SpinRite 5.0

Owner's Guide Addendum

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THIS OWNER'S GUIDE ADDENDUM *updates the SpinRite version 3.1 Owner's Guide for owners of SpinRite 5.0.*

As a convenience to owners who are upgrading from SpinRite 4.0 we have separated those features which are new to SpinRite 5.0.

SPINRITE 4.0 OWNERS *should note that SpinRite 5.0's new Windows/DOS hybridization changes SpinRite's operation when launching from within Windows. Therefore, please pay special attention to the new "Installing & Configuring SpinRite" section.*

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New for SpinRite 5.0

Operation on 32-bit FAT Partitions

SpinRite 5.0 runs on FAT-format partitions with file allocation table entry sizes of 12, 16, or 32 bits.

Compatible with Device-Driven Drives

For the first time ever, SpinRite can be used to recover, refresh, and maintain non-BIOS-based drives which depend upon device drivers for their operation. This includes the popular Iomega ZIP and JAZ drives, the LS-120 SuperDisk, SCSI drives, and any other drives recognized by MS-DOS at the time SpinRite is started.

Windows/DOS Hybridization

SpinRite is now a true Windows 3/95/98/NT program which contains a textual-based MS-DOS program. You may still run it from an MS-DOS command prompt, or from a (recommended) “clean boot” diskette. But you can now also launch SpinRite directly from within Windows 3.1 or 95/98 without the need for a DOS PIF file.

When it is started from within Windows, SpinRite gracefully closes Windows (after saving any work in other applications), then runs itself from DOS. Windows will be automatically restarted after SpinRite has been terminated.

“NoBlanking” Command Line Option

SpinRite protects your screen by switching to a screen saver after five minutes of keyboard inactivity. But if you would prefer to watch it run without the screen blanker, simply add `NOBLANKING` to the SpinRite command line.

Redesigned Low-Level IDE Drive Interface

IDE drive technology continues advancing to offer state-of-the-art performance. SpinRite is keeping pace with these advancements by updating its hardware-level interface to these new top-of-the-line IDE drives.

New for SpinRite 4.0

Ten Times Faster Operation

SpinRite 3.1 brought newly powerful disk surface defect detection to the end user in the form of "long-period" analysis patterns. Although this approach proved to be very effective in the detection of data-affecting surface defects, we encountered two problems:

First, since each testing pattern had a deliberately long repetition period, each one of the many test patterns could only test "data bit cells" which were spaced far apart. As a result, a great many individually-shifted patterns (typically twenty-two) were required to scrub every possible bit cell. This took an inordinate length of time.

Second, the long-period patterns tended to interact not only with the disk's surface (which we wanted), but also with the read/write electronics throughout the drive's data channel (which we did not want). The result was an effect that we dubbed *"the ping pong effect"* since SpinRite 3.1 would erroneously mark regions as defective, and then later mark them as good.

Some SpinRite users wondered how defects could "come and go"; since this seemed counterintuitive. It turned out that the problem was an interaction between SpinRite's intolerance for any variation in data amplitude even though the long-period patterns had been designed to force just such variations.

No more "Ping Pong."

After three years of extensive laboratory and field experience with SpinRite 3.1, we have introduced an entirely new pattern testing technology based upon "short-period" test patterns. The short-period patterns create the required minimum amplitude data signal that's required for detecting weak spots on a drive, but without coupling into the drive's internal electronics. And since these patterns are able to test *every other* data bit cell, only ***two*** patterns are required rather than twenty-two! Thus, we have the delightful side benefit of up to a ***ten times improvement*** in overall surface defect analysis.

SpinRite's defect analysis is now so fast ***and*** effective that we even eliminated the weaker surface analysis tests. Rather than three "depths" of surface analysis, SpinRite 5.0 now has only ***one*** . . . because that's all you need. Thus, SpinRite 3.1's SEVEN levels of testing have been consolidated into FIVE levels, providing more power and increased speed.

Completion Time Estimation

When we introduced multi-partition operation tagging into SpinRite 3.1, we removed SpinRite's original completion time estimation system. This feature was very much missed by users of version 3.1, so we've returned and improved its operation. Now the Graphic Status Display screen and the moving blanking box both show the elapsed time and estimated completion time for the current partition.

Quick-Run Diskette Operation

SpinRite 3.1 first introduced floppy diskettes to SpinRite's data recovery and maintenance capabilities, but still required a burdensome full system reboot. SpinRite 4.0 added the `DISKETTE` command line option to allow diskettes to be quickly recovered without requiring a "clean" reboot of the system.

SpinRite 5.0's newer technology eliminates the requirement for rebooting (though we still think it's a good idea when possible) which obsoletes the need for the `DISKETTE` command line option. It has been removed from SpinRite.

Data Recovery "Aggression" Control

Though the DynaStat Data Recovery system is stunningly powerful, SpinRite 3.1 users commented that it frequently "took forever" when the drive being worked on (a diskette for example) contained data that just wasn't that precious.

SpinRite introduces the new command line option:

`DYNASTAT` *n*

Where *n* can be any number from 0 through 1000 and is the percentage of the normal Dynastat recovery strength. For example, if you desire 25% of the normal recovery strength, you would add the command line parameter: `DYNASTAT 25` after the SpinRite program name.

Updated for DriveSpace Recognition

Shortly after SpinRite 3.1's release, Microsoft renamed their whole-drive compression technology "DriveSpace." Since the underlying filenames were also changed, SpinRite now correctly recognizes DriveSpace compressed partitions under DOS 6.xx, and Windows 95.

"Intrinsic Caching" Compatibility

On some rare systems, SpinRite 3.1 was unable to operate due to intrinsic data caching that SpinRite could not circumvent. This limitation was completely eliminated by restructuring those aspects of SpinRite. SpinRite now operates upon many DOS storage subsystems where it would not before.

Miscellaneous Interactions Resolved

During the three years of SpinRite 3.1's existence, we encountered miscellaneous operational interactions with obscure hardware and software. Rather than pointing fingers, we've simply solved these problems by incorporating various workarounds. As a result, SpinRite today is more able to operate with anything it encounters than any prior SpinRite.

Installation

Installing & Configuring SpinRite

With the few exceptions noted in this addendum, SpinRite's outward operation has not been changed from SpinRite 3.1. Please refer to the original SpinRite 3.1 Owner's Guide for details about installing SpinRite 5.0.

If you have already created a "clean boot diskette" for SpinRite 3.1, you may simply copy the version 5.0 **`SPINRITE.EXE`** file onto that diskette. This will overwrite and replace the older version of SpinRite.

(SpinRite 2.0 owners: First delete the file **`SPINRITE.COM`**, then copy **`SPINRITE.EXE`**.)

SpinRite 5.0 may be run directly from within Windows 3.1, 95, or 98. (Windows NT must first be manually shut down then re-booted under MS-DOS.)

IMPORTANT NOTE:
If, after exiting Windows and automatically starting SpinRite, any important drives (such as ZIP, JAZ, or SCSI drives) are absent from SpinRite's available drive list, you will need to prepare an MS-DOS boot disk containing the required software device drivers, then exit Windows and re-boot MS-DOS from this diskette so that your special drivers can be loaded.

SpinRite will operate upon any disk drives that are recognized by MS-DOS at the time it is started.

Other Stuff on the Diskette

Purchasers of the diskette-based version of SpinRite 5.0 receive additional files which are also freely available on our World Wide Web site on the Internet at: http://www.grc.com.

Product Literature

Since many customers want to share knowledge of SpinRite with their family, friends, and co-workers, we have included additional SpinRite literature (which is **not** necessary for the operation of the product) in a **PROD_LIT** subdirectory on the SpinRite 5.0 diskette.

This directory contains an Abode Acrobat Portable Document Format (PDF) file which may be easily viewed and printed at high quality on a wide variety of computer systems. The viewing/printing software is FREE from Adobe's Web site at: http://www.adobe.com.

The ChromaZone Demo

The **CHROMA** subdirectory on the SpinRite 5.0 diskette contains a demonstration of ChromaZone, our virtual reality 3D interactive screen saver construction set for Windows 3.1 and Windows 95. Like SpinRite, Steve Gibson wrote it in 100% pure assembly language for maximum performance and minimum size.

No installation is required to try the demo — so it can't mess up your system's configuration — just run the program from the diskette under Windows and see what Steve's been up to!

SpinRite owners may purchase the full ChromaZone product for just $19.95.

Follow the ordering information in the ChromaZone Demo or on our World Wide Web site on the Internet, located at: http://www.grc.com.