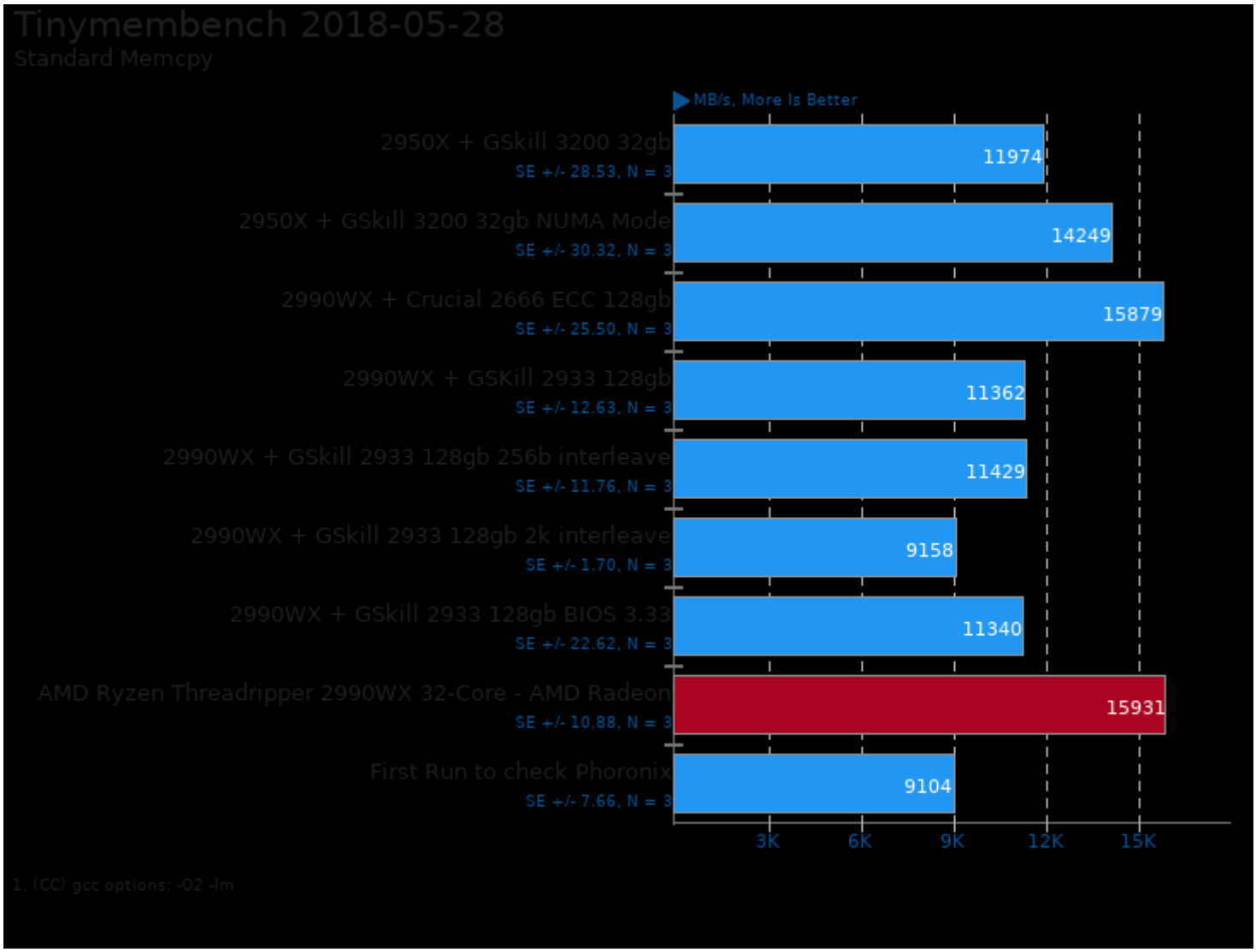
	AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon	2990WX + GSKill 2933 128gb	2950X + GSkill 3200 32gb	2950X + GSkill 3200 32gb NUMA Mode	2990WX + Crucial 2666 ECC 128gb	2990WX + GSkill 2933 128gb BIOS 3.33	2990WX + GSkill 2933 128gb 256b interleave	2990WX + GSkill 2933 128gb 2k interleave	First Run to check Phoronix
Tinymembench - Standard Memset (MB/s)	**13021**	9855	10677	9773	12803	10143	9835	**8300**	12595
Normalized	100%	75.69%	82%	75.06%	98.33%	77.9%	75.53%	63.74%	96.73%
Standard Deviation	0.3%	0.6%	0.5%	0.6%	0.2%	5.3%	0.6%	0.1%	0.1%
Tinymembench - Standard Memcpy (MB/s)	**15931**	11362	11974	14249	15879	11340	11429	9158	**9104**
Normalized	100%	71.32%	75.16%	89.44%	99.67%	71.18%	71.74%	57.49%	57.15%
Standard Deviation	0.1%	0.2%	0.4%	0.4%	0.3%	0.3%	0.2%	0%	0.1%
MBW - M.C.F.B.S - 8192 MiB (MiB/s)	8012	6640	7752	6110	8124	6841	6841	**5967**	**8812**
Normalized	90.92%	75.35%	87.97%	69.34%	92.19%	77.63%	77.63%	67.71%	100%
Standard Deviation	0.4%	2.7%	11.1%	3.1%	0%	0.9%	0.6%	0.4%	0.1%
MBW - Memory Copy - 8192 MiB (MiB/s)	14757	10595	11208	11817	14069	10702	10782	**10329**	**15276**
Normalized	96.6%	69.36%	73.37%	77.36%	92.1%	70.06%	70.58%	67.62%	100%
Standard Deviation	0.2%	0.1%	0.1%	1.9%	0.3%	1.1%	0.3%	0.1%	1%

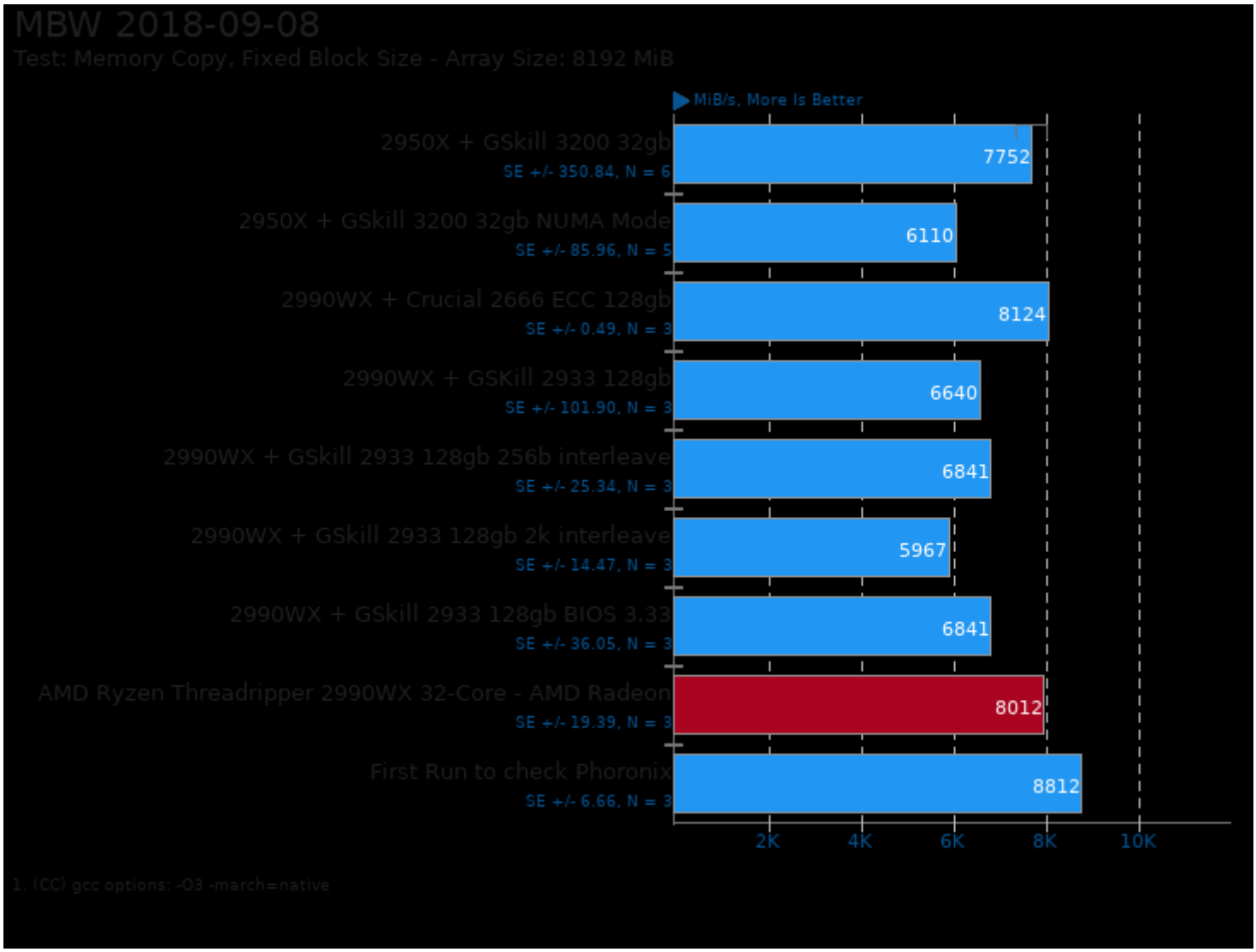
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MBW - M.C.F.B.S - 4096 MiB (MiB/s)	8277	6724	7603	6675	8180	6642	6831	**5961**	**8855**
Normalized	93.47%	75.93%	85.86%	75.38%	92.38%	75.01%	77.14%	67.32%	100%
Standard Deviation	1.8%	0.1%	2.4%	2.9%	1.2%	2.8%	0.6%	1.9%	0.7%
Stream - Copy	57947	63904	50828	**66491**	58711	59802	58498	54112	**43681**
Normalized	87.15%	96.11%	76.44%	100%	88.3%	89.94%	87.98%	81.38%	65.69%
Standard Deviation	2.5%	3.3%	0.3%	0.6%	0.9%	6.9%	7.5%	15.7%	0.1%
MBW - Memory Copy - 4096 MiB (MiB/s)	15028	10898	11449	14161	14032	10775	10916	**9808**	**15281**
Normalized	98.34%	71.32%	74.92%	92.67%	91.83%	70.51%	71.44%	64.18%	100%
Standard Deviation	0.2%	0.9%	0.9%	1.9%	0.3%	0.5%	0.2%	0.3%	0.8%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	8329	6841	7555	6978	7767	6845	6799	**5996**	**8875**
Normalized	93.85%	77.08%	85.13%	78.63%	87.52%	77.13%	76.61%	67.56%	100%
Standard Deviation	0.5%	1%	0.5%	1.8%	0.6%	0.4%	0.4%	0.4%	0.8%
MBW - Memory Copy - 1024 MiB (MiB/s)	14812	10893	11244	13804	13140	10750	10800	**9331**	**15402**
Normalized	96.17%	70.72%	73%	89.62%	85.31%	69.8%	70.12%	60.58%	100%
Standard Deviation	0.1%	0.2%	0.1%	0.8%	0.5%	0.4%	1%	0.6%	0.1%
MBW - M.C.F.B.S - 512 MiB (MiB/s)	8300	6877	7767	6902	7452	6837	7053	**6065**	**8984**
Normalized	92.39%	76.55%	86.45%	76.83%	82.95%	76.1%	78.51%	67.51%	100%
Standard Deviation	0.9%	1.7%	3.8%	1.1%	0.9%	2.1%	0.3%	0.9%	0.1%
MBW - Memory Copy - 512 MiB (MiB/s)	14854	11035	11241	14069	12003	**8892**	11001	10427	**15493**
Normalized	95.88%	71.23%	72.56%	90.81%	77.47%	57.39%	71.01%	67.3%	100%
Standard Deviation	0.5%	0.4%	0.1%	1%	0.2%	0.3%	0.3%	0.2%	0.1%
MBW - M.C.F.B.S - 128 MiB (MiB/s)	**8271**	6880	7926	7142	**5899**	7098	6923	6204	7856
Normalized	100%	83.18%	95.83%	86.35%	71.32%	85.82%	83.7%	75.01%	94.98%
Standard Deviation	0.4%	0.6%	0.9%	1.4%	0.3%	0.8%	1.5%	3.4%	0.1%
MBW - Memory Copy - 128 MiB (MiB/s)	14928	11070	11159	14086	14772	**6376**	6421	10364	**15636**
Normalized	95.47%	70.8%	71.37%	90.09%	94.47%	40.78%	41.07%	66.28%	100%
Standard Deviation	0.3%	0.6%	0.2%	1.1%	0.2%	0.4%	0.4%	0.6%	0.4%
Stream - Add (MB/s)	43330	**48706**	**36284**	43109	44712	46378	43861	42466	48625
Normalized	88.96%	100%	74.5%	88.51%	91.8%	95.22%	90.05%	87.19%	99.83%
Standard Deviation	3.1%	2.7%	0.3%	1.4%	1.1%	5.2%	8.7%	12.5%	0.1%
Stream - Triad (MB/s)	43020	**48929**	**36448**	43273	44294	46400	43836	42154	48740
Normalized	87.92%	100%	74.49%	88.44%	90.53%	94.83%	89.59%	86.15%	99.61%
Standard Deviation	2.7%	2%	0.2%	1.1%	2.5%	5.1%	8.7%	13.8%	0.2%
Stream - Scale	40359	**44238**	**32427**	37977	41407	42868	40931	40638	43881
Normalized	91.23%	100%	73.3%	85.85%	93.6%	96.9%	92.52%	91.86%	99.19%
Standard Deviation	1.4%	4%	0.3%	1.5%	1.1%	5.7%	9.6%	12.7%	0.1%

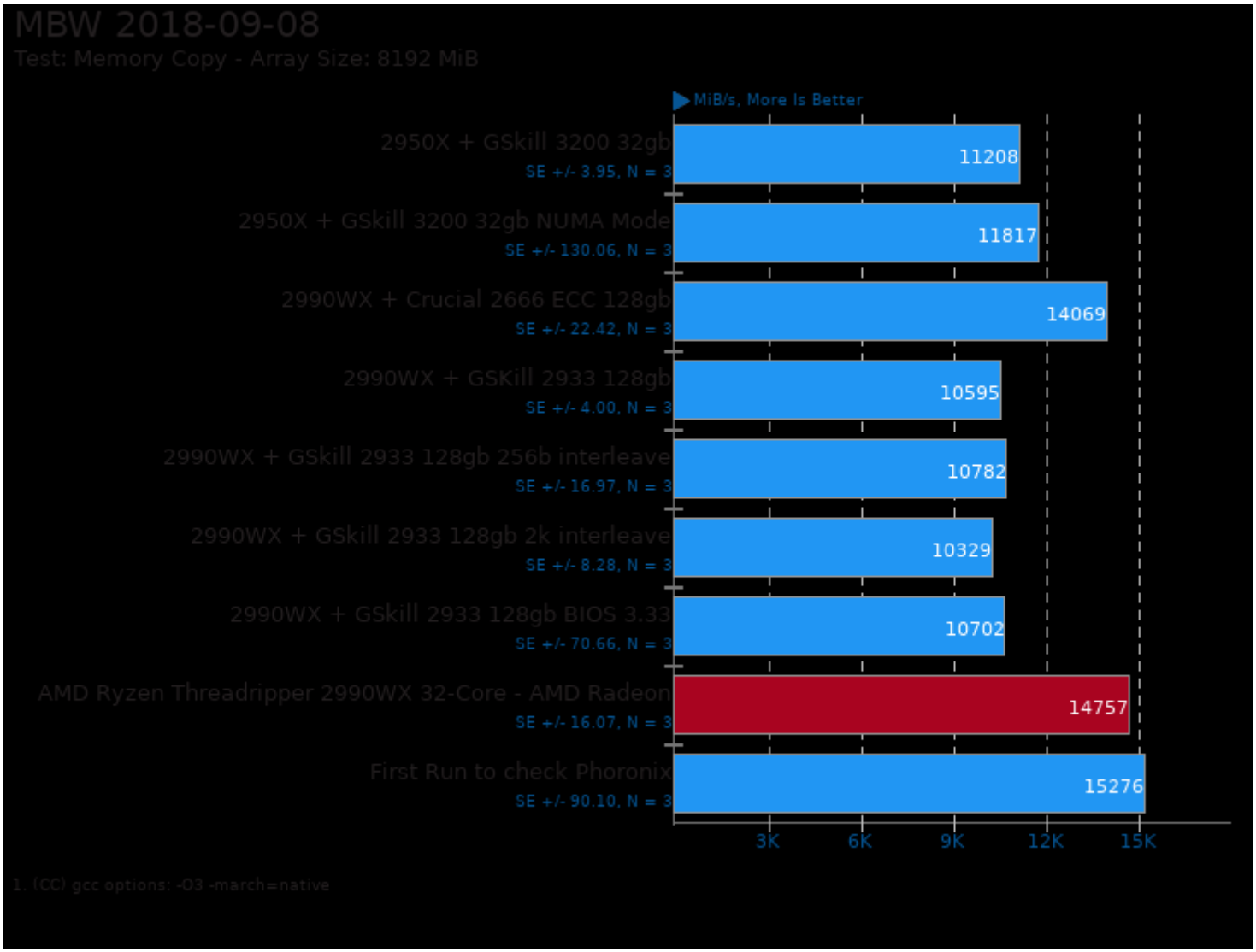

Tinymembench 2018-05-28
Standard Memset
MB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 29.45, N = 3
10677
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 33.24, N = 3
9773
2990WX + Crucial 2666 ECC 128gb
SE +/- 14.37, N = 3
12803
2990WX + GSKill 2933 128gb
SE +/- 33.95, N = 3
9855
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 34.80, N = 3
9835
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 7.11, N = 3
8300
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 308.70, N = 3
10143
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 23.06, N = 3
13021
First Run to check Phoronix
SE +/- 6.58, N = 3
12595
3K
6K
9K
12K
15K
1. (CC) gcc options: -O2 -lm

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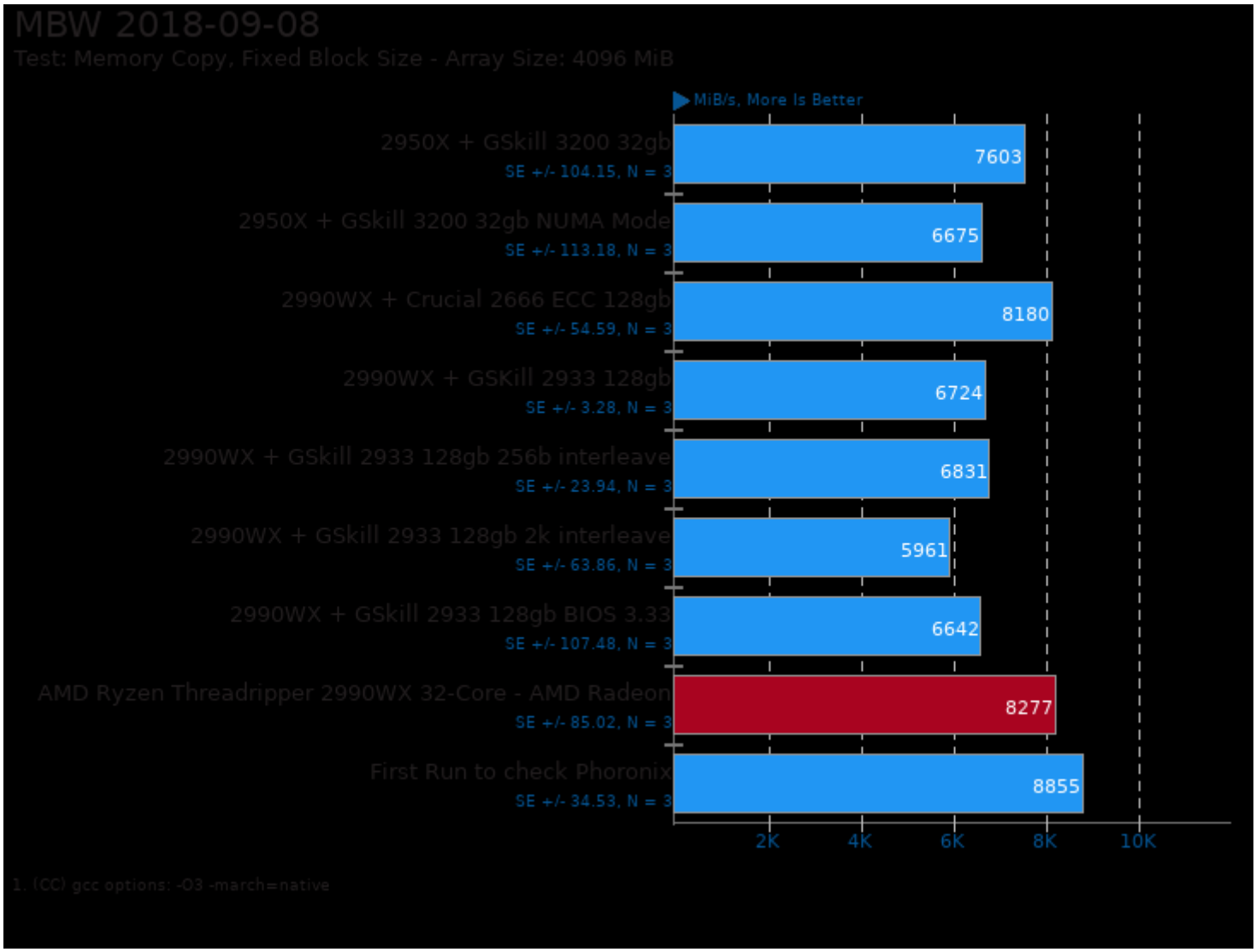


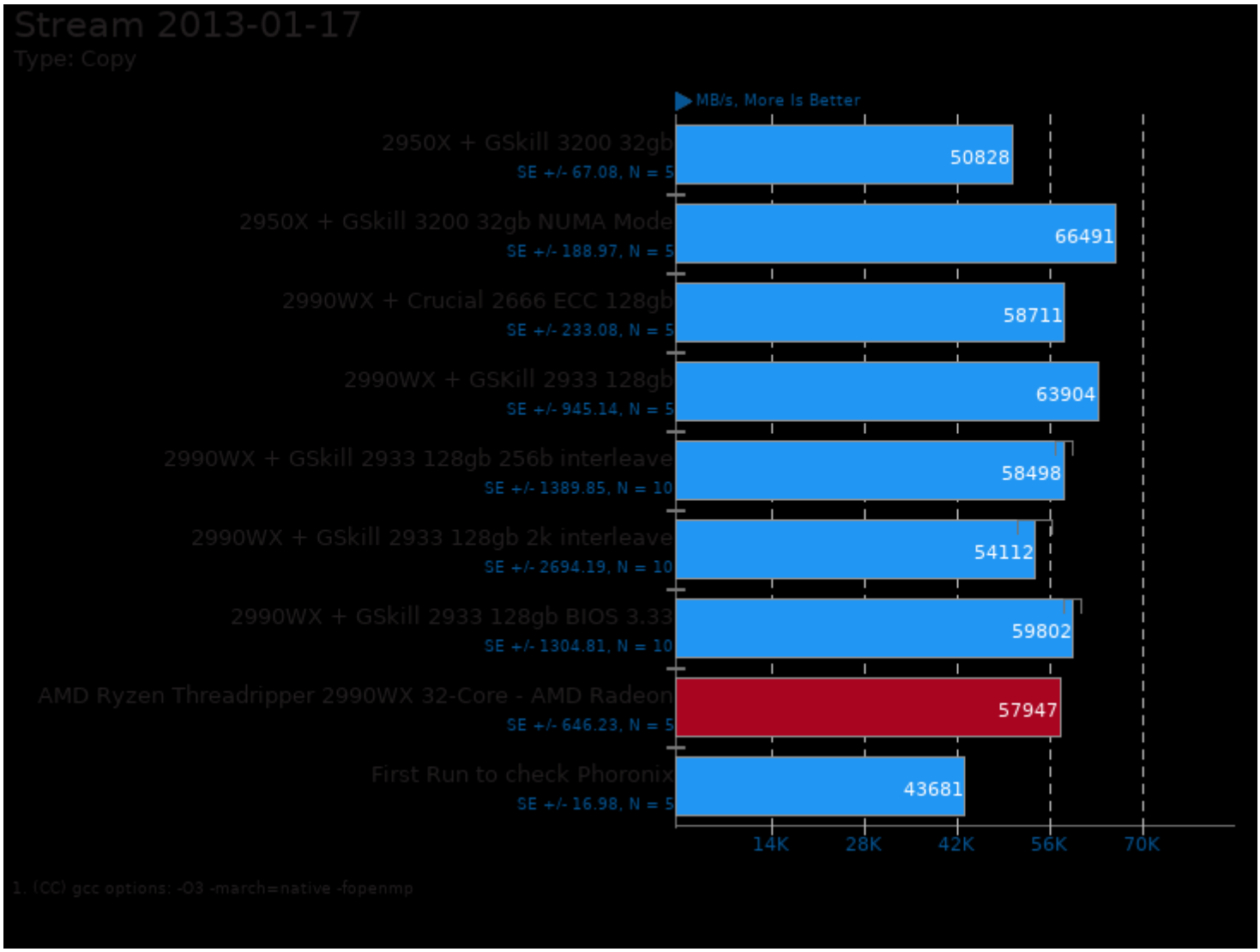

MBW 2018-09-08
Test: Memory Copy, Fixed Block Size - Array Size: 8192 MiB
MiB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 350.84, N = 6
7752
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 85.96, N = 5
6110
2990WX + Crucial 2666 ECC 128gb
SE +/- 0.49, N = 3
8124
2990WX + GSKill 2933 128gb
SE +/- 101.90, N = 3
6640
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 25.34, N = 3
6841
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 14.47, N = 3
5967
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 36.05, N = 3
6841
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 19.39, N = 3
8012
First Run to check Phoronix
SE +/- 6.66, N = 3
8812
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native

memory-2990-ecc

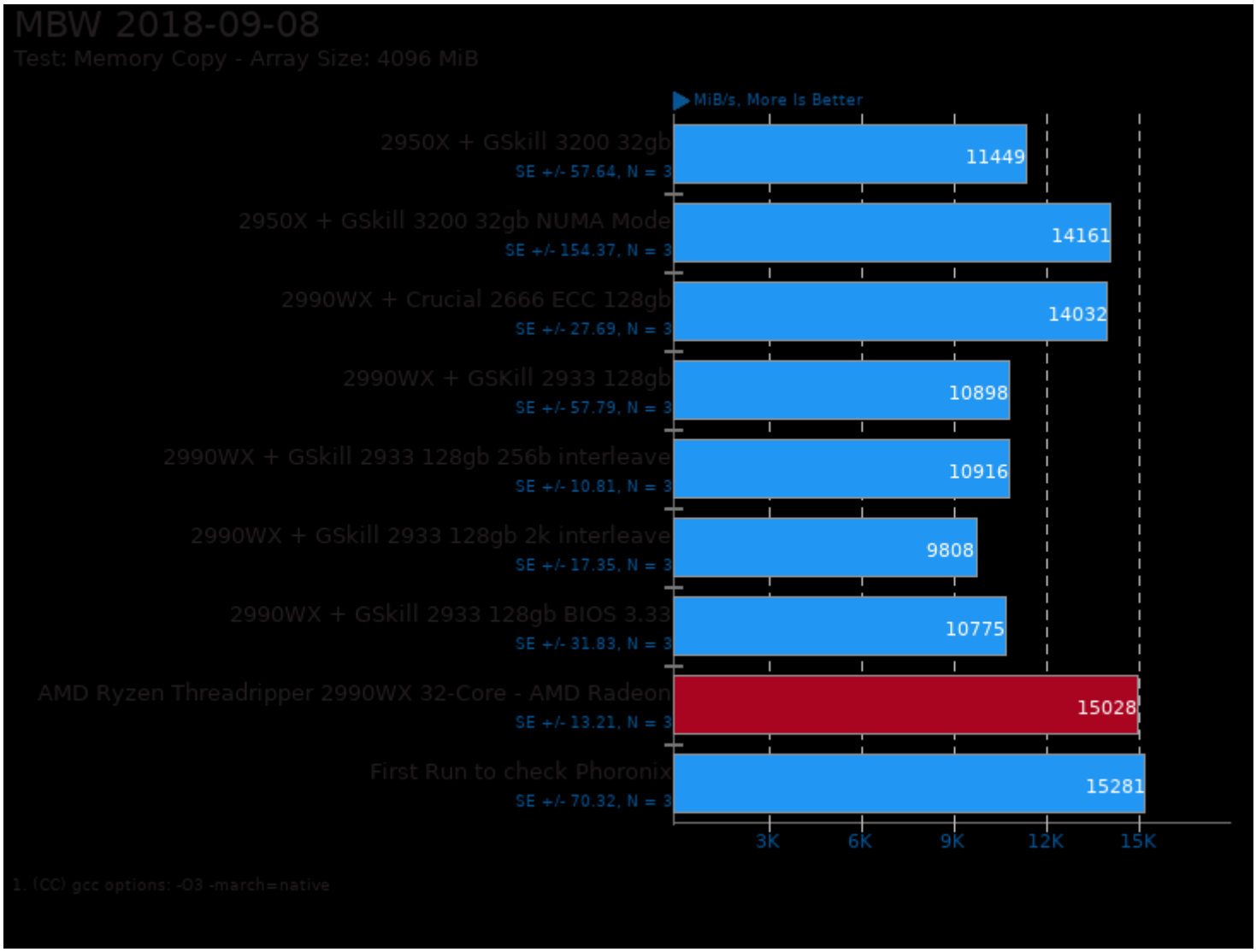


memory-2990-ecc

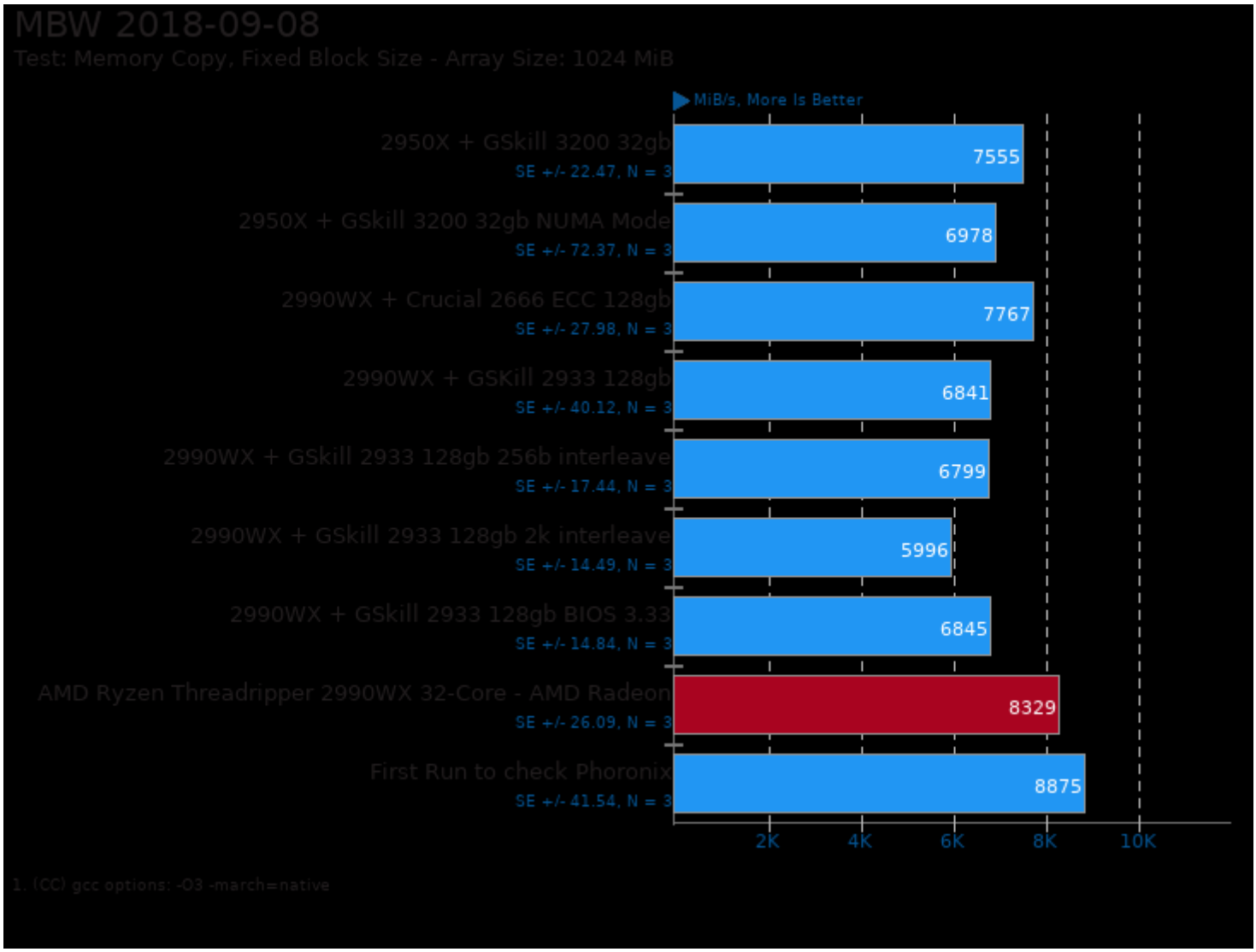



Stream 2013-01-17
Type: Copy
MB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 67.08, N = 5
50828
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 188.97, N = 5
66491
2990WX + Crucial 2666 ECC 128gb
SE +/- 233.08, N = 5
58711
2990WX + GSKill 2933 128gb
SE +/- 945.14, N = 5
63904
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1389.85, N = 10
58498
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2694.19, N = 10
54112
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 1304.81, N = 10
59802
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 646.23, N = 5
57947
First Run to check Phoronix
SE +/- 16.98, N = 5
43681
14K
28K
42K
56K
70K
1. (CC) gcc options: -O3 -march=native -fopenmp

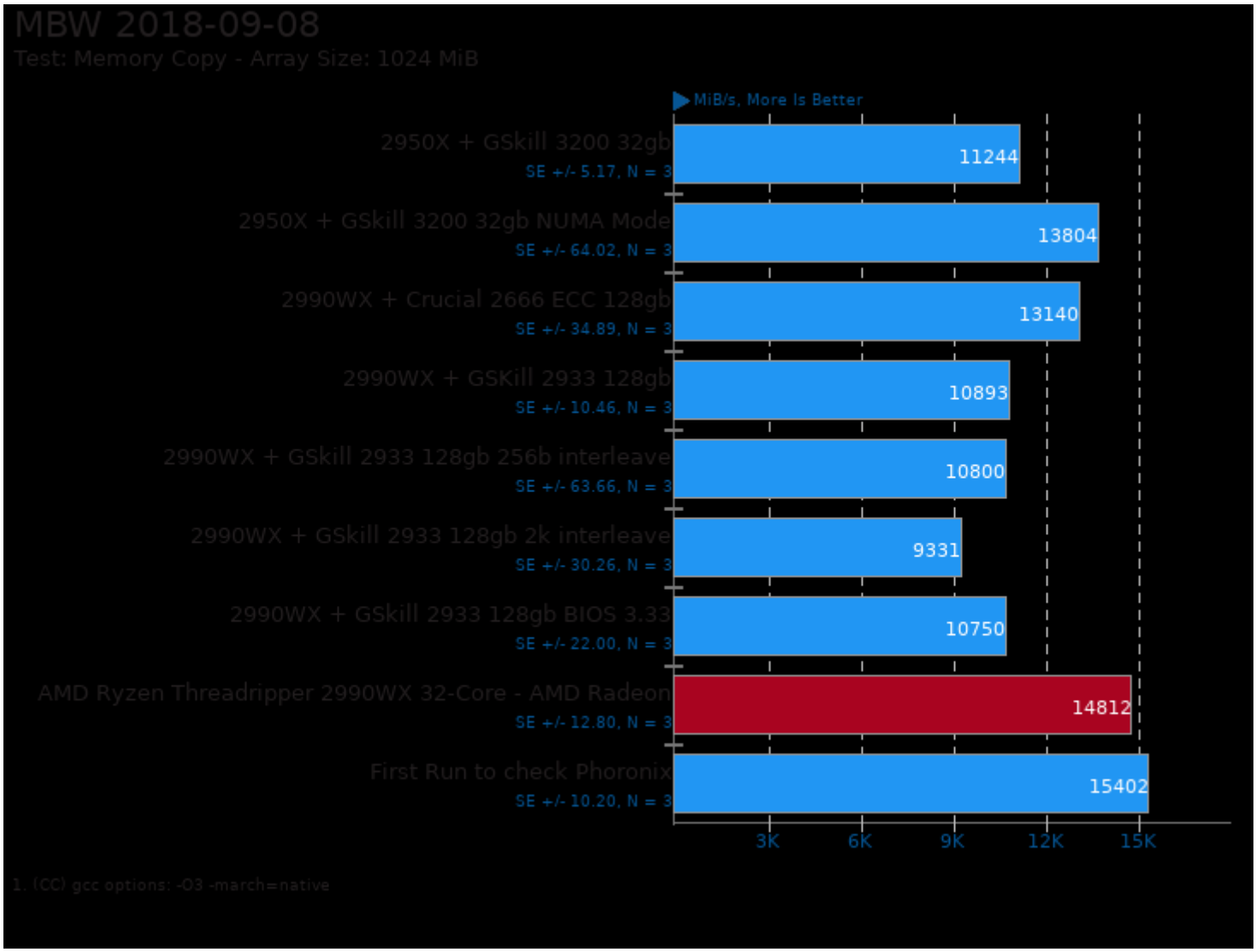
memory-2990-ecc



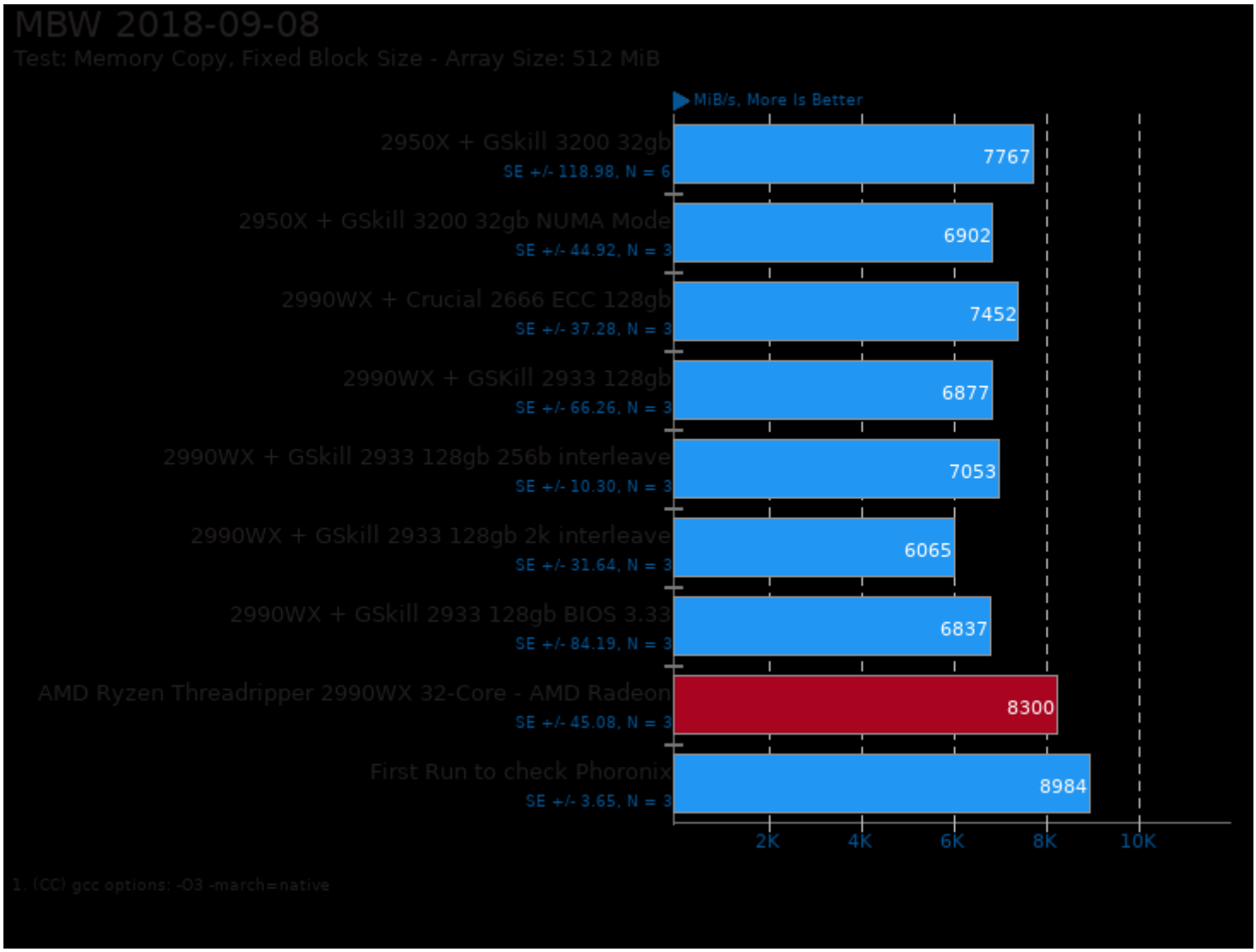
memory-2990-ecc



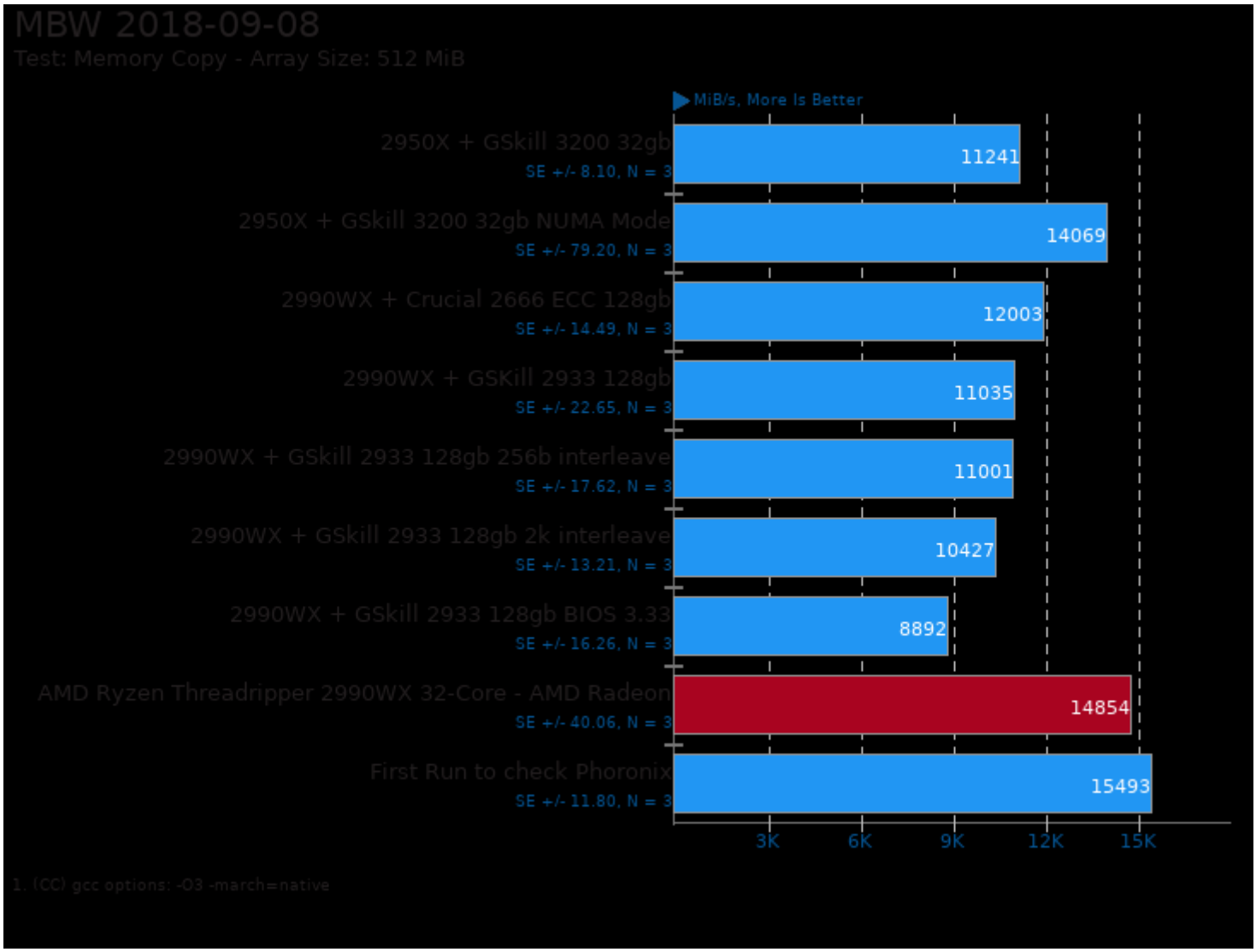
memory-2990-ecc

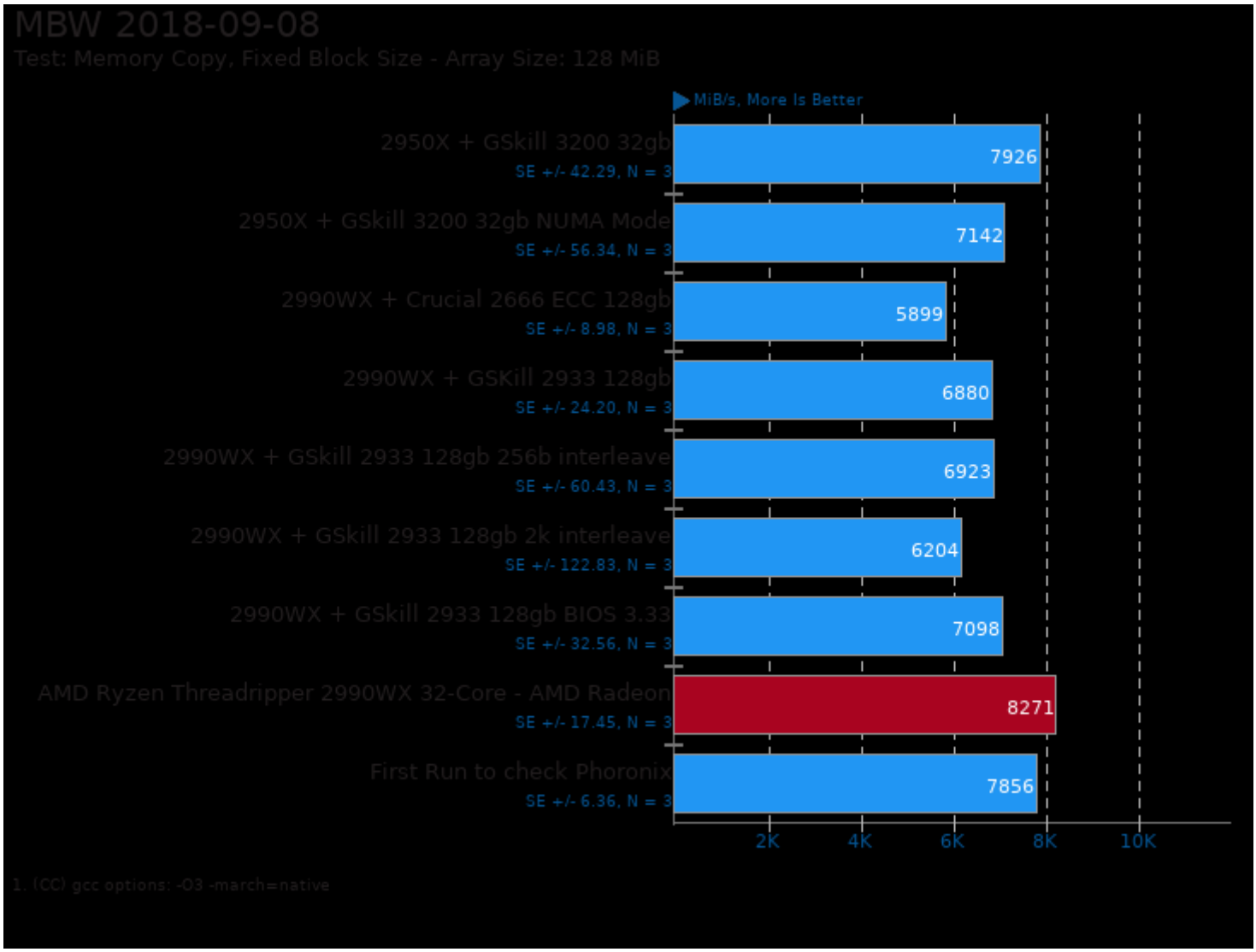


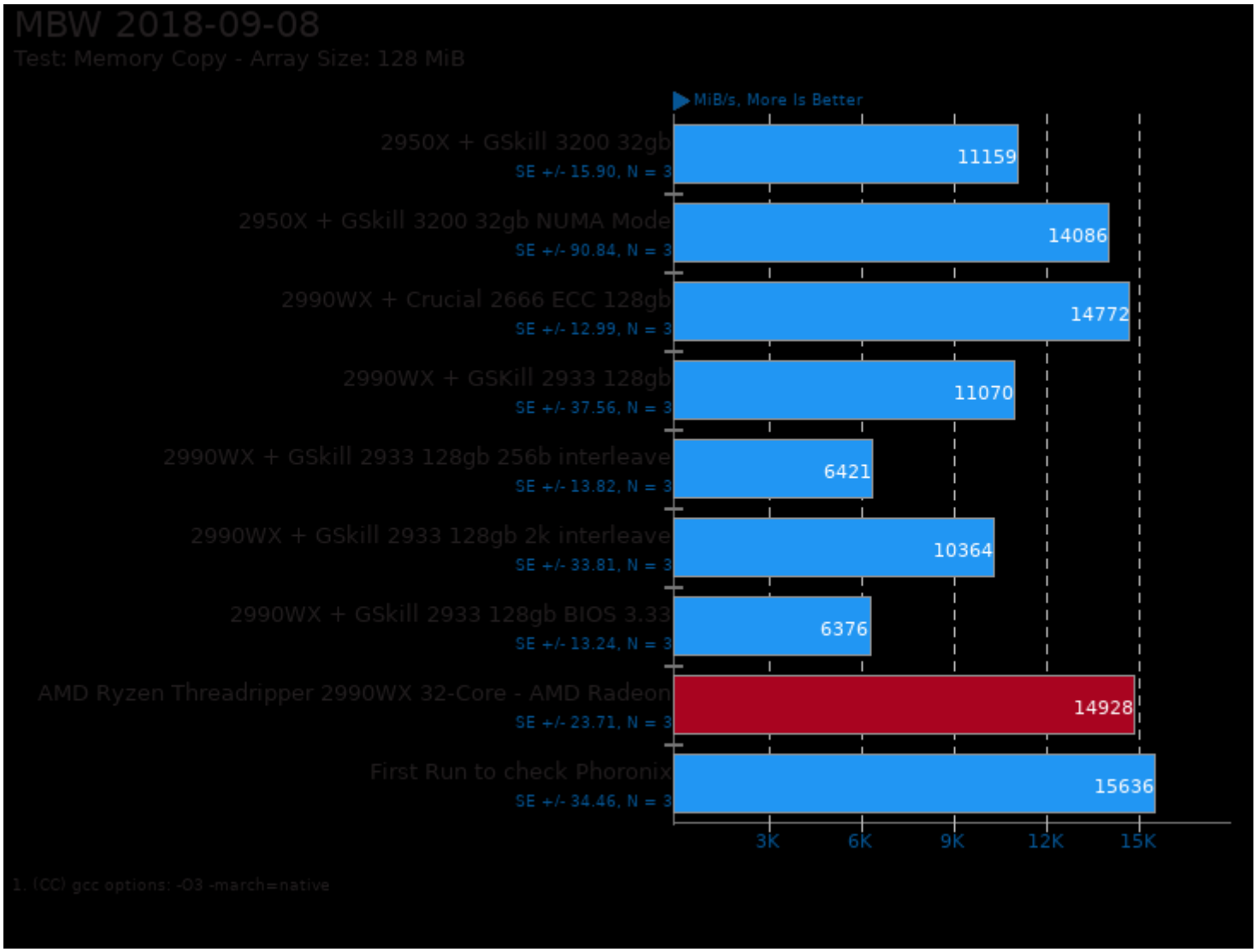
memory-2990-ecc

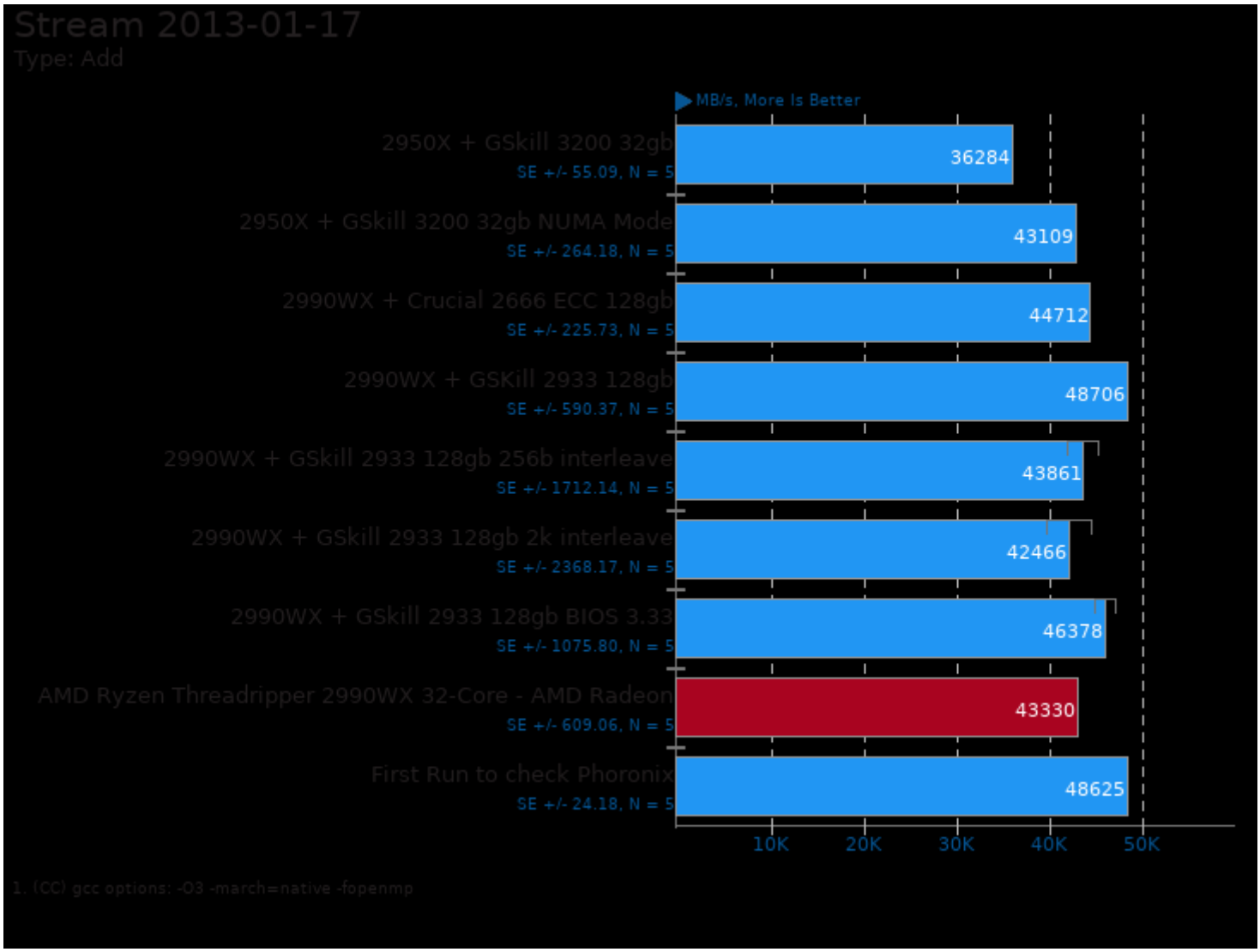


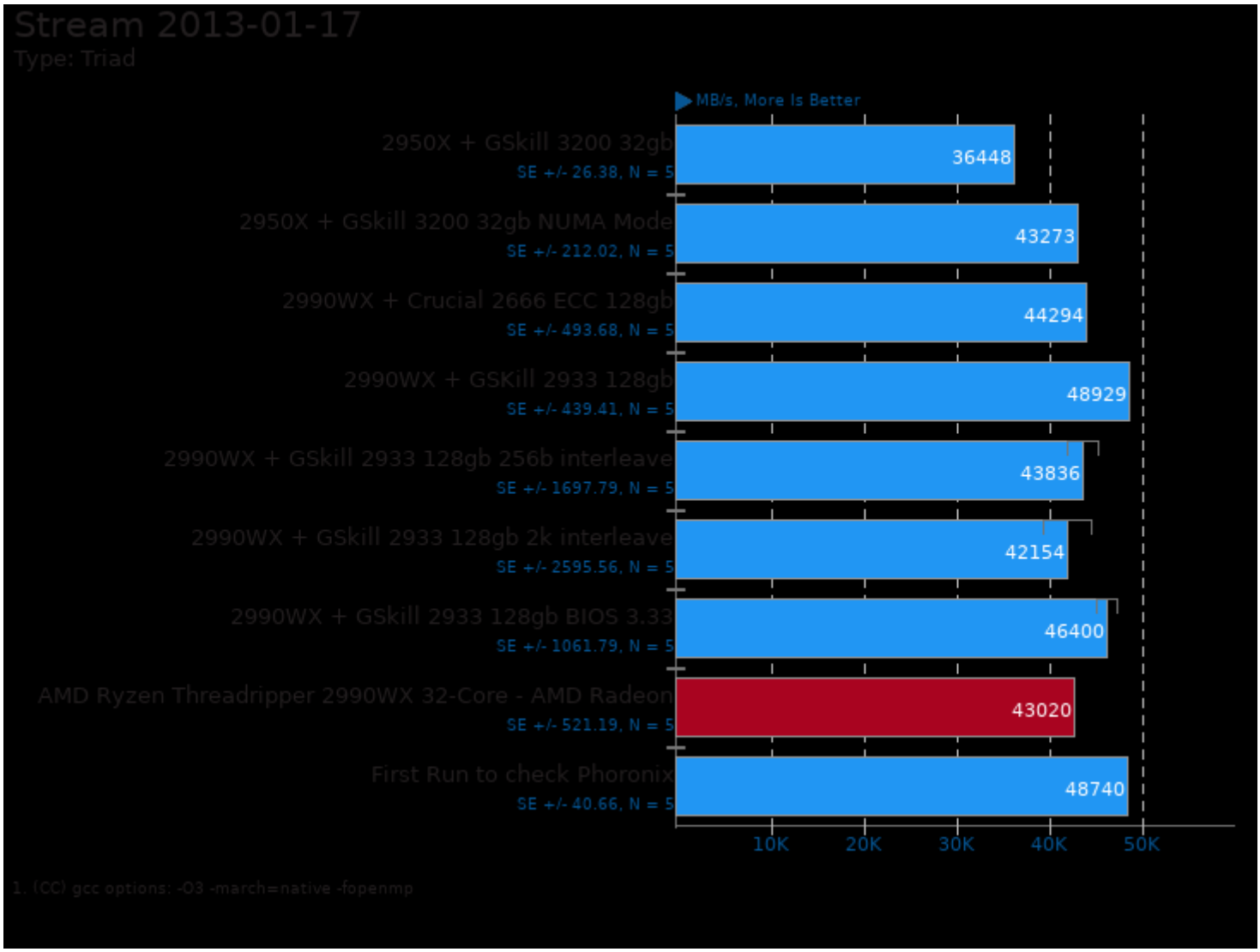
memory-2990-ecc

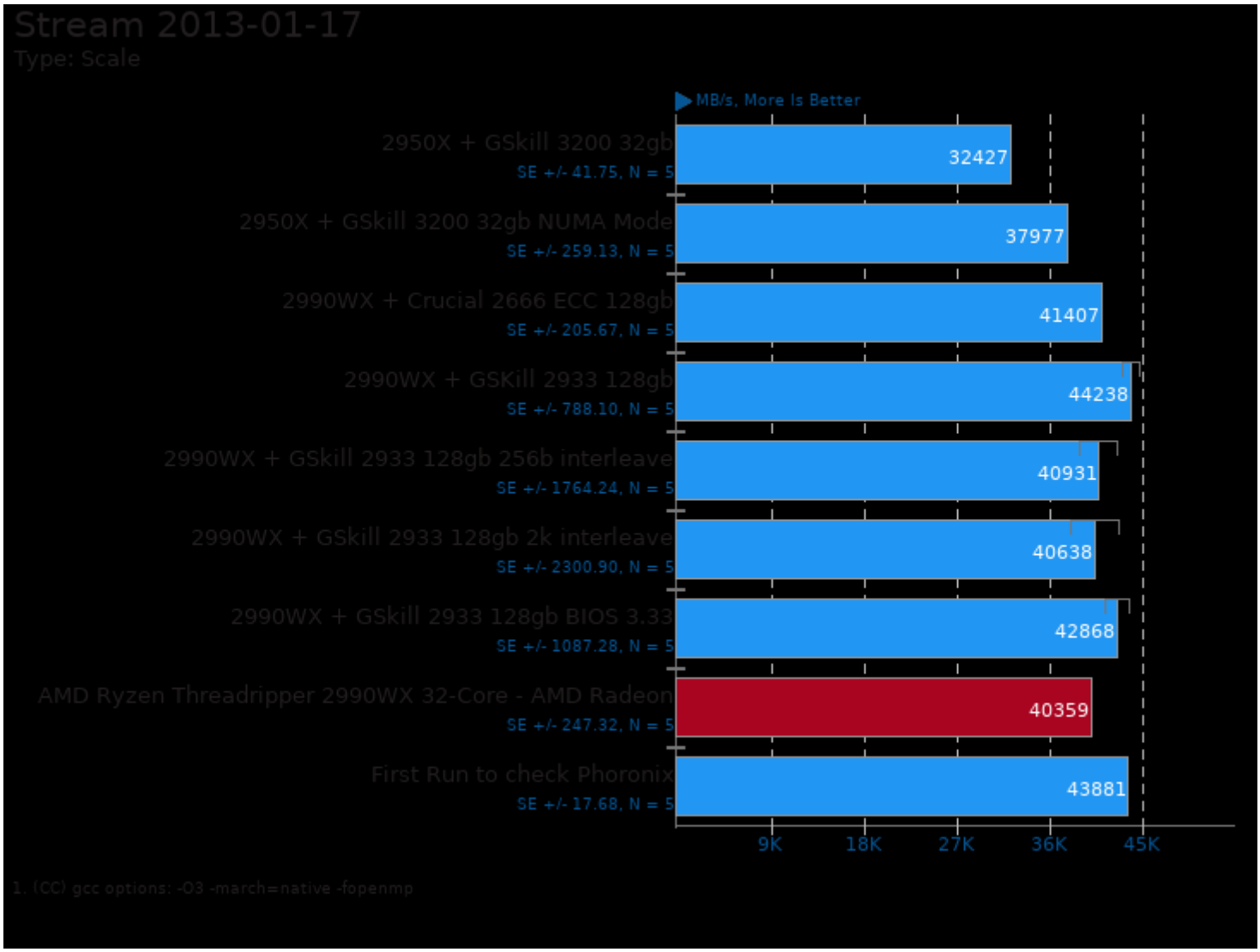



MBW 2018-09-08
Test: Memory Copy, Fixed Block Size - Array Size: 128 MiB
MiB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 42.29, N = 3
7926
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 56.34, N = 3
7142
2990WX + Crucial 2666 ECC 128gb
SE +/- 8.98, N = 3
5899
2990WX + GSKill 2933 128gb
SE +/- 24.20, N = 3
6880
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 60.43, N = 3
6923
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 122.83, N = 3
6204
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 32.56, N = 3
7098
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 17.45, N = 3
8271
First Run to check Phoronix
SE +/- 6.36, N = 3
7856
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native

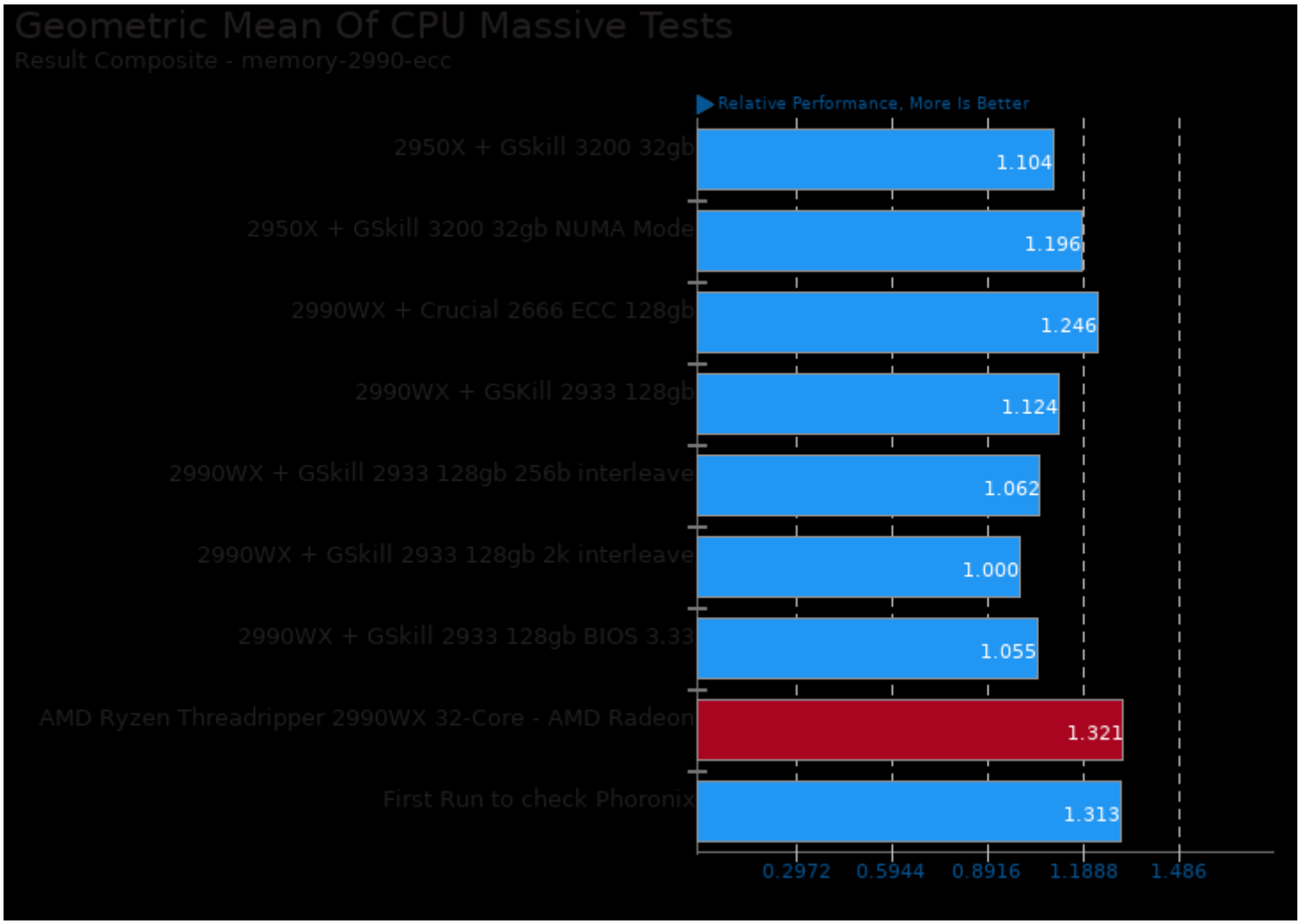

MBW 2018-09-08
Test: Memory Copy - Array Size: 128 MiB
MiB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 15.90, N = 3
11159
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 90.84, N = 3
14086
2990WX + Crucial 2666 ECC 128gb
SE +/- 12.99, N = 3
14772
2990WX + GSKill 2933 128gb
SE +/- 37.56, N = 3
11070
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 13.82, N = 3
6421
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 33.81, N = 3
10364
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 13.24, N = 3
6376
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 23.71, N = 3
14928
First Run to check Phoronix
SE +/- 34.46, N = 3
15636
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3 -march=native


Stream 2013-01-17
Type: Add
MB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 55.09, N = 5
36284
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 264.18, N = 5
43109
2990WX + Crucial 2666 ECC 128gb
SE +/- 225.73, N = 5
44712
2990WX + GSKill 2933 128gb
SE +/- 590.37, N = 5
48706
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1712.14, N = 5
43861
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2368.17, N = 5
42466
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 1075.80, N = 5
46378
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 609.06, N = 5
43330
First Run to check Phoronix
SE +/- 24.18, N = 5
48625
10K
20K
30K
40K
50K
1. (CC) gcc options: -O3 -march=native -fopenmp

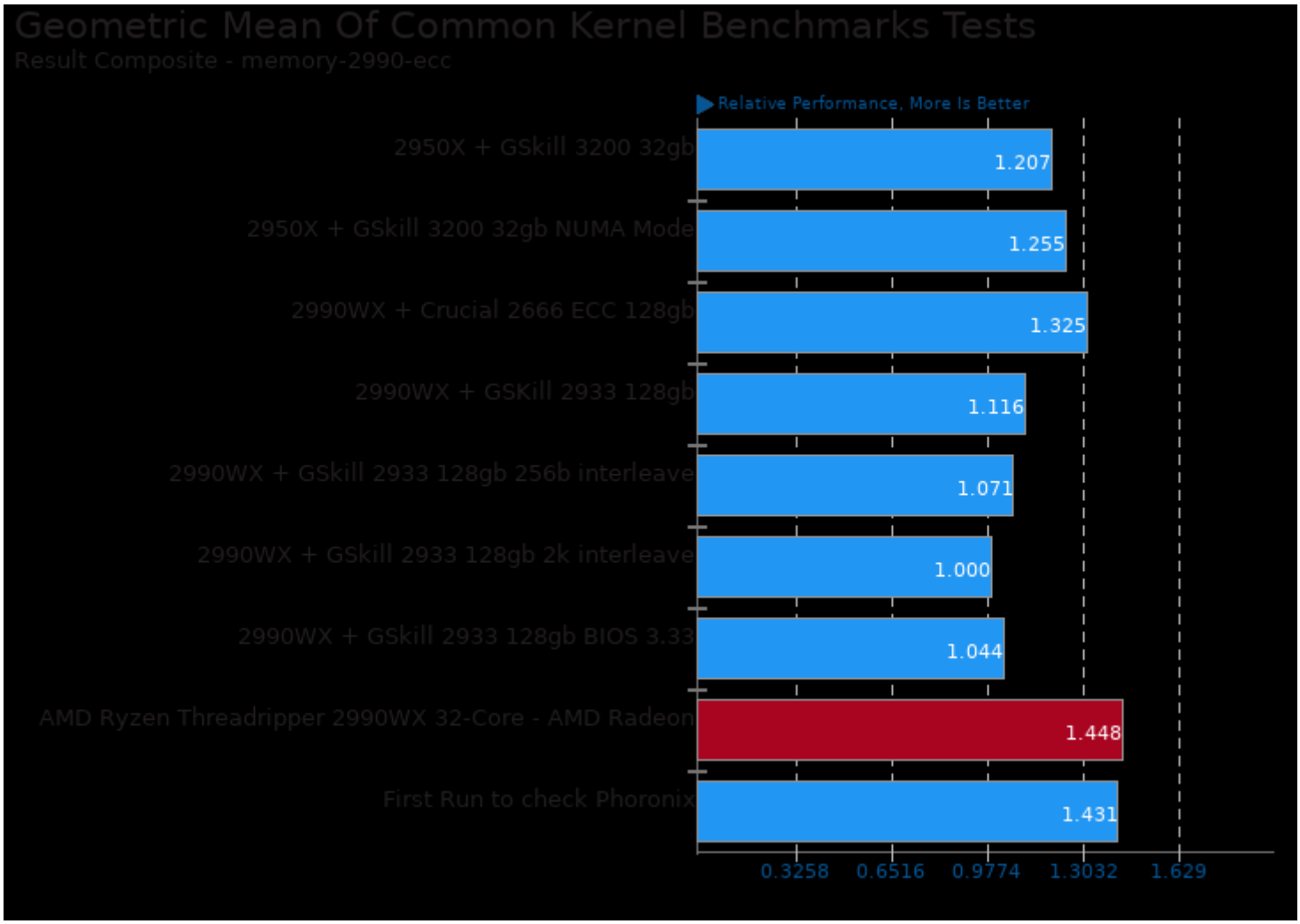

Stream 2013-01-17
Type: Triad
MB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 26.38, N = 5
36448
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 212.02, N = 5
43273
2990WX + Crucial 2666 ECC 128gb
SE +/- 493.68, N = 5
44294
2990WX + GSKill 2933 128gb
SE +/- 439.41, N = 5
48929
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1697.79, N = 5
43836
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2595.56, N = 5
42154
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 1061.79, N = 5
46400
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 521.19, N = 5
43020
First Run to check Phoronix
SE +/- 40.66, N = 5
48740
10K
20K
30K
40K
50K
1. (CC) gcc options: -O3 -march=native -fopenmp


Stream 2013-01-17
Type: Scale
MB/s, More Is Better
2950X + GSkill 3200 32gb
SE +/- 41.75, N = 5
32427
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 259.13, N = 5
37977
2990WX + Crucial 2666 ECC 128gb
SE +/- 205.67, N = 5
41407
2990WX + GSKill 2933 128gb
SE +/- 788.10, N = 5
44238
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1764.24, N = 5
40931
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2300.90, N = 5
40638
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 1087.28, N = 5
42868
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 247.32, N = 5
40359
First Run to check Phoronix
SE +/- 17.68, N = 5
43881
9K
18K
27K
36K
45K
1. (CC) gcc options: -O3 -march=native -fopenmp

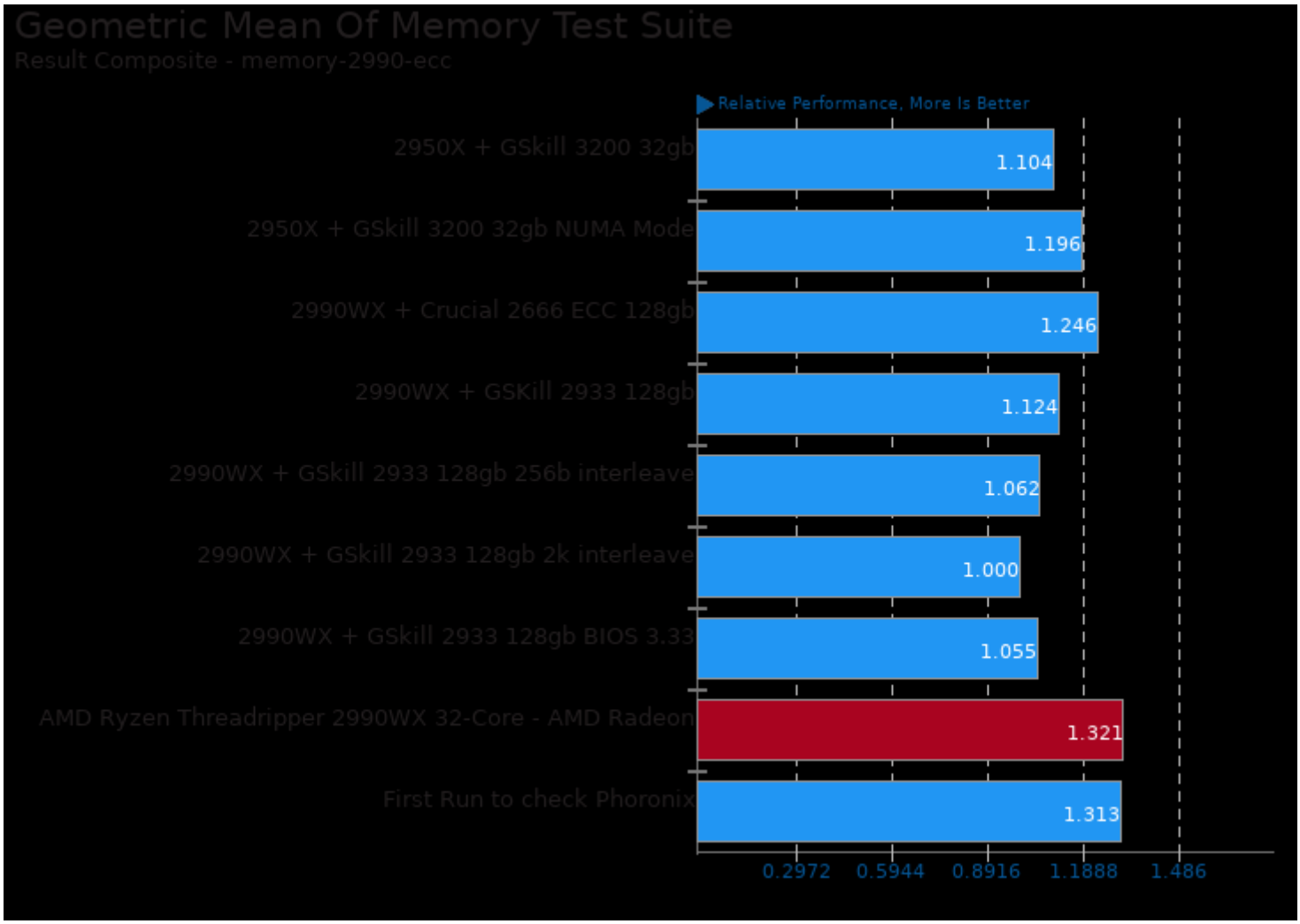
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/mbw, pts/stream and pts/tinymembench



Geometric mean based upon tests: pts/tinymembench and pts/mbw



Geometric mean based upon tests: pts/stream, pts/tinymembench and pts/mbw

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 06:39.