

# GRC SpinRite Development Roadmap

Release 4 - January 17<sup>th</sup>, 2021 (reviewed 2021-07-18 – no changes)

**Our New Approach:** SpinRite has traditionally been developed under the pre-Internet model of infrequent major feature releases. (SpinRite v6 was released 17 years ago in 2004!) Because SpinRite has proven to be just as useful on non-spinning solid-state mass storage, GRC has an ambitious long-term plan for SpinRite's future. But rather than making everyone wait for it, we will be dropping incremental updates along the way. The goal of this approach is to place new state-of-the-art functionality into SpinRite's users' hands as soon as it exists.

**UEFI** forces a major change. Discoveries made in 2020, during the development of SpinRite's high speed drivers for IDE & SATA drives, demonstrate that SpinRite still has many remaining useful years of life. Unfortunately, BIOS-based booting does not. SpinRite depends upon DOS and DOS depends upon the BIOS. But the BIOS is obsolete & rapidly disappearing. To remain viable, SpinRite **must** be able to boot on either BIOS or UEFI. This requires abandoning DOS. SpinRite v6.1 will be the last release of SpinRite that is unable to boot on UEFI systems. After v6.1, SpinRite will move to a BIOS & UEFI compatible, future proof, real-time OS platform.

High-performance drivers have already been developed for IDE & SATA drives, and SpinRite v6.1 will receive them. But USB and NVMe drivers have not been written for DOS, and writing them now makes no sense, since they would be immediately abandoned. Therefore, SpinRite v6.1 support for USB and NVMe drives will be through the system's BIOS until SpinRite v7.x. This **may** limit drive size to 2.2 terabytes if the system does not provide an enhanced BIOS, and it **will** limit performance, because even BIOS enhancements still provide for the transfer of only 127 sectors at a time. However, **ALL** drive partition formats **will** be compatible with SpinRite v6.1. After SpinRite makes the transition to a non-obsolete OS, all drive types will operate at their maximum possible performance and with full access to all of their features.

**SpinRite v6.1** will be a no-charge update of v6.0. During the 16 years since v6.0, the GPT (GUID partition table) has become popular and drives have grown massive with advanced capabilities including pure solid-state, hybrid solid-state with magnetic storage and physically large (4K) sectors. SpinRite v6.1 will "catch up" to re-fulfill SpinRite's original promise made back in 2004. Specifically, *with some limitations for USB & NVMe*, SpinRite v6.1 will offer:

- Native AHCI and IDE support, with BIOS support fallback for USB, NVMe and others.
- Operates on the physical drive surface to provide compatibility with ANY drive format.
- Practical use on drives of =ANY= physical size. (~ 0.5 terabytes per hour)
- Support for drive advancements: Hybrid drives and large physical sector drives.
- Absolutely maximum possible performance – no missed revolutions.
- Support for (older) Apple Mac Intel hardware which supports Boot Camp / CSM.
- Downloadable as an .ISO for boot media prep on non-Windows systems.
- Diskette (floppy disc) support removed. SRv5.0 or v6.0 may be used for diskettes.
- Minimal changes will be made to SpinRite's user interface so that its new functions can be provided as soon as possible. But the many changes will be very apparent in SpinRite's performance and its ability to see much more deeply into its client drives.

**SpinRite v7.0** will extend SpinRite's reach to the growing number of newer PCs that have dropped support for the traditional BIOS and no longer support DOS in any form. SpinRite will be rewritten as a client of a 32-bit real time operating system, able to boot on any BIOS or UEFI system natively. v7.0 will be a paid upgrade, with no-charge upgrade protection for recent SpinRite v6.x purchasers.

- Booting and operation under BIOS and UEFI.
- Native high-performance drivers for IDE & SATA drives.

**SpinRite v7.1** will extend SpinRite's maximum-performance reach by adding hardware drivers for USB. This will empower SpinRite to function at maximum possible speed on any drives connected to those interfaces.

- Native driver support for USB OHCI/UHCI, EHCI and xHCI motherboard controllers.

**SpinRite v7.2** will further extend SpinRite's maximum-performance reach by adding hardware drivers for solid-state NVMe mass storage. This will empower SpinRite to function at maximum possible speed on any drives connected to those interfaces as well.

- Native driver support for NVMe solid-state memory.

**"Beyond Recall":** To address the critical need to securely wipe drive data so that it is truly beyond recall, we'll use SpinRite's new maximum-performance native (bare metal) hardware support to create a super-fast and cryptographically-strong and inexpensive data wiping utility. "Beyond Recall" will answer the need to securely eradicate any trace of a mass storage drive's previous data making it safe to sell, give away or discard.

Then, as SpinRite's technology continues to be developed with new "bare metal" drivers, Beyond Recall will immediately inherit these advances so that its technology advances in lock step with SpinRite's.

### **Release timing:**

As noted above, our goal is to make SpinRite v6.1, v7.0 and v7.1 available in succession as quickly as possible, though, in truth, we have no idea what that translates to on the calendar. Unlike other companies, GRC is not driven by management, it's driven by technology. So, all we can promise is that the projects above are top-of-mind and are our primary focus and attention.

