

by L. Davenport

TechTool Pro is a full featured diagnostic and repair utility that can check your software, hardware, and peripherals for problems. If TechTool Pro finds problems with your Mac, it will let you know and will provide straightforward advice on how to proceed. If the problems are of a type that may be repairable, then TechTool Pro will offer you the option to attempt repairs.

TechTool Pro has a number of automatic checks and routines that run in the background. These will forewarn you of impending problems and will increase the chances of successful data recovery and repair in the case of disaster. These automatic features are fully configurable by the user.

TechTool Pro also includes a number of features that allow you to more effectively work with your computer and data. These include defragmentation (not compatible with APFS drives) and optimization to enhance drive performance, data recovery routines to rescue data from damaged drives, and Wipe Data tool to securely delete sensitive information on HFS formatted drives. You can even set up an emergency boot partition which includes the TechTool Pro program for your pre Monterey System drives. Then, if problems arise, you can boot from the emergency drive and use TechTool Pro to attempt data recovery and/or repairs.

The following will be a more in-depth look at these and other tools that come with TechTool Pro.

User Interface

Once you open TechTool Pro, it automatically runs several hardware tests and shows the results in a row of five diagnostic dials for your Mac's USB, Cache, Processor, Network, and Thunderbolt speeds (look at the top Figure #1). The bottom part of the opening window displays the Computer Configuration (your computer type and which hard drives and SSDs are attached) along with some of the tests that can be run listed along the left of the window. At the bottom of the opening window is a bar graph for each installed processor. This displays processor usage in real-time.

At the top left corner of the TechTool Pro window are three buttons for Tests, Tools, and Reports. Let's take a closer look at each of these three options:

Test Category

1. The **"Check Computer"** option will run a suite of tests on your computer and on attached drives and volumes. These tests check your files, hardware components, etc. If you are in a hurry and don't want to run all of the tests, you can run individual tests. An explanation of each test is listed below (in list numbers 2 - 12).
2. **Memory test:** RAM problems are quite prevalent and can cause a variety of crashes, program errors and even data loss. The RAM is extremely susceptible to damage from static electricity, moisture in the air, overheating, and thermal fluctuations. So it is crucial that you perform tests to be sure it is working properly. As part of the RAM test, Micromat has included an SPD report that shows you an enormous amount of technical and other interesting information about your computer's memory



Figure #1. This is TechTool Pro's opening window which shows a row of five diagnostic dials across the top, the available "Test" on the left, and a graphic representation of your computer along with all of its attached hard drives on the right.

3. **Surface Scan:** This test checks the surface of your hard drive(s) for bad blocks. This test will let you know the number of bad blocks that it encountered along with the names of any files that reside in an area that has a bad block.

4. **SMART Check:** TechTool Pro will read the SMART parameters of NVMe (PCI-Express) and SATA hard drives. FYI: Drives that are SMART equipped are monitored for behavior which may cause a drive fail. You are then alerted to the problem which in-turn gives you time to back up your important information before your drive fails.

5. **Partition Map:** This will verify the health of the partition map and the Partition Repair tool will repair any errors found in the partition map. The Partition Map verification includes partition map layout, EFI System Partition, Core Storage Physical volume partitions, and provisioning of space for boot loaders.
6. **Volume Structures:** TechTool Pro will scan for structure problems and then reports the name any file that is structured incorrectly.
7. **Video Memory:** Your computer's VRAM must be fully functional for graphics to be correctly displayed. Damaged VRAM can cause missing bits, screen noise, system lock ups, or freezes. This test will exercise the VRAM to try and locate any problems.
8. **Fan Test:** Most computers have one or more fans that try to keep your Mac's processors and hard drives cool. The Fans Test will modulate the speed of the fans (up and then back down) to be sure that your Mac can utilize its fan(s) to increase cooling if needed. BTW: You can actually hear the fans revving up and down during the test.
9. **Sensors Test:** Macs have a number of sensors that are used to monitor temperatures, voltages, power, and currents of the motherboard and various components that are on or attached to it. The Sensors Test gathers the reported values and compares them to a database of known minimum and maximum values.
10. **Battery Test:** All laptops and iOS Devices have batteries which can fail (trusted devices can be tested over WiFi as well as through a wired connection). The Batteries Test will report the condition of your battery along with other important statistics.
11. **File Structures:** This test checks a variety of file types for corruption. There is also an option to exclude items from testing. So, if there are files or folders you don't want tested, it is simple to tell the test to skip those locations. If there is anything unusual, TechTool Pro lets you know which files may be corrupted.
12. **Network Interfaces:** The Network Interfaces Test scans each active network adapter for connectivity and reports any problems that it finds.



Figure #2. TechTool Pro comes with a variety of tools that you can use for repair, data recovery, file & volume defragmentation. This screenshot currently shows the Volume Cloning tool.

The Tools Category

The previous tests were for diagnostic purposes. The next set of tools are for repair, data recovery, file & volume defragmentation, etc.:

1. **eDrive & Protogo:** These will create small bootable Emergency Startup Disks which contain TechTool Pro along with several handy Apple utilities. — Note: Here is what Micromat has to say about eDrive & Protogo's limitations: "All Macs Running Monterey, and Apple Silicon Macs running Big Sur will only start up using devices signed by the macOS installer. As a result, the eDrive and Protogo features are not available on these Macs. Protogo features are limited on Intel Macs running Big Sur."

Silicon Summit

2. **Volume Cloning:** You can create exact duplicates of your volumes, thus backing up all of your data and applications. Cloning volumes can also be helpful if you are upgrading from a smaller size hard drive to a larger drive. You have the options of creating a duplicate of an entire disk, file syncing by adding only the changed files to a clone, or cloning to numerous disc image formats (Figure #2).
3. **Partition Repair:** This will repair partition map components such as the Map layout, EFI System partitions, Core Storage Physical Volume partitions, and provisioning of space for boot loaders.
4. **Volume Rebuild:** Your Mac's Volume Structures keep track of where your files and folders reside on your hard drive(s). If there is a problem with the volume structures, Volume Rebuild will attempt to build new volume structures from scratch.
5. **File Optimization:** This tool displays the amount of file fragmentation and it will defragment the files on a volume. For full optimization, you are advised to perform the Volume Optimization after running the File Optimization. — See the note at the end of the next Volume Optimization heading for some important limitations.
6. **Volume Optimization:** This tool defragments your volume by grouping all of your files together at the beginning of your drive and all of the free space grouped at the end of your drive. — A note from Micromat: Defragmenting (Optimizing) is not supported for APFS volumes, and is not advised for any drive with a Solid State component. Solid state drives do not benefit from defragmentation, which only serves to wear out those drives sooner. Optimization for APFS rotational drives is not yet possible with the current amount of APFS documentation provided by Apple, which currently provides insufficient documentation for defragmenting a disk.
7. **Snapshot Recovery:** Techtool Pro includes data recovery options for APFS volumes. Create longer lasting APFS snapshots that can be used to recover accidentally deleted files, even if a backup is unavailable. Create snapshots automatically using the new Snapshot Usage feature in Techtool Protection, and mount and recover from your snapshots using the Snapshot Recovery tool.
8. **Data Recovery:** These tools help you recover your data from corrupted drives or volumes that don't mount on the desktop to save the data to another location. — Note: Data Recovery may not recover data in all circumstances.
9. **Wipe Data:** When you trash an item, only the directory location of that file or folder is deleted. The file is still on the hard drive, thus it is recoverable unless it has been overwritten by a new file. If you use the Wipe Data tool, these files can be overwritten 1, 3, 7, or 35 times to be sure it is securely deleted. — Note: Currently this works only on HFS formatted hard drives.
10. **Disk Speed:** This tool measures the read and write performance of a selected volume on a storage device.
11. **Internet Speed:** This tool checks the download and upload speeds of your active Internet connection.
12. **System Maintenance:** This tool provides access to three system maintenance scripts and displays their last run time. FYI: these scripts are titled: Daily, Weekly, and Monthly.
13. **Cash Rebuild:** The Cash Rebuild tool cleans and rebuilds selected cache files for maintenance or troubleshooting.
14. **Database Rebuild:** The Database Rebuild tool rebuilds selected database for maintenance or troubleshooting.
15. **Home Permissions:** This tool attempts to reset the permissions of the current user's home directory.
16. **App Check:** This checks applications for key attributes.
17. **Processor Check:** This tool benchmarks your Mac's processor performance using industry-standard benchmarking algorithms.
18. **Local Network:** This will list the services and devices that are running on your local network.
19. **Video:** This tool assists with monitor calibration and identification of dead pixels on LDC displays.
20. **Audio:** This tool helps manipulate and monitor the audio signal.

Techtool Monitor

The Techtool Monitor operates in the background to monitor several of your Mac's critical functions. In particular, you can configure Monitor to save APFS Snapshots, monitor the free space on your hard drives, and to monitor the SMART routines of your hard drives. Monitor also watches out for battery problems and RAID errors. If problems are found, Monitor delivers onscreen and email alerts. Monitor's interface can be accessed through both system preferences and Techtool Pro itself.

The Skinny

Evaluation: I have used TechTool Pro for around 12 years and I have been satisfied with its performance. It has a nice selection of tools to help prevent and hopefully repair problems with your computer. My only disappointment is that some of the features are not APFS compatible. Hopefully that will be corrected in the future. But the remaining tools still makes this a nice repair tool to have in your Utility Apps folder.

Requires: Apple Silicon and Intel-based Macs, OS X 10.13 through macOS 13 'Ventura'.

Company: [Micromat](#)

Street Price: TechTool Pro - \$159.99, Annual price: \$80 for the first year then \$89.95 per year for subsequent years.