Welcome to The Silverlining Pro 6.2 Quick Start Guide

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For the latest release of Silverlining Pro please consult the support section of our worldwide web site on the internet: http://www.lacie.com

Please make sure to consult your printed copy of The Silverlining Pro Users Guide for complete documentation.

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What's New in 6.2?

Silverlining Pro 6.2 adds support for USB and FireWire Storage devices, such as LaCie's USB hard disk and magneto-optical removable cartridge drives, as well as LaCie's new FireWire peripherals.

In addition to adding support for LaCie USB and FireWire drives, several other improvements have been made for SCSI and IDE/ATAPI drives including:

• Installer is provided for easier installation
• Improved performance for very large (>16MByte) transfers
• Improved caching for drives with 1024, 2048, 4096 bytes/sector
• Improved support for System 8.5 and 8.6 ICONs
• Improved compatibility with Norton Disk Doctor for HFS+ partitions
• Improved password performance

Silverlining Pro is compatible with MacOS 8.5.1 and 8.6. For best FireWire performance, be sure to use Mac OS 8.6 and update the Apple FireWire support to v2.1 or later. Additional info available at:

http://www.apple.com/firewire

Outstanding Issues:

• Silverlining Pro password protection is NOT fully compatible with PowerBook G3 sleep mode. If you have external SCSI devices initialized with Silverlining Pro, they may not be remounted if you allow your PowerBook to sleep, and then wake-up. After wake-up, your drives will may not be mounted due to a unresolved problem that Apple is investigating. You may need to reboot to access your drive. Your drive will not be damaged.

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Introducing Silverlining Pro

Introducing Silverlining Pro, an integrated complete solution for all of your Macintosh block-addressable storage devices. A convenient control panel, Silverlining Pro offers state of the art removable media management along with the most comprehensive feature set available in Macintosh formatting software:

Silverlining Pro will format initialize and partition any standard Mac SCSI or IDE/ATAPI block-addressable storage devices, including hard disk drives, SyQuest, Jaz, MO, Zip, and more. Friendly takeover of drive and installation of the Silverlining Pro driver without data loss on most drives. Additionally, Silverlining Pro supports LaCie FireWire and USB storage products such as the LaCie FireWire External Hard Drive, and external USB Hard Drive and MO Drive. Silverlining Pro **DOES NOT** support USB or FireWire storage peripherals from other third party companies. You must use the USB or FireWire drivers that come bundled with those products.

Silverlining Pro is optimized for compatibility with MacOS 8.5.1 and 8.6, and all the latest Macintosh computers; it includes full HFS+ support. Some key features of Silverlining Pro:

- HFS+ support includes user selection of "allocation block size".

- Easy to use graphical interface for partitioning.

- Resizable control panel dialog to suit user preference.

- Password protection is available to prevent mounting or changes to volumes, and administrator passwords are also available. Easy volume locking. Specify which volumes are automatically mounted at startup.

- Full hardware diagnostic capabilities for testing device mechanism integrity, and surface scan of disks. Fast and simple 2 minute check to make sure your drive is in good working order.

- Built in RAID 0 (striping) for SCSI drives.

- Finder-style drill down interface for clutter-free viewing of busses, devices, and volumes.

- Full support for Wide, Ultra2/LVD PCI storage busses, including LUN support.

- Full log/save functions for all drive/volume information for easy support.

- Fully configurable mounter for all removable storage devices. Clear and simple control panel for managing drivers, will peacefully co-exist with other manufacturer's software.

- Easy to find, always ready to use, available from your control panels menu.

- Easy to navigate secondary window interface. For example, if you highlight a bus and get info, a new window will open with the bus displayed in a smaller window area on top. If you are getting info on a drive, you can click on the bus in the top area and the info displayed will change accordingly, etc.

- When formatting a drive we install the factory default page mode settings, and if drive supports SCSI standard capability, the read and write caches are enabled.

The Drive Setup window is entirely revised:

- Test drive hardware is a new set of tests that replace short tests. For a hard drive they take 2 minutes, for an MO an other slower devices they take 4 minutes.

The tests consist of, in order:

1. internal self test

2. The remaining time available is divided into: 25% of time for read/write to internal memory (cache test), 50% random reads of drive media, 25% read, write, & restore to areas determined to not be in use, or containing user data.

Scan media for bad sectors is a single pass of write, read, & compare of random data to every sector on drive. This test is destructive—it leaves the drive filled with random data.

Drive may be formatted without installing file system. This can be handy when moving a drive to another platform.

When formatting drive we install the factory default cache control page modes, plus enable error correction if available.

The custom setup window now shows proportions of a partition used/unused in different colors.

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Installation

1. Boot up from your primary drive and insert the Silverlining Pro diskette or CD-ROM.

2a. **For floppy version:**
Copy the Silverlining Pro Control Panel to the System Folder icon of the startup drive. Silverlining Pro will be placed in the Controls Panel folder automatically. Note the name includes a space in front of the "S" (name is " Silverlining Pro"; this is done so it will load first, before other control panels.

2b. **For CD-ROM version:**
Double-click on the Installer ICON, and follow directions in the dialog. Silverlining Pro will be placed in the Control Panel folder automatically. Note the name includes a space in front of the "S" (name is " Silverlining Pro"); this is done so it will load first, before other control panels. Other information is placed in the appropriate directory.

2c. **Note for Systems before 7.5.3:**
An older version of Silverlining control panel is installed: Silverlining Lite v2.2.2 for compatibility with your system.

3. Restart the Macintosh.

4. To use, choose Silverlining Pro from the Control Panels menu in the Apple menu.

Updating the Silverlining Pro driver

A drive must have a valid Silverlining Pro driver in order for you to perform most actions on the drive. You may want to update the driver should it become outdated or corrupted.

1. Back up the data on the drive.

2. Open Silverlining Pro.

3. Select the drive that you wish to update.

4. Click Setup.

5. Select the Update Driver box. Do not select any other boxes.

6. Click Update. A confirmation appears indicating that the driver will be updated.

7. Click OK to update the driver.

8. Restart your computer to use the new driver.

Note that you will not be able to update the driver on your boot volume. If you want to update the driver of the drive containing your boot volume, you must first reboot your computer from a CD, emergency boot floppy, or another drive.

Your options are to create an emergency, bootable Silverlining Pro Floppy, or boot from another volume which contains a valid System folder, into which you have installed Silverlining Pro. Another option would be to make a copy of Silverlining Pro to a fresh blank floppy, boot the Mac from a System install CD, insert the floppy and run the copy of Silverlining Pro on the floppy.

Important precautions

Run Silverlining Pro only when necessary

If you purchased your new hard drive from LaCie, you can begin using your new drive immediately without running Silverlining Pro. The new drive has already been initialized (but it does not include a System Folder). Set up a bootable Silverlining Pro Startup Diskette ahead of time. Run Silverlining Pro only when you have a specific reason to do so, such as partitioning, testing, troubleshooting, installing drivers, or password-protecting volumes.

Don't run Silverlining Pro to "experiment" with your drive; this may result in unwanted loss of data.

Always back up your drive before running Silverlining Pro

Frequent backups are your best precaution against drive catastrophes. It's a good idea to purchase a reliable backup program and develop a strategy that ensures complete backup of all your files. It is especially important to back up the data on all volumes of your drive before running Silverlining Pro, especially when repartitioning drives, or initializing any of the drives connected to your Macintosh. Although Silverlining Pro warns you before erasing data, an accidental system error or power failure during an operation could result in permanent data loss.

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Making a bootable Silverlining Pro Floppy

This section explains how to make a blank floppy disk into a bootable Silverlining Pro Startup Diskette compatible with your Macintosh model. The Silverlining Pro Startup Diskette that you create must contain these essential files:

Minimal System: A stripped down version of a System file with just enough resources to perform basic functions. Copy this file from the Disk Tools Disk or Macintosh CD that came with your computer (see the Appendix in the LaCie Storage Utilities User's Guide for details).

System Enabler: A file containing the resources required by a specific Macintosh model. Copy the correct System Enabler (or Minimal System Enabler, if available) for your Macintosh from the Disk Tools Diskette or Macintosh CD that came with your computer (see the Appendix in the LaCie Storage Utilities User's Guide for details). Note that some Macintosh models do not require this file.

Disk First Aid: An application used to verify each volume of a drive and in many cases fix the problems it detects. Copy this file from the Disk Tools Disk or Macintosh CD that came with your computer (see the Appendix in the LaCie Storage Utilities User's Guide for details).

Special mini-Finder: An ultra-compact Finder designed to open SOSLauncher at startup. Copy this file from the LaCie Storage Utilities Diskette.

SOSLauncher: An application that lets you open Silverlining or Disk First Aid, or restart or shut down the Macintosh. Copy this file from the LaCie Storage Utilities Diskette.

Silverlining Pro SOS: A smaller, compact version of the drive management application used to set up, modify and troubleshoot your drive. Copy this file from the LaCie Storage Utilities Diskette.

Why must I make a Silverlining Pro Startup Diskette?

If a bus problem prevents you from booting from your internal or external CD-ROM drive, you will need to get around it by booting from the floppy drive, if your Macintosh has one. This may be the only way to restore proper system operation.

When should I make my Silverlining Pro Startup Diskette?

Right away! Should a hard drive problem arise that requires you to boot your Macintosh from a Silverlining Pro Startup Diskette, you won't be able to do so if you haven't already created a bootable floppy. To help you to create that floppy we have included a small emergency version of Silverlining Pro called Silverlining SOS—it has all the functionality of Silverlining Pro but is English-only to save space.

Although our Technical Support Department stands ready to assist you, this situation is easily avoidable by promptly making your bootable floppy following the few simple steps outlined below. We suggest that you create a copy of the LaCie Storage Utilities diskette which came with your drive, and use that to create your Silverlining Pro Startup Diskette, rather than the original. You should keep the original diskette in a safe place.

Can I just replace my old copy of Silverlining on my existing boot floppy with the new Silverlining Pro?

Yes, you can, but this disk won't work correctly, you'll also need to replace the old Silverlauncher file with the new SOSLauncher included on this floppy—the change from an application to a control panel makes this necessary.

Begin with three (3) floppy disks.

Floppy #1: Find or make your Disk Tools diskette. This floppy came with your Mac OS software. If your version of the Mac OS did not include a Disk Tools Diskette, the files necessary to create it are located on most Mac OS CDs.

IMPORTANT DISK TOOLS NOTE: Before proceeding any further, you should make certain that your Disk Tools diskette is the correct one for your Macintosh. You can quickly test this by attempting to boot your Macintosh from this floppy. If it boots the Mac successfully, then you have an appropriate Disk Tools diskette (even if the version number on the Disk Tools diskette doesn't exactly match the one on your installed Mac Operating System software).

Floppy #2: The LaCie Storage Utilities diskette or CD which came with your LaCie drive.

Floppy #3: A blank high-density 1.4MB floppy diskette (this will become your Silverlining Pro Startup Disk). To prevent problems, this should be a newly-initialized floppy, to provide as much free disk space as possible for your Silverlining Pro Startup

Diskette. Initialize this new diskette to remove all other data from it.

What goes on the floppies and how to get it there:

Floppy #1 (or Disk Tools Diskette) already contains the System file, the System Enabler files, and Disk First Aid. Please note that some versions of the Mac OS do not have a System Enabler file. If your Mac OS lacks a System Enabler file, you don't need to worry about it.

Floppy #2 (The LaCie Storage Utilities Diskette) already contains the following files:

Floppy #3: Copy the files depicted in the previous two steps; the result will be your completed, ready-to-use Silverlining Startup Diskette, which now should resemble the diagram below (note that the System Enabler may not be present).

We strongly encourage you to make a copy of your Silverlining Startup Diskette and store the original in a safe place. You can boot your Macintosh from this floppy to run Silverlining as an application.

Test your Silverlining Startup Diskette:

After creating your Silverlining Startup Diskette, you should reboot your Macintosh with the diskette inserted into the floppy drive to make certain that your Macintosh will boot from the floppy. Then quit Silverlining, restart your Macintosh normally, and store your Silverlining Startup Diskette in a safe place.

An alternate way to run Silverlining . . .

If for some reason you cannot boot from your floppy drive, there is another way to run Silverlining. If your Macintosh's System software came on a CD, you can boot from this and run Silverlining from your floppy drive. To boot from the Mac OS CD, insert it into your CD-ROM drive and restart your Macintosh while holding down the "c" key. Then insert your (copy) LaCie Storage Utilities diskette into your floppy drive and run Silverlining from there.

Although Silverlining will run acceptably in this manner, we strongly recommend that you create and use the bootable Silverlining Pro Startup Diskette.

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Drives Larger than 2 Gigabytes

If you purchased your new SCSI drive from LaCie, it has been formatted, tested and partitioned at the factory; it is divided into two partitions, a large one (which mounts at startup) and a smaller one (which does not; though present on the drive, it does mount automatically). The smaller of the two volumes contains the LaCie Storage Utilities software, including Silverlining Pro. This software is accessible by clicking on the LaCie icon we have installed on the larger volume. This smaller volume is locked to prevent you from accidentally erasing the utilities from your hard drive.

Your new FireWire or USB drive will come initialized as one volume, with nothing on the drive. You should re-initialize your drive, and partition the drive to suit your particular needs.

If the larger volume of your hard drive exceeds the maximum size your System software can handle, then both volumes will mount (Only the smaller volume will be usable, and you will be able to access the LaCie Storage Utilities software directly from this volume). You will see a warning that reads:

You have a volume that is too large to access with this version of the operating system.

You need to upgrade the System or Setup your drive at [location] with smaller volumes.

To access the "missing" space on your hard drive, you can either:

1] repartition the larger volume into partitions small enough for your System to handle (See "Modifying Partitions" in the LaCie Storage Utilities User's Guide for details), or

2] upgrade to a more recent version of the System software.

About volume sizes and System software

Volumes larger than 2 GB require System 7.5.3 or later. If you attempt to use a volume larger than 2 GB on an earlier version of the System software, your drive will not work reliably and you may experience lost data or other unpredictable results.

On a drive with System 7.5.3 or later, Silverlining Pro will allow you to create or change volumes in size up to 1 Terabyte.

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Drive Sizes Explained

Many of the vendors of storage products for the SCSI storage market identify their drive models and capacities by using the same model number and capacity as the original manufacturer of the drive mechanism. However, these model numbers only reflect a hard drive's approximate capacity. The exact capacity available for a user's files may vary slightly, just as an automobile engine touted as "2-liter" may have an actual displacement of 1,950 cc's. Vendors may round up or down to the nearest "gigabyte" multiple, or hundreds of megabytes.

Another reason your drive's actual capacity may differ from its nomenclature is that hard drive manufacturers use a slightly different yardstick to measure megabytes than your Macintosh does. Hard drive manufacturers define a megabyte (MB) as 1,000,000 (one million) bytes, or 1,000 kilobytes (KB). However, the Macintosh defines a megabyte more precisely as 1,048,576 bytes (1,048K).

Additionally, some of your hard drive's capacity is used with formatting and driver data. This includes such essentials as the partition map, the desktop files, the SCSI driver, and directory information. Although the space taken up by this information still exists, it is not usable for storing other files. Even when a user has placed no files of his own on the disk, some space must still be reserved for this information. This reserved space, along with the difference between reckoning storage in millions of bytes (1,000K) versus megabytes (1,048K), accounts for the two very different storage capacity values which may be seen for any given drive.

For example, your new 9GB hard drive may yield only 8.5GB of usable space.

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VirtualDisk Automatic Cataloging Software

VirtualDisk is the premier automatic removable-media cataloging program. Installed as a Control Panel, VirtualDisk runs in the background and automatically catalogs all floppies, cartridges (SyQuest, Bernoulli, Zip, Magneto-Optical, Jaz, or Floptical), and other removable media as they are ejected. The Catalog file, which is dynamically re-sizable, stores the information for each file and application cataloged. The catalog file is displayed on the Finder's desktop as the VirtualDisk volume icon, so the entries can be viewed, opened, and copied using standard Find commands (Find, Find Again, Get Info, Open, etc.).

VirtualDisk provides an up-to-date, accurate catalog of all your floppies and removables. You don't need to open a separate application to catalog your files, and you no longer need to keep all of your files and applications on your hard disk because you can easily locate and open the files you need from the VirtualDisk volume icon. VirtualDisk provides the best means to keep a record of all your files at your fingertips.

See the online help within VirtualDisk for more information on VirtualDisk's capabilities and for complete operational details. VirtualDisk is located in the Software folder installed on your hard drive or in your Silverlining Pro diskette or CD-ROM.

To Install VirtualDisk from CD-ROM

VirtualDisk is installed from integrated installer if your Silverlining Pro was delivered on CD-ROM.

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TimeDrive V2.0 Instructions

The TimeDrive utility lets you test the performance of the selected volume on a drive. It will also very verify the reliability of data transfers by checking the data read during its read/write timing measurements.

If you received the floppy diskette version, copy the utility to your hard drive and double-click the icon to open it. Otherwise it will can be installed using the CD-ROM installer.

Select Volume Dialog Box
When you start TimeDrive, it displays the Apple, File, Edit and Options menus. It also displays the Select Volume dialog box where you can select a volume whose speed you want to test.

Volume List
The Volume List displays all mounted volumes that you can select to test the speed of. A volume can be an SCSI device, a floppy drive, a networked volume, a RAM disk, and so on. Until you select a volume from this list, the Test button remains dimmed.

Where
After you select a volume that you want to test, the TimeDrive application displays where the volume is located. The drive icon appears along with the SCSI ID number in parentheses.

Size
After you select a volume that you want to test, the TimeDrive application displays the size of the volume in K (kilobytes).

Test Button
After you select a volume to test and check the options and parameters to be sure they're set the way you want them, click Test to begin timing the drive. Until you click the Test button, the File and Edit menus remain dimmed.

The TimeDrive application displays a window with instructions and testing progress information.

During speed testing, the TimeDrive application creates a temporary contiguous scratch file. Then, it executes single large block reads and writes, measuring the time and converting it to Kilobytes per Second. Seeks are restricted to a single volume, or partition, on a drive. A volume that is smaller than the total drive yields noticeably smaller seek times than the drive specification--another advantage of partitioning hard drives.

The total time for a disk transfer is calculated using this equation:
Total Time = Seek Time + Latency + Data Size / Transfer Speed

Latency = #.### ms (#### RPM)
Latency is the time required in ms, or milliseconds, for data to rotate under the heads. On average, this is one half the disk revolution time. RPM stands for Revolutions Per Minute.

Ave. Seek = ##.### ms, (access = ##.### ms)
Average seek times are measured by reading 200 random locations within the selected volume.
Maximum seek times are measured by reading the first and last location within the selected volume.

Read from Cache = ### us, (setup = ### us)
Cache hit times are measured by reading 200 times from the same disk location. In this case, the disk drive will not access the media, but will return the data stored in internal cache memory. This test determines how much time is take by the Mac operating systems and the disk driver to set up the transfer and transfer 512 bytes. The setup time in parentheses represents the time if zero bytes of data was transferred.

Write transfer rate = #### KBytes/Sec.
Read transfer rate = #### KBytes/Sec.
The Data Transfer Speed measures how fast data moves between your drive and the Macintosh once the drive head reaches the data--you might think of this as the speed the data travels across the SCSI cable. This transfer rate is measured in kilobytes per second. Transfer times vary depending on your Macintosh and drive combination.

Note: The data read during Read Transfer Rate measurements is checked against the known random data written. This thoroughly tests the reliability of storing and retrieving data on the selected volume.

Simulated "Typical" rate = ### KBytes/Sec.
The Simulated "Typical" rate measures the speed of a sequence of randomly selected, yet typical, disk transfers. This simulated rate of data transfers is more like the way you normally use your computer: data is not transferred constantly. The data transfers involve a small number of single block requests (system resources) followed by a number of 1-32 block requests (application requests). The number reported, the "effective transfer rate", is lower than read/write transfer rates since seek and latency times are included in the calculation.

Apple Menu

The Apple menu contains one command for the TimeDrive application:

About Time Drive

About Time Drive displays the instructions, or the top half, of the Instructions and Progress Window illustrated above.

File Menu

The File menu contains commands that let you begin testing, repeat testing, perform continuous testing, save your preferences, and quit the application.

Note: Until you've selected a volume and clicked Test to test the speed of a volume, the File menu remains dimmed. Thereafter, you can select any of the commands from this menu.

Time Drive
The TimeDrive command displays the Select Volume dialog box illustrated above that lets you select a drive and begin testing its speed.

Again
Again lets you test the speed of the selected volume again.

Continuous
Continuous lets you repeatedly test the speed of the selected volume.

Save Preferences
Save Preferences lets you save the options and parameters that are currently selected. When you choose Save Preferences, TimeDrive displays a confirmation message to be sure you want to save these settings.

Quit
Quit lets you quit the TimeDrive application.

Edit Menu

The Edit menu contains the Cut, Copy, and Paste commands. After you've tested the speed of a volume, you can select a piece of text in the Instructions and Progress window and copy or cut it to the Clipboard. You can also paste the contents of the Clipboard at the cursor position inside this window.

Options Menu

The Options menu lets you choose the timing procedures and parameters.

Time Latency, Time Ave Seeks, Time Max Seeks, Time Writes, Time Reads
These Timing options are explained above in the "Test Button" section.

You can also choose Parameters to view or change the timing parameters.

Parameters
Parameters displays the Test Parameters dialog box where you can view or change the testing parameters.

Size of transfer (in K)
TimeDrive reads and writes data in blocks of the size you specify in the Size Of Transfer text box. The default size is 512K. TimeDrive will create a contiguous file of the selected size (i.e. not fragmented). If such a file can not be created, then a smaller file will be created and you will be warned that a small transfer size is used for testing. The maximum transfer size is determined by the amount of free memory.

Test data after reading
Select Test Data After Reading if you want the TimeDrive application to test the data after reading it.

Report data errors
Select Report Data Errors if you want the TimeDrive application to tell you if it encounters errors while reading or writing data.

Test data pattern
Select one of these test data patterns: Random, Sequential, or Worst Case. Or, you can enter any combination of characters to use as a test data pattern in the text box.

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Contacting LaCie

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