PC Lockups and how to Fix Them

Contents

My PC started randomly freezing months ago, no blue screen – it would just freeze wherever it was for no apparent reason. This documents the steps I took to resolve the issue.

How to Fix any Damage Caused

Once your PC has frozen, there is nothing you can do other than power cycle it. Ctrl-Alt-Delete doesn't work. You will need to press, and hold, the power button until the power turns off. It may then then turn back on briefly so you should wait around 30 seconds until it has stabilized and is really off.

Then press the power button again to turn it back on. You should get a prompt asking if you want to analyze the problem OR just reboot your PC. Just reboot the PC.

Since the freeze left your PC in a potentially unstable state, it is possible that files may be corrupted.

In order to fix these, you need to run the following commands at an administrative command prompt (hold Ctrl and Shift and left click on your command prompt icon):

- C:>sfc /scannow
- C:>dism /Online /Cleanup-image /Restorehealth

These commands should scan all of the operating system files and restore any corruption that may have occurred.

The Dell Recommended Solution

After spending hours on the phone with Dell, they told me to do a "hard reset" which consists of the following:

1. Unplug ALL cords (everything) from your PC box.
2. Press and hold, the power button for at least 15 seconds.
3. Reconnect everything, and power it back up.

This didn't fix anything for me, and frankly seems kind of silly. Their explanation was this would completely discharge some capacitor in the power supply that "might" be powering something even when the power was turned off. This is probably a design issue with Dell PCs.
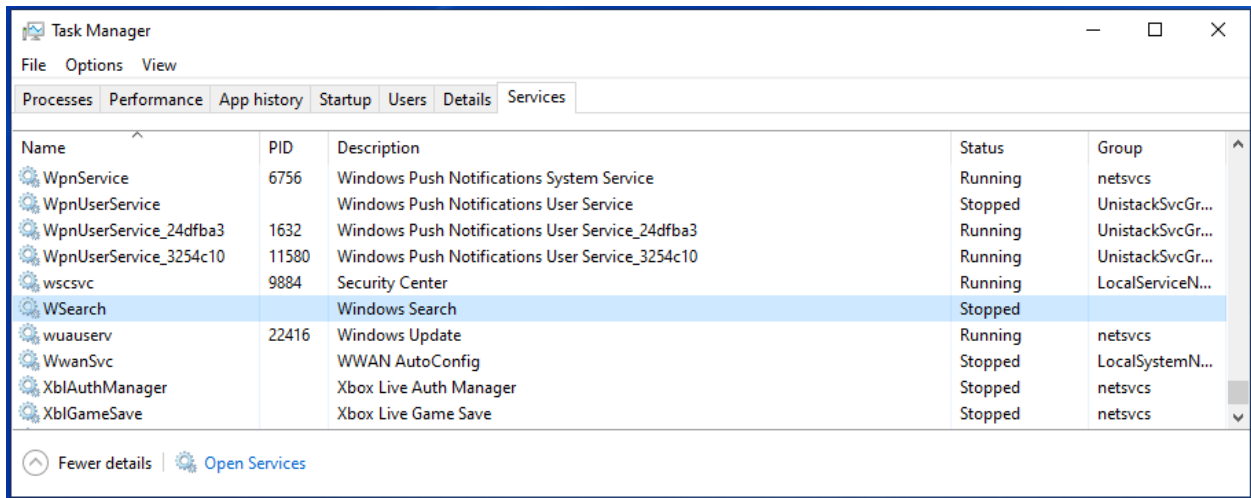
View Reliability History

You can find this in the Control Panel and it shows things that went wrong so you can try to figure out what might have caused your freeze.

Windows Search

In my case the freeze was always accompanied with critical events related to Windows Search.

I used the Task Manager to stop the WSearch service (changed from "delayed startup" to "disabled".) However, this also did not fix my freezing issue. Additionally, I would later see that even though the service was disabled at startup, it would be run later if other parts of the OS required it's services.

I also tried disabling WSearch using GPEDIT.MSC (sadly I didn't record the steps) but that was no more help in solving the freezing issue.

Using Hard Disk Sentinel

This program can be downloaded here [Download Hard Disk Sentinel (hdsentinel.com)](https://www.hdsentinel.com) and allows you to see every aspect of the health of your disk drives. This is a great tool and I highly recommend it.
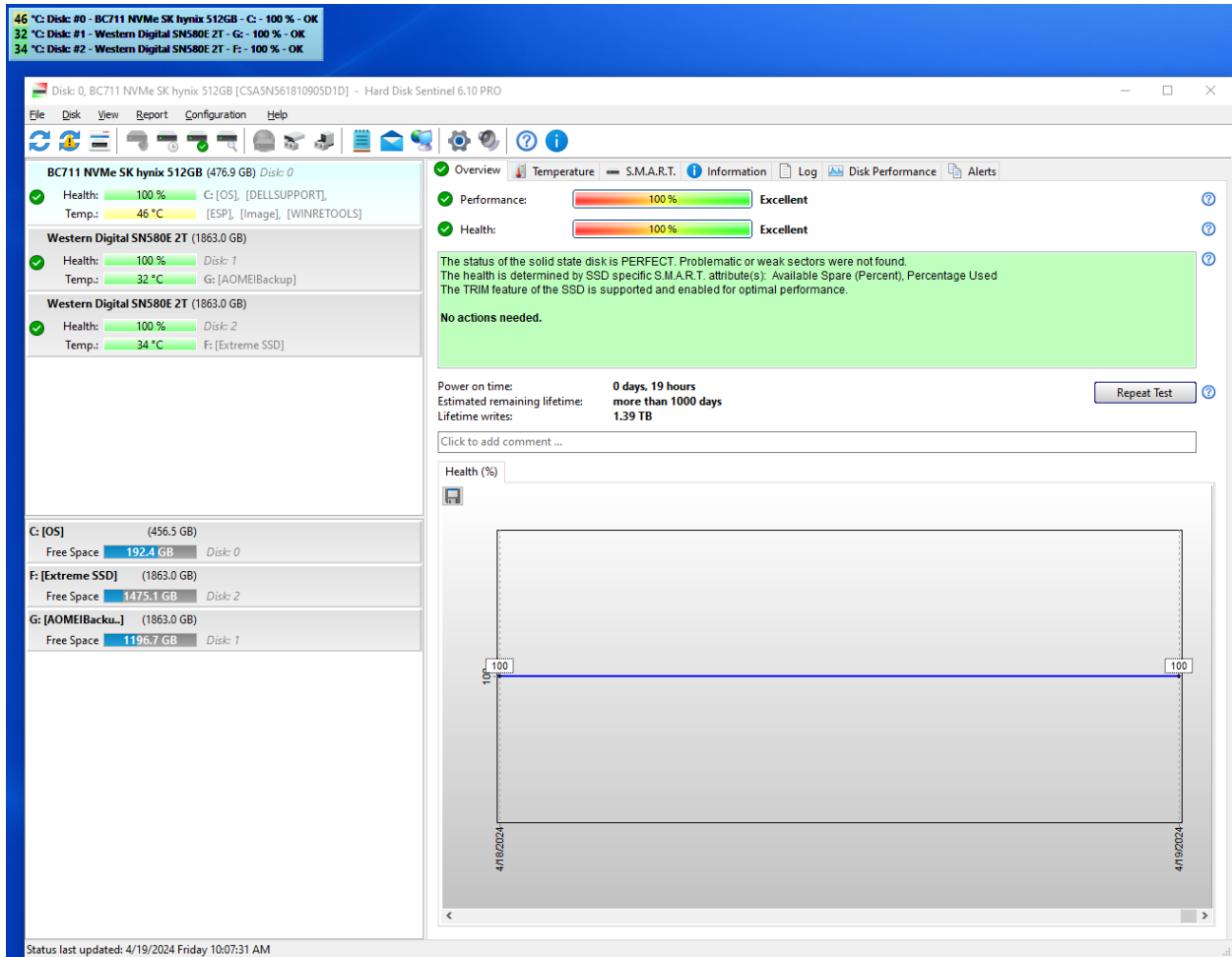
Cooling Issues

Using this tool, I could see that my C: drive SSD was running a little hot so I added an extra fan to my PC chassis to improve the air flow. However, this did not resolve my freezing issue.
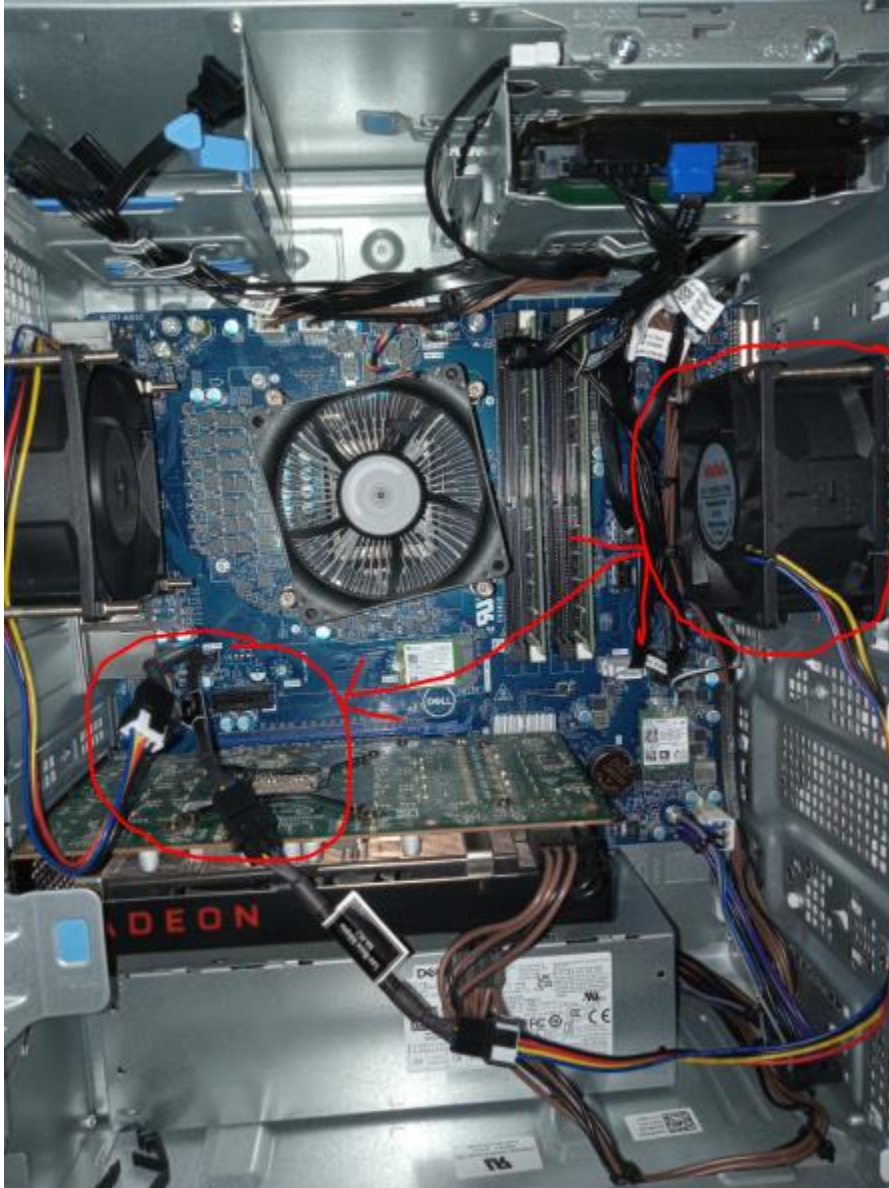
Disk Errors

Using Hard Disk Sentinel I was able to see that there were many access errors on my D: spinning disk hard disk.

I bought some external USB SSD drives and transferred the data off of the D: drive spinning disk. I then disabled the D: spinning disk in Device Manager so that these errors could not cause the freezing when Windows Search crashed trying to index the drive.
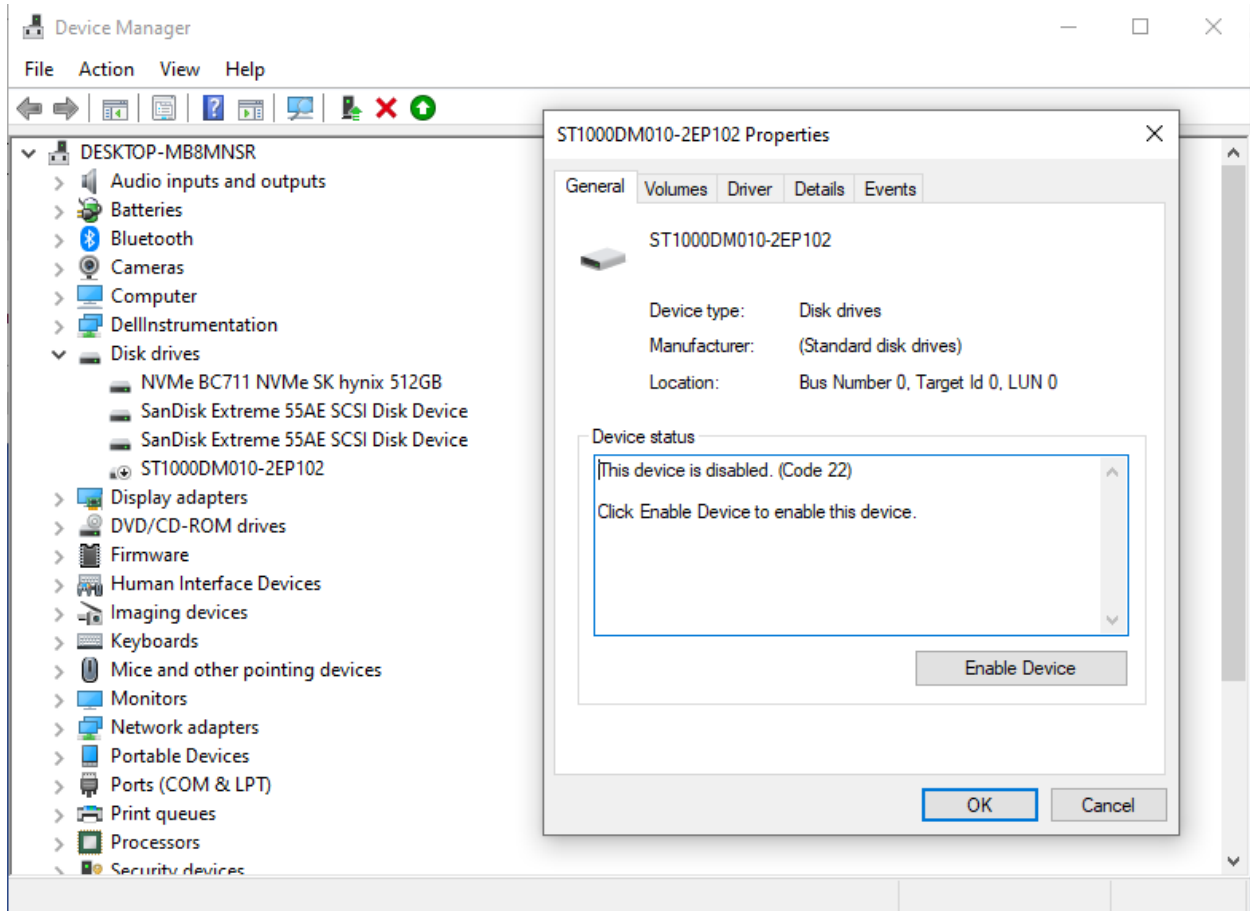
However, this did not improve the freezing issue.

Replacing Your C: Drive SSD

The Hard Disk Sentinel program indicated that my SSD was at 99% health which I assumed was OK. However, when everything else failed to solve the problem, I decided to replace the SSD.

Even though SSD drives are designed to operate with failed sectors (they replace them with 'spare' sectors) it is possible that the accesses times are longer to the 'spare' sectors in some cases. If this is true, AND your PC has a device driver that does not take this into account, it would be possible for the driver to fail and freeze the PC. Granted the "correct" solution would be for the vendor to update their driver so that this failure stops, but, in the meantime, a practical solution is simply to replace the "worn out" SSD with a brand new on.

I bought an NVMe duplicator along with a new SSD (yours may be different – make sure you match what is in your PC now)

With this you take out your current SSD and put it into the duplicator in the "source" slot. Then you put the new SSD into the duplicator in the "target" slot and press the duplicate button. After a few minutes you will have a complete copy of your original SSD.

Be aware the first time you boot up with the copied SSD you will get a BIOS warning saying there is something wrong (because it detected that the device changed.) This is OK, just click through and it will reboot and it should work fine the second time.

This worked for a day or so, and then it froze up again.

Cleaning and Re-Seating Memory DIMMs

Over time, oxidation can occur on the DIMM memory connector gold contacts. You can clean this off with a pencil eraser, or ideally a gold contact cleaner like DeoxIT Gold, and re-seat the DIMMs. This can cause freezing if the oxidation gets bad enough. You can see on the right how much contamination was removed by the gold wipe even AFTER using a pencil eraser to get the bulk of it off.

I will try this now and see if it resolves my freezing issue.