**Scannerz with FSE Frequently Asked Questions**

For this document, FSE will be used for both FSE and FSE-Lite. FSE is much more capable than FSE-Lite, but for using it in Scannerz the use is virtually identical, so they won't be distinguished below.

**Questions:**

1. Does Scannerz™ or FSE™ work on PowerPC™ systems with G3 processors?

2. Does Scannerz of FSE work on Tiger (OS X 10.4) Panther (OS X 10.3), or anything earlier?

3. Why doesn't Scannerz work with optical drives?

4. Why doesn't Scannerz work with USB 1.0 and 1.1 drives?

5. Your documentation says Scannerz is hardware oriented vs. file system oriented. What's the difference?

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13. Can I turn a software-only only version of Scannerz into a USB based version?

14. I just upgraded from Leopard to Snow Leopard, now every time I run Scannerz it requests an administrative ID and password. Why?

15. Can I take my USB version of Scannerz and use it on other systems?

16. I don't understand any of the output of FSE. What is it doing and what is it displaying?

17. The FSE display can sometimes sit still for minutes, and then suddenly go crazy putting out so much data I can't see it or keep track of it. Is this normal, and is there a way to see all the messages?

18. When Scannerz is doing a surface scan, FSE isn't showing any activity except when Scannerz does log updates. Why isn't Scannerz activity showing up with FSE?

19. I get an irregularity erratically once in a while with Scannerz. Is this normal?

20. Every time a do a surface scan with Scannerz, I keep getting irregularities over the exact same region of the drive. Is this a problem?

21. I'm getting a lot of surface scan errors. Should I just get a new drive?

22. I'm getting tons of inconsistent errors all over the place, and they're never repeatable. What's going on?

23. I read the manual, and my drive is recording a true seek scan error as opposed to a surface scan error. How serious is this?

24. Can Scannerz be used with SSDs or flash drives?

25. Can the RPI values Scannerz uses to evaluate a drive be correlated to drive performance?

26. I bought two copies of Scannerz, one for my laptop and on for my desktop. The laptop is older and uses an IDE interface, and the desktop is new with a super-fast SATA drive. Both drives are about the same size. When I run Scannerz, it takes a little less time to test the IDE drive than it does to test the SATA drive. Why is this? I would have thought the SATA drive would be a lot faster.

27. I want to put Scannerz on every unit in my company's division. Is volume pricing available?

28. Are Scannerz and FSE available outside the U.S.?

29. How long does it take to scan a drive?

30. Why isn't Scannerz available on Windows?

**Answers:**

1. **Does Scannerz™ or FSE™ work on PowerPC™ systems with G3 processors?** No. Scannerz is really limited by the operating systems most commonly available at the time it was written. However, if SCSC gets enough requests for versions supporting earlier hardware and operating systems, we may consider developing versions for such hardware. However, considering the age of some of these systems, we think the demand will likely be limited or non-existent.

2. **Does Scannerz of FSE work on Tiger (OS X 10.4) Panther (OS X 10.3), or anything earlier?** No. Scannerz wasn't developed for anything earlier than Leopard (10.5) because statistical data indicates Leopard and Snow Leopard comprise over 95% of the OS X versions in use. As in item 1 above, if we receive enough requests, we might develop versions for Tiger or Panther, be we doubt such demand will exist. FSE and FSE-Lite could not be used on anything earlier that Tiger because the file system events daemon wasn't available on the operating system.

3. **Why doesn't Scannerz work with optical drives?** Optical drives, particularly read/write drives, have inconsistent tests results due to radical quality deviations in media, as well as the fact that dirt accumulated from normal wear (dust, fingerprints) tend to lead to test results that are not repeatable. A hard drive, if functioning and sealed/filtered properly, has little or no dust and obviously no fingerprints so the characteristics are repeatable.

4. **Why doesn't Scannerz work with USB 1.0 and 1.1 drives?** One of the critical factors that Scannerz measures is the time it takes for it to complete each of it's tests. A typical drive is subjected to hundreds of thousands and in the case of very large drive, millions of tests. To detect errors and irregularities, Scannerz has to internally define limits to help predict when a drive is developing problems. Because the response times of any USB devices that adhere to specs earlier than 2.0 have slow data rates and response times, we would have had to “loosen up” the specs that we use to define problems. On contemporary hard drives, this could lead to Scannerz completely missing some problems that might be in the process of developing. Rather than compromise, we simply decided to drop support for

USB 1.0 and 1.1 devices. Additionally, they're old and evidence suggests few of them are left on the market.

5. **Your documentation says Scannerz is hardware oriented vs. file system oriented. What's the difference?** Hardware oriented essentially means that Scannerz doesn't really care what the file system is, as long as the operating system recognizes it. The tests Scannerz performs are on the hardware only with the sole purpose of finding problems before they become significant or identifying them if they already exist. A file system oriented product will do things like repair index files, possibly recover deleted files, defragment drives, possibly do some degree of surface scanning, and other items that have more to do with the files installed on the drive or volume as opposed to the evaluating the quality of the condition of the drive or volume itself. File system oriented systems have merits, but in our opinion, most significant problems with drives are hardware related, and attempting to patch them may give the end user a false sense of security. The fact is, the day of the $1000.00 hard drive are long gone with 1TB drives now costing $49.99 at some stores. Why hang on to and “patch up” a failing drive instead of just replacing it if it really has problems that can't be corrected?

6. **Does Scannerz and/or FSE work on Lion (OS X 10.7)?** Yes.

7. **Can Scannerz scan remote drives?** It depends on what's meant by “remote drives.” Scannerz can work properly with a USB 2.0 (or newer) drives and all Firewire drives. It shouldn't be used with networked drives because network access and timing is unpredictable. Scannerz also shouldn't be used with RAID or other multi-disk systems.

8. **Does Scannerz use S.M.A.R.T. technology?** Yes, but minimally. Scannerz only checks internal hard drives for S.M.A.R.T. that are so enabled, and it only checks for a failure. OS X doesn't support S.M.A.R.T. monitoring on FireWire or USB drives. We've found the implementation of S.M.A.R.T. to be variable from vendor to vendor, with the only consistency being instances where S.M.A.R.T. has indicated that a drive is about to fail. In this case, Scannerz will issue a warning dialog to the user telling them to exit Scannerz and recover whatever data they can, if it's still possible. A S.M.A.R.T. failure is serious and shouldn't be ignored.

9. **Why shouldn't I run other applications while Scannerz is running?**

Scannerz is extremely disk intensive and will tend to drastically slow applications on most systems down to a crawl. Scannerz also requires as much access to the drive as possible and timing is critical. If Scannerz has to contend with another application for drive access time, it will slow a Scannerz test down, and can induce false irregularities.

10. **Can I transfer Scannerz to another system if I get rid of my existing system?** Scannerz, whether on a USB drive or not, is licensed software. The license allows the licensee to transfer it to another system provided it's deleted on the original system. If the unit is a USB unit, the user may also need to clean up the Scannerz directory under Library->Application Support so it doesn't retain what will now be useless information.

11. **What are SCSC's policies regarding updates?** SCSC will make updates available at no cost to registered users for every major version of Scannerz and/or FSE when they become available for the licensed version they own. The major version number is always the first number in a version sequence. For example, if you have version 1.2.10.55, then the major version number is “1” and any updates that apply to that release will be free of charge. Addtionally, if a user purchases a license of Scannerz and new, major version is released within 90 days of their purchase, SCSC will provide, at no cost to the purchaser, a complete software update that can be applied to their existing USB based version of Scannerz or to overwrite their current software-only version of Scannerz.

12. **Of the USB and software-only versions of Scannerz, which is better?** The tests Scannerz performs with the USB and software-only only based versions are identical, but the USB version allows the end user to not only install the software-only version, but also launch the application from the USB flash drive if so desired. This is a good idea if the drive being tested is suspected of being unreliable.

13. **Can I turn a software-only only version of Scannerz into a USB based version?** No. The USB version uses the USB launcher to launch the Scannerz application that resides on the flash drive. Because permissions on the flash drive are not permanent, the launcher effectively assigns them at run time.The launcher also communicates with the Scannerz application.

14. **I just upgraded from Leopard to Snow Leopard, now every time I run**

**Scannerz it requests an administrative ID and password. Why?** Snow Leopard has better security. Having to authenticate Scannerz is a good thing.

15. **Can I take my USB version of Scannerz and use it on other systems?** No. Scannerz essentially “marries” itself to a system by recording hardware parameters that it evaluates for testing. If you took a USB based version from one system to another, it's likely that the data areas of the Scannerz USB device would fill up and eventually produce an error because there would be no more room for them to write the data and the file indexes would overflow.

16. **I don't understand any of the output of FSE. What is it doing and what is it displaying?** FSE puts out the full path, file name, and operation being performed on files. Some of the names likely look strange because programs such as web browsers frequently write a lot of temporary data, frequently with names that look strange to those unfamiliar with them. Users may need to do a little detective work if they're concerned about what they're seeing or logging.

17. **The FSE display can sometimes sit still for minutes, and then suddenly go crazy putting out so much data I can't see it or keep track of it. Is this normal, and is there a way to see all the messages?** It's perfectly normal. During operation, the operating system will periodically bring up processes that work in the background without the end user knowing about it. If one of these activates, drive activity may pick up radically and then stop. The display FSE uses is really intended for convenience only, and if you wish to record it's output, click on the “logging” option to enable logging.

18. **When Scannerz is doing a surface scan, FSE isn't showing any activity except when Scannerz does log updates. Why isn't Scannerz activity showing up with FSE?** FSE only records “normal” drive activity that uses higher level operating system calls to read and write data files. Scannerz is using very low level I/O and bypasses the operating system and buffers to work directly on the drive when testing it. When Scannerz needs to update log and/or data files, it reverts to using the normal I/O channels, and thus FSE sees it.

19. **I get an irregularity erratically once in a while with Scannerz. Is this normal?** Getting a periodic and non-repeatable irregularity is not unusual, but you should make sure the irregularities are not consistent from test to test by checking the log files. False irregularities are typically caused by hardware/software “hiccups” when a component in the system issues a high level interrupt that interfere with Scannerz operation. These are typically rare. If you're seeing a lot of irregularities, you should check with the manual as it likely means there's some type of problem with the hardware or the testing process.

20. **Every time a do a surface scan with Scannerz, I keep getting irregularities over the exact same region of the drive. Is this a problem?** Probably. Scannerz identifies an irregularity as an operation that's taking an abnormally long amount of time to complete. If these are repeatable from test to test within a region of a drive, it usually indicates surface damage to the platter has developed or is developing. It's not uncommon for regions that eventually fail on a hard drive to first manifest themselves as irregularities. Note that repeatability need not be exact, but rather within a region to be of concern.

21. **I'm getting a lot of surface scan errors. Should I just get a new drive?** When Scannerz runs, if it detects real errors in a surface or seek scan, it assigns a status of “FAILED” to the unit. This doesn't mean the drive is useless. Most contemporary drives can automatically remap bad sectors to spare sectors, provided the pool of spare sectors isn't exhausted. This is detailed in the users manual for Scannerz.

22. **I'm getting tons of inconsistent errors all over the place, and they're never repeatable. What's going on?** If the drive is external, make sure it's not a USB 1.0 or 1.1 drive. Scannerz doesn't support these because their response times are too slow. If this is not the case, it typically indicates that there's a hardware problem associated with the connections between the logic board and the drive itself. This is detailed in the users manual.

23. **I read the manual, and my drive is recording a true seek scan error as opposed to a surface scan error. How serious is this?** It's very serious. In many cases, surface scan errors indicate a problem exists on the drive platters that might be able to be “formatted out,” but a true seek scan error indicates the drive can't position the heads over the region of the

drive's platters that are to be read. This implies that a mechanical failure is in the process of occurring, and there's little that can be done about it. The manual provides details about this. Do a backup as soon as possible!

24. **Can Scannerz be used with SSDs or flash drives?** Scannerz will treat these as if they're regular hard drives, but the results might be erratic. SSDs are a “moving target.” The technology and how the OS deals with SSDs is still emerging. Future releases of Scannerz will have better SSD support. Scannerz can still be used with either of these if the user suspects the problem is related to the hardware connectivity circuitry or certain sections of the devices are unreadable.

25. **Can the RPI values Scannerz uses to evaluate a drive be correlated to drive performance?** No. The RPI values are based on overall response and performance from the drive controller to the drive itself, and the relative performance indices (RPI) are with respect to that as a system. There is no direct correlation between an RPI value for a particular drive in a particular system and it's advertised speed.

26. **I bought two copies of Scannerz, one for my laptop and on for my desktop. The laptop is older and uses an IDE interface, and the desktop is new with a super-fast SATA drive. Both drives are about the same size. When I run Scannerz, it takes a little less time to test the IDE drive than it does to test the SATA drive. Why is this? I would have thought the SATA drive would be a lot faster.** Transfer rates advertised by manufacturers are typically hard drive buffer to system data rates, not the data rates of the data being read off the drive platters themselves. The unbuffered data rates from the drive heads to the drive controller, which is what Scannerz pays attention to, will vary, but not widely, based on the rotational speed of the drive and the tactics used by the manufacturer to map the data to the drive itself. This is not uncommon.

27. **I want to put Scannerz on every unit in my company's division. Is volume pricing available?** Yes, but you need to contact SCSC directly to do this.

28. **Are Scannerz and FSE available outside the U.S.?** Currently no, but they likely will be in the near future. Check back for updates.

29. **How long does it take to scan a drive?** If a drive is problem free, it can typically take about 20-30 seconds per gigabyte for a surface scan, and the seek scan test typically runs from 30 seconds to a few minutes. Because Scannerz does a lot of calculations in it's analysis, this speed will obviously vary with the CPU speed of the unit. If the drive has problems it can take considerably longer. When operated in the normal mode of scanning, Scannerz can be stopped and resume scanning at a later time or day. This feature was added to Scannerz so people could test large drives without having to dedicate hours and hours on end to uninterrupted testing.

30. **Why isn't Scannerz available on Windows?** The systems Apple produces have much tighter control over what goes into a system, and hence the results are much more repeatable and predictable from system to system. With a Windows PC, there's no telling who made the mother board, the drive controller, or the drive, what processes are interrupting the system and when, and how much deviation should be allowed to indicate a problem is in the process of developing . That's not to say it can't be done, it would just require a considerable amount of research to do so, and SCSC's technical staff has a lengthy background in UNIX based systems.

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