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Ram test windows 10

RAM can cause some of the most frustrating computer problems. Symptoms can be diverse and somewhat random: you may encounter high system instability, data corruption, or unexplained behaviors that leave you puzzled. When you have problems like these, it is a good idea to test the RAM on your Windows computer. One way to do it is to use the built-in Windows Memory Diagnostic app. It is available in Windows 10, as well as in older versions. Here is how to use it to troubleshoot memory problems and view diagnostic results: If you want to use the Windows Memory Diagnostic app for troubleshooting RAM problems, you need to start it first. We have a dedicated guide with everything you need to know, including ways to start the app when Windows doesn’t boot or from the Command Prompt: 12 ways to start the Windows Memory Diagnostic troubleshooting app. Starting Windows Memory Diagnostic from CMD If you are in a rush and don’t want to read another guide, a quick way to open the Windows Memory Diagnostic app is to search for its name and then click or tap on the appropriate search result. Search for Windows Memory Diagnostic When you open Windows Memory Diagnostic, it asks whether you want it to restart your PC now and check for problems, or scan for problems the next time you start your computer. If you want to troubleshoot your issues right away, choose the first option. Windows Memory Diagnostic Windows Memory Diagnostic reboots your Windows computer or device and runs in full-screen, in an environment that reminds us of the old MS-DOS operating system. By default, it runs two Standard test passes with the cache turned on, and then it reboots automatically. Windows Memory Diagnostic runs two Standard test passes If you want to configure the type of tests and how many times they are run, press F1 on your keyboard. You see all the options that can be configured about the Windows Memory Diagnostics tool: the test mix used, the cache settings, and the pass count. Windows Memory Diagnostic - set things your way Navigate the available options by pressing TAB on your keyboard to change the following items: Test Mix – choose between Basic, Standard, or Extended diagnostics. Even though their description is somewhat technical, what is evident is that the complexity and length of the tests that get executed grows from Basic to Standard to Extended. If you want to be sure there is no problem with your RAM, the Extended test does the job, but the testing duration increases significantly, from a couple of minutes to several hours. Cache – you can choose between Default, On, or Off. I think it is best to use the default cache setting and not fiddle with it. Pass Count – type the number of times you want the test mix to be repeated. The default number is two, and it should be good enough for most people. If you’re going to go the extra mile, three passes should provide enough clarity. To apply your settings, press F10 on your keyboard and wait for Windows Memory Diagnostic to run its course. Again, arm yourself with patience, as the whole process takes a lot of time. When done, the app reboots your computer automatically, and you have to sign in to Windows. After you log into Windows, you may see a notification from Windows Memory Diagnostic, telling you whether memory errors were detected or not. Unfortunately, this notification is not always shown, and you may miss it on your PC. Windows Memory Diagnostic notification To see the results of your RAM diagnostics, open the Event Viewer, and go to “Windows Logs -> System.” There, look for events that have MemoryDiagnostics-Results mentioned as the Source in the column in the middle. In Event Viewer, look for MemoryDiagnostics-Results Click on those events, and you see details about the results you’ve got, similar to the screenshot below. If you go to the Details tab, you see lots of technical information about each test pass. Event Viewer shows details about the Windows Memory Diagnostic When you are done understanding whether you have problems with the RAM on your computer, close Event Viewer. Flaky or faulty RAM can cause other problems that may not seem as though they are memory-related. Having one easy-to-use diagnostic tool on hand can save a lot of time and trouble (and possibly opening up your computer to reseat the memory when it isn’t necessary - been there, done that!). Hopefully, Windows Memory Diagnostic managed to help you out. If it didn’t and you want a second opinion, try the free MemTest86 app for Windows. Testing RAM on Windows 10 can help diagnose hardware issues and ensure your system runs smoothly. In just a few minutes, you can use built-in tools to check your computer’s memory for errors. Follow these easy steps to use the Windows Memory Diagnostic tool, and you’ll be on your way to a healthier, faster PC. How to Test RAM Windows 10 Testing your RAM on Windows 10 mainly involves using the Windows Memory Diagnostic tool. This tool will check your RAM for any issues by running a series of tests. Let’s go through the straightforward steps to get this done. Step 1: Open the Start Menu Click the Start button on the bottom-left corner of your screen. From the Start menu, you can access all the programs and tools you’ll need. It’s the gateway to your computer’s settings and utilities. Step 2: Type "Windows Memory Diagnostic" In the search bar, type "Windows Memory Diagnostic" and press Enter. The search bar is an efficient way to find specific programs and settings on Windows 10. Typing the name of the tool you need will bring it up quickly. Step 3: Select "Windows Memory Diagnostic" Click on the Windows Memory Diagnostic tool that appears in the search results. This tool is specifically designed to test your RAM for errors. Selecting it will open the application. Step 4: Choose "Restart now and check for problems" When prompted, click "Restart now and check for problems." This option will reboot your computer and start the memory diagnostic process immediately. Make sure to save any work before proceeding. Step 5: Wait for the Test to Complete Let your computer reboot and perform the memory test. The test runs in a pre-boot environment and can take several minutes. Your screen will display the progress and any errors found during the test. Step 6: Check the Results Once your PC restarts, check the results in the notification area. After the test is complete, your computer will restart. A notification will appear with the test results, letting you know if any issues were found. After completing these steps, your computer will report any RAM issues. If errors are found, you may need to replace or reseat your RAM modules. Tips for Testing RAM Windows 10 Make sure to save all your work before starting the memory test as the computer will restart. Run the test at a convenient time since it can take several minutes to complete. If the test finds errors, consider reseating the RAM sticks to ensure they are properly connected. Use the Windows Event Viewer for more detailed results if needed. If problems persist, you may need to replace the faulty RAM module. Frequently Asked Questions What is Windows Memory Diagnostic? It is a built-in tool in Windows 10 that checks your RAM for errors. How long does the memory test take? The test usually takes a few minutes, but the time can vary depending on your system. Can I use my computer during the test? No, your computer will restart and you won’t be able to use it during the test. What should I do if errors are found? Consider reseating or replacing the RAM modules if errors are found. Is there any other software I can use for testing RAM? Yes, there are third-party tools like MemTest86 that provide more detailed tests. Summary Open the Start Menu. Type "Windows Memory Diagnostic". Select "Windows Memory Diagnostic". Choose "Restart now and check for problems". Wait for the test to complete. Check the results. Conclusion Testing RAM on Windows 10 is a simple yet crucial step in maintaining your computer’s health. By using the Windows Memory Diagnostic tool, you can easily identify any memory-related issues that might be slowing down your system or causing crashes. Remember to save your work before running the test, and don’t hesitate to repeat the process if you suspect ongoing issues. Even if you’re not experiencing problems, periodic testing can be part of a good maintenance routine. If errors are detected, reseating or replacing your RAM can be the key to a smoother, faster experience. Keep your system in top shape by understanding and managing your computer’s memory—your PC will thank you for it! For those interested in further reading, exploring third-party tools like MemTest86 can provide even more insights into your system’s memory health. Stay proactive and keep your computer running at its best by regularly testing your RAM on Windows 10. Matt Jacobs has been working as an IT consultant for small businesses since receiving his Master’s degree in 2003. While he still does some consulting work, his primary focus now is on creating technology support content for SupportYourTech.com. His work can be found on many websites and focuses on topics such as Microsoft Office, Apple devices, Android devices, Photoshop, and more. Windows 10 and earlier versions come with a built-in utility called Windows Memory Diagnostics Tool to check for memory problems. In this guide, we will see how to run and use the Windows Memory Diagnostics Tool on a Windows 10 PC. Using the Memory Diagnostics tool in Windows 10 The Memory Diagnostics tool in Windows 10 offers three types of tests: Basic, Standard, and Extended. By default, the utility runs a standard test, which is sufficient in most cases to detect memory problems. The “Basic” test does MATS+, INVC, and SCHCKR. In the “Standard” mode, it does all the “Basic” tests, plus LRAND, Stride6 (cache enabled), CHCKR3, WMATS+, and WINVC. The “Extended” test includes all the tests in the “Standard” test plus MATS+, Stride38, WSCHCKR, WStride-6, CHCKR4, WCHCKR3, ERAND, Stride6, and CHCKR8. When the utility is running, you can click the F1 key to see advanced options where you can select a test type. The “Standard” test takes about 30 minutes. The “Extended” test might take a few hours to complete. Once the Memory Diagnostics Tool completes checking the memory for errors, your PC will automatically restart, and you will be able to see the test results after you log on. If no issues are found, you will get a “No memory errors were detected” notification. Method 1 of 3 Run the Memory Diagnostics utility on a bootable PC This is the ideal method when your PC is bootable and you want to identify and diagnose problems with your PC’s memory. Step 1: In the Start/taskbar search field, type mdsched.exe or Windows Memory Diagnostics and then press the Enter key. Step 2: When you see the following Memory Diagnostic dialog on your screen, save your work, close all running programs, and then click Restart now and check for problems option. Alternatively, if you don’t want to restart now, click Check for problems the next time I start my computer option. Step 3: The Memory Diagnostics Tool will automatically run upon rebooting your PC to check for memory problems. When the Memory Diagnostics utility is running, you will be able to see the status, including if the tool has detected any memory problems. If issues are found, you will get details upon logging in to your account. Method 2 of 3 Run Memory Diagnostics Tool without booting into Windows 10 If your Windows 10 PC is not bootable for some reason, you can run the Memory Diagnostics Tool even without booting into Windows 10. Here is how to do that. Step 1: Turn on your PC and navigate to Advanced options. Refer to our how to access Advanced boot options when PC is not booting article for directions. Step 2: On the Advanced boot options screen, click the Command Prompt tile. Your PC will restart now. Step 3: If you are asked to enter your user account’s password, please do the same. If you have two or more accounts, you will need to select your account and then enter the password for the same. Step 4: You should now see the Command Prompt window. Type mdsched.exe and press the Enter key. Step 5: Click Restart now and check for problems option to restart your PC and check for memory errors. Refer to the directions in Using Memory Diagnostics Tool in the Windows 10 section of this guide (screen up to see) to know how to use the Memory Diagnostics Tool. Method 3 of 3 Run Memory Diagnostic tool from Windows 10 recovery media You can use the Windows 10 recovery drive to start the Windows Memory Diagnostics Tool. Here is how to do that. Step 1: If you don’t have the recovery drive, refer to our how to prepare a Windows 10 recovery USB drive guide to create one. Step 2: Configure your PC’s BIOS to boot from USB/DVD. Restart your PC and then boot from the recovery drive. Step 3: When you get the keyboard layout screen, choose your keyboard layout. Step 4: On the Choose an option screen, click on Troubleshoot tile. Step 5: On the Advanced options screen, click the Command Prompt tile to open the same. The Command Prompt window should immediately appear on your screen. Step 6: In the Command Prompt, type mdsched.exe and then hit the Enter key. Step 7: When you see the following prompt, click the “Restart now and check for problems” option to reboot your PC and run the Memory Diagnostics utility. To use the Memory Diagnostic utility, refer to the directions in the Using Memory Diagnostics Tool in Windows 10 section of this article (scroll up to see). How to check if your Intel processor is running properly guide might also interest you. Run "Windows Memory Diagnostic" from the Start Menu, and then restart your PC to check your RAM for problems. You can also download and install MemTest86 for a more thorough RAM test. Is your PC crashing, freezing, or just unstable? There may be a problem with its RAM. To check, you can use a hidden system tool included with Windows 11, 10, and 7—or download and boot a more advanced tool. Your computer's random access memory (RAM) is its working memory. Your computer's operating system and applications are continually writing data to RAM and reading it back. For example, when you load a web page like this one, your web browser stores it in RAM while you're reading it. When you launch a PC game, the game loads information from slower system storage (like a solid-state drive or hard drive) into much faster RAM. If your computer's RAM is faulty, this can cause problems. Your computer will save data to RAM and will find different data when it goes to read the RAM. This can lead to application crashes, system freezes, blue screens of death (BSODs), data corruption, and other problems. These tools function by writing data to each sector of your computer's RAM and then reading it back in turn. If the tool reads a different value, this indicates that your RAM is faulty. The best RAM testing tools require you to reboot your computer into a special bootable system. This gets Windows (or another operating system) out of the way and ensures the tool has full low-level access to your RAM. There are tools you can run from within Windows, like HCI Design's MemTest, but they just won't be as reliable. We don't recommend them. The most common reason people test their computer's memory is to resolve issues with repeated crashes. If you frequently get BSODs, a RAM test is a good way to diagnose issues. This is especially the case if the BSOD error message makes reference to computer memory. We've found faulty RAM to be to blame for specific error messages like the common "Page Fault in Nonpaged Area" error. It's also a smart move to run a memory test as soon as you install new RAM sticks. It's not unheard of for manufacturers to ship out RAM (and other hardware) that's dead on arrival, so putting your brand new RAM to the test right out of the box will let you spot manufacturer issues and get a replacement before the problem hardware interupts your gaming sessions. By the way, though we're showing you different memory testing tools, it's not a bad idea to use both. Different software might be better or worse at detecting specific types of errors, so there's a minor chance one will catch something that the other doesn't. If you've got the time, we recommend getting a "second opinion" this way. Windows has a built-in RAM testing tool. It's included on Windows 10, Windows 11, Windows 7, and all other modern versions of Windows. To launch the Windows Memory Diagnostic tool, open the Start menu, type "Windows Memory Diagnostic", and press Enter. You can also press Windows Key+R, type "mdsched.exe" into the Run dialog that appears, and press Enter. You'll need to reboot your computer to perform the test. While the test is happening, you won't be able to use your computer. To agree to this, click "Restart now and check for problems (recommended)." Be sure to save your work first. Your computer will immediately restart. Your computer will restart and the Windows Memory Diagnostics Tool screen will appear. Just leave it be and let it perform the test. This may take several minutes. During this process, you'll see a progress bar and a "Status" message will inform you if any problems have been detected during the process. However, you don't need to watch the test—you can leave your computer alone and come back to see the results later. Jordan Gloor / How-To Geek When it's done, your computer will automatically reboot and return to the Windows desktop. After you log in, the test results will appear. At least, that's what the tool says is supposed to happen. The results didn't automatically appear for us on Windows 10 and Windows 11. But here's how to find them, if Windows doesn't show you. First, open the Event Viewer. Right-click the Start button and select "Event Viewer". If you're using Windows 7, press Windows Key+R, type "eventvwr.msc" into the Run dialog, and press Enter. Navigate to Windows Logs > System. You'll see a list of a large number of events. Click "Find" in the right pane. Type "MemoryDiagnostic" into the find box and click "Find Next." You'll see the result displayed, as well as additional details about your RAM, at the bottom of the window. The text doesn't wrap inside the window, so you can't see it in the screenshot above, but in our case Windows returned a message stating no errors were found in our RAM. If you're looking for a more powerful testing tool, you can download and use MemTest86. It performs a wider variety of tests and may find issues that the included Windows test won't. The latest releases of this tool offer a paid version with more features, although the free version should do everything you need. You don't need to pay for anything. MemTest86 is signed by Microsoft, so it will work even on systems with Secure Boot enabled. If you're looking for another option, you could also try the free and open-source MemTest86+. However, we've used MemTest86 for a long time. Both of these are bootable, self-contained tools. MemTest86 provides a USB image you can copy to a USB drive. Just run the EXE file included with the download and provide a spare USB drive to create a bootable USB drive. Writing the MemTest86 image to a USB drive will erase its contents. Be sure you've backed up any important files on the drive first. Once you've created bootable media, restart your computer and tell it to boot from the USB drive you copied the memory test tool to. The tool will boot and automatically start scanning your memory, running through test after test and informing you if it finds a problem. It will keep running tests until you choose to stop it, allowing you to test how the memory behaves over a longer period of time. Information about any errors will be displayed on your screen. When you're done, you can just press the "Esc" key to exit it and restart your computer. Jordan Gloor / How-To Geek If memory tests give you errors, it's very possible that your RAM—at least one of the sticks—is faulty and needs to be replaced. We recommend you contact your PC's manufacturer for service if it's still under warranty. If you have some spare RAM lying around, you can swap out your current RAM sticks and see if your PC runs reliably with different RAM. Or, if your PC has multiple sticks of RAM, you can try removing one and see if that helps—you may be able to determine the RAM component that is failing and replace it. If you've built your own PC or just installed RAM yourself, it's also possible that the RAM isn't compatible with your motherboard for some reason. It's also possible that your RAM can't reliably run at its current speeds, so you may want to adjust your RAM speed to a lower setting in your UEFI or BIOS settings screen. After making a change, you can run the RAM test again to see if there's a problem. If nothing seems to work and your RAM seems to need replacing, you'll want to take a look at our picks for the best DDR4 RAM or DDR5 RAM sticks. Do you want to check your computer’s RAM for problems freely? It is crucial to test RAM regularly so that you can keep your computer stable. In today’s article, MiniTool will introduce several free RAM test programs to you.If your computer gets unstable or runs slowly, you may consider checking your computer’s RAM for problems. To test RAM, you can use the Windows built-in utility or download another free advanced tool.So how to test RAM in Windows 10? Here are 4 options that can help you make a ram test Windows 10, including Windows Memory Diagnostic, MemTest86, Memtest86+, and DocMemory Memory Diagnostic. Let’s begin!Tips: Experience peak PC performance with MiniTool System Booster - Free up RAM for a smoother computing journey.MiniTool System Booster TrialClick to Download100%Clean & SafeOption 1. Use the Windows Memory DiagnosticWindows Memory Diagnostic is a hidden system tool included in Windows 10. You can follow these steps to run this utility.Step 1. Type Windows Memory Diagnostic in the search box and double click this program under the Best match.Step 2. You will receive a message saying Check your computer for memory problems. Here are 2 options for you to perform a RAM test. It is recommended that you click Restart now and check for problems. Well, you can click Check for problems for next time I start my commuterStep 3. Then your computer will restart and Windows Memory Diagnostics Tool will automatically perform the RAM test. This process may take you some time. You can see the overall test status bar and the detected problems during this process.Step 4. After the RAM test finishes, your computer will reboot automatically. If you want to see the test results, you need to open the Event Viewer by right-clicking the Start menu and select Event Viewer.Step 5. Go to Windows Logs and System, you will see a list of events. To find the RAM test results, you can click Find on the right pane and type MemoryDiagnostic in the box. After clicking Find Next, you will see the results at the bottom of the window.Option 2. Use MemTest86MemTest86 is another RAM test program that you can use it for more powerful features. It can find some issues that Windows Memory Diagnostic won’t find and perform wider RAM tests. More importantly, this tool provides you with an ISO image that can be burned to a CD or copied to a USB drive.Here is a simple guide you can follow to run this app.Step 1. Run the MemTest86.exe file and create a bootable USB drive with the ISO image.Note: This will format all the data of the USB drive, please make sure you have made a backup in advance.Step 2. Reboot your computer with this bootable USB drive. Then this tool will automatically perform a RAM test. This process will take a few minutes, you can see the information about any errors during the process. When the process completes, exit the window and restart your computer.Option 3. Use Memtest86+Memtest86+ is a modified version of Memtest86. It also provides you a free RAM test. It is recommended that you perform a RAM test with Memtest86+.This software has some similarities with Memtest86. You can run it on Windows as well as Mac to create a bootable USB drive, but this program operates differently and provides you with a more comprehensive RAM test.Option 4. Use DocMemory Memory DiagnosticIn addition to the above 3 options, DocMemory Memory Diagnostic is also a free program to perform a RAM test. This software is similar to the other 3 programs we listed above, but its major disadvantage is that you need a floppy disk to create a bootable disc, while most computers today don’t have a floppy drive.Nevertheless, it is also recommended that you use this program if all the above 3 programs fail to test RAM or work unsatisfyingly. In other words, DocMemory Memory Diagnostic might be exactly what you have been looking for since MemTest86 and MemTest86+ require a bootable disc or USB drive.In a word, Windows Memory Diagnostic is a good option to check your PC’s RAM for problems if you don’t want to use any third-party software. The other 3 programs also provide you with a more advanced RAM test. So, you can choose one based on needs.