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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

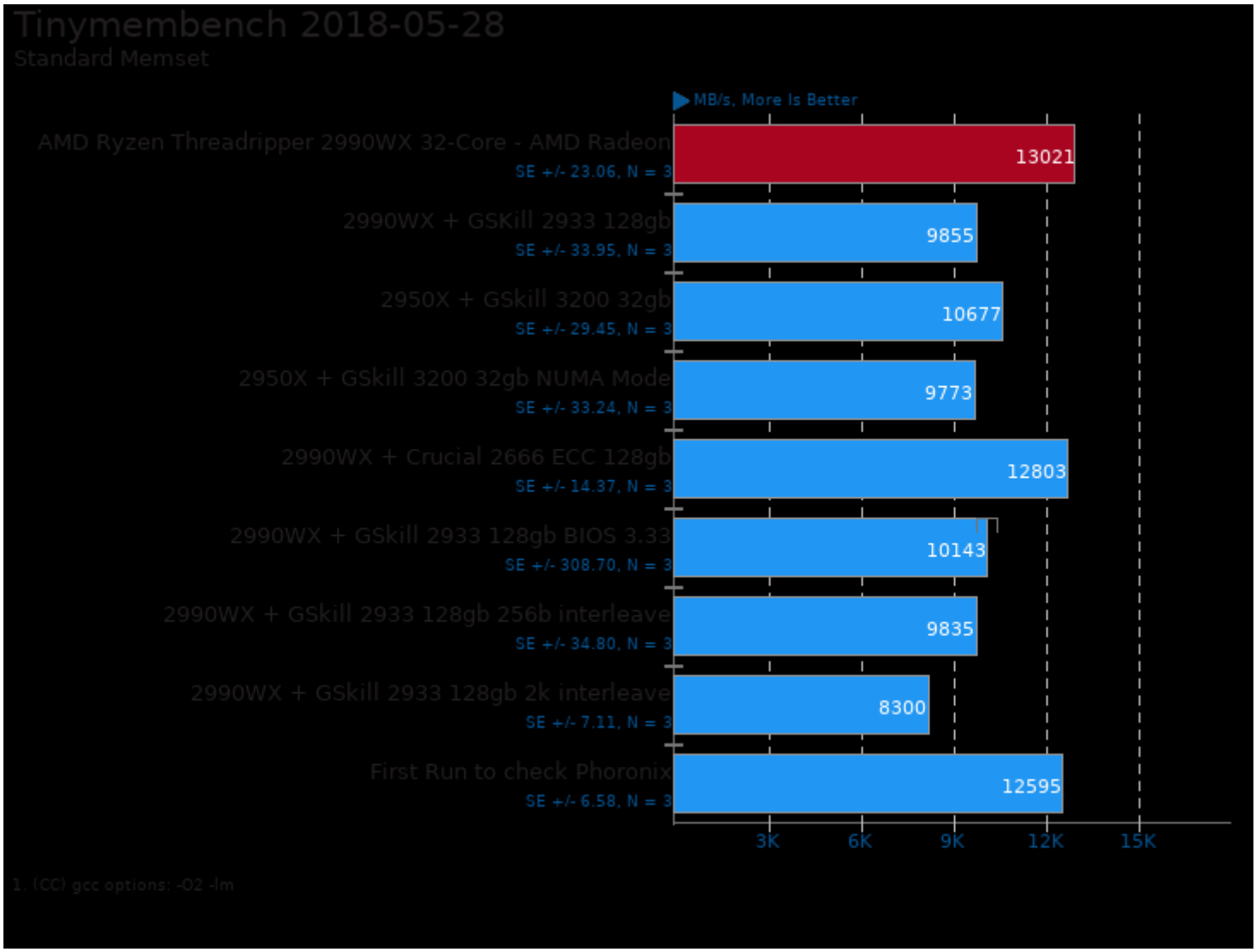
OS: Arch Linux, Kernel: 4.19.2-arch1-1-ARCH (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.20.1, Display Driver: modesetting 1.20.1, Compiler: GCC 8.2.1 20180831, File-System: ext4, Screen Resolution: 2560x1440

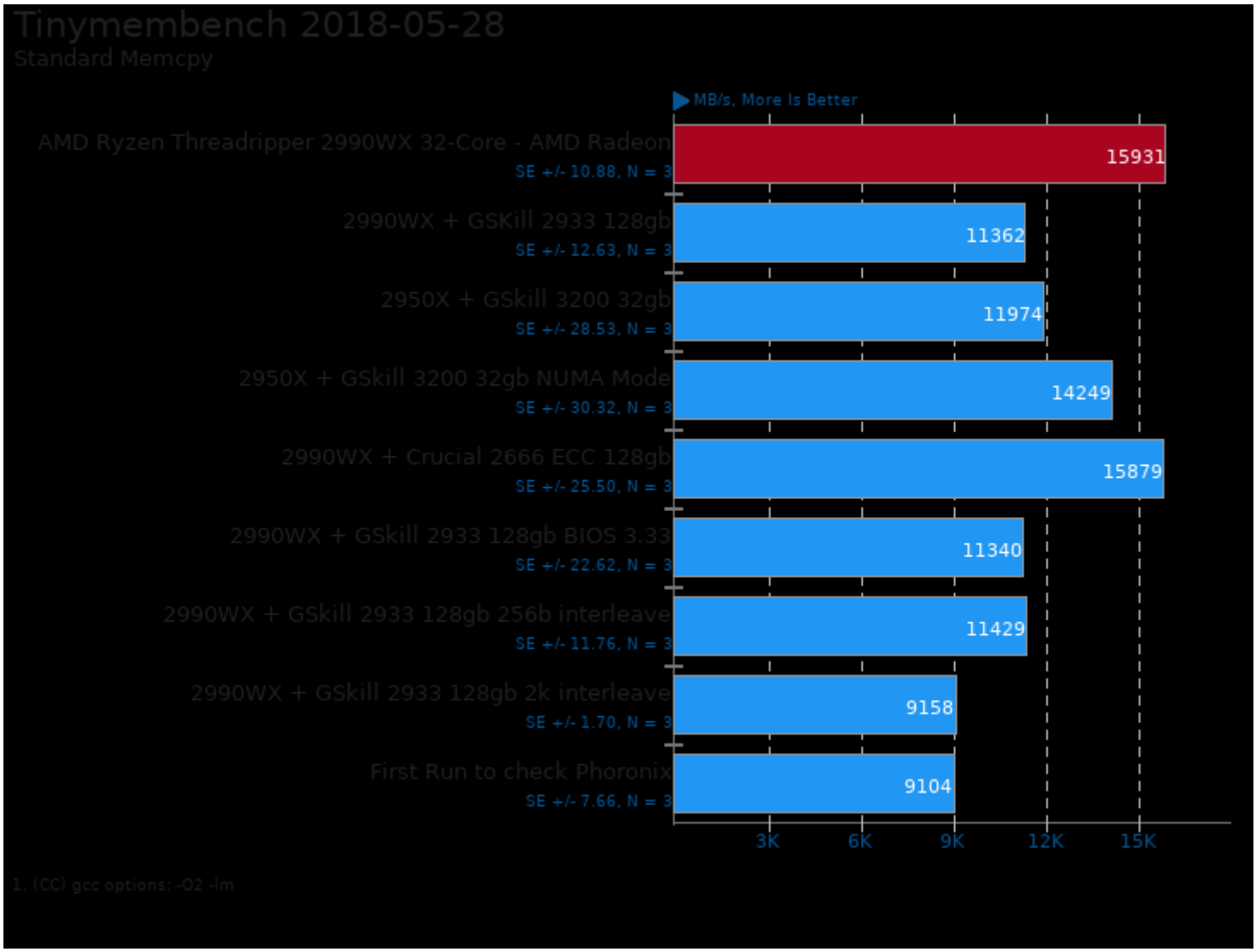
Kernel Notes: kvm.ignore_msrs=1
Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-werror --enable-__cxa_atexit --enable-cet=auto --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --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% |

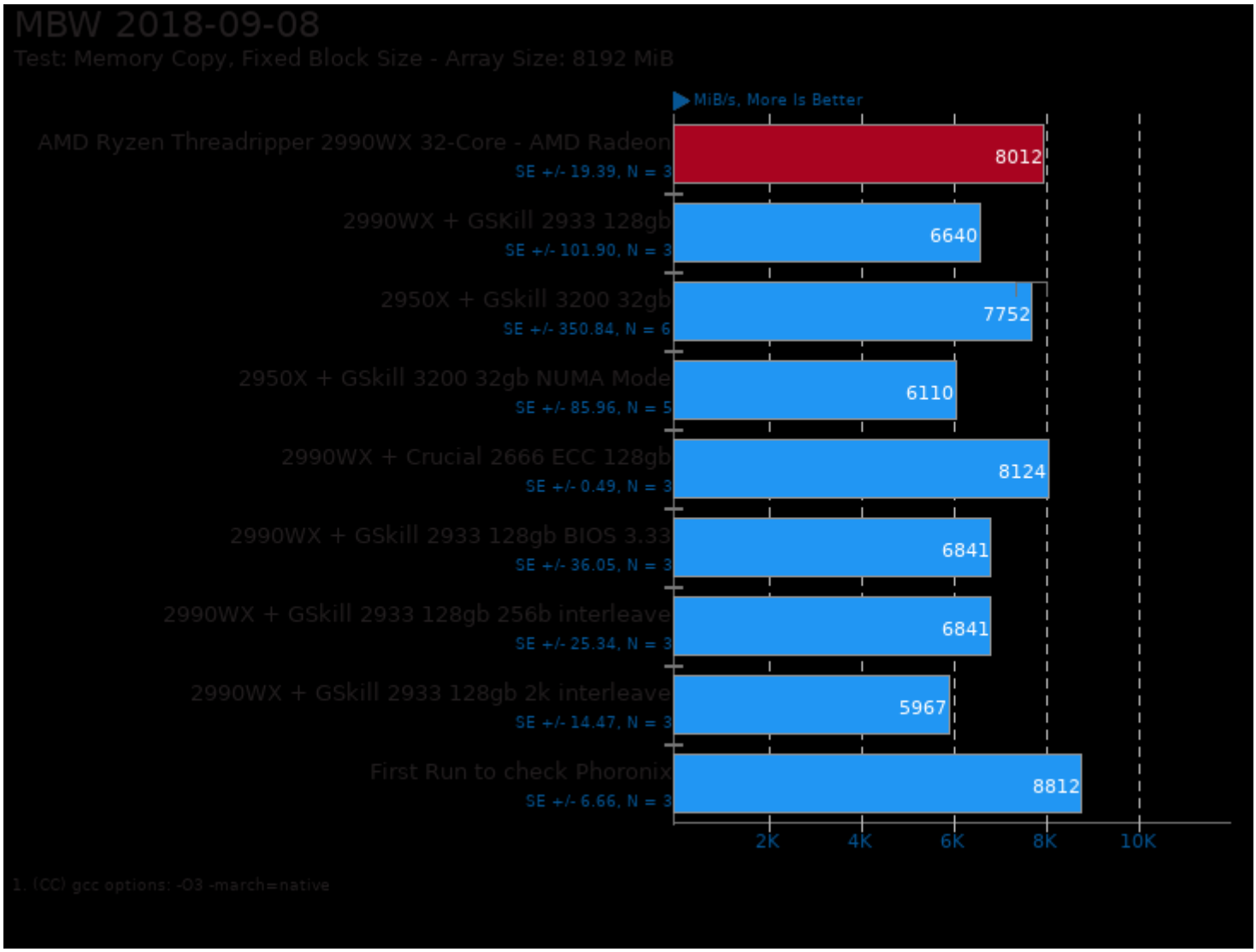
# memory-2990-ecc

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **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% |

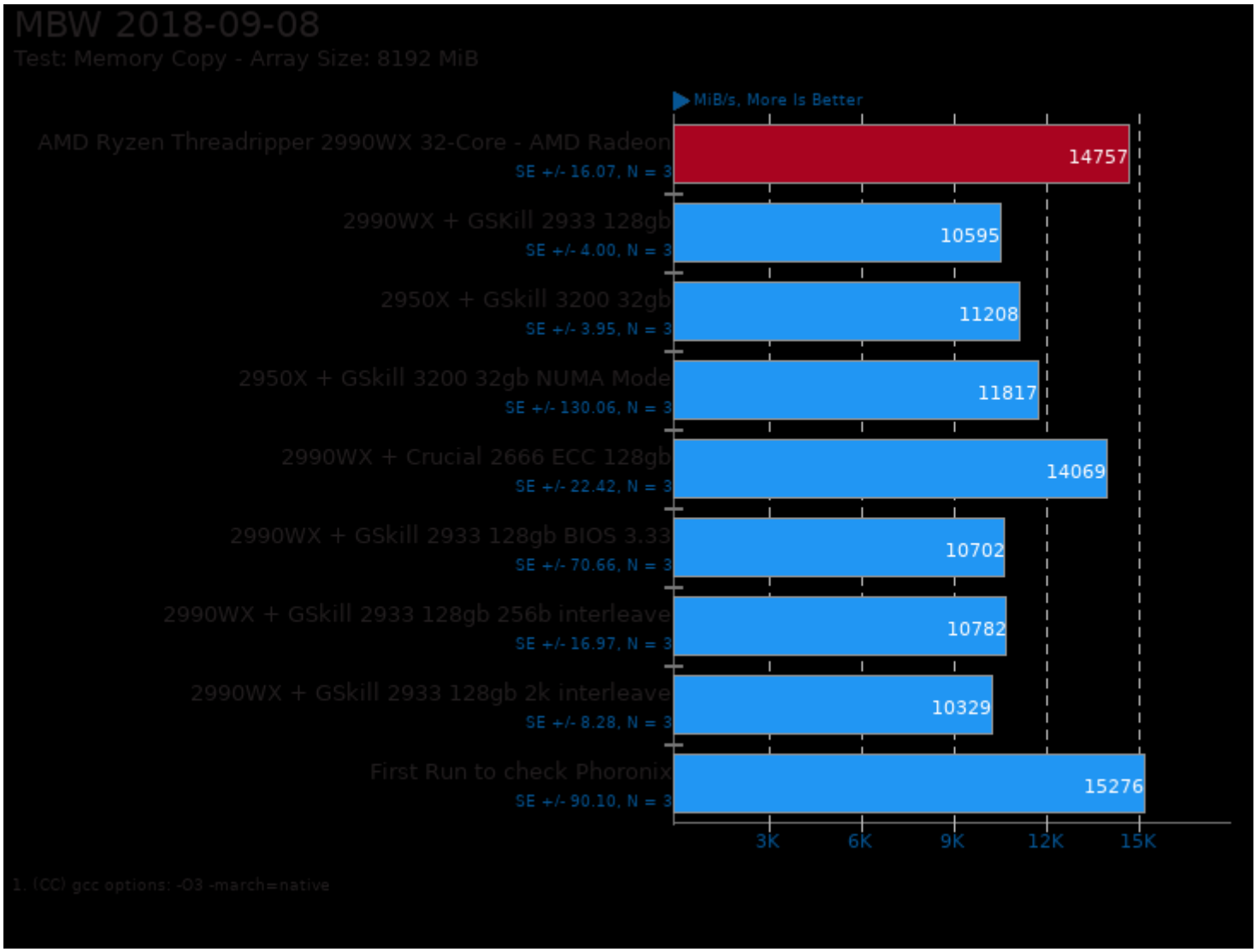

Tinymembench 2018-05-28
Standard Memset
MB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 23.06, N = 3
13021
2990WX + GSKill 2933 128gb
SE +/- 33.95, N = 3
9855
2950X + GSkill 3200 32gb
SE +/- 29.45, N = 3
10677
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 33.24, N = 3
9773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


Tinymembench 2018-05-28
Standard Memcpy
MB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 10.88, N = 3
15931
2990WX + GSKill 2933 128gb
SE +/- 12.63, N = 3
11362
2950X + GSkill 3200 32gb
SE +/- 28.53, N = 3
11974
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 30.32, N = 3
14249
2990WX + Crucial 2666 ECC 128gb
SE +/- 25.50, N = 3
15879
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 22.62, N = 3
11340
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 11.76, N = 3
11429
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 1.70, N = 3
9158
First Run to check Phoronix
SE +/- 7.66, N = 3
9104
3K
6K
9K
12K
15K
1. (CC) gcc options: -O2 -lm

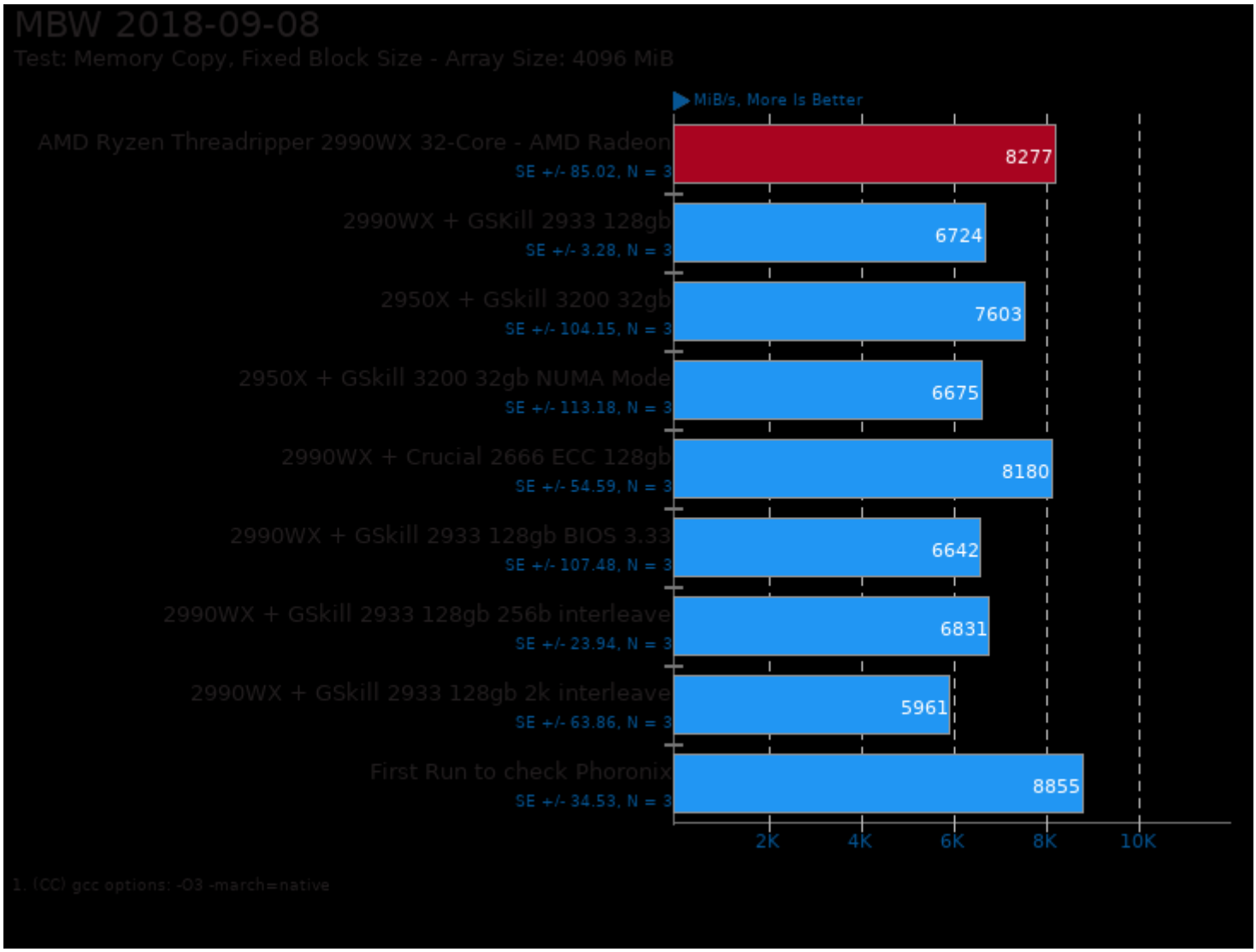
# memory-2990-ecc

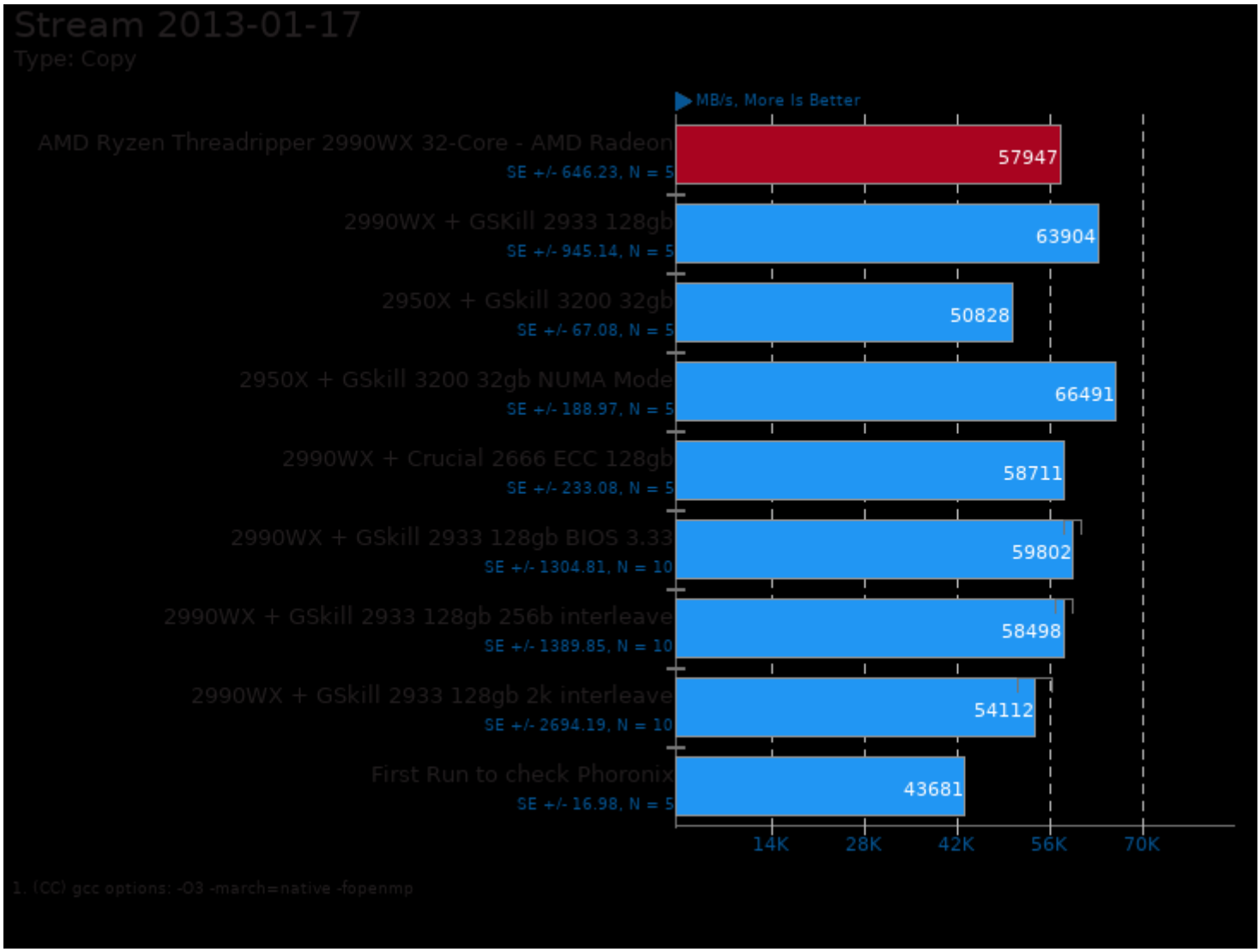


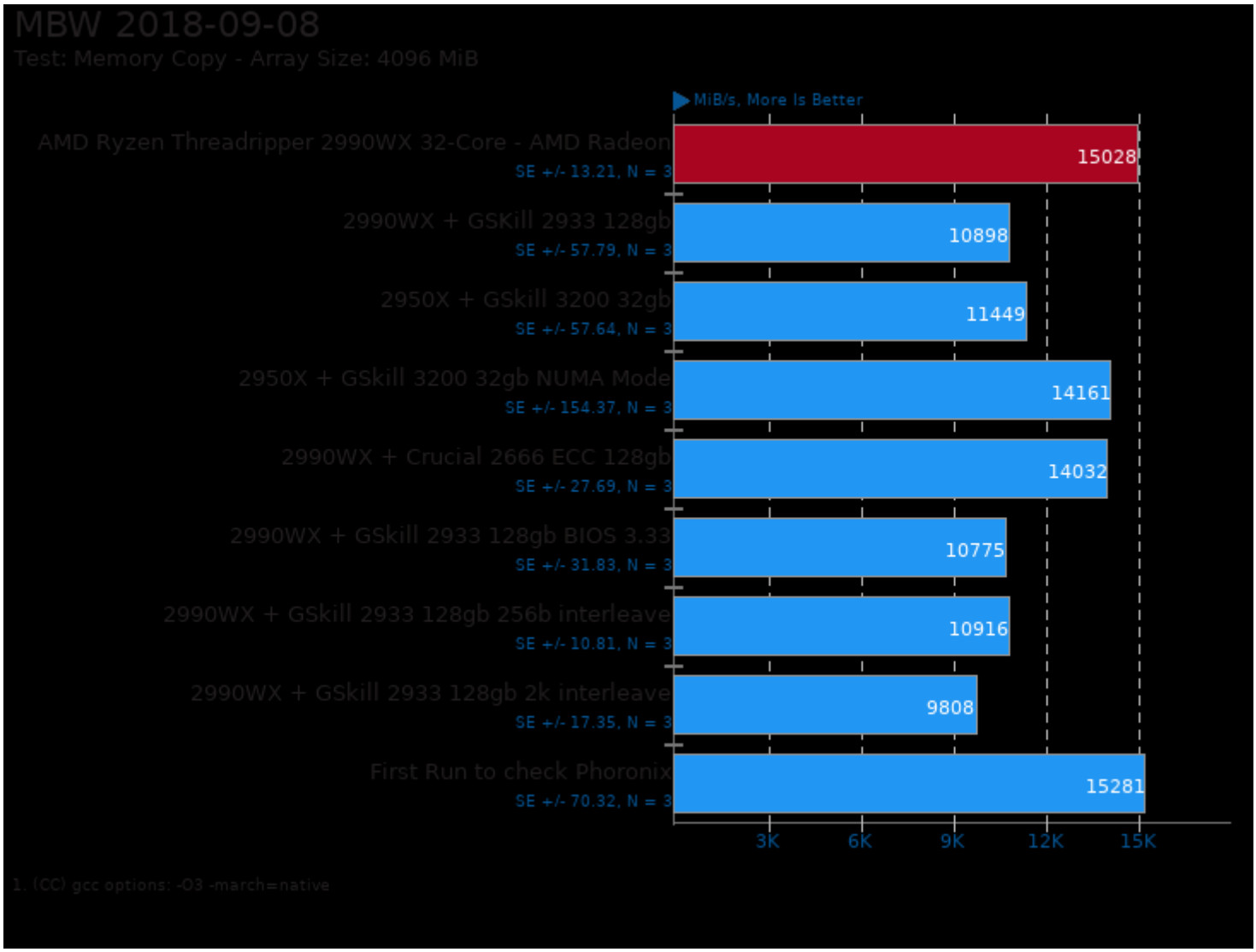
# memory-2990-ecc

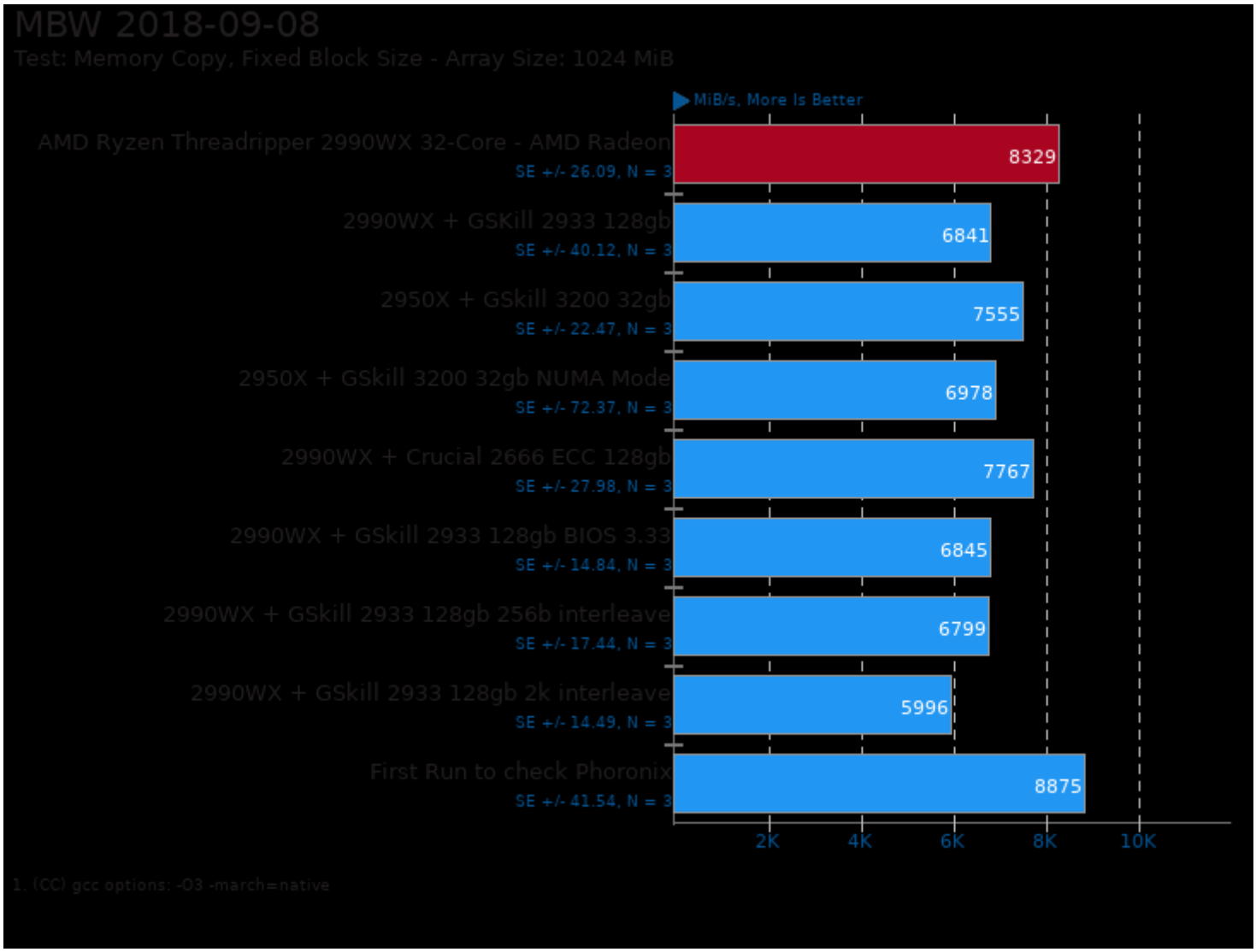


# memory-2990-ecc

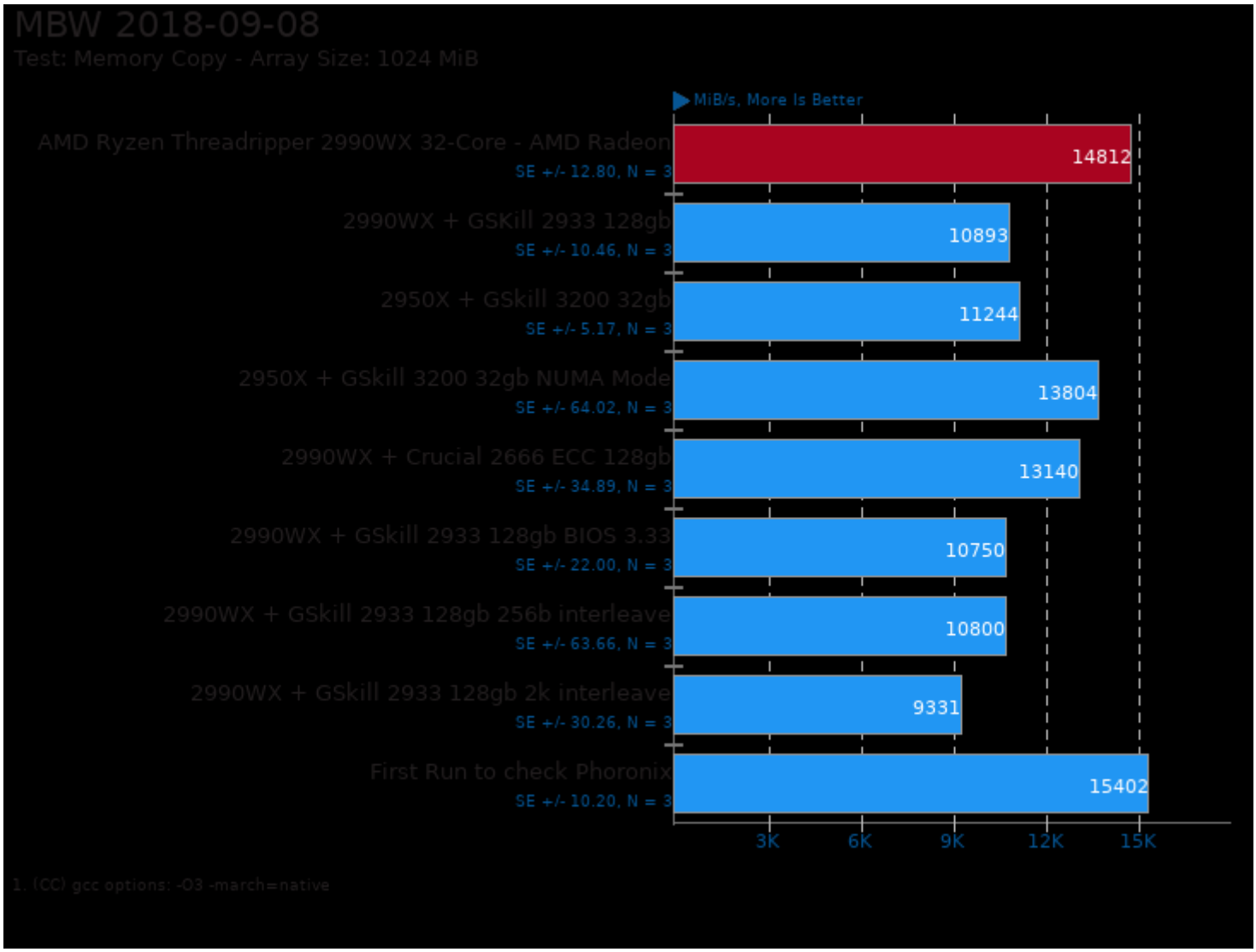


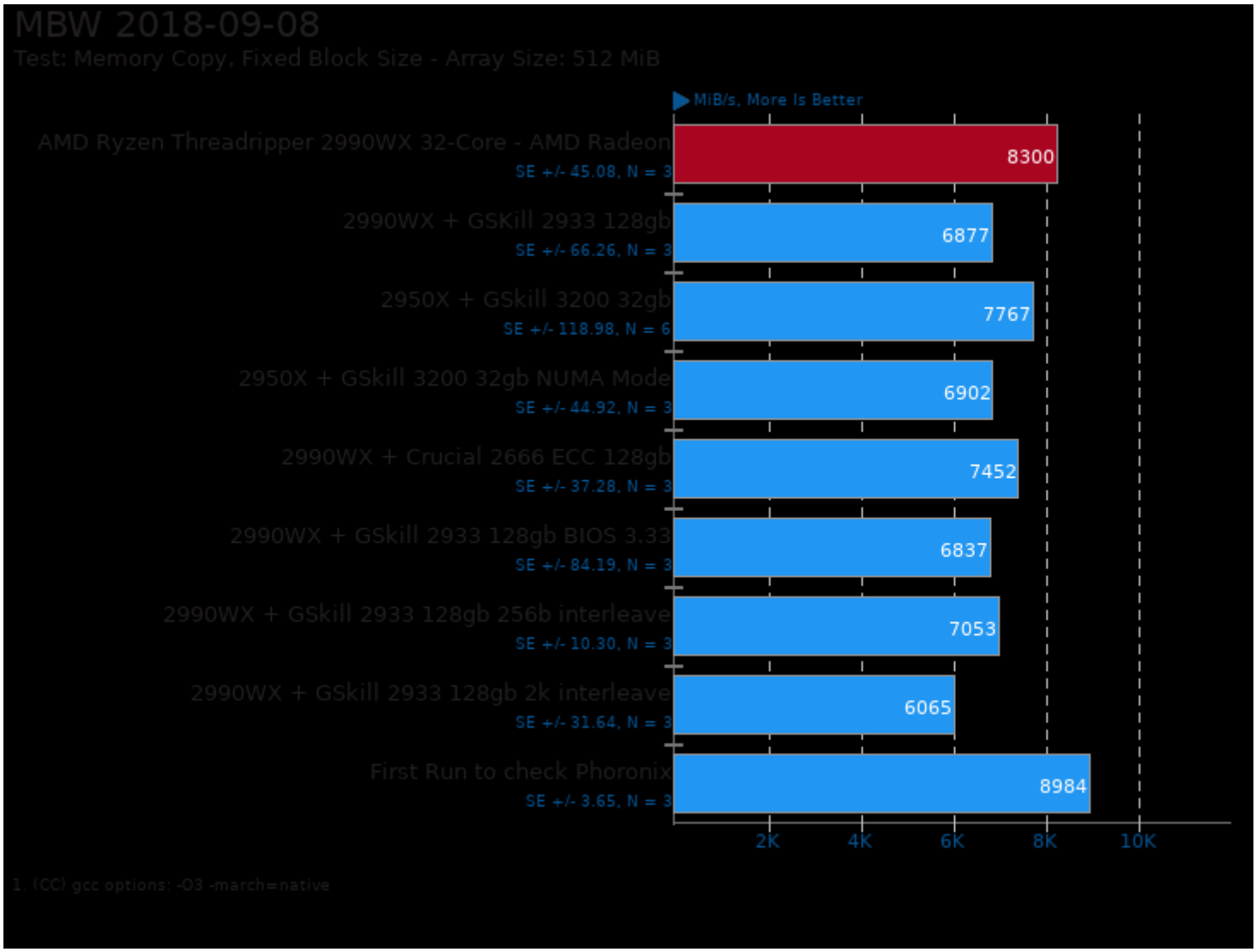

Stream 2013-01-17
Type: Copy
MB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 646.23, N = 5
57947
2990WX + GSKill 2933 128gb
SE +/- 945.14, N = 5
63904
2950X + GSkill 3200 32gb
SE +/- 67.08, N = 5
50828
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 188.97, N = 5
66491
2990WX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


MBW 2018-09-08
Test: Memory Copy - Array Size: 4096 MiB
MiB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 13.21, N = 3
15028
2990WX + GSKill 2933 128gb
SE +/- 57.79, N = 3
10898
2950X + GSkill 3200 32gb
SE +/- 57.64, N = 3
11449
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 154.37, N = 3
14161
2990WX + Crucial 2666 ECC 128gb
SE +/- 27.69, N = 3
14032
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 31.83, N = 3
10775
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 10.81, N = 3
10916
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 17.35, N = 3
9808
First Run to check Phoronix
SE +/- 70.32, N = 3
15281
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3 -march=native

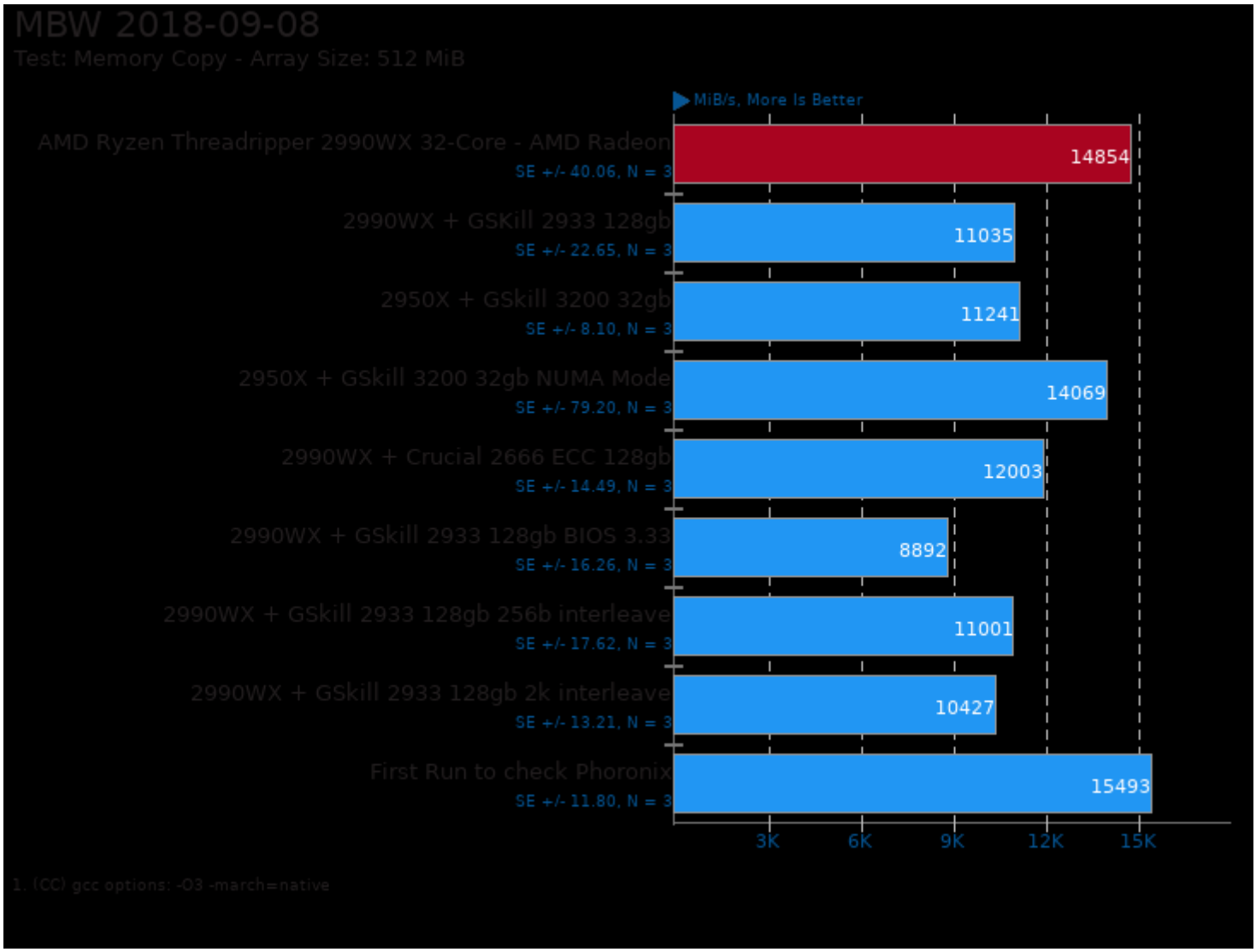

MBW 2018-09-08
Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB
MiB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 26.09, N = 3
8329
2990WX + GSKill 2933 128gb
SE +/- 40.12, N = 3
6841
2950X + GSkill 3200 32gb
SE +/- 22.47, N = 3
7555
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 72.37, N = 3
6978
2990WX + Crucial 2666 ECC 128gb
SE +/- 27.98, N = 3
7767
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 14.84, N = 3
6845
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 17.44, N = 3
6799
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 14.49, N = 3
5996
First Run to check Phoronix
SE +/- 41.54, N = 3
8875
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native

# memory-2990-ecc

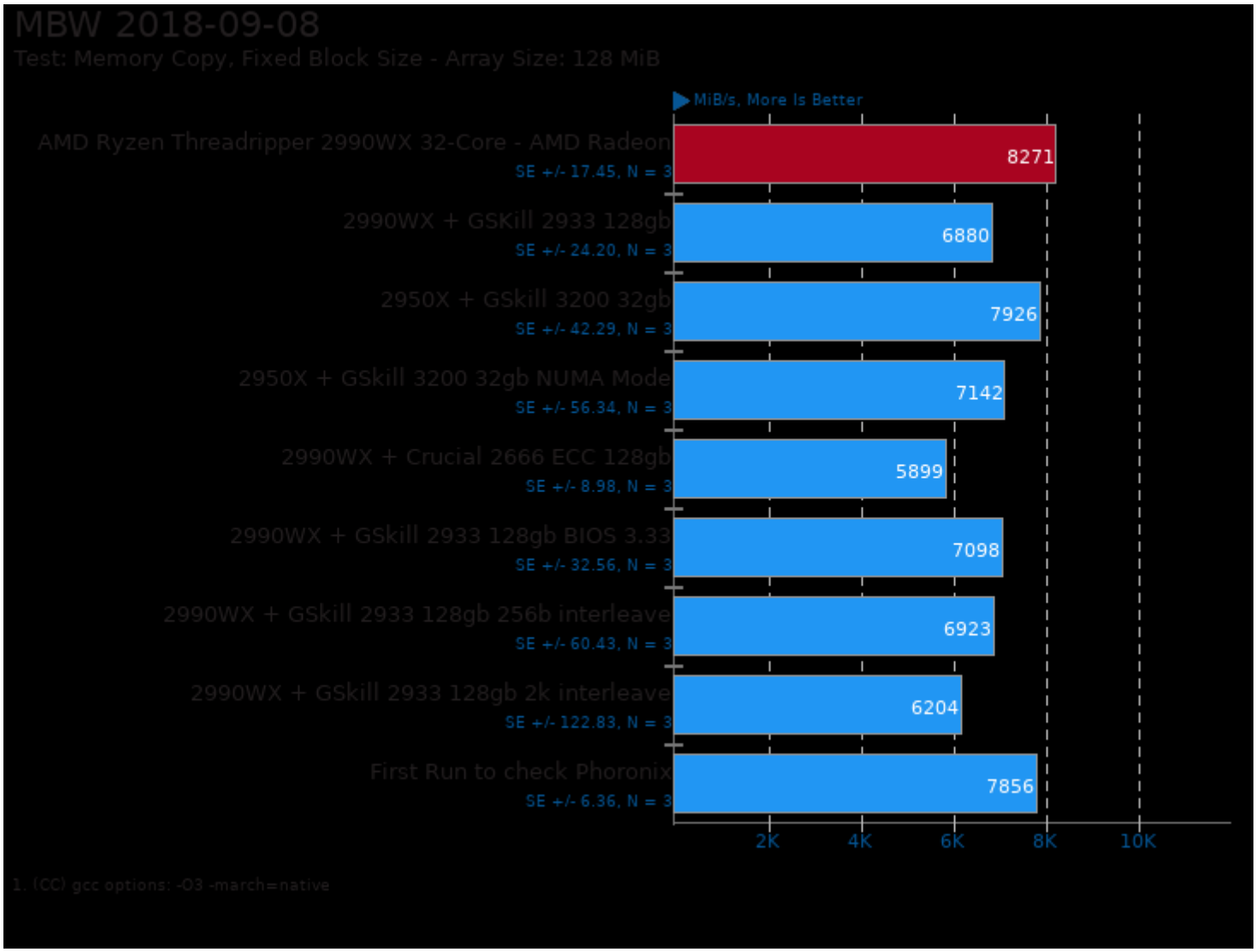



MBW 2018-09-08
Test: Memory Copy, Fixed Block Size - Array Size: 512 MiB
MiB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 45.08, N = 3
8300
2990WX + GSKill 2933 128gb
SE +/- 66.26, N = 3
6877
2950X + GSkill 3200 32gb
SE +/- 118.98, N = 6
7767
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 44.92, N = 3
6902
2990WX + Crucial 2666 ECC 128gb
SE +/- 37.28, N = 3
7452
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 84.19, N = 3
6837
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 10.30, N = 3
7053
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 31.64, N = 3
6065
First Run to check Phoronix
SE +/- 3.65, N = 3
8984
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native

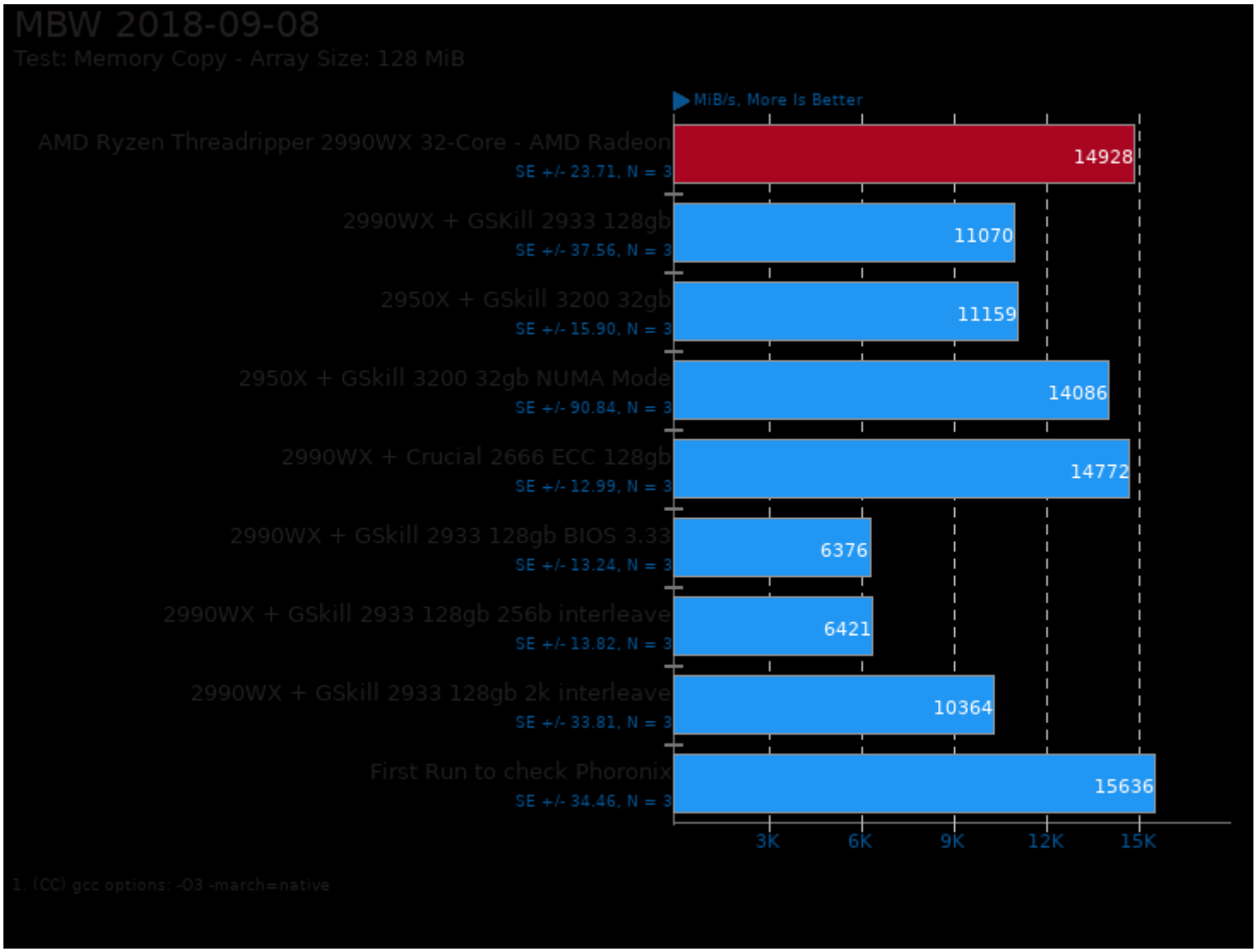
# memory-2990-ecc

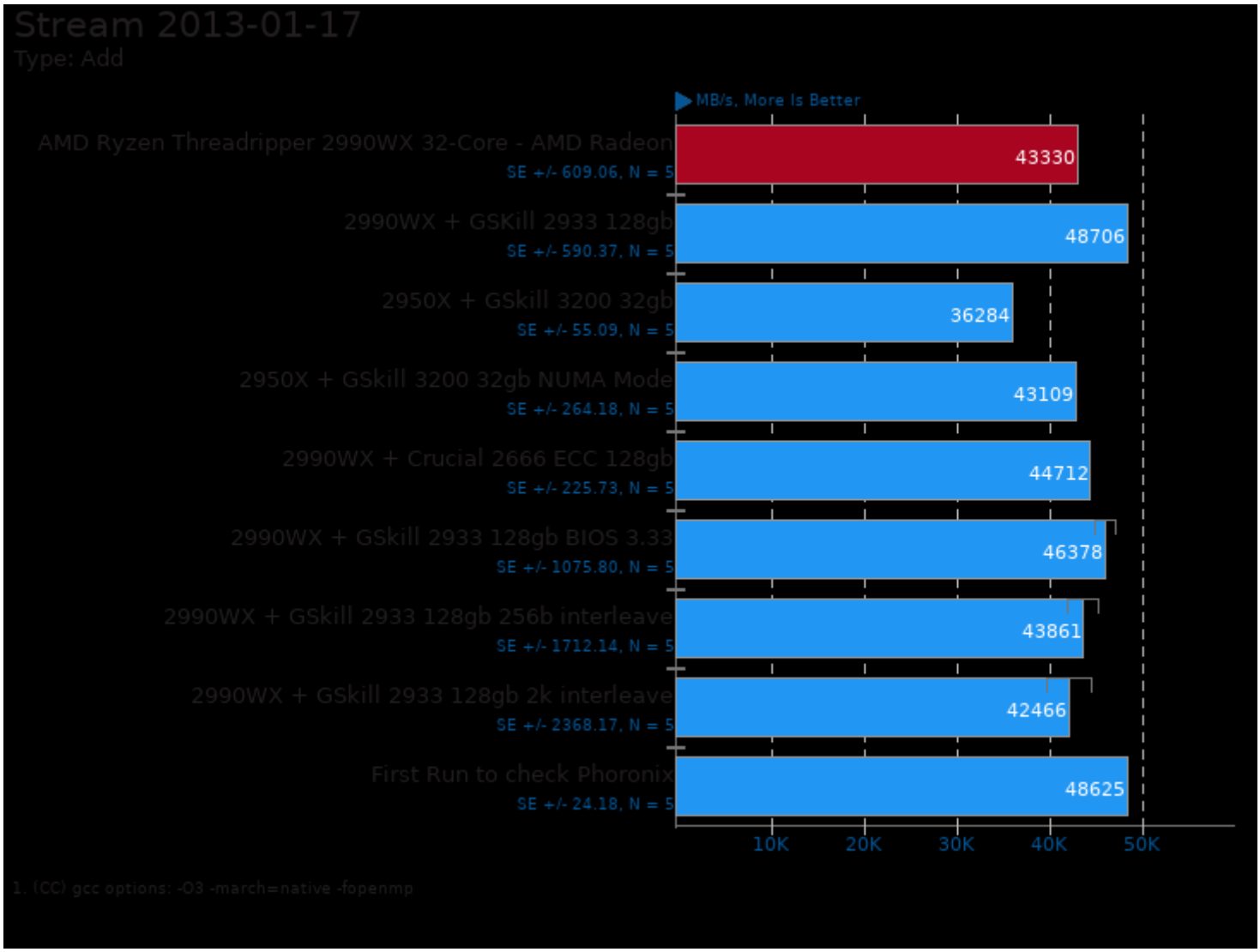


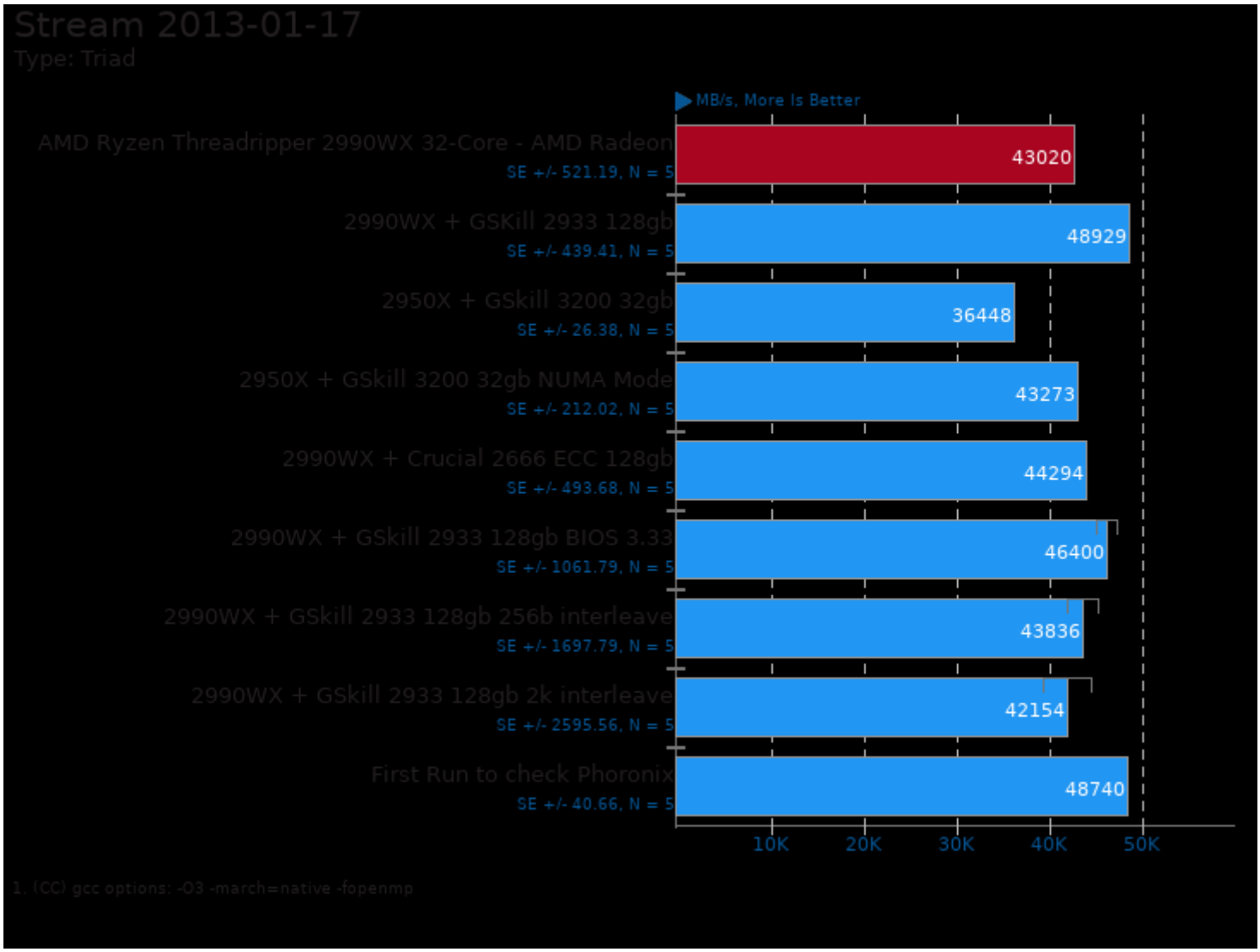
# memory-2990-ecc

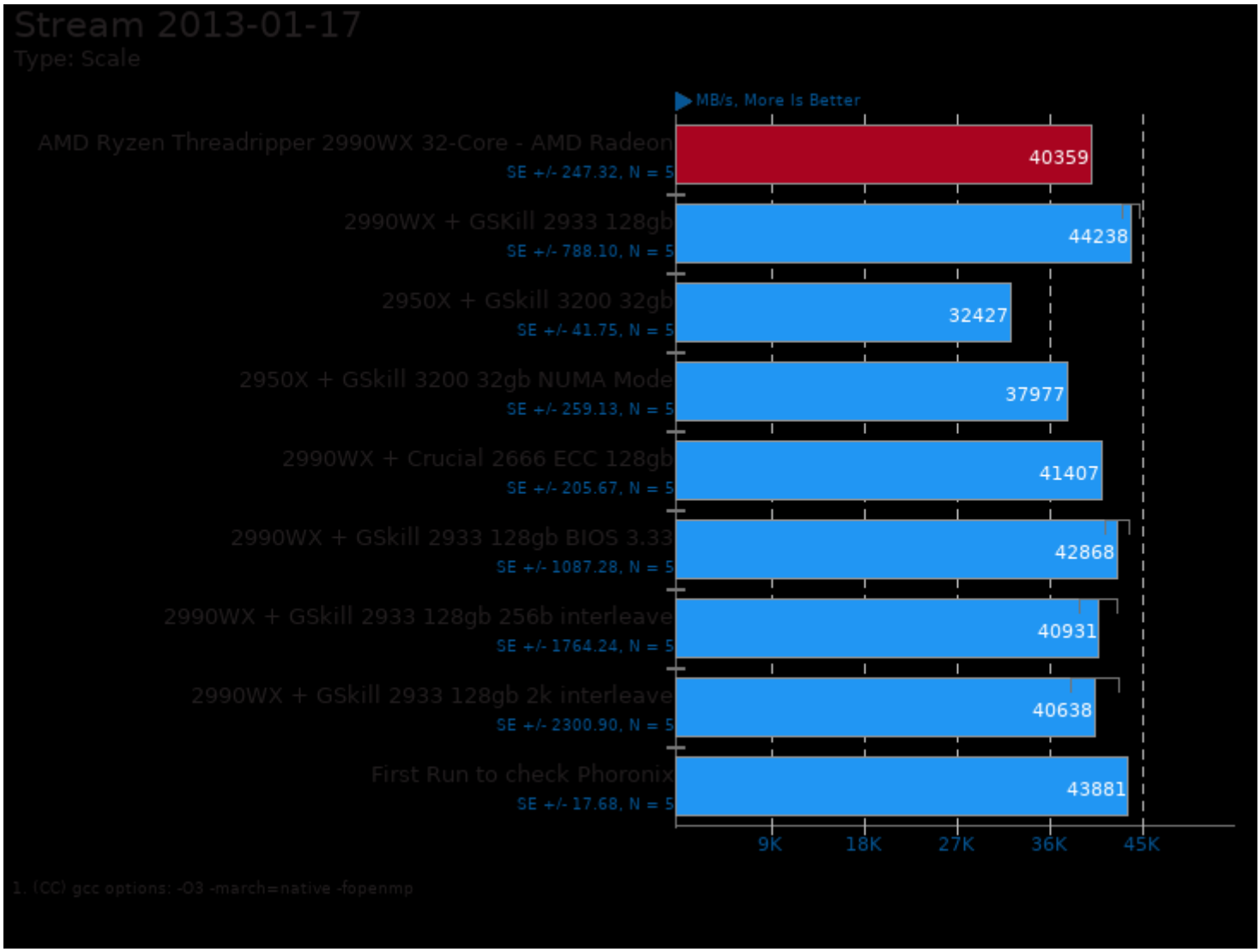


# memory-2990-ecc

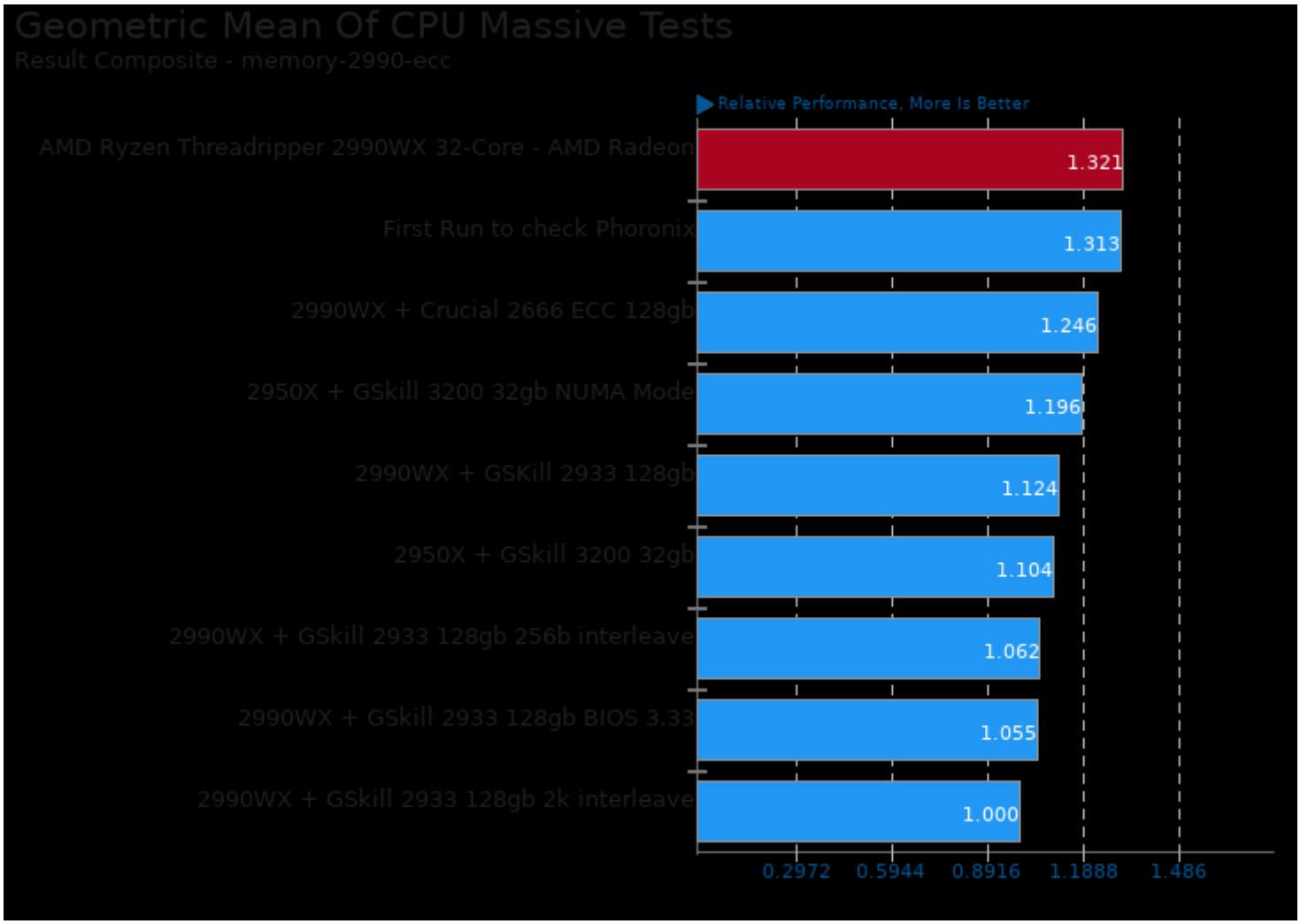



Stream 2013-01-17
Type: Add
MB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 609.06, N = 5
43330
2990WX + GSKill 2933 128gb
SE +/- 590.37, N = 5
48706
2950X + GSkill 3200 32gb
SE +/- 55.09, N = 5
36284
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 264.18, N = 5
43109
2990WX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

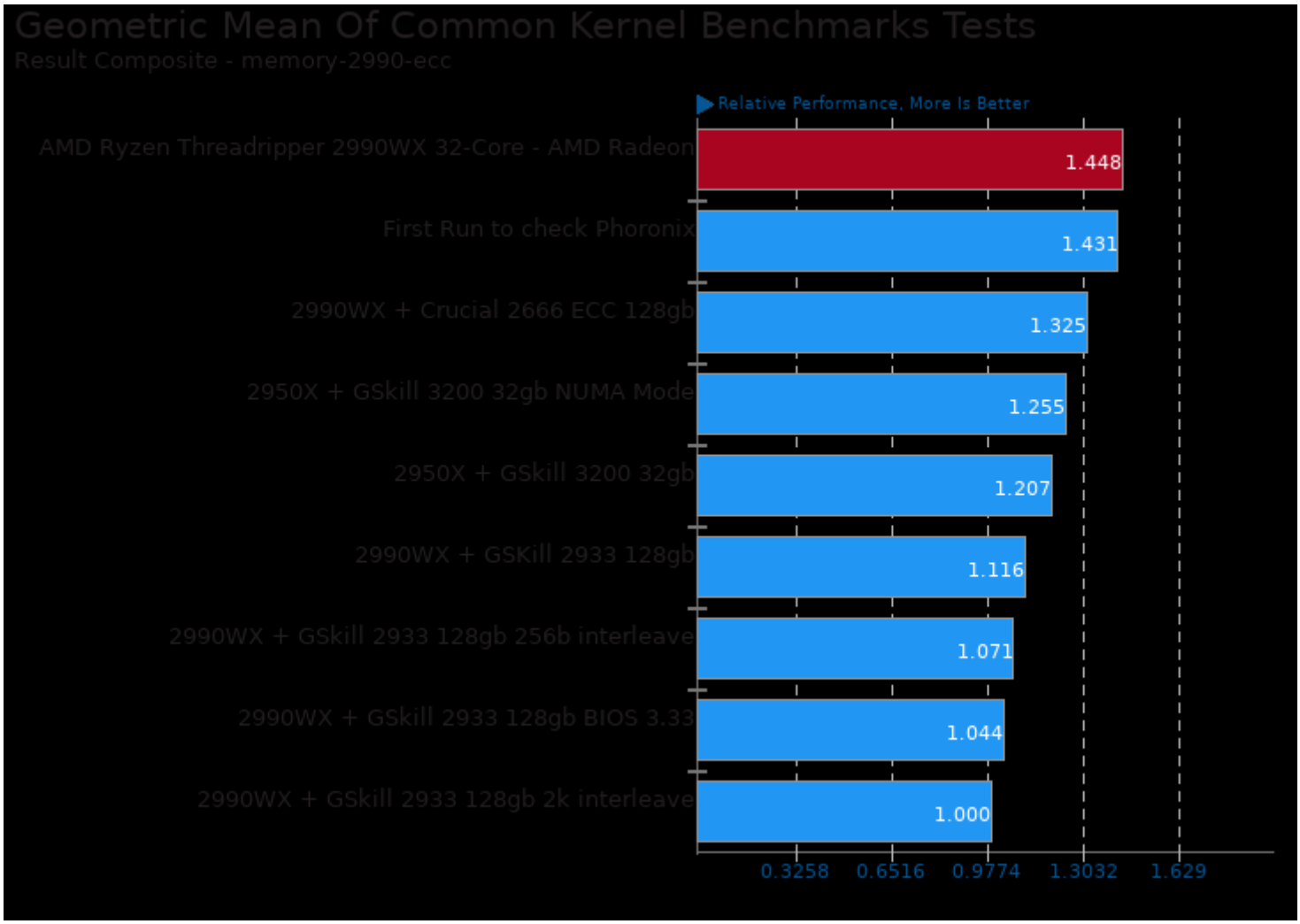

Stream 2013-01-17
Type: Triad
MB/s, More Is Better
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 521.19, N = 5
43020
2990WX + GSKill 2933 128gb
SE +/- 439.41, N = 5
48929
2950X + GSkill 3200 32gb
SE +/- 26.38, N = 5
36448
2950X + GSkill 3200 32gb NUMA Mode
SE +/- 212.02, N = 5
43273
2990WX + Crucial 2666 ECC 128gb
SE +/- 493.68, N = 5
44294
2990WX + GSkill 2933 128gb BIOS 3.33
SE +/- 1061.79, N = 5
46400
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1697.79, N = 5
43836
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2595.56, N = 5
42154
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
AMD Ryzen Threadripper 2990WX 32-Core - AMD Radeon
SE +/- 247.32, N = 5
40359
2990WX + GSKill 2933 128gb
SE +/- 788.10, N = 5
44238
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 BIOS 3.33
SE +/- 1087.28, N = 5
42868
2990WX + GSkill 2933 128gb 256b interleave
SE +/- 1764.24, N = 5
40931
2990WX + GSkill 2933 128gb 2k interleave
SE +/- 2300.90, N = 5
40638
First Run to check Phoronix
SE +/- 17.68, N = 5
43881
9K
18K
27K
36K
45K
1. (CC) gcc options: -O3 -march=native -fopenmp

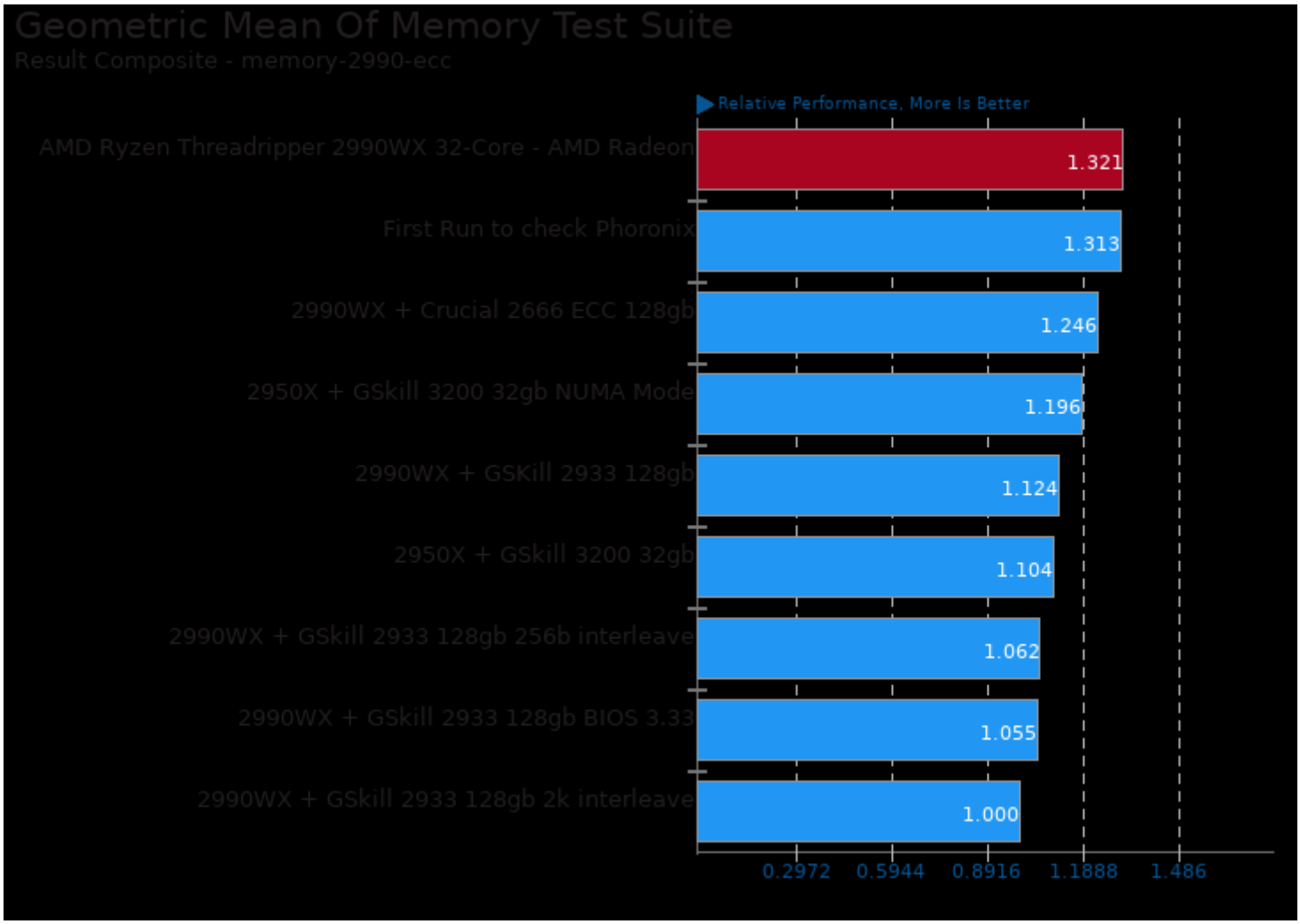
These geometric means are based upon test groupings / test suites for this result file.




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 13:45.*