How to Check for Bad RAM, which can cause a slow computer

Windows

Symptoms:

- Beep codes: All windows computers have beep and light codes that indicate different boot problems. Descriptions of different vendors’ codes are available through Google searches: just search for “<Insert Vendor Name Here> Beep Code” or “<Vendor Name> Light Code”.
- Failure to boot: if the computer won’t start at all, there is some hardware problem, but RAM isn’t typically the cause of this. However, it’s still worth confirming that it isn’t part of the cause.
- Software crashes & system freezes: if applications or your OS freeze and crash, RAM could be the culprit.
- Corrupt files: if your RAM isn’t working properly, files can become corrupt as you work with them.

Diagnosis:

I. Windows 7 & 10 both include built-in features to help you identify and diagnose problems with memory. If you suspect a computer has a memory problem that isn’t being automatically detected, you can run the Windows Memory Diagnostics utility by completing the following steps:
   1. Click Start, type mdsched.exe, or “Windows Memory Diagnostic”, in the Search box, and then press Enter.
   2. Choose whether to restart the computer and run the tool immediately or schedule the tool to run at the next restart.
   3. Windows Memory Diagnostics runs automatically after the computer restarts and performs a standard memory test automatically. If you want to perform fewer or more tests, press F1, use the Up and Down arrow keys to set the Test Mix as Basic, Standard, or Extended, and then press F10 to apply the desired settings and resume testing.
   4. When testing is completed, the computer restarts automatically. You’ll see the test results when you log on.

Note that if a computer crashes because of failing memory, and Windows Memory Diagnostics detects this, the system will prompt you to schedule a memory test the next time the computer is restarted.


II. Third-party RAM check: [http://www.memtest.org/](http://www.memtest.org/)
   1. Note, you’ll need to create a bootable USB stick to use this software.
Mac OS

Symptoms:

- **Triple beep on start-up:** The clearest signal your Mac can give that its RAM needs to be replaced. You'll hear three beeps instead of the usual startup tone when booting up; and then the system won't boot. A failed boot is always a bad sign, but the triple beep lets you know that the Mac detected a RAM issue when running its standard boot-up diagnostic check.
- **Failure to boot:** Even if there wasn't a triple beep, failure to boot up may still indicate a RAM problem. If this is happening consistently, it's worth running the test in the next section.
- **Unexpected/unexplained software crashes:** An application packing in can be caused by many things, but if this seems to be happening more than normal (and particularly if the crash reports show inconsistent causes) it could point to a RAM problem.
- **System freezes:** Also kernel panics.
- **Corrupt files:** From time to time you will find that saved files become corrupt, and this is normal. But if it's happening a lot, it could be evidence of faulty RAM.

Diagnostic:

I. Restart or boot up your Mac and hold D while it boots; this will take you to the diagnostics screen.
   a. The Diagnostics section varies depending on the age of your Mac and OS: on older systems (where the diagnostics page has a blue background) you'll need to select the middle tab, Hardware Tests, then put a tick next to 'Perform extended testing (takes considerably more time)' and hit the big blue Test button.
   b. If your system is more recent, you may find that the memory test begins automatically; the newer interface has a grey or black background.
   c. You may find, additionally, that the diagnostic function has been removed from your system; this sometimes happens when you format the hard drive and reinstall OS X. If holding down D isn't bringing up the testing screen, try again and this time hold down Option + D, and your Mac will look online for a set of tests it can download.

II. Third-party RAM check: [http://www.memtest.org/](http://www.memtest.org/)
   a. Note, you’ll need to create a bootable USB stick to use this software.