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LAPTOP SUPPORT SERVICE GUIDE

Computer Care

Abstract

This document outlines steps and measures you can take to care for your computer and keep if running for the years to come.

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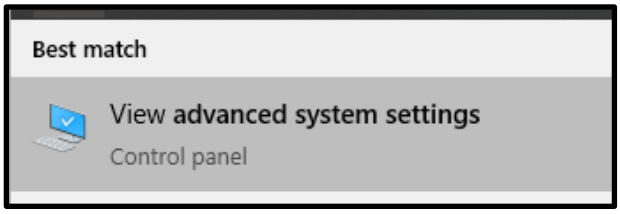
Windows Operating System

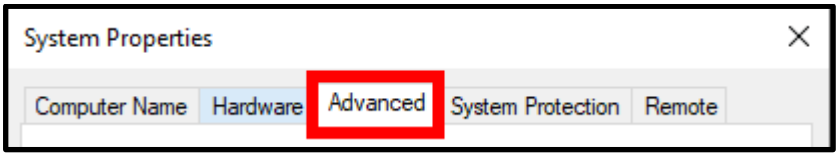
Turn off visual effects

I. Open the start menu by pressing the Windows key on your keyboard or by clicking on the icon shown below.

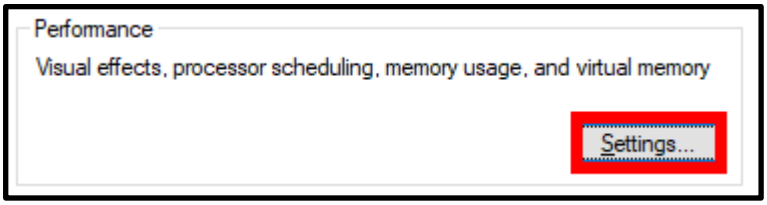
a. Type “Advanced System Settings” and click on it when it appears in the Menu.



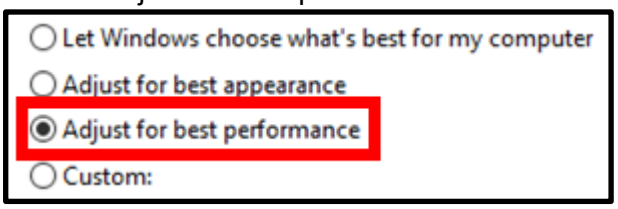
b. Navigate to the “Advanced” tab at the top.



c. Click on “Settings” in the “Performance” block



d. Select “Adjust for best performance”.

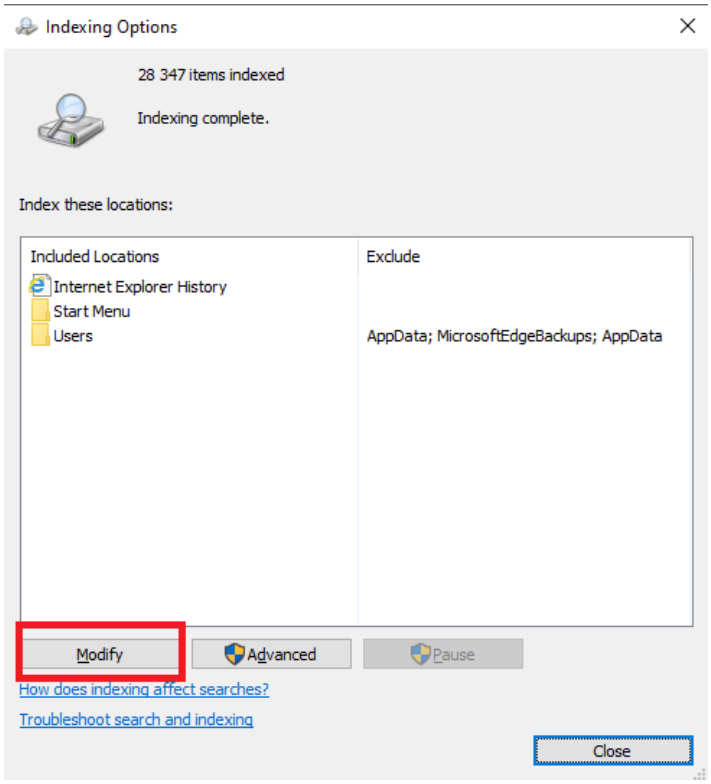


e. Click “Ok” to finish the setup.

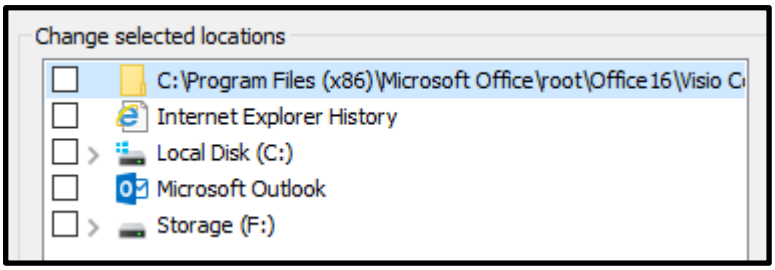
Turn off Windows Search Indexing Feature

I. Open the start menu by pressing the Windows key on your keyboard or by clicking on the icon shown below.

II. Search for “Index” and choose “Indexing Options” when it appears.
III. Click on “Modify” as shown below.



IV. Remove all tick marks from the boxes and click “Ok” to finish the setup.



Defragging Hard Drive

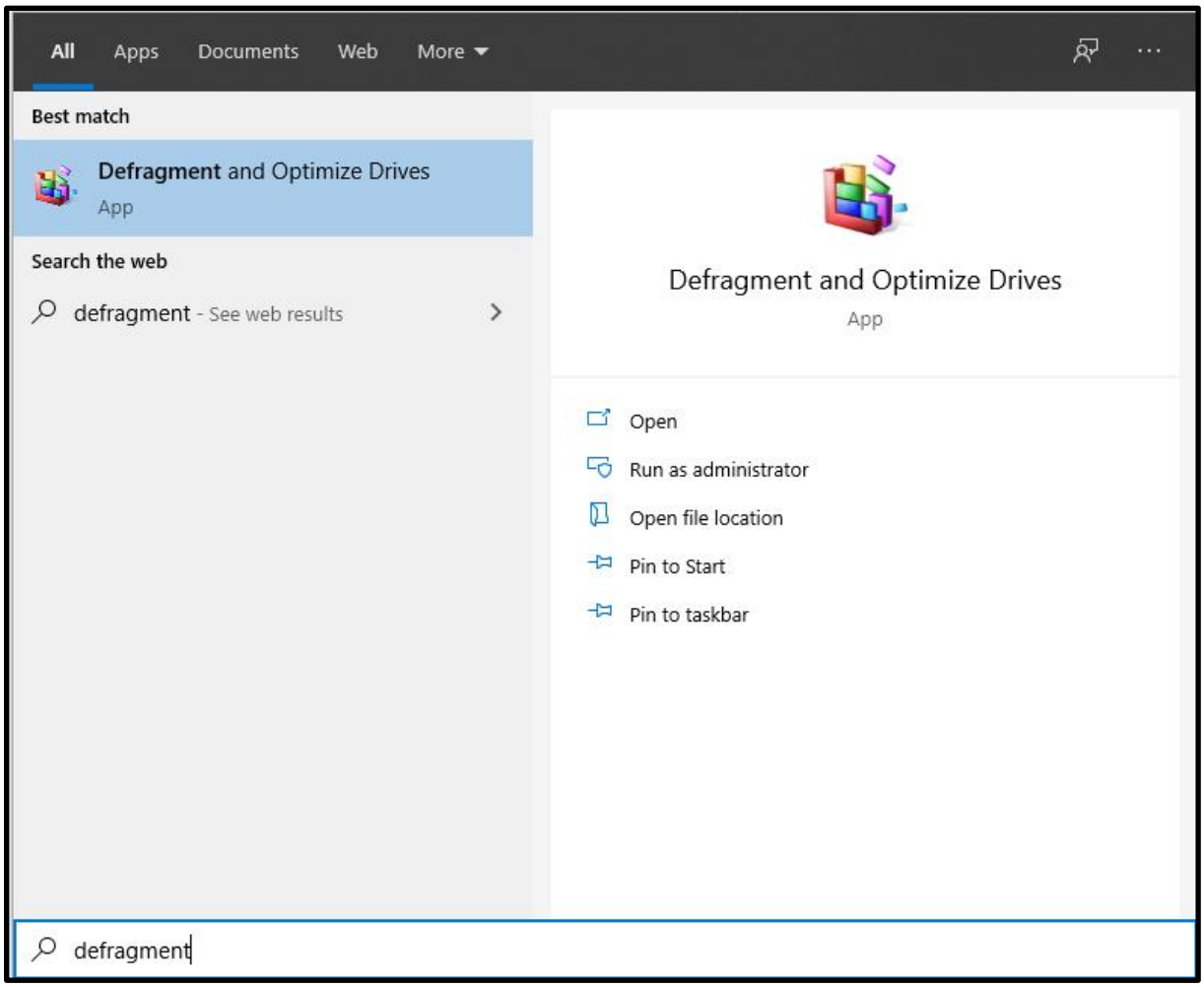
*Do NOT Defrag a Solid State Drive (SSD). An SSD has a fast enough read speed to be able to read blocks of data that are spread about just as well as those that are ordered correctly. SSDs have a shorter lifespan than mechanical drives and the defrag process can cause unnecessary wear and tear on the SSD

You will be able to tell if you have an SSD or not in the steps that follow:

Step 1: Locating the Defragment Wizard

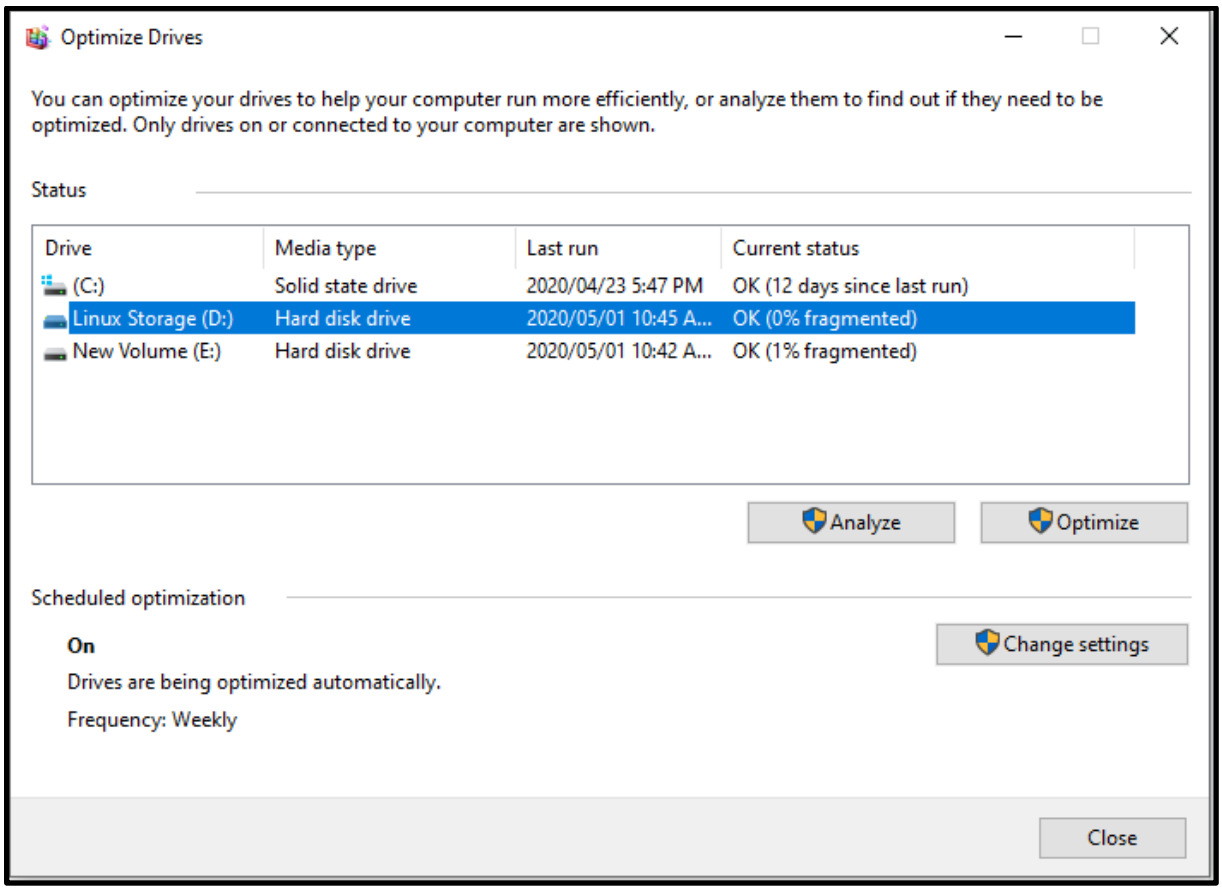
I. Press the Windows key on your keyboard or click the icon as shown:

II. Once the Windows menu appears, type the word “Defragment” and the following screen should appear:



Step 2: Using Defragment Wizard

I. Click “Open” or simply press the Enter key once the option is highlighted as shown in the image above.



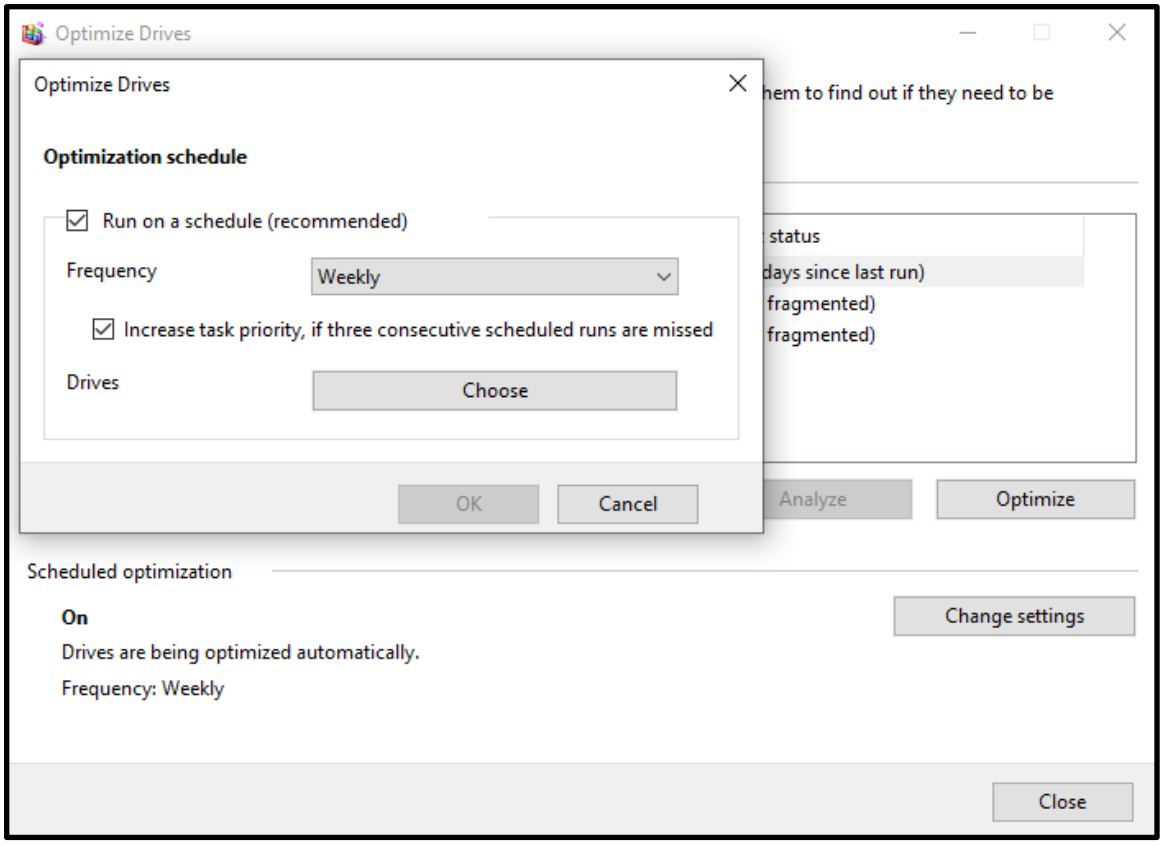
On the example computer that the screenshot was taken, there are 3 drives listed as the (C:), the Linux Storage (D:) drive and New Volume (E:) drive. Your computer may have more than the ones listed or less; however, the drive that if defragment, will have the most impact to your system is the drive that Windows is installed on. This is the (C:) Drive. However it is good practice to defragment all of your Hard disk drives.

As shown in the image above, there is a row for each drive, and in the row for the example (C:) drive, in the column “Media type”, the media type of this C: drive is “Solid state drive”. As noted in the disclaimer at the beginning of this section, one should not defragment a solid state drive. Do not worry if Windows has as shown in the image the Current Status of the SSD is “Ok (12 days since last run)” as this is the Windows Operating System itself that is managing the drives. One should not Manually defragment the drive however.

To Defragment a drive:

1. Highlight the drive by clicking on it as shown in the image above.
2. Click the “Analyze” button. This scans the drive for sectors that are fragmented.
3. Onces the Alayzing is completed, click the “Optimize” button which defragments the drive.

II. Set up a Defragment Schedule



Under the “Scheduled optimization” heading, click on the button “Change settings”. This brings up the window as shown in the image above.

You can choose when to automatically run the defragmentation. Keep in mind that when running the computer will be slower as it uses quite a few system resources; however, make sure the time for the optimization to run is when the computer is on otherwise the process will never take place.

Checking your hard drive

a. Click Start

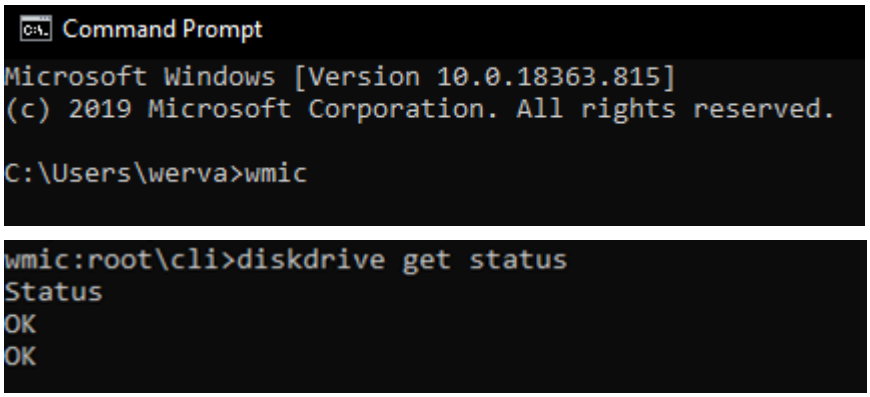
b. Type “Command prompt”

c. Type “wmic”, then press “Enter”

d. Type “diskdrive get status”, then press “Enter”

e. Under “Status” it should show “OK”

If the results don’t show “OK”, this is an indication that your hard drive is failing



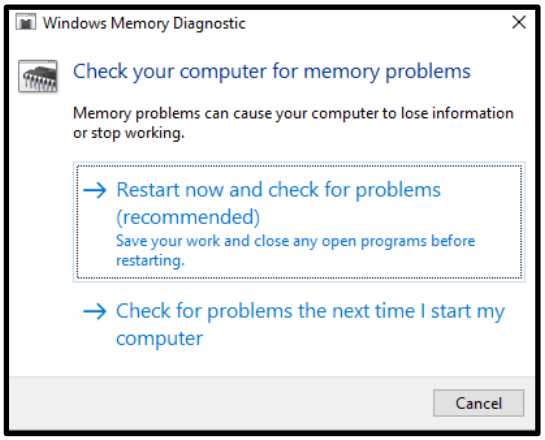
Checking your memory

(If you need to save any data, please do so before continuing)

a. Click Start

b. Type “Windows Memory Diagnostic”, then press “Enter”

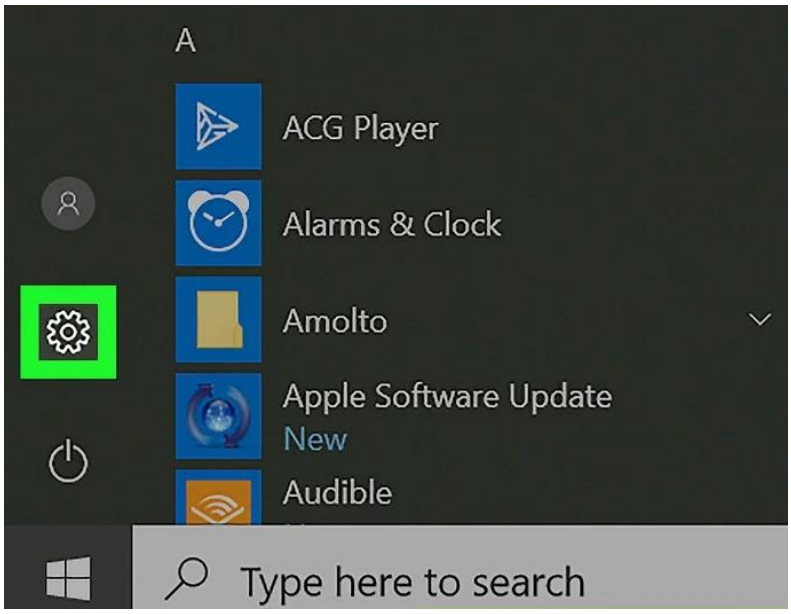
c. If you have saved your work, click on “Restart now and check for problems” this will restart your computer immediately. Else you can opt to schedule the memory scan for the next time you restart your computer by selecting “Check for problems the next time I start my computer”



Ensure Windows Defender is enabled

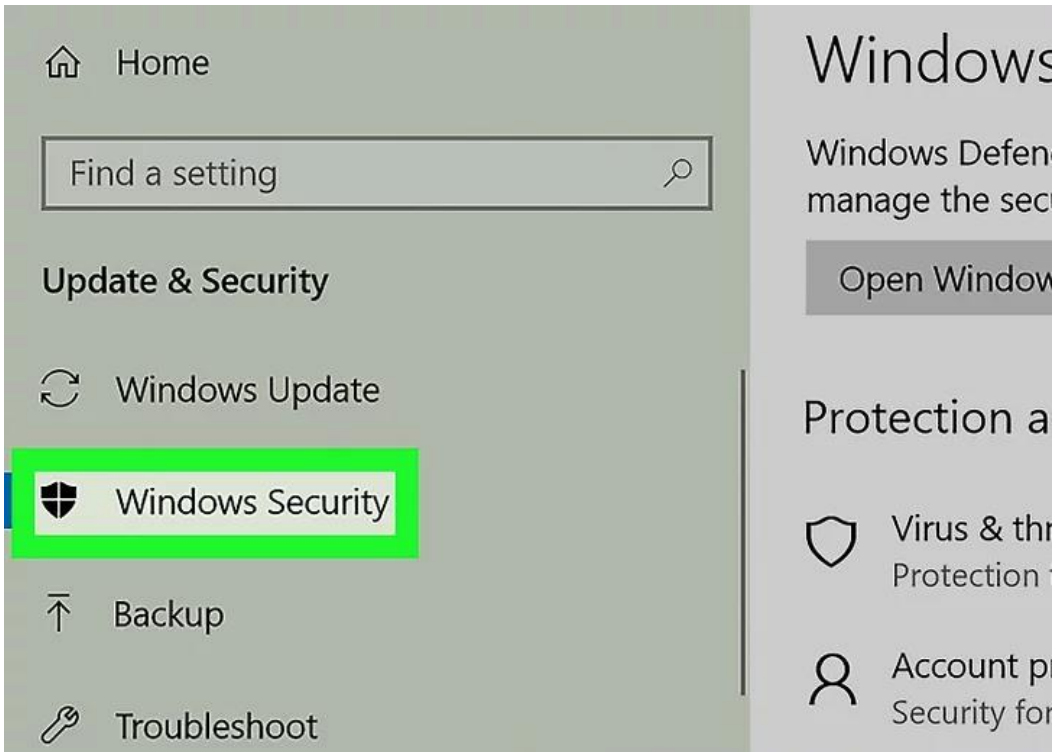
Turn on Windows Defender

1. Open Start. Click the Windows logo on the bottom-left corner of the screen. The Start menu will pop up.



2. Open Settings. Click the gear-shaped Settings icon in the lower-left side of the Start menu. Doing so opens the Settings window.
3. Click Update and Security.

4. Click Windows Security.



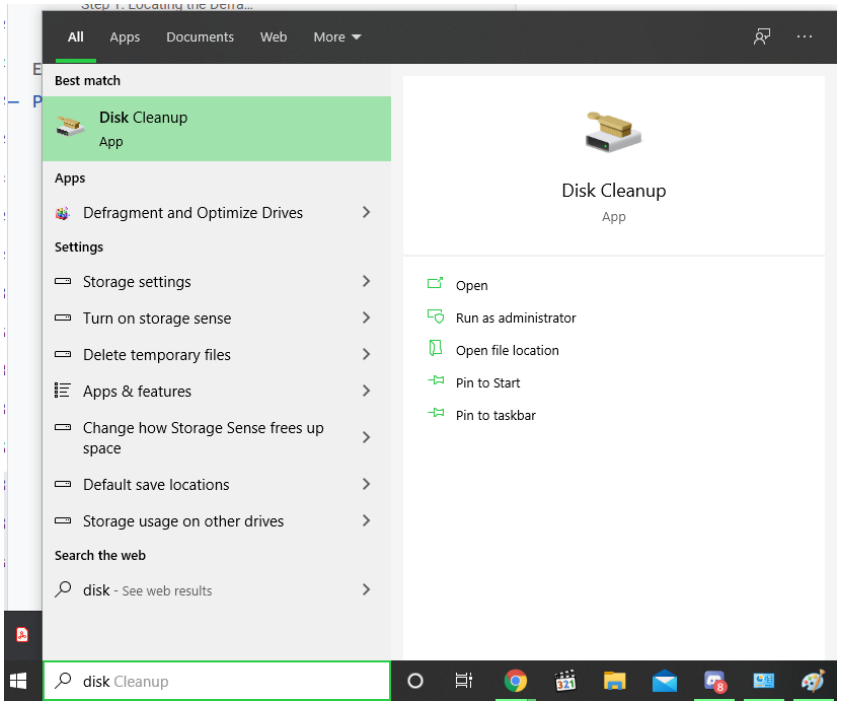
5. Click Virus and Threat protection.

6. Click Virus and Threat protection settings.

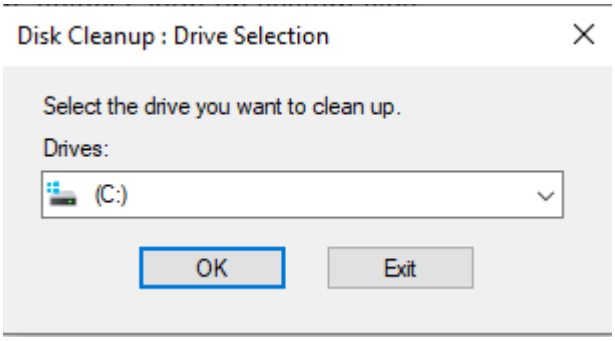
7. Turn on real time scanning

Perform Disk cleanup to remove clutter

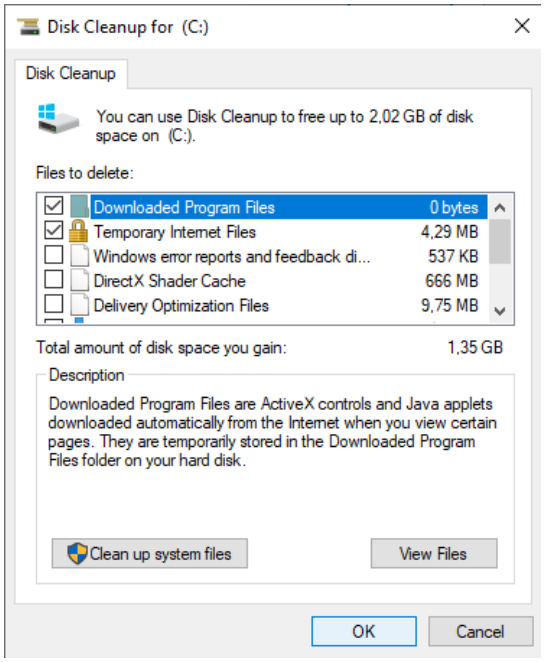
1. To delete temporary files:
   1.1. In the search box on the taskbar, type disk cleanup, and select Disk Cleanup from the list of results.



   1.2. Select the drive you want to clean up, and then select OK.



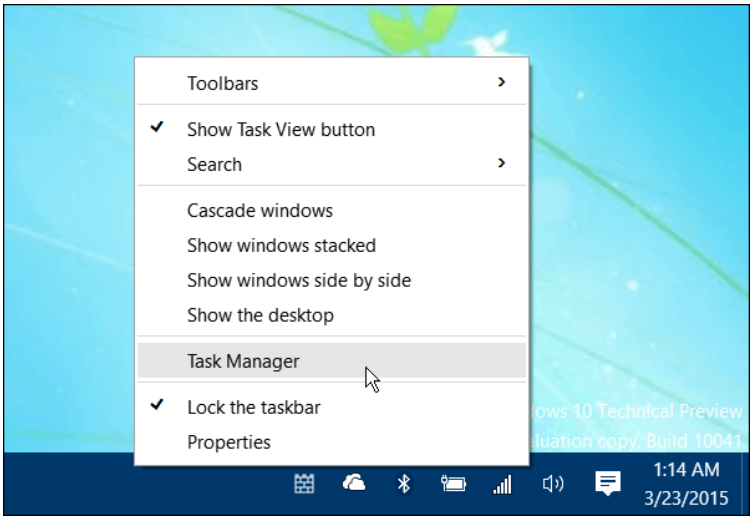
   1.3. Under Files to delete, select the file types to get rid of. To get a description of the file type, select it.
   1.4. Select OK.



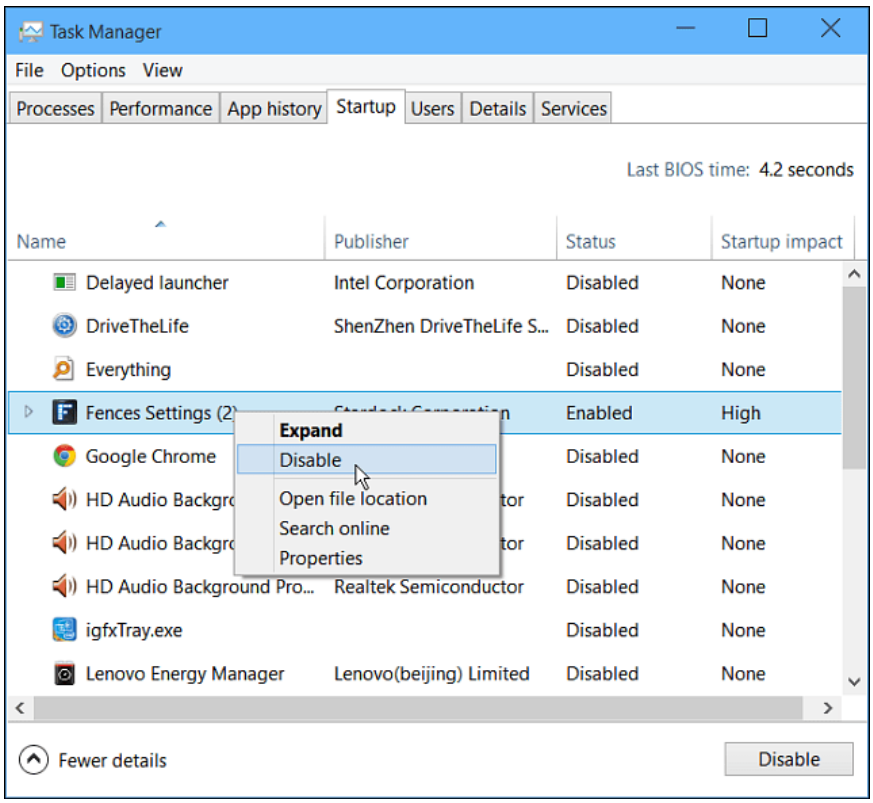
2. If you need to free up more space, you can also delete system files:
   2.1. In Disk Cleanup, select Clean up system files.
   2.2. Select the file types to get rid of. To get a description of the file type, select it.
   2.3. Select OK.

Disable Programs that you do not use frequently from starting when system boots

1. Right-click on an empty area on the Taskbar and select Task Manager.



2. When Task Manager comes up, click the Startup tab and look through the list of programs that are enabled to run during startup. Then to stop them from running, right-click the program and select Disable.

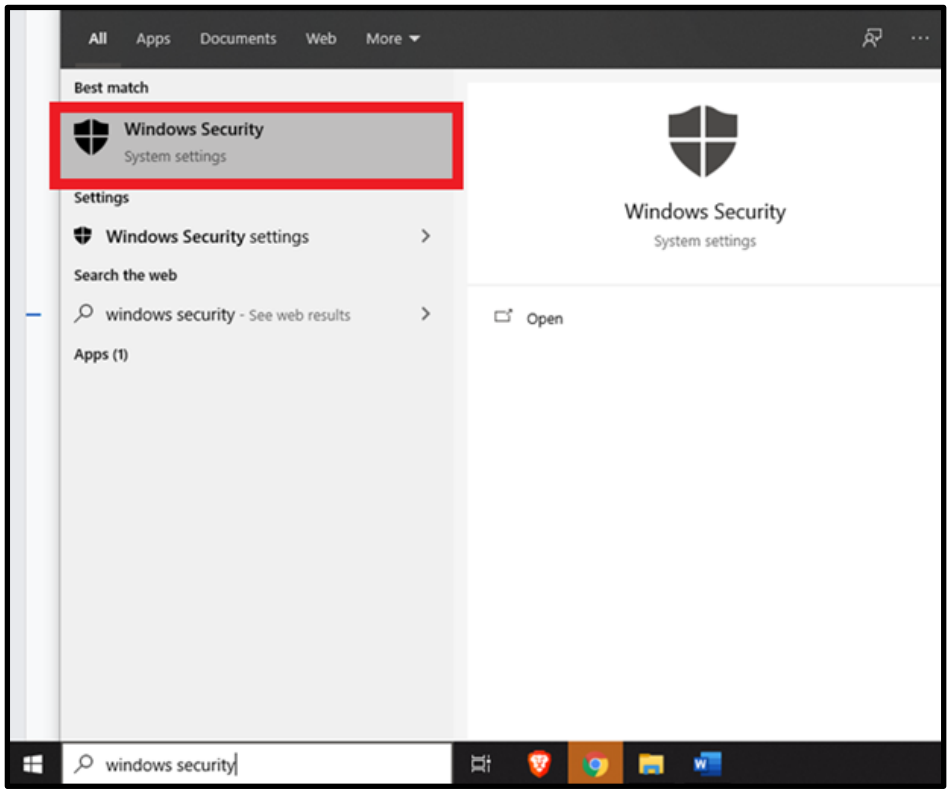


Perform regular Windows Defender scans on system

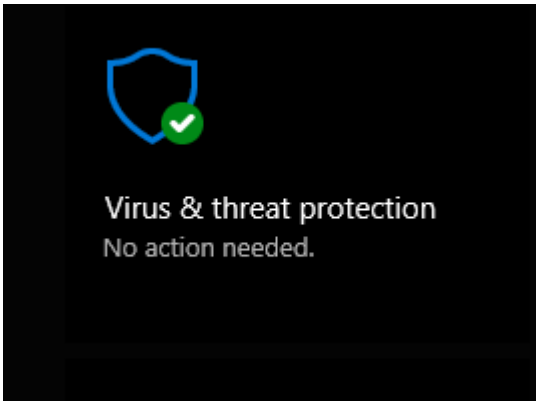
This is important to your system, files and online activities from viruses, malware, spyware, and other threats.

1. Press the Windows key on your keyboard or click the icon as shown:

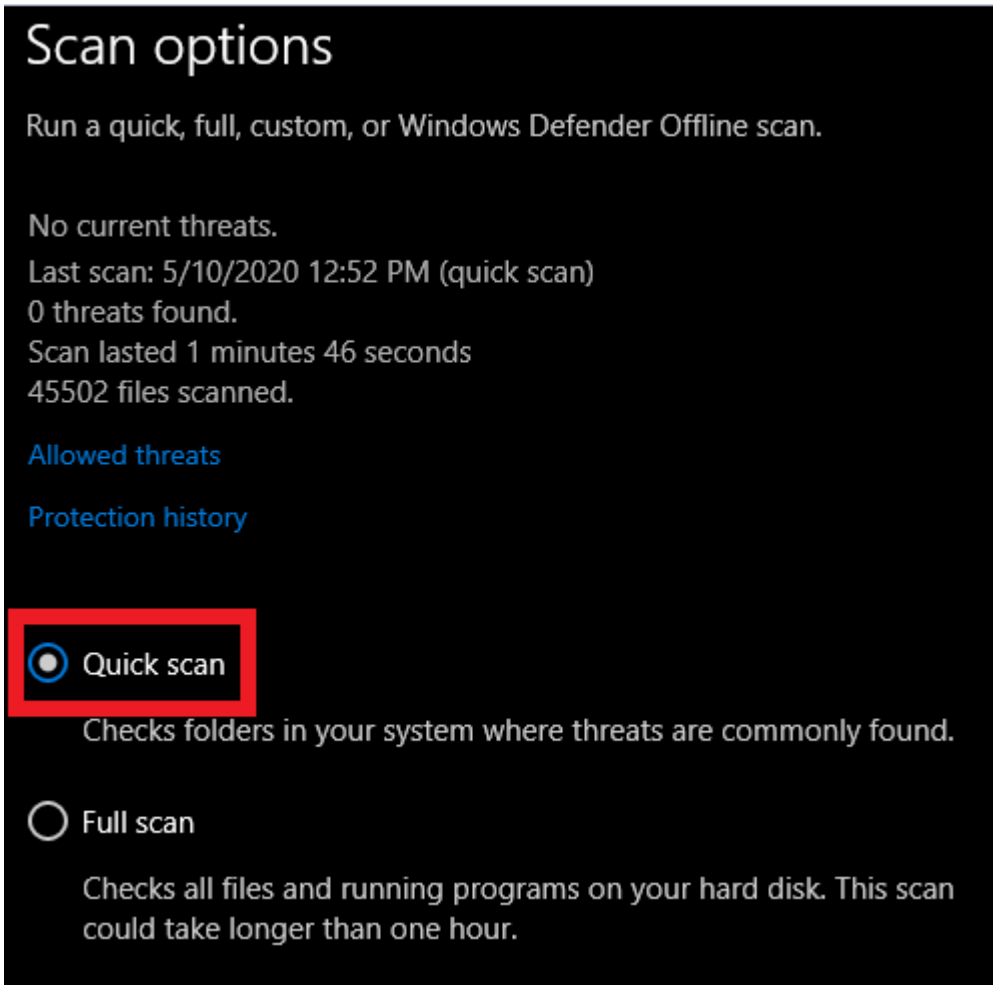
2. Once the Windows menu appears, type the word “windows security” and the following screen should appear:



3. Select the “Virus & Threat protection” section, shown below:



4. Select “Quick scan” for a quick scan of your system, it is recommended that you scan your computer with the “Quick scan” feature. If you have never done a scan before, a “Full scan” would be advised to ensure that there are no threats on your system. When the option you selected, click on the “Scan now” button.



Full scan:
Goes through every file, folder and task on your laptop. The more that is stored on your computer, the longer the scan will take. Try to run full scans at night when you are not using the computer to avoid slow speeds.

Quick scan:
Looks for malicious threats in locations that are most likely to contain threats such as memory and common locations (like Downloads)

Uninstall programs that you do not use anymore

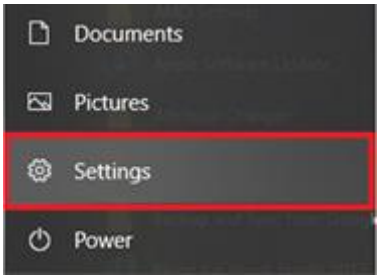
Over the lifetime of your computer, you will often install new software on a regular basis. Over time your computer can become swamped with dozens of software programs that you no longer need or use. Uninstalling these programs may help in the followings ways:

1. Clear up disk and free some memory
2. Tidy up icons and programs list
3. Improve system performance
4. Speed up loading times
5. Reduce compatibility issues

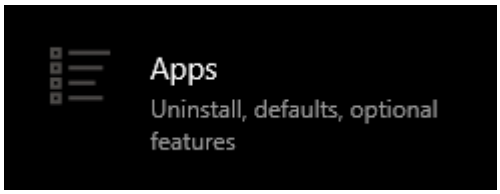
Why would you like to uninstall a program? Having additional programs installed that aren't in use can slow down your computer.

1. Press the Windows key on your keyboard or click the icon as shown:

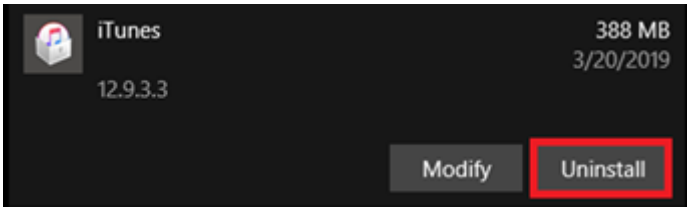
2. Type "Settings" or select the "Settings" icon shown below.



3. Select the "Apps" section shown below.



4. Scroll down and select the application you would like to uninstall. This is illustrated below. When the program you want to uninstall is selected, an "Uninstall" button will appear. Select the "Uninstall" button to start the uninstall process.



Regularly turn off your system when not in use

Reasons to regularly shut down your system include:

#1 – Extended Lifespan

Even if you use your computer throughout the day and every day, you can help extend the lifespan of your device by shutting down at the end of the night. While it's true that every computer (both laptops and desktops) will eventually wear out and need to be repaired or replaced, certain parts are more sensitive to being left on for extended periods of time. For example, a laptop's battery life will significantly shorten after about 300 charge cycles and an LCD panel only has around 15,000 hours (2 years) of use. Also, when a computer is on, it generates heat. Even as the fan runs, this heat is wearing down parts and shortening the life of the computer. For this reason, shutting down your computer after a day's work could extend your device's life by months or even years.

#2 – Improved Computer Performance

Have you ever left your computer on for days and noticed that it's slowing down? It could be for many reasons including random programs hogging resources and fragmented files that are taking up extra processing power. A fresh reboot can help free up resources by shutting down unnecessary programs running in the background and discarding file fragments. Here are some other computer performance problems you may fix or avoid by shutting down every day:

- **Driver crashes.** Graphics card drivers, printer drivers, monitor drivers and just about any other driver you can think of can crash or malfunction. When you shut off your computer every day, it gives your system a chance to fix those crashes and reboot the driver properly.
- **Memory hogs.** Sometimes programs get greedy and they begin hogging your memory. When they do this, this can slow down or even freeze your system. When you shut down, your computer system will stop the memory hog from causing problems and give you a smoother and faster experience.

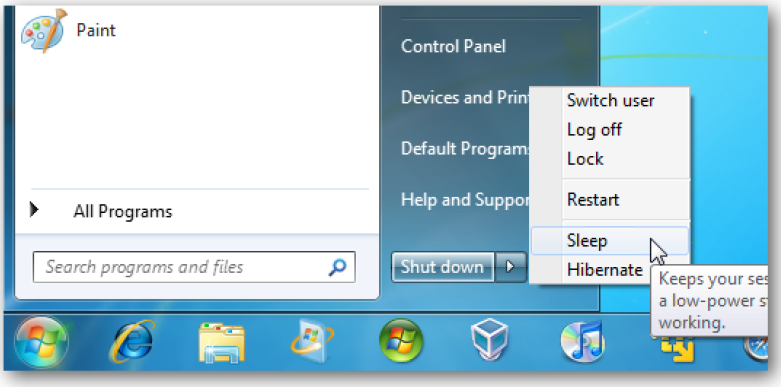
- **Wi-Fi malfunction.** Wi-Fi is great, but sometimes it just doesn't work no matter how many times you run the diagnostic tool. When that's the case, shutting down your computer can help reload the Wi-Fi tool properly.

#3 – Protection From Power Surges

When you leave your computer on 24/7, there's always a chance that it can get damaged during a storm. Power surges can destroy your computer, cost you financially, and cause you to lose unsaved data or data that wasn't backed up in the cloud. It's important to note that while surge protectors will protect your computer from small spikes in electricity, they won't protect you from large surges such as lightning strikes. And if there is a storm in the middle of the night, any computer left on is vulnerable.

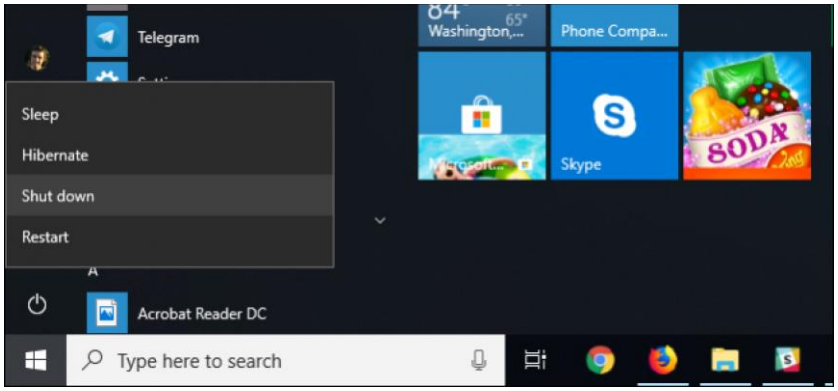
How to shut down your windows machine

Windows 7:



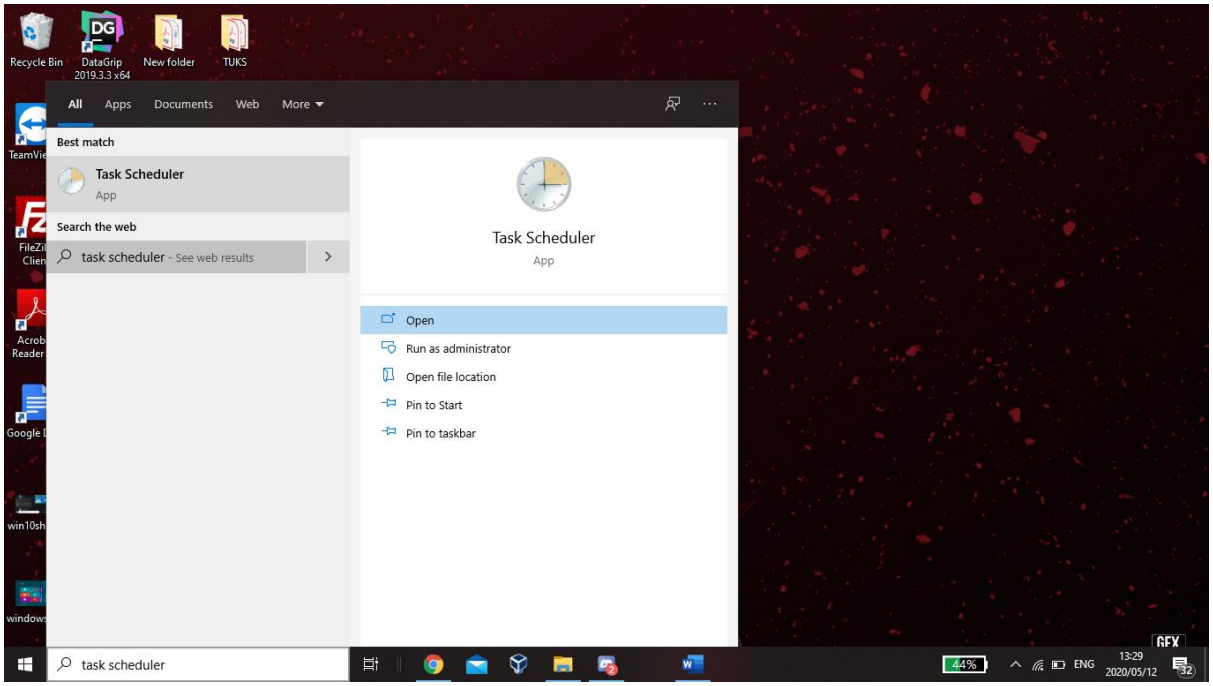
Windows 8:

Windows 10:



How to schedule a shut down:

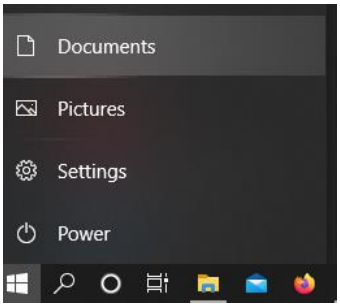
1. Start Task Scheduler. You can start it by going to the Start Menu typing schedule in the Search Bar and choosing **Schedule Tasks/Task Scheduler**.



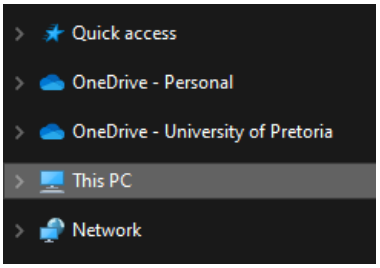
2. When Task Scheduler opens click the **Create Basic Task**.
3. Enter the name for your task, for example Shutdown.
4. Now choose **when** you want the task to start e.g. daily, weekly, monthly, etc.
5. Now **enter the time and date** when the task will be executed.
6. Next choose **Start** a program.
7. Click the **Browse** button and go to C:WindowsSystem32 and select a file called ***"shutdown"***. Then click **open**.
8. Now just in Add arguments field add ***"-s"***, and then click **Next**.
9. Now you should see the task information. You can check it one last, and if you're pleased with your settings click **Finish** to schedule a shutdown.
10. Done!

Perform check disk on hard drive regularly

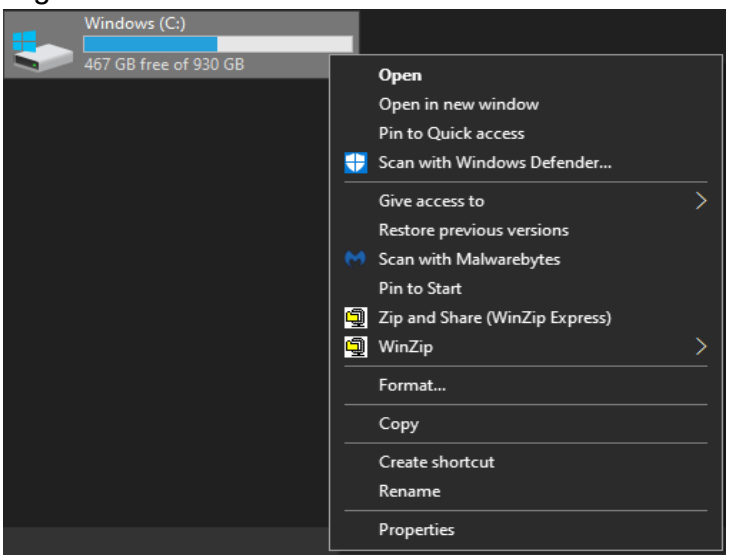
1. Press windows key 
2. Press documents



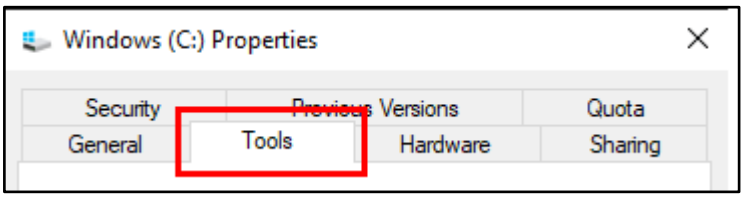
3. Navigate to This PC



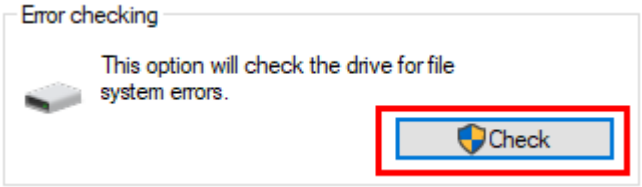
4. Locate your main storage device, usually “C:”
   Right click on the icon.



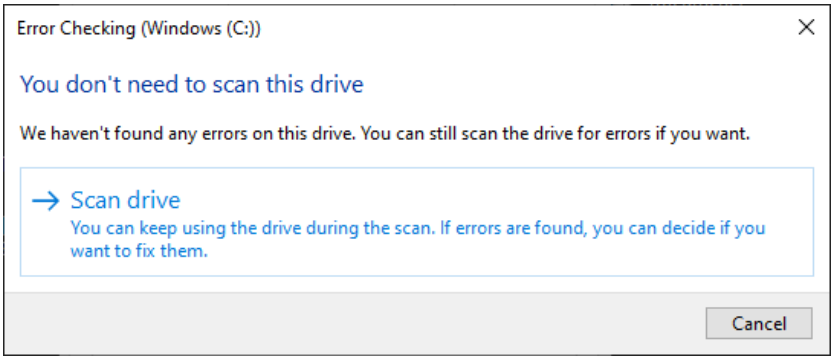
5. Click on “Properties” in the options that showed up.
6. Locate the “Tools” tab and click on it



7. Two options are presented
   The first one is “Error checking”
   Click on the “Check” button.



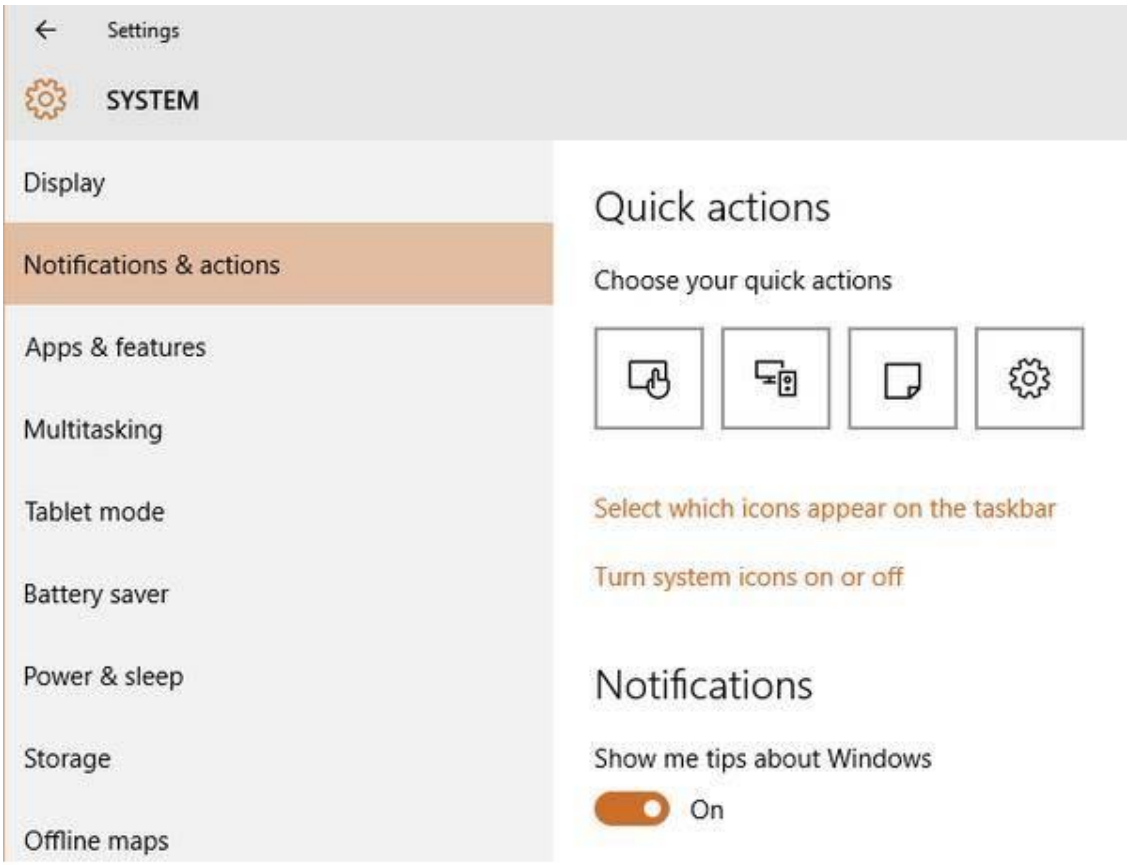
8. Click on “Scan Drive”

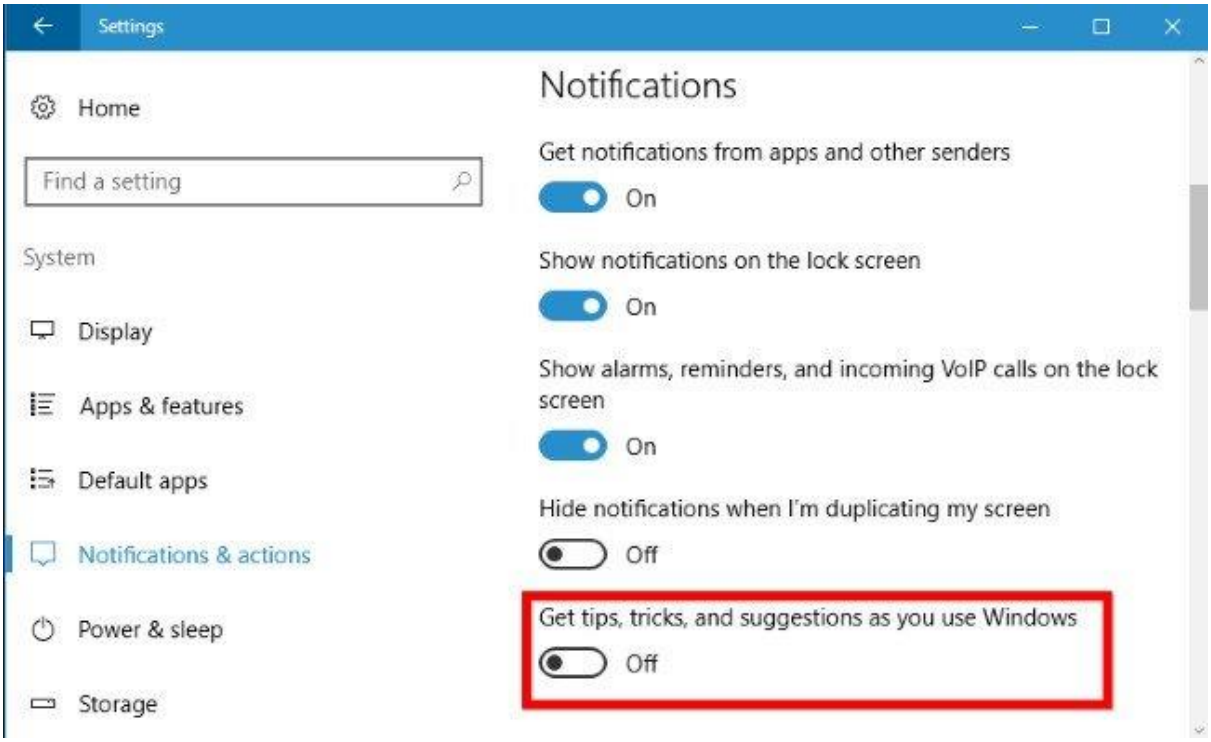


9. Once the scan is done:
    a. No errors: click on the “close” button.
    b. Errors were found: choose the option to fix the drive.

Turn Off Windows Tips and Tricks

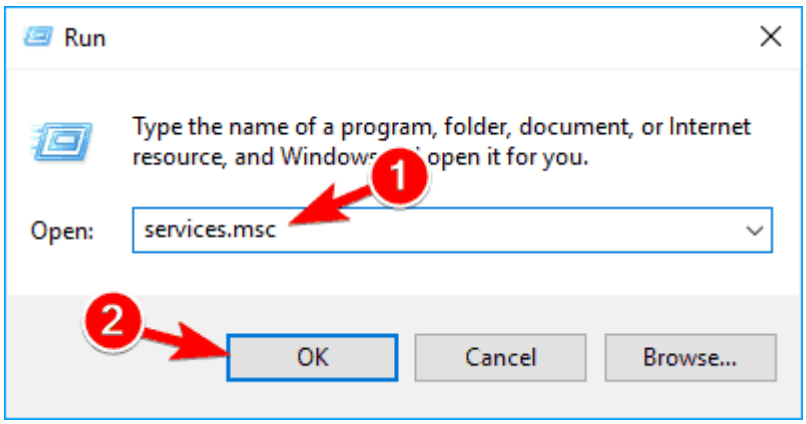
1. First click on the Start Menu and select Settings.
2. From the Settings screen, go to System > Notifications & Actions on the left pane in turn.
3. Scroll down in the list of options on the right until you see a toggle labeled Get tips, tricks, and suggestions as you use Windows.
4. Toggle the button to Off to disable the notification-based alerts.



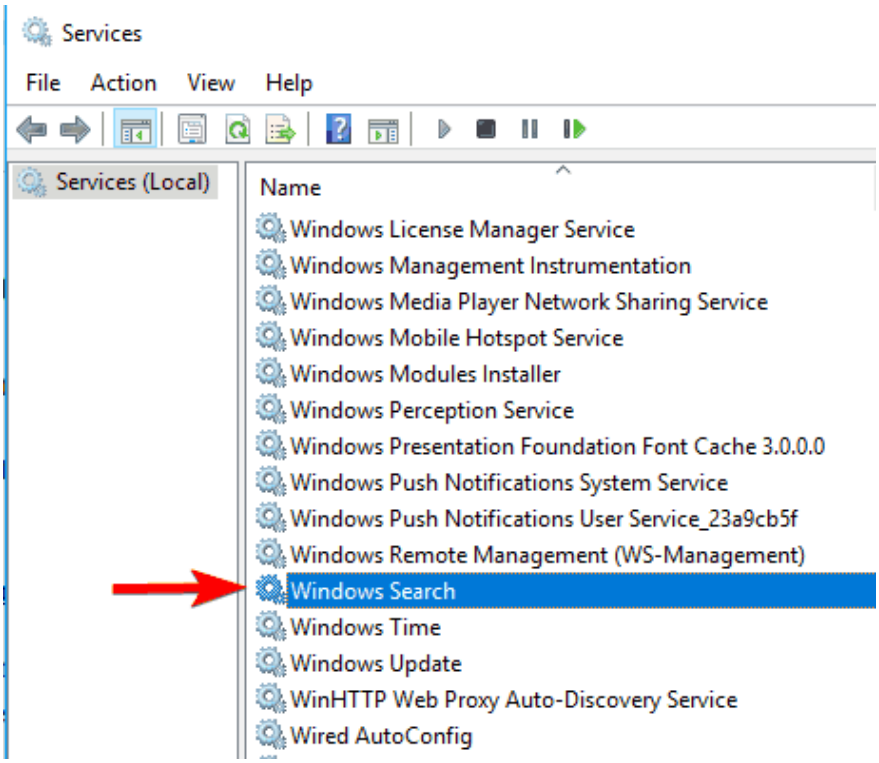


Turn Off Search Indexing

1. Open the Run window – press Windows key + R or just type Run in the Search bar.
2. Type services.msc and press Enter or click OK.



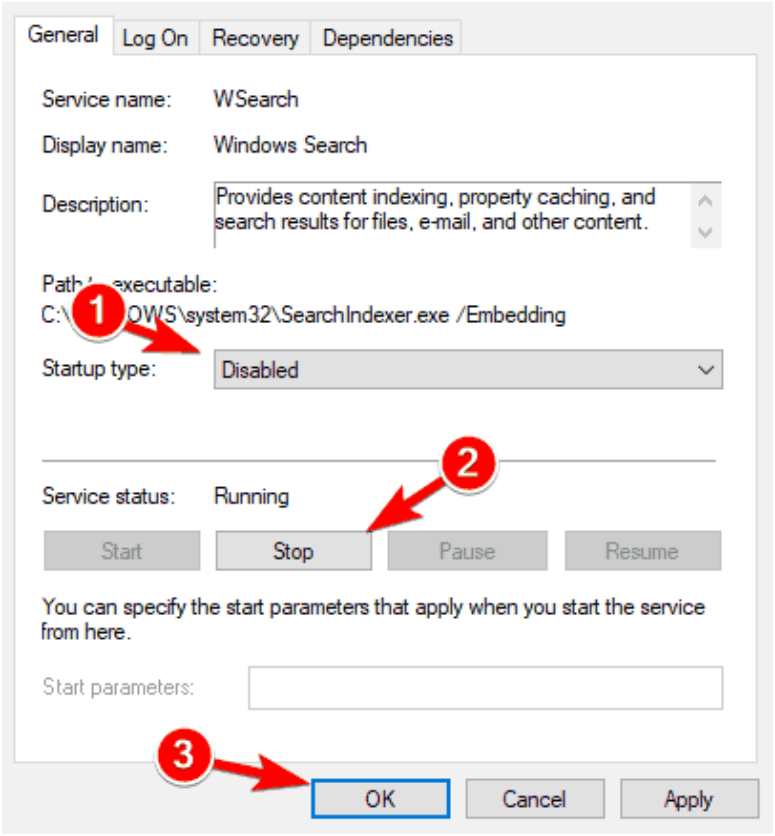
3. Find the Windows Search service and double-click on it. It looks like in the right screenshot.



4. Find Startup type: and select Disable from the pull-down menu. Now click the Stop button to stop the service. Click Apply and OK buttons

5. Now restart your PC.

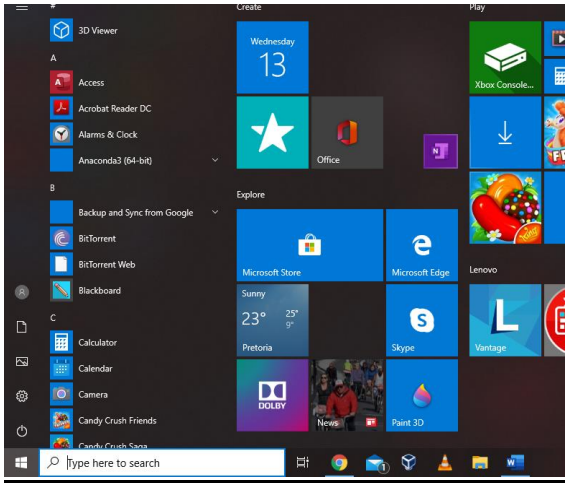
After your PC restarts, Windows Indexing feature should be completely disabled on your PC. To turn it back on, simply undo the changes you made in this solution.


General
Log On
Recovery
Dependencies
Service name:
WSearch
Display name:
Windows Search
Description:
Provides content indexing, property caching, and search results for files, e-mail, and other content.
executable:
OWS\system32\SearchIndexer.exe /Embedding
Startup type:
Disabled
Service status:
Running
Start
Stop
Pause
Resume
You can specify the start parameters that apply when you start the service from here.
Start parameters:
OK
Cancel
Apply
1
2
3

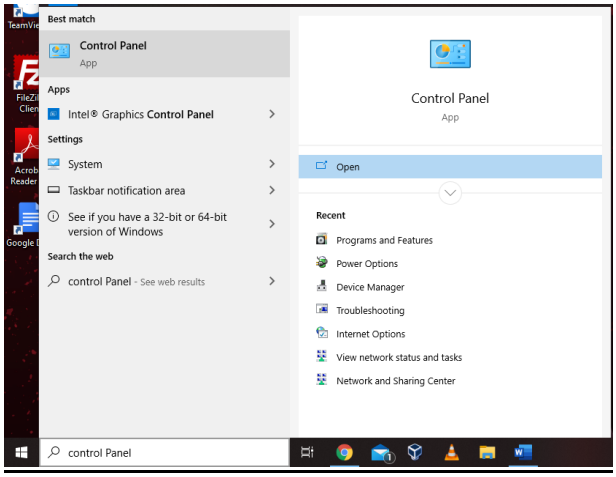
Regularly perform backups as well as create restore points

Backup

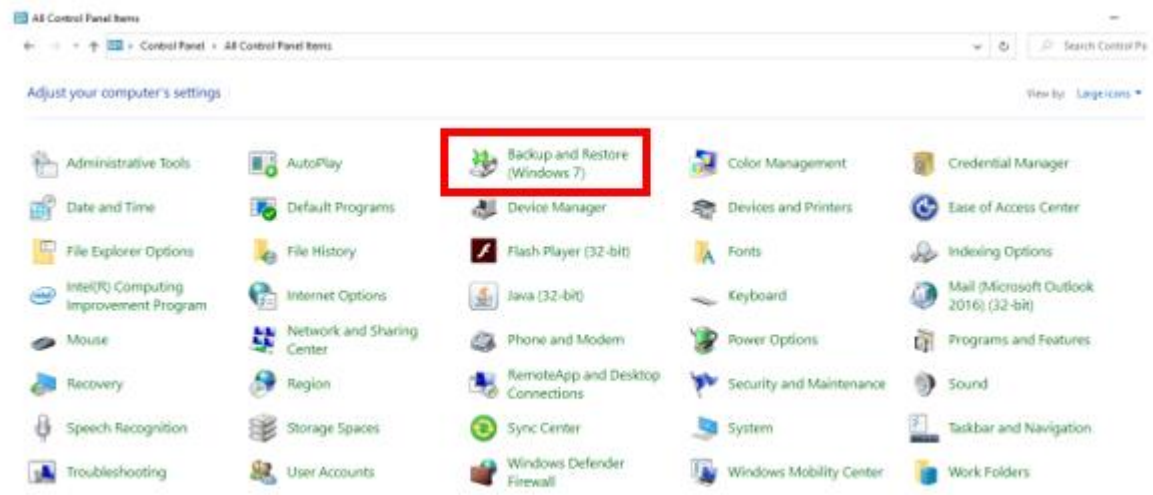
1. Select the **Start** button,



2. then select **Control Panel**



3. **System and Maintenance** > **Backup and Restore**



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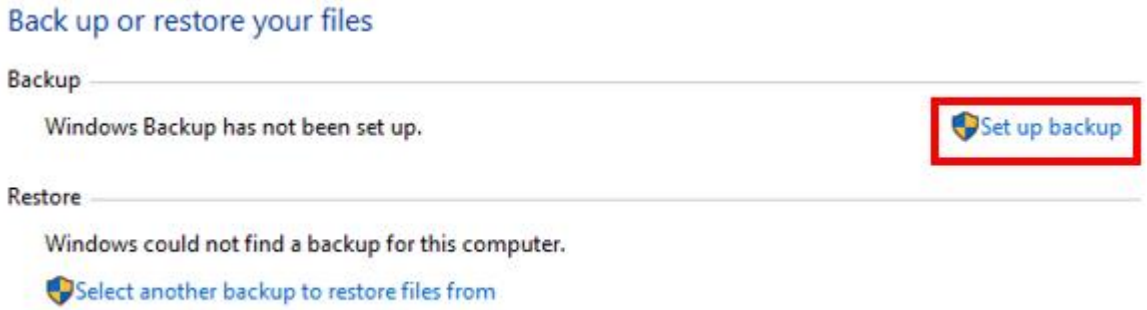
4. **Do one of the following**:

- If you've never used Windows Backup before, or recently upgraded your version of Windows, select **Set up backup**, and then follow the steps in the wizard.



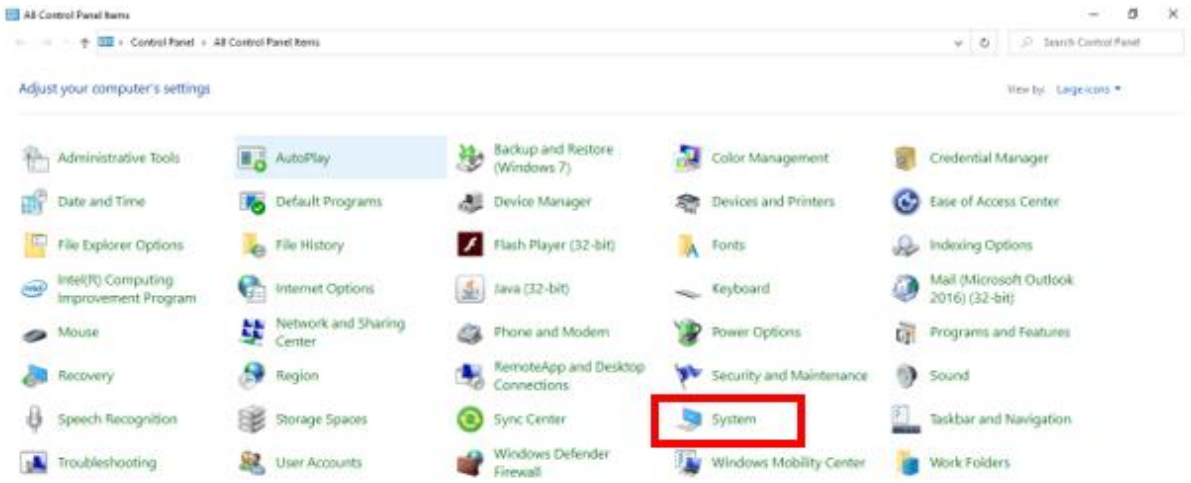
- If you've created a backup before, you can wait for your regularly scheduled backup to occur, or you can manually create a new backup by selecting **Back up now**.
- If you've created a backup before, but want to make a new, full backup rather than updating the old one, select **Create new**, **full backup**, and then follow the steps in the wizard.

Create A Restore Point

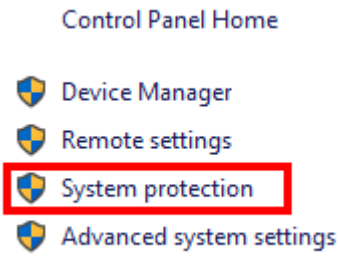
You can use a restore point to restore your computer's system files to an earlier point in time. Restore points are automatically created each week by System Restore and when your PC detects change, like when you install an app or driver.

Here's how to create a restore point.

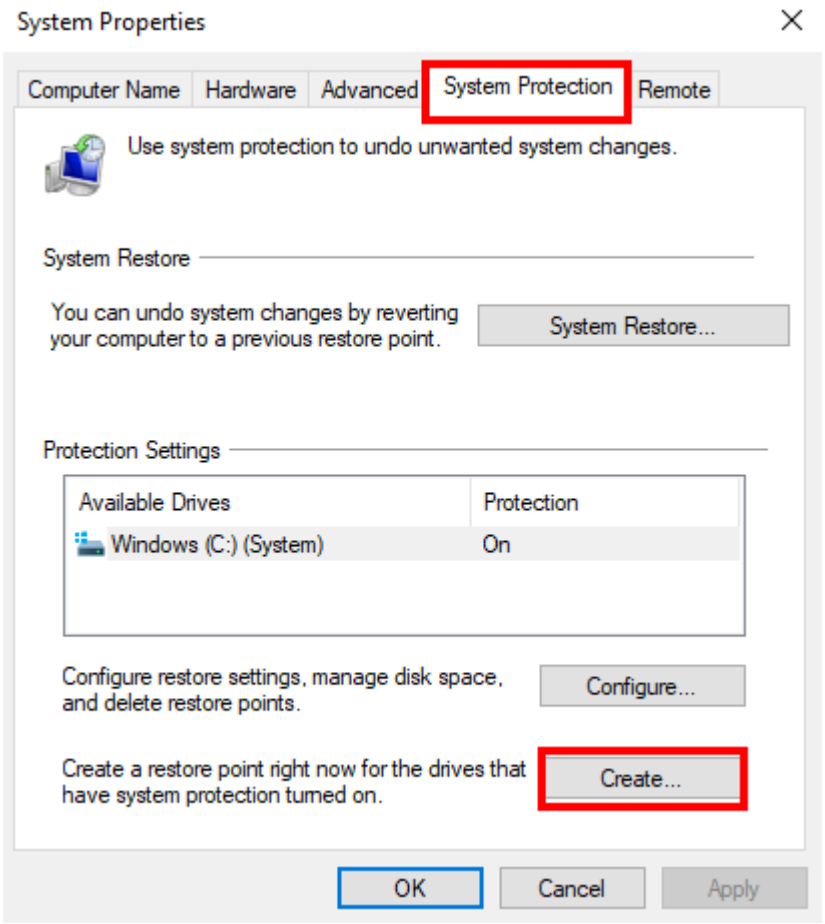
1. Select the **Start** button, then select **Control Panel**



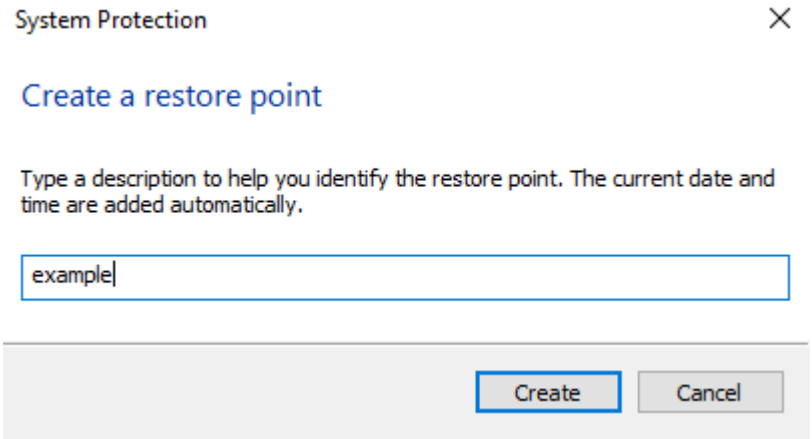
2. In the left pane, select **System protection**.



3. Select the **System Protection** tab, and then select **Create**.



4. In the **System Protection** dialog box, type a description, and then select **Create.**



Restore

Right-click the Start button, then select Control Panel > System and Maintenance > Backup and Restore.

Do one of the following:

To restore your files, choose Restore my files.

To restore the files of all users, choose Restore all users' files

Do one of the following:

To look through the contents of the backup, select Browse for files or Browse for folders. When you're browsing for folders, you won't be able to see the individual files in a folder. To view individual files, use the Browse for files option.

To search the contents of the backup, select Search, type all or part of a file name, and then select Search.

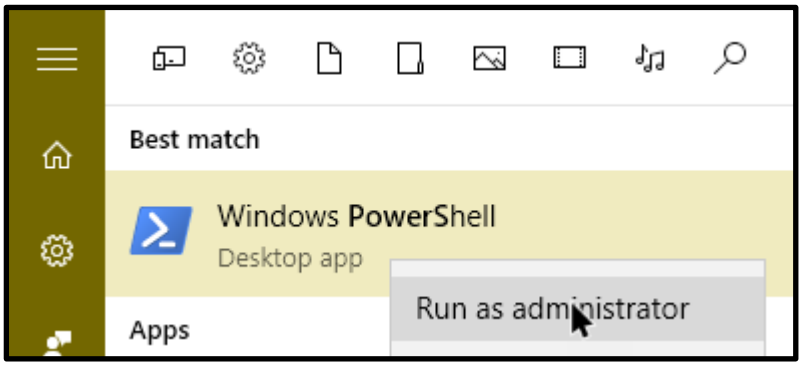
Use Powershell to fix corrupt files:

Over time your computer may act a bit weird and sometimes slower than usual, this can be due to some system files getting corrupted. This happens over time when updates don't install properly as well as when programs are installed or old programs get uninstalled. This can be fixed by doing the following.

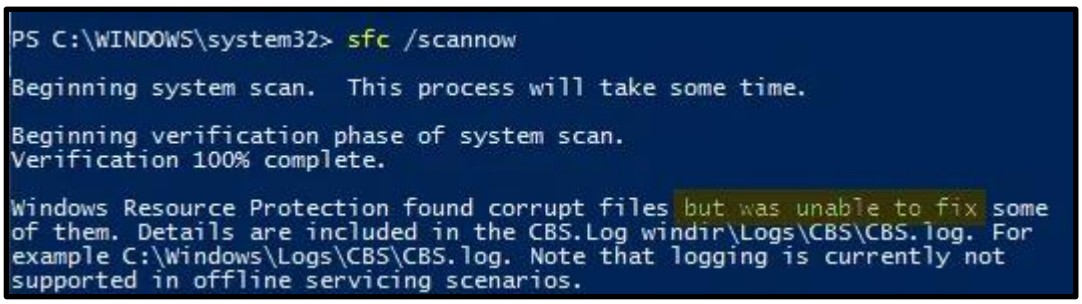
Please be patient as these processes do take some time to complete. If you are using a laptop, please ensure that your charger is plugged in.

1. Select the start key on your keyboard or on your screen.

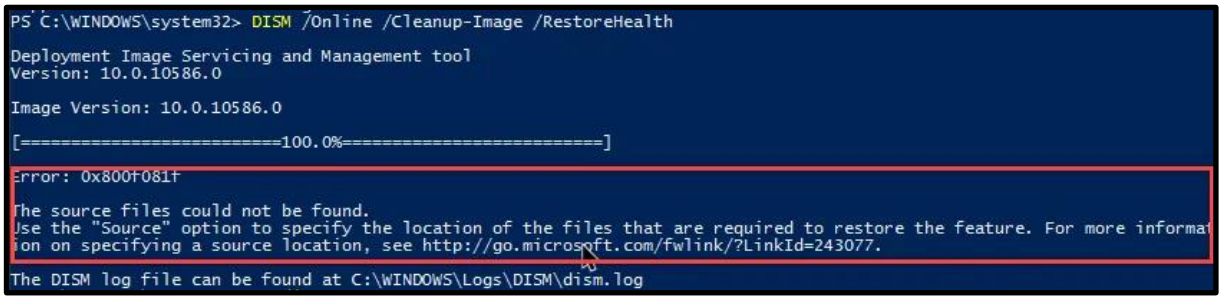
2. Search for "Powershell" and right click on it. Select the "Run as administrator" option.



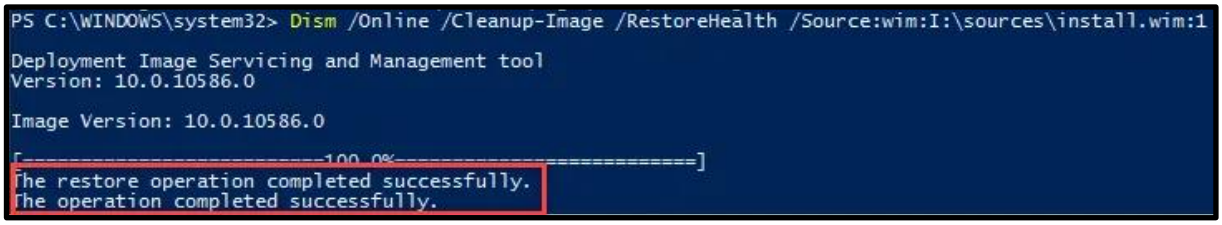
3. In the Powershell, type the command: "sfc /scannow" and press enter.



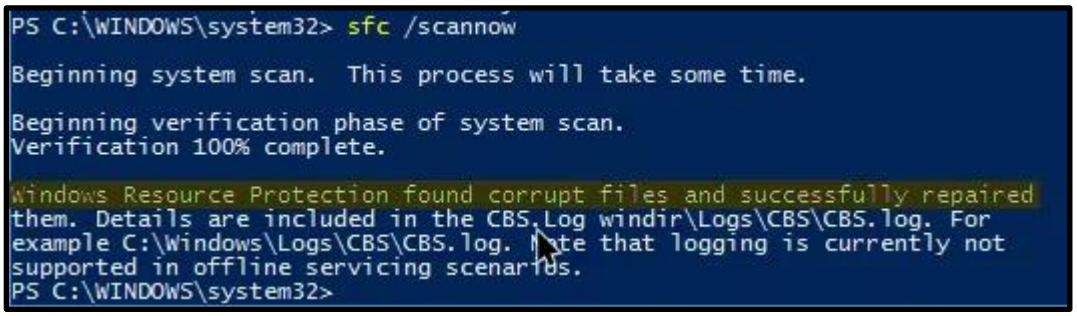
4. If the SFC scan did not fix all the errors that occured, use the following command to fix the corruptions : Dism /online /cleanup-image /restorehealth



5. In the event that the operation did not complete successfully, we will run the following command to fix these errors : " Dism /online /cleanup-image /restorehealth /source:wim:X:\sources\install.wim:1 /limitaccess "



6. After the above mentioned command has completed we run the sfc command again to ensure that all the corruptions have been fixed.



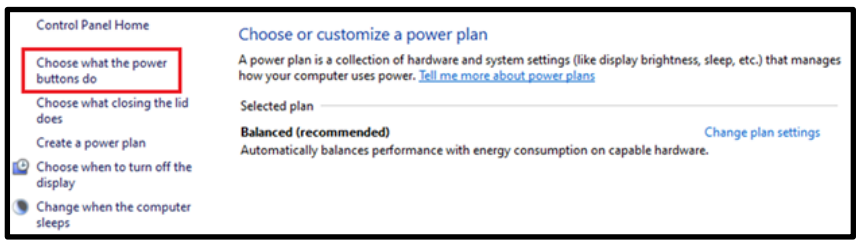
Enable fast start-up:

1. Select the start key on your keyboard or on your screen.

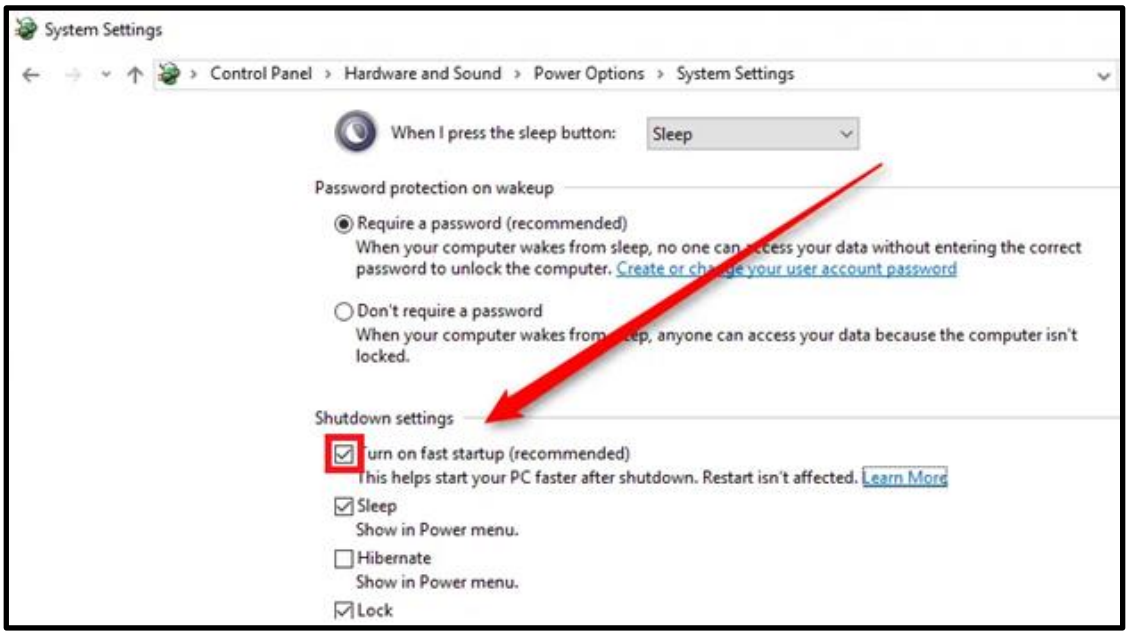
2. Type in “control panel” and press “Enter”

3. Select the “Power Options” icon

4. Select the “Choose what the power buttons do” on the left side of the screen.



5. Ensure that the “Turn on fast startup” is selected.



Effect of ram on the system

RAM (Random Access Memory) is high speed memory, used by the computer to store the information the processor is currently busy with. This is necessary so that the information the processor needs can be transferred at a fast enough rate for the processor to keep performing.

If you find that your RAM is always full it might be worth investing in additional RAM.
If you decide to get more RAM, make sure it is compatible with your device before buying it.
RAM can significantly increase a laptop’s performance, but there is also a point where adding additional RAM will not help anymore. It always helps talking to someone who is informed on the subject or to do some research.

If RAM was installed on your device, when you start it up again, make sure the newly added RAM shows up.

Check for the amount of RAM you have:

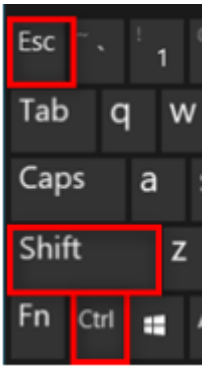
1. Locate “This PC”, found in file explorer.
2. Right click on This PC
3. Select properties
4. On the window that pops up you will find “Installed memory(RAM)”.
   This shows how much RAM your computer has.

System

Processor:	Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz 1.80 GHz
Installed memory (RAM):	8.00 GB (7.87 GB usable)
System type:	64-bit Operating System, x64-based processor
Pen and Touch:	No Pen or Touch Input is available for this Display

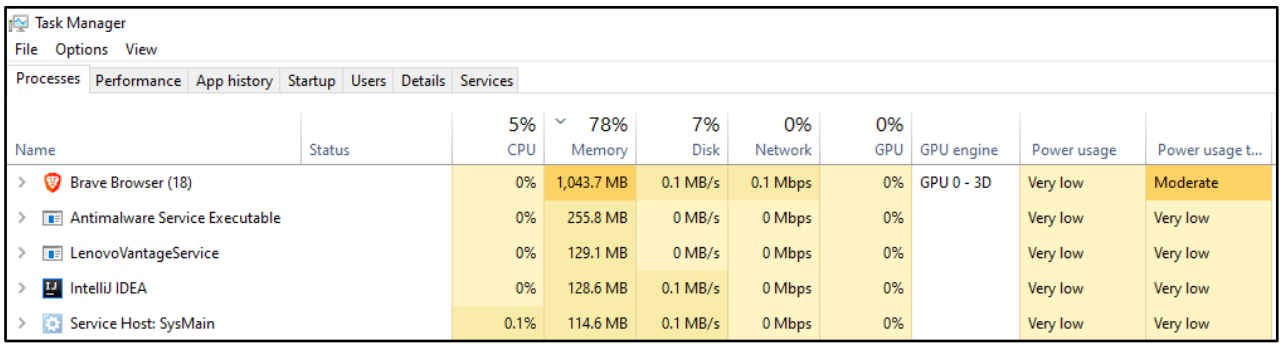
Check current RAM usage:

1. On the keyboard press the following three keys simultaneously
   Ctr +l Shift + Esc



2. This will open up the task manager.
   If it says “More details” in the left bottom corner, click on the text.

3. With the task manager open, you will see a bunch of columns and rows with programs/tasks. Like this:



4. The column that says “Memory” is the column that shows the current RAM usage of each task of the computer. At the top of the column a percentage is shown, this is the percent of all your RAM that is being used.
5. Here you can identify applications that might be making your system significantly slower. And it can also be a way to determine how many programs you can run at the same time. If you are in the task manager and chrome is open, when you add an additional tab you can see how it influences the memory usage.

In a way the more RAM you add the more applications you can run simultaneously.
If you find that your laptop is freezing or being slow, check how much RAM you have and then check how much is currently being used.
If you have one application open and the total RAM percentage is full or almost full it means that you should probably not open a lot of applications at the same time.

Each application has its own memory usage, some use a lot more than others.

For regular users who send emails, write documents and browse the web around 4GB of RAM should suffice, but it may still cause some slow bumps in performance.

Laptop performance is not just reliant on RAM but a combination of factors, so in some cases even if RAM is added it might not make a difference, meaning the performance issue might be somewhere else.