

An Advanced version of my [Basic FPS Guide](#) (For experienced users ONLY, use at your own risk)

**Twitch:** <https://twitch.tv/Milkbrain>

**Twitter:** <https://twitter.com/MilkbrainTV>

**Instagram:** <https://instagram.com/MilkbrainTV>

Please follow along to [this VOD](#) for the time being. I will be making a proper tutorial video soon.

Another similar, easier to follow tutorial: <https://www.youtube.com/watch?v=wkJBDEDDS5o>

Also please note that this guide is not tailored to any specific build and is a basic Windows 10 optimization guide with additional tweaks geared towards gaming. Of course there is more you can do, which I can't include in this guide because the average user would be too lost.

**If you are confused about anything, don't do it. I am not responsible if you fuck up :)**

**Use [this guide](#) instead.**

## // RESTORE POINT //

As always we'll start by creating a restore point, so if for whatever reason you want to revert any changes you make, that option will be available.

control panel > system > advanced system settings > System protection > select system drive (the drive Windows is installed on) > configure > turn on system protection; set 5% > create

## // SYSTEM OPTIMIZATIONS //

(still under advanced system settings)

Advanced > performance settings; performance, custom: check

- show thumbnails instead of icons

- smooth edges of screen fonts

(obviously this is preference, you could uncheck everything)

(if you have shit RAM, skip this step)

Advanced > change; uncheck automatically manage; set c drive to system managed

Advanced > startup and recovery settings; time to display OS: uncheck

(don't do this if you have multiple operating systems, this will just speedup startup time)

Remote > Advanced... > uncheck > Ok > uncheck allow remote assistance; don't allow; restart later

(obviously don't do this if you want this feature)

**Disable drive indexing** (With indexing turned on, all searches are indexed so that searches are faster.

However, the search indexer uses CPU and RAM so with it switched off you will save those resources)

Use this to determine whether you should disable indexing:

Good CPU and a standard hard drive = Keep indexing on

Slow CPU and any hard drive = Turn indexing off

Any SSD = Turn indexing off

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File explorer > This PC > right click each drive > Properties > uncheck 'Allow files on this drive to have contents indexed' > Apply changes to drive, subfolders and files > ignore all

Windows key + R > msconfig > Boot > Advanced options > Number of processors: MAX > Ok  
Check 'No GUI boot', set timeout: 5 (can set to 3 if High End PC)

**TimerResolution** - <http://www.lucashale.com/timerresolution/TimerResolution.zip>

Extract this program to your desktop, Run it and click 'Maximum'. If your Current Resolution is anything other than a clean 0.500 ms, run Command Prompt as Admin and run this command:

`bcdedit /set useplatformtick yes` (this will disable synthetic timers within Windows)

Then restart your system and reopen TimerResolution, you should now see 0.500 ms

(see [this article](#) on how to get TimerResolution to start every time your PC does)

## // WINDOWS SETTINGS //

settings > system > notifications; disable all  
focus assist; off, automatic rules = off  
power & sleep; sleep = never  
storage; storage sense off

home > personalization >  
Colors > transparency effects off  
Taskbar > Select which icons appear in taskbar >  
Always show all icons in the notification area: ON  
(this is so you can easily see what is running on your PC at all times)

turn system icons on or off > all OFF except clock, volume, network, power  
(cleans up taskbar clutter)

home > apps > startup > turn off anything not used  
(highly recommended to speed up startup time and potentially increase fps)

home > gaming > Game bar; off  
Game mode; on  
(You can test whether you gain more fps with Game Mode OFF, typically most benefit from having it ON)  
(Windows 10 version 1809 and later = ON, pre 1809 = OFF [reference this](#))

home > ease of access > display; show animations off

home > privacy > general; everything off  
speech; off  
ink & typing; off  
diagnostics; basic, everything off, delete data, feedback frequency: never  
activity history; uncheck send history, clear history  
location; off

**Skip this CAMERA: ON**  
**Skip this MICROPHONE: ON**

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notifications; off  
account info; off  
contacts; off  
calendar; off  
phone calls; off  
call history; off  
email; off  
tasks; off  
messaging; off  
radios; off  
background apps; off  
app diagnostics; off  
(gaming recommendation, disabling unnecessary features that could interfere while playing)

home > update & security > windows update > advanced options; off  
delivery optimization; off > advanced options; check everything, set minimum  
(recommended for gamers, we do not want Windows downloading updates while gaming)

## // DEBLOAT WINDOWS \\\

10AppsManager - <https://www.thewindowsclub.com/downloading-10appsmanager>

Download and extract program

Run 10AppsManager.exe as Admin

Uninstall all pre-installed apps you do not use (Select 'Remove All' if you don't use any)

**\*IMPORTANT:** If you use Nvidia Control Panel Windows Store app, DO NOT uninstall Windows Store\*

If you need the Windows Store back for whatever reason, run Powershell as Admin then copy paste and run these commands individually:

```
Get-AppxPackage windowsstore | Remove-AppxPackage
```

then followed by this command,

```
Get-AppxPackage -allusers Microsoft.WindowsStore | Foreach {Add-AppxPackage  
-DisableDevelopmentMode -Register "$($_.InstallLocation)\AppXManifest.xml"}
```

After that has completed you should be able to search Windows Store and see it now.  
Open the Windows Store app and search Nvidia Control Panel, install that and you're good.

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## // OPTIMIZE REGISTRY \\

Windows key + R > regedit

Copy the highlighted path text and paste into navigation bar in regedit.  
Then change the values listed below:

\* optional but useful tweaks \*

Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\Multimedia\SystemProfile

- NetworkThrottlingIndex = ffffffff (default value = 10)
- SystemResponsiveness = 10 (set to 0 for max responsiveness) (default value = 20)  
(Disables Network Throttling and improves System Responsiveness)

\* important for next step \*

Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Power\PowerSettings  
\54533251-82be-4824-96c1-47b60b740d00\943c8cb6-6f93-4227-ad87-e9a3feec08d1

- Attributes = 2 (default value = 1)  
(Unlocks the ability to modify sleeping CPU cores to increase performance and reduce stutters in games)

\* additional tweaks for system performance \*

(You will most likely have to create these values: Right click > New > String Value)

Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control

- WaitToKillServiceTimeout = 2000  
(Speeds up shutdown/restart time)

Computer\HKEY\_CURRENT\_USER\Control Panel\Desktop

- AutoEndTasks = 1
- HungAppTimeout = 4000
- LowLevelHooksTimeout = 1000
- MenuShowDelay = 0
- WaitToKillAppTimeout = 5000  
(Slightly improves RAM management and overall system speed)

## // POWER OPTIONS \\

Advanced power settings - important, builds off of what we just did

Control panel > System & Security > Power Options > next to whichever power plan you have selected click 'Change plan settings' > Change advanced power settings

Wireless Adapter settings > Power Saving Mode > Maximum Performance

PCI Express > Link State Power Management > Off

Processor Power management

- > Processor performance core parking: 100%
- > Maximum processor state: 100%

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### // CPU CORE UNPARK //

<https://coderbag.com/product/quickcpu>

Download & install Quick CPU

Select active power plan

Set Core parking index, Turbo boost index and Frequency scaling index to 100%, apply

### // INTERNET / PING TWEAKS //

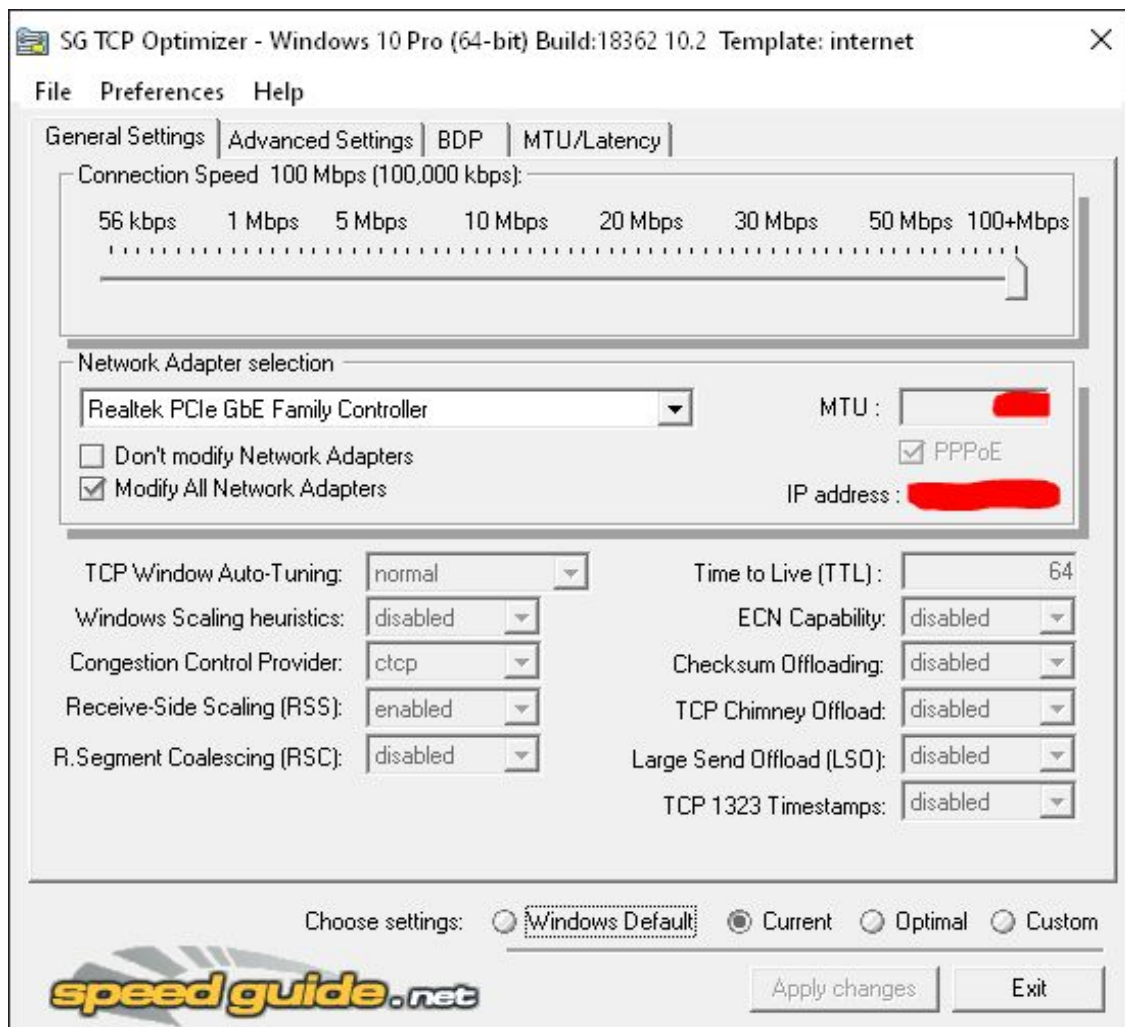
TCPOptimizer - <https://www.speedguide.net/files/TCPOptimizer.exe> (reference [this video](#))

Download and extract the program

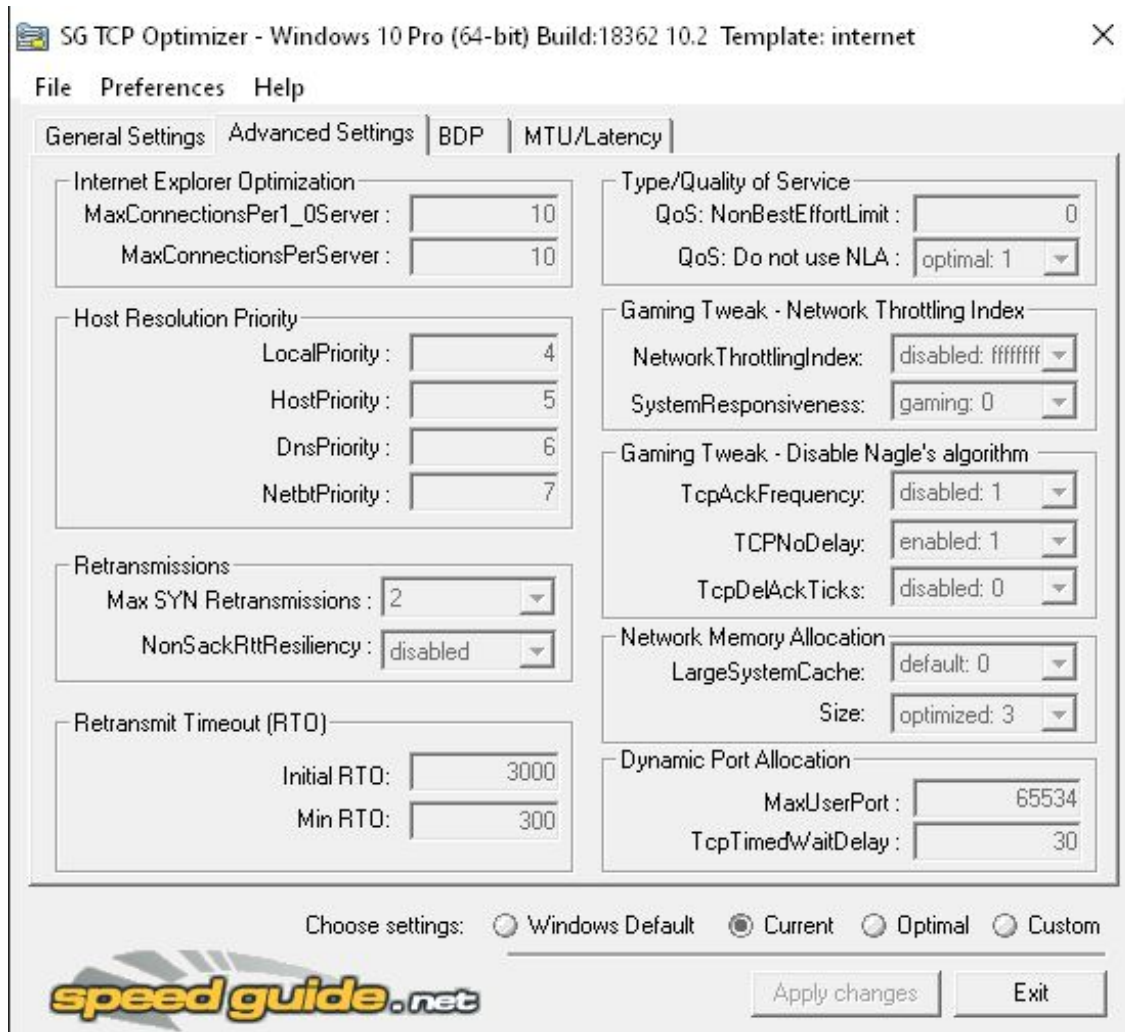
Run TCPOptimizer as Admin

Test MTU, set correct MTU

Use these custom settings:



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Apply changes > Ok > Restart

(You can always set this back to Windows Default using the option at the bottom)

### **Adware Cleaner (credit to [Dety0](#) for this)**

Adwcleaner - <https://downloads.malwarebytes.com/file/adwcleaner>

(This program detects and removes potentially unwanted programs from your system that may be affecting your ping)

Run the scan, Quarantine anything it finds and Restart your PC

If you are experiencing packet loss, try this:

Device Manager > Network adapters > right click your network adapter > properties > advanced  
Change 'Receive Buffers' to something lower like 128.

(This will basically cause you to receive smaller packets thus making it less impactful if any get lost.  
If this doesn't affect anything you can change it back)

### **Disable Bandwidth Limit**

Open group policy editor:

Windows key + R > gpedit.msc

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\* If group policy editor is not installed, download and run this installer below from [itechtics.com](http://itechtics.com) \*  
[GPEdit.msc Installer](#)

(Certain versions of Windows do not come with Group Policy Editor)

Computer Configuration > Admin templates > Network > QoS Packet Scheduler > Limit reservable bandwidth > enabled > bandwidth limit: 0

(by default, Windows reserves 20% of your bandwidth for updates)

## // DISABLE HARDWARE ACCELERATION //

Within your Web Browser, Spotify, Discord

Navigate to advanced settings and **disable Hardware Acceleration**

*Discord > User Settings > Appearance*

*Spotify > ... > Edit > Preferences > Show Advanced Settings > Compatibility*

*Most web browsers > Settings > use the settings search bar to search 'hardware acceleration'*

## // FORTNITE SPECIFIC RECOMMENDATION // (Nvidia users only)

If you have an Nvidia GPU do not install Nvidia Graphics Driver version 441.66 many experience bad fps and stutters. **Update: 441.87 was just released, if you try it please DM me feedback!**

I recommend using anything between 441.41 down to 436.48

(Test and see which works best for you)

To revert to a previous version of Nvidia graphics drivers:

Control panel > uninstall a program > nvidia graphics driver 441.66 > uninstall

Use [this link](#) to find, download and install an older driver package after uninstalling 441.61

**If you still experiencing nvidia driver issues or cannot open your nvidia control panel follow these steps:**

(I personally do this everytime nvidia releases a new driver to see how it performs on my PC)

I take no responsibility for any damages caused if you don't follow steps correctly, you proceed at your own risk and take full responsibility. [Reference this if you are lost.](#)

### Method One

1. Have [DDU](#) and [Nvidia driver package](#) on your desktop.
2. Run 'Display Driver Uninstaller.exe' as admin > select 'GPU' and 'Nvidia' from the drop down menus > select 'Clean and Restart'

3. Install new driver package

You can also perform this process for AMD drivers as well.



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#### Method Two (my method)

1. Download both [DDU](#) and [NVCleanstall](#) and extract to your desktop
2. Once both programs are on your desktop, it is recommended to boot into safe mode:  
Windows key + R > msconfig > click on the 'Boot' tab > check 'Safe Boot' > Ok > Restart
3. Once your PC has rebooted into Safe Mode, we can uncheck Safe Boot for next time:  
Windows key + R > msconfig > 'Boot' tab > uncheck 'Safe Boot' > Ok > **Exit without restart**
4. Run 'Display Driver Uninstaller.exe' as admin > select 'GPU' and 'Nvidia' from the drop down menus > select 'Clean and Restart'
5. Run NVCleanstall as Admin and manually select whichever driver version you wish to install (desktop version unless you are on a laptop, then select notebook) and hit next,

If you use Shadowplay or GeForce Experience, select 'All' at the bottom then next,

If you DO NOT use Shadowplay or GeForce Experience, select 'Recommended' at the bottom then next,

the driver package will then proceed to download, check all the boxes that appear on this window to ensure the install goes smoothly. After the driver package has downloaded select 'install', only after the installer has completed may you close NVCleanstall.

#### **// DISABLE FULLSCREEN OPTIMIZATIONS //**

Navigate to where Fortnite (or any game you play) is installed, here by default:

C:\Program Files\Epic Games\Fortnite\FortniteGame\Binaries\Win64

Right click the 'FortniteClient-Win64-Shipping' file > properties > compatibility > check 'disable fullscreen optimizations' > apply



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## // AMD RADEON SETTINGS //

The new 2020 Adrenalin version has reported many issues, I wouldn't recommend updating to it.  
(Ideal AMD Radeon settings for max fps)



**Video > Default**

**ReLive > Off**

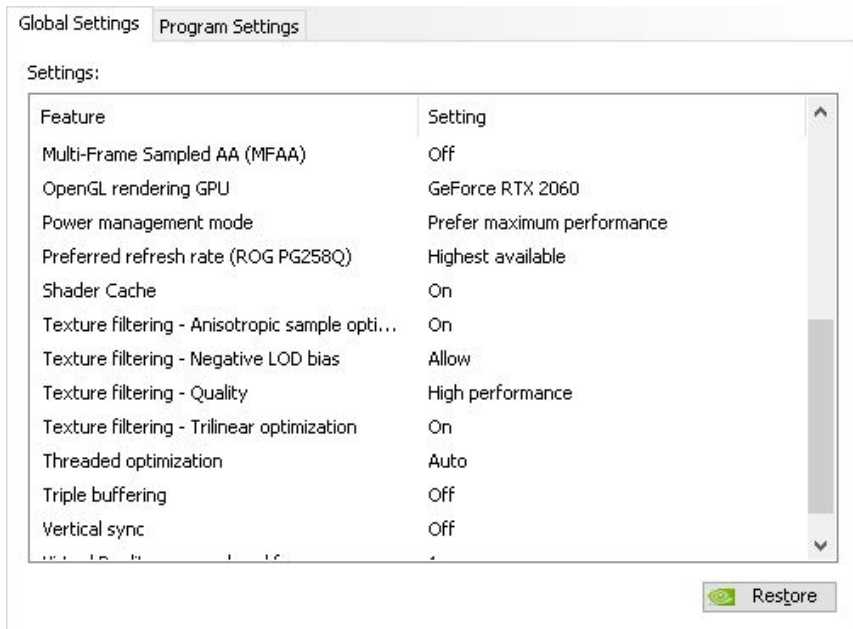
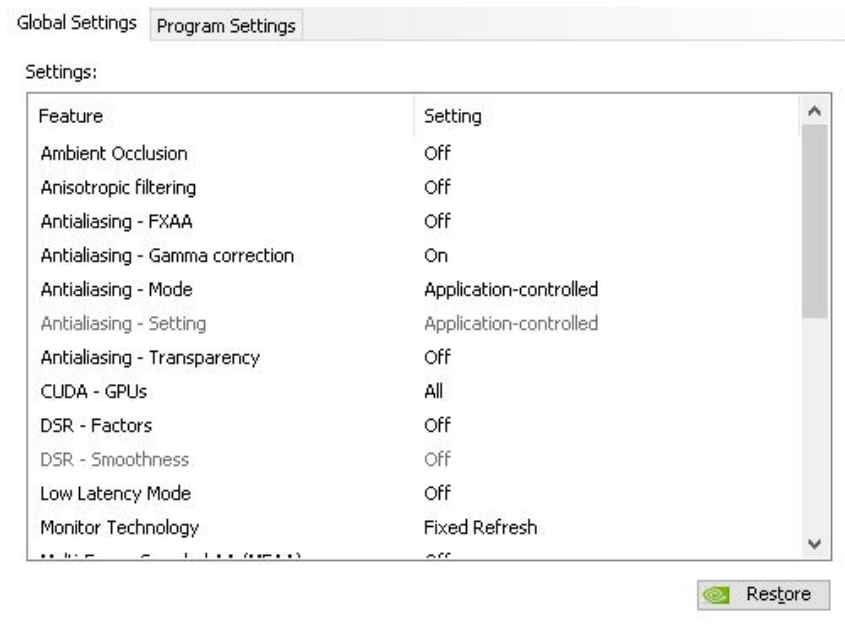
**Display > GPU Scaling = Off**

(If you are using custom resolutions such as stretched 4:3 this will introduce black bars. GPU Scaling ON will fix this)

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## // NVIDIA 3D SETTINGS //

After you install new drivers or even if you aren't, make to use these Nvidia 3d settings:



Only turn G-sync on if your fps has trouble reaching you monitor's refresh rate  
(example: you get 100 fps but you monitor is 144hz)

([A lot of research has been done on this subject](#))

G-sync users:

If you have gsync on, set Low latency mode to On or Ultra. If you have no Low Latency Mode options simply limit your fps to 3 below your monitor's refresh rate.

(Example: 141 fps if you have a 144hz monitor, 237 fps if you play on a 240hz monitor.)

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If you play on a 60hz monitor it is recommended to limit your fps to 120 or 144 ([reference this](#))

### // FINAL CLEANING \\\

CCleaner - <https://www.ccleaner.com/ccleaner/download/standard>

Custom Clean > Applications (uncheck all boxes under Chrome) > Analyze > Run Cleaner

Registry > Scan for issues > Fix selected > Fix all issues

I recommend going into the settings and unchecking 'start with system startup' and 'minimize to system tray'. We only want CCleaner running when we want it to be

File Explorer > This PC > Right click a drive> properties > Disk Cleanup > Cleanup System files  
Check all boxes > OK > Delete Files

\* do this for each drive \*

Tools (still in drive properties)

Error checking > Check

Optimize > \* ONLY SELECT HARD DRIVES, DO NOT SELECT SSD's \* > analyze > optimize

### // ENSURE HEALTHY OS \\\

Run Command Prompt as Admin

Copy and paste the commands below, letting each one finish before starting the next

sfc /scannow

DISM /Online /Cleanup-image /Restorehealth

\*\*\* Make sure to **restart your pc** even if you already have \*\*\*

You've now completed my basic fps guide!

If you find yourself stuck and needing to reinstall Windows for whatever reason I suggest using Windows new 'Fresh Start' feature to reinstall the latest version of Windows 10 without any bloatware:

<https://www.howtogeek.com/265054/how-to-easily-reinstall-windows-10-without-the-bloatware/>

Please note: These recommendations are just that, they may not work for your system, you may not like my preferences. I encourage you to look into other ways you can further optimize your system. Do some research, there are a lot of good resources out [there](#).

If this has helped you please feel free to support me in any way by either following, subscribing or leaving a tip. Any support is greatly appreciated! <3

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