How to optimize the NVIDIA Video Card to play the best game

Nvidia cards are generally appreciated for their performance, low temperatures and good compatibility with good games. If you're using an Nvidia card, the following tips will help you change the performance of this graphics card and give you a smoother and more stable gaming experience.

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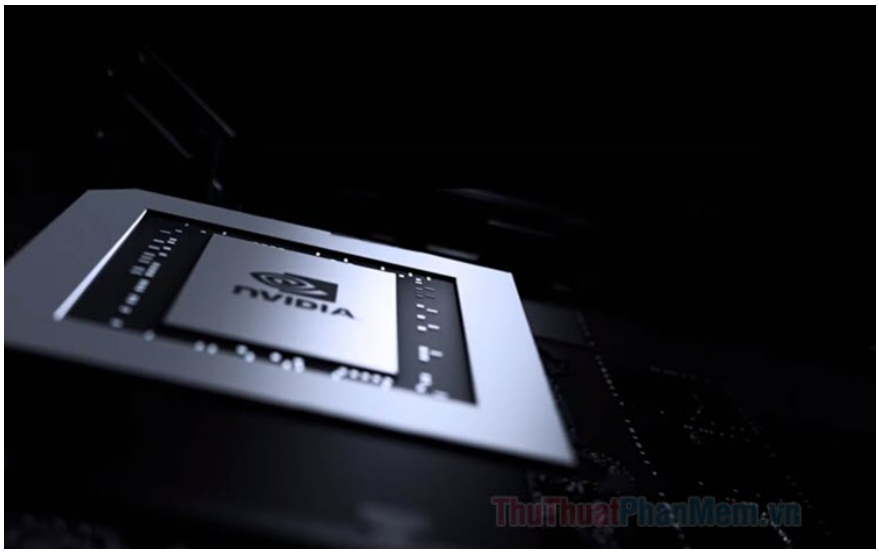
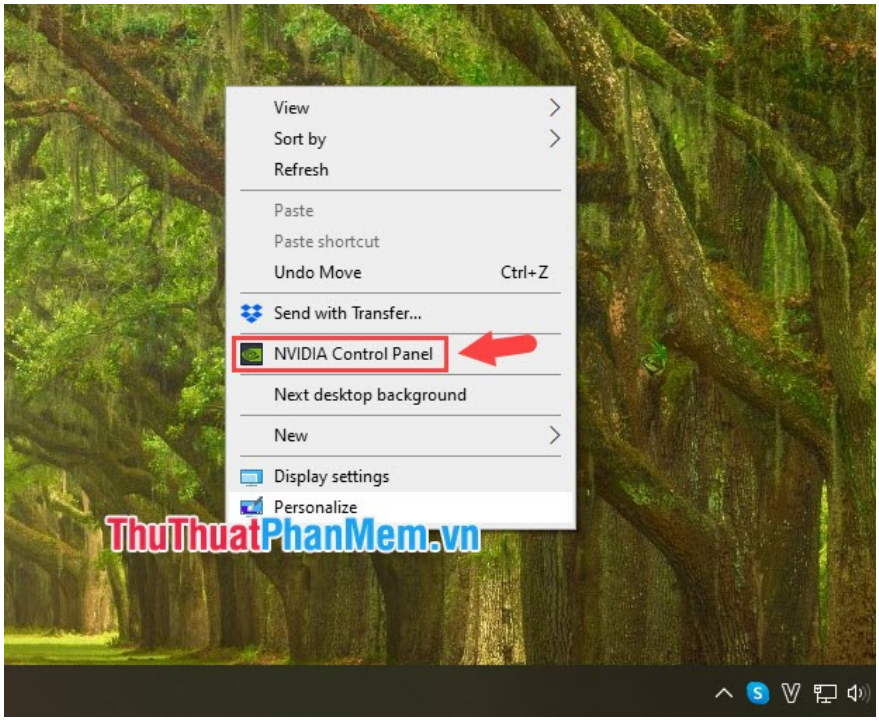


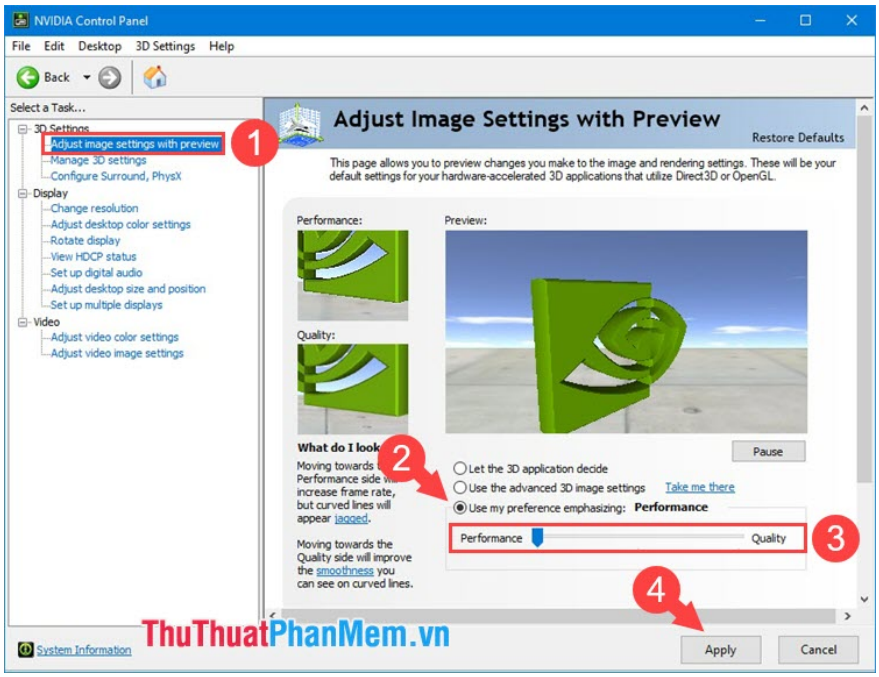
1. Optimize NVIDIA Video Card in NVIDIA Control Panel

The Nvidia Control Panel tool is Nvidia's default driver so that we can interact with the graphics card and edit the parameters that the manufacturer offers such as effects, screen resolution, performance level. . Note that the performance will be inversely proportional to the quality, if you want the game, the image is of the best quality, the ***Quality*** option in the Nvidia Control Panel will help you have the clearest visual effects, The best mode, but ***Performance*** mode will reduce graphics quality and in return, the number of frames per second (FPS) will be higher and you will find the game experience significantly smoother.

Step 1: Right-click on the Desktop and select **NVIDIA Control Panel** .



Step 2: Select the section **Adjust image settings with preview (1)** => **Use my Preference Emphasizing (2)** . Next, adjust the slider to **Performance** or **Quality** depending on the needs and configuration of your computer. To save the settings, click **Save (4)** .

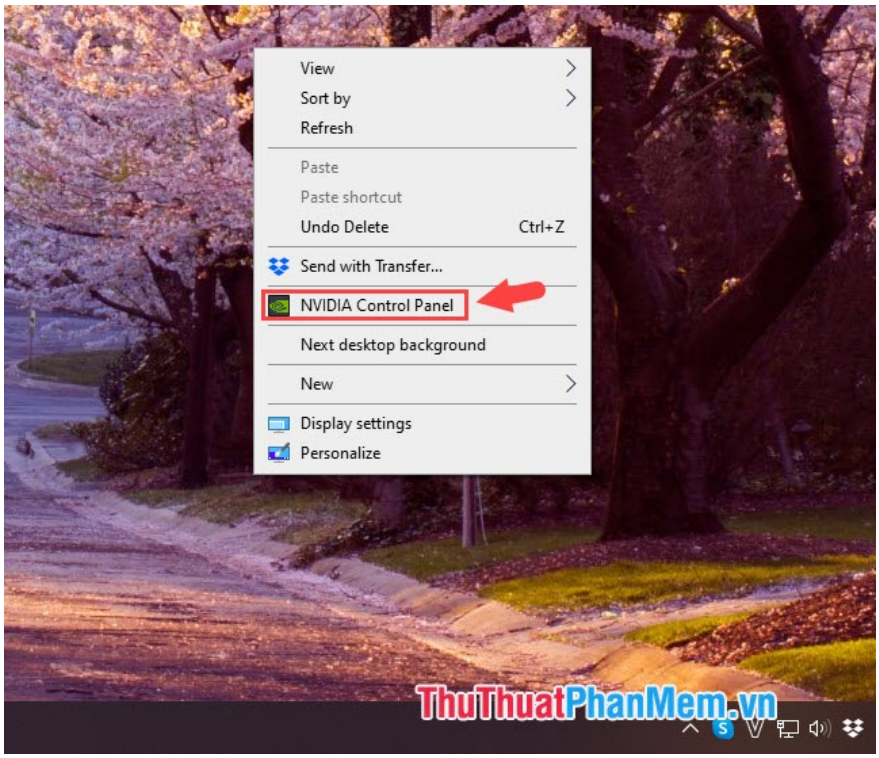


2. Edit advanced settings in NVIDIA Control Panel

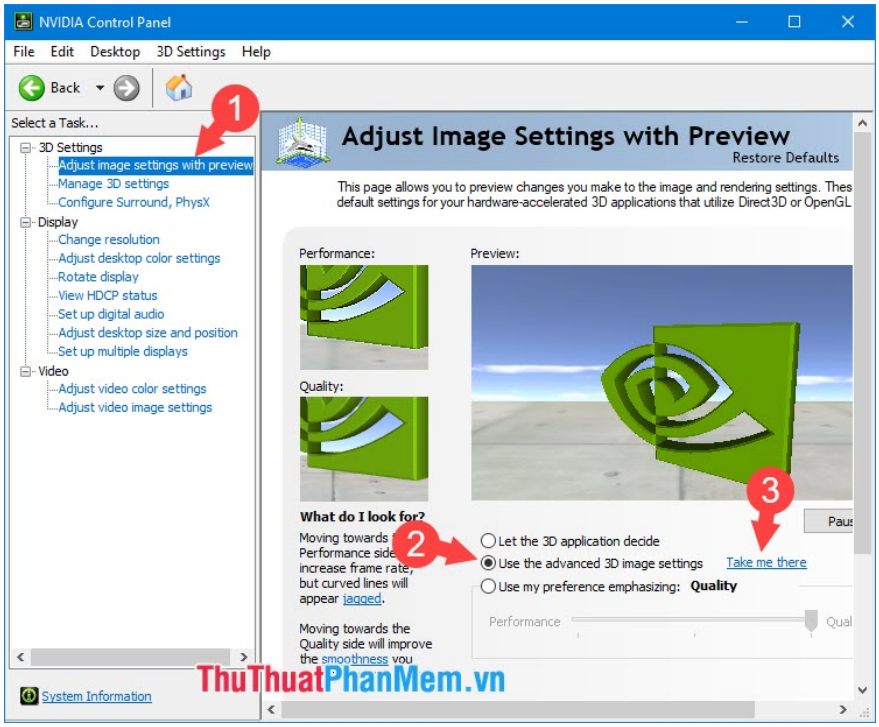
If the default settings do not satisfy you, we can optimize our NVIDIA card by manually setting. However, you need to be familiar with the image processing terminology to establish the most appropriate and optimal for your

card.

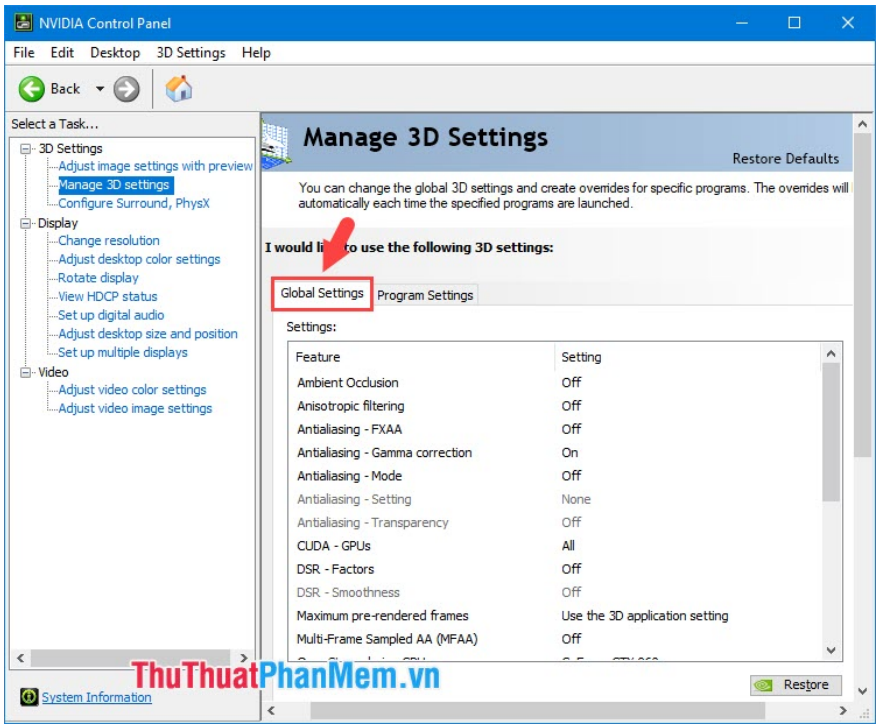
Step 1: Right-click the desktop => select **NVIDIA Control Panel** .



Step 2: Select the **Adjust Image Setting With Preview (1)** => **Use the advanced 3D image settings (2)** => **Take me there (3)** .

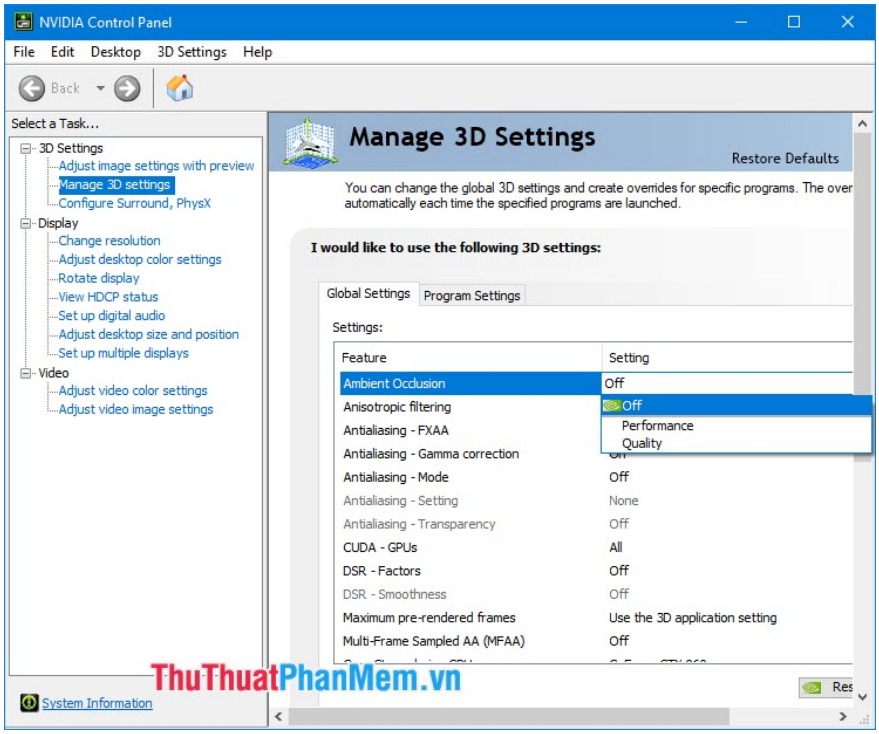


Step 3: Next you move on to the **Global Settings settings** to fine-tune your NVIDIA card.



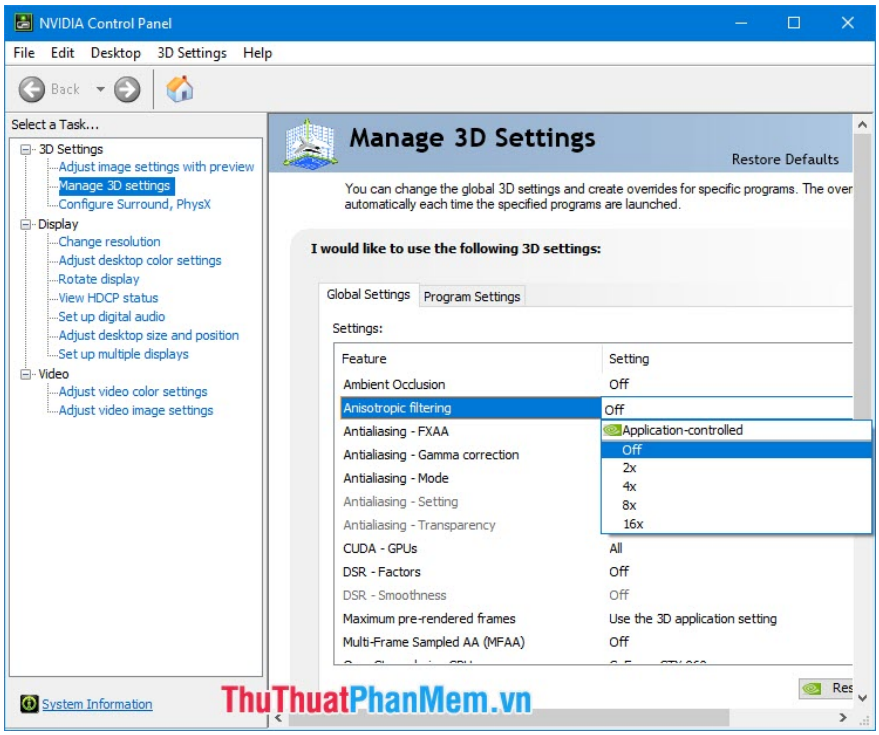
2.1. Ambient Occlusion

Ambient Occlusion is known as the light shadow effect, giving you realistic game scenes with light shining on objects. This technology is the premise of Ray Tracking technology found on NVIDIA's RTX card models. However, the Ambient Occlusion feature is still a basic feature on all card models and we have three main options for tuning in the NVIDIA Control Panel: **Off, Performance, Quality** . Your job is to choose a setup based on your needs and based on your card. If you own high-end Nvidia card models and the "terrible" PC configuration, **Quality** will give you the best gaming experience, and if you only own mid-range Nvidia cards and the average configuration, choose **Off** or**Performance** gives you higher and smoother frame rates when fighting heavy games.



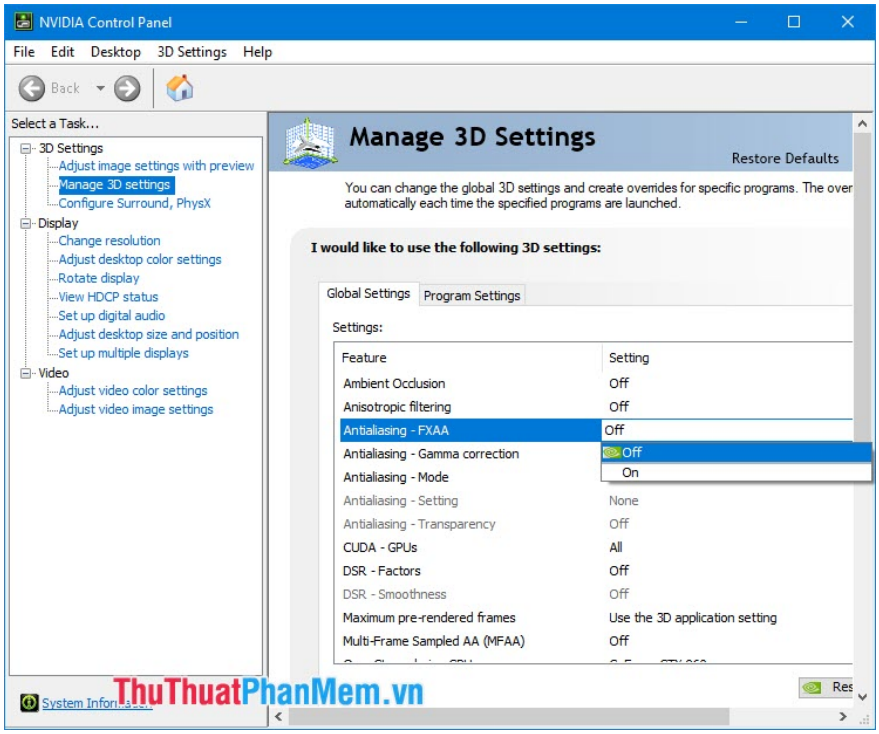
2.2. Anisotropic filtering

The feature helps to make images clearer, especially when objects are far away. **Anisotropic filtering** is like having a zoom camera that is very far away and can see objects clearly. However, this feature consumes a lot of computer resources due to handling objects at a distance and you should not set at **16x** if you own a high-end card with "terrible" hardware. attach.

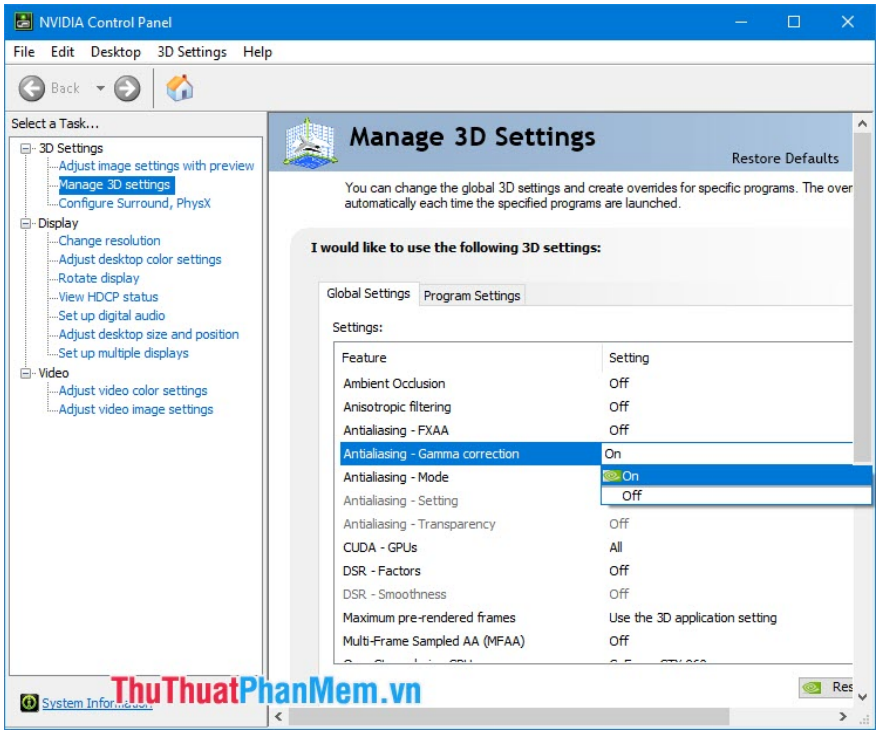


2.3. Antialiasing - FXAA / Gamma correction

FXAA - Fast approximate anti-aliasing takes care of the **anti-aliasing** process and makes images look much smoother. After anti-aliasing with the first layer, FXAA is the second layer that helps the remaining jagged details of the image to be blurred and the image looks more beautiful and realistic. You can select Off to turn it off to increase a little performance when playing games.

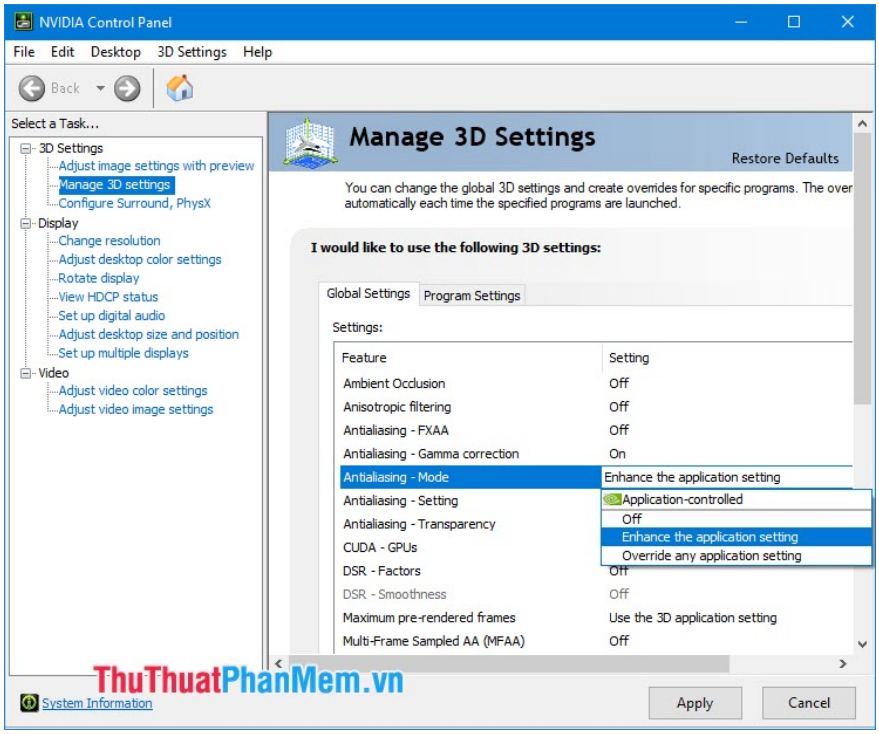


With **Gamma correction** undertaken in technical brightness antialiasing **Antialiasing** . This feature should be enabled with **FXAA** to enhance the authenticity of the image, otherwise you should turn off both of them rather than turn on one of the two.

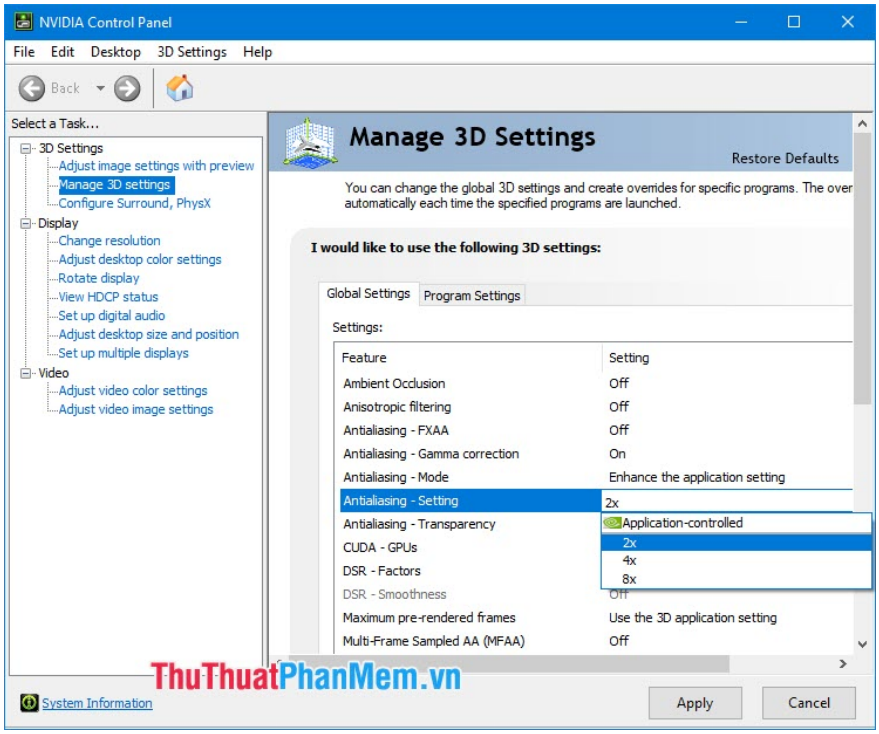


2.4. Antialiasing - Mode / Settings / Transparency

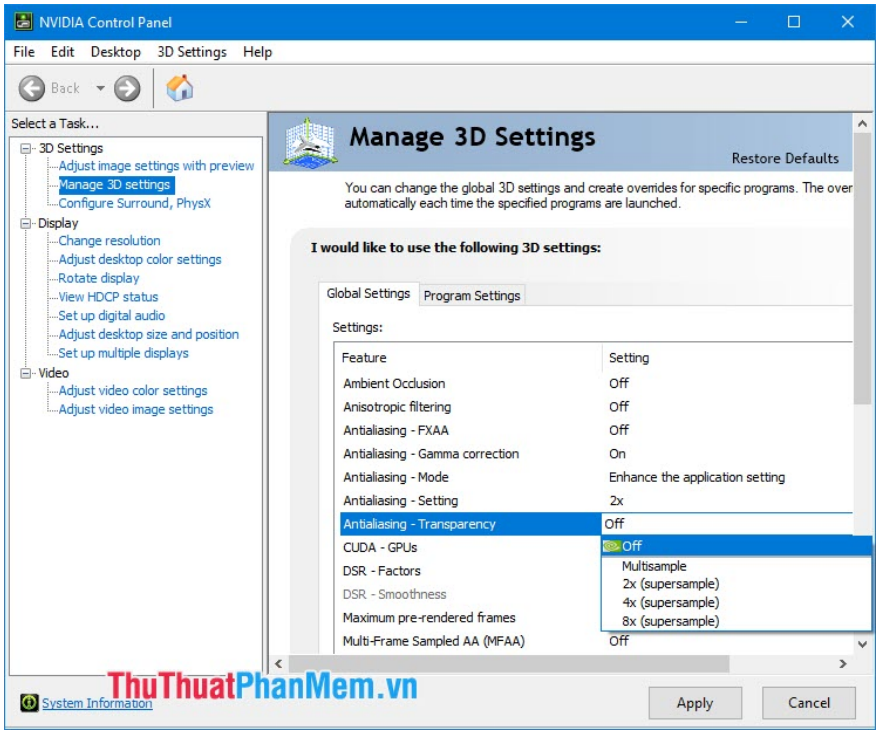
Next in Antialiasing, we have additional settings to make the anti-aliasing process more realistic. If you set the item **Mode** is **Off** , then we will not be able to set the remaining two items **Settings** and **Transparency** . And the **Enhance the Application setting option** will enhance the ability to remove teeth with the game. For example, if you set Enhance 2X and AA antialiasing in the game to 2X then we will have 4X antialiasing altogether. But for games that do not have anti-aliasing, this feature is useless and you must select the **Override any Application setting** to override the game settings and give the desired antialiasing setting.



The **Settings** section allows you to tweak the antialiasing capability from **2x** to **8x** . You should set the settings according to the game you want to adjust and should not set **8x** if your system is not strong enough.

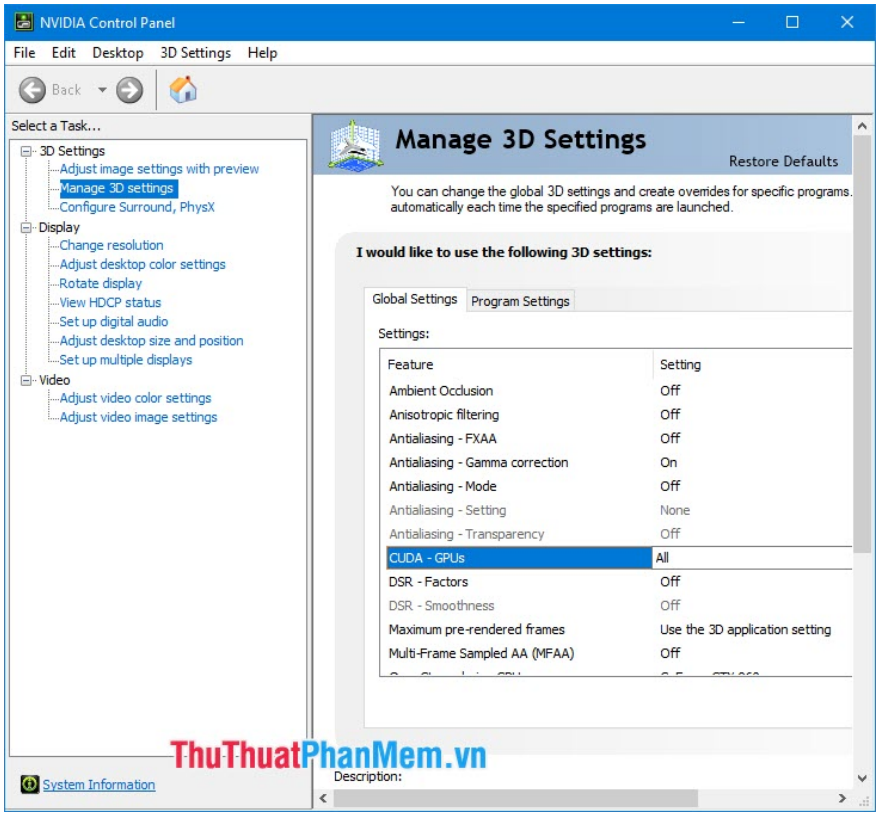


The **Transparency** part will take on the role of aliasing, make the image more realistic and look more "mechanical". You should set the option equal to the setting in the **Settings** section for the image to be synchronized and the best quality of processing.



2.5. CUDA - GPUs

CUDA is considered to be the core of a graphics processor just like the core in a CPU. But there are quite a lot of CUDA cores here, up to thousands of CUDA cores in a card. Of course, the more cores the better, and you should set **CUDA - GPUs** to All for high performance.



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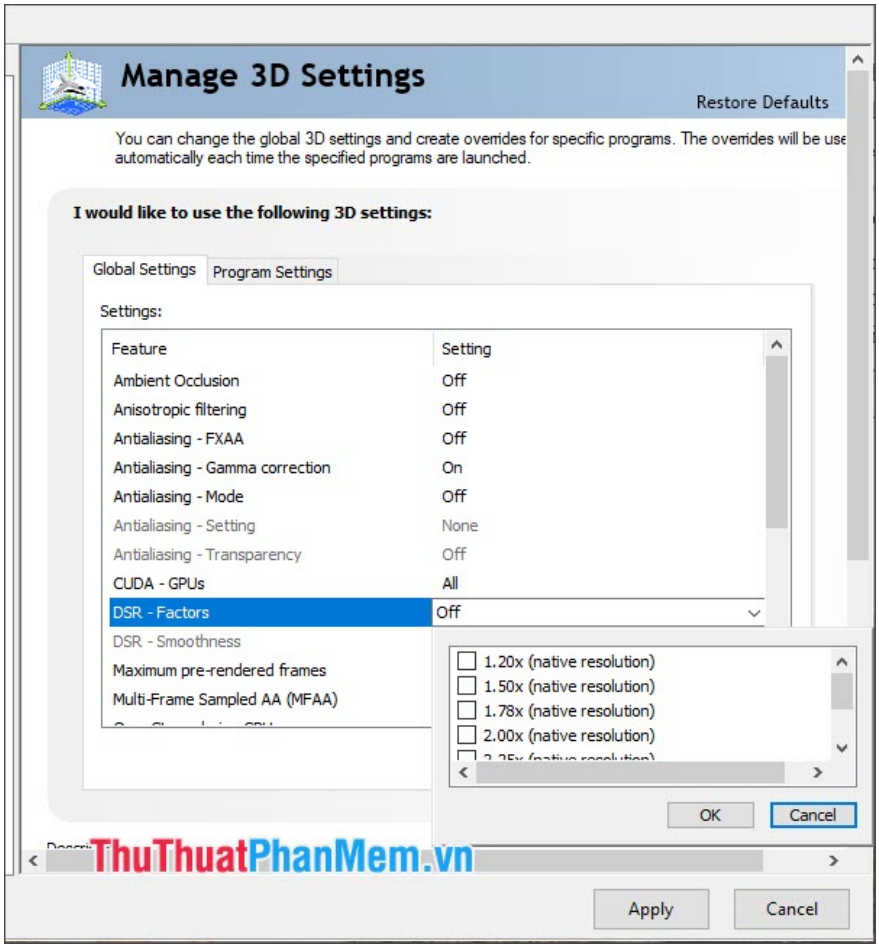
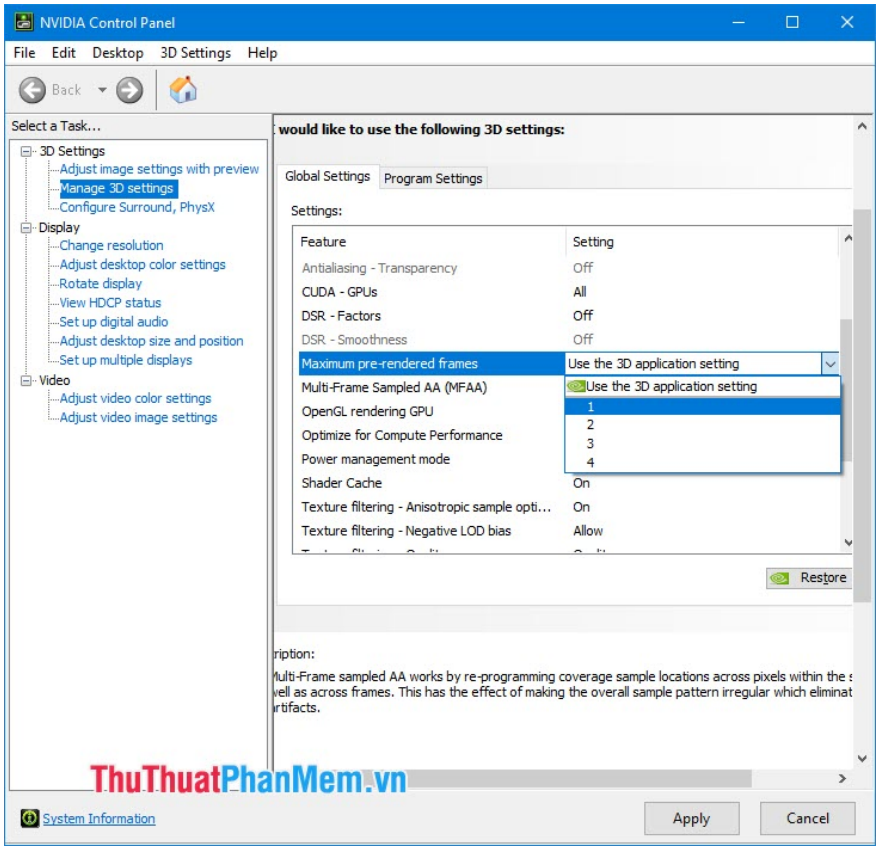
2.6. DSR - Factors / Smoothness

DSR or **Dynamic Super Resolution** is a feature that allows you to experience 4K resolution on a screen only Full HD. This option should be turned off because it will take up quite a bit of resources on your PC due to the higher resolution. This feature is only useful when you own a powerful PC and want images to be output on a big screen like a projector, the new **DSR** really works. And **DSR Smoothness** will complement **DSR Factor** in smoothing images when you zoom the resolution to "super large".



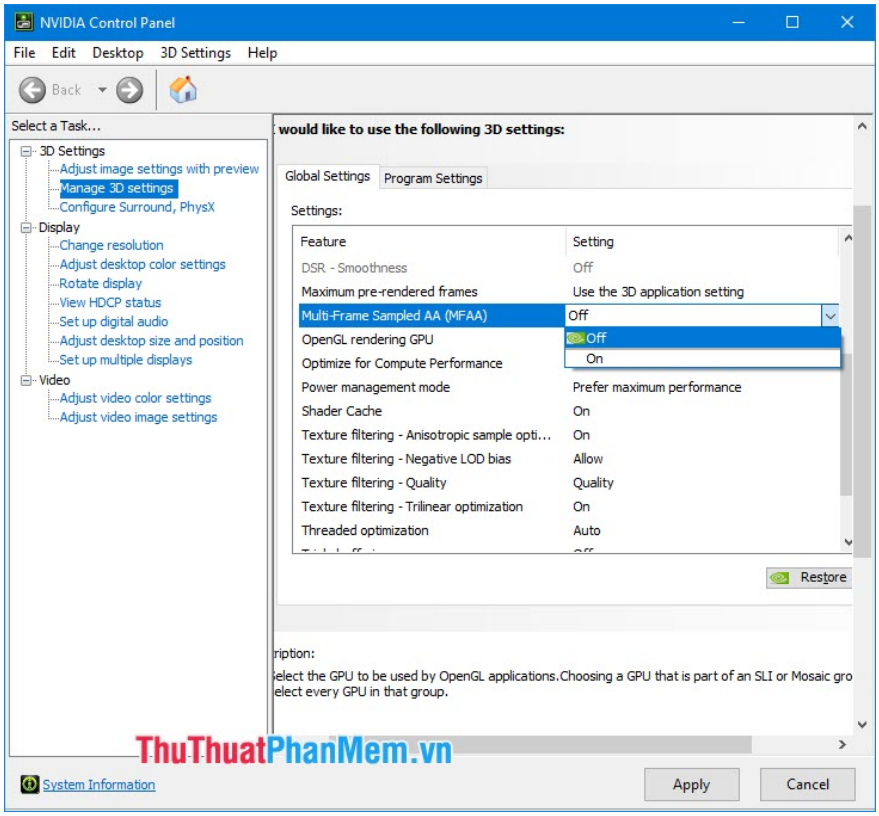
2.7. Maximum pre-rendered frames

This feature basically means that the graphics card will pre-process the frame to bring smooth game. We should leave the default or set to **1** to graphics card processing sufficient, to avoid causing overload.



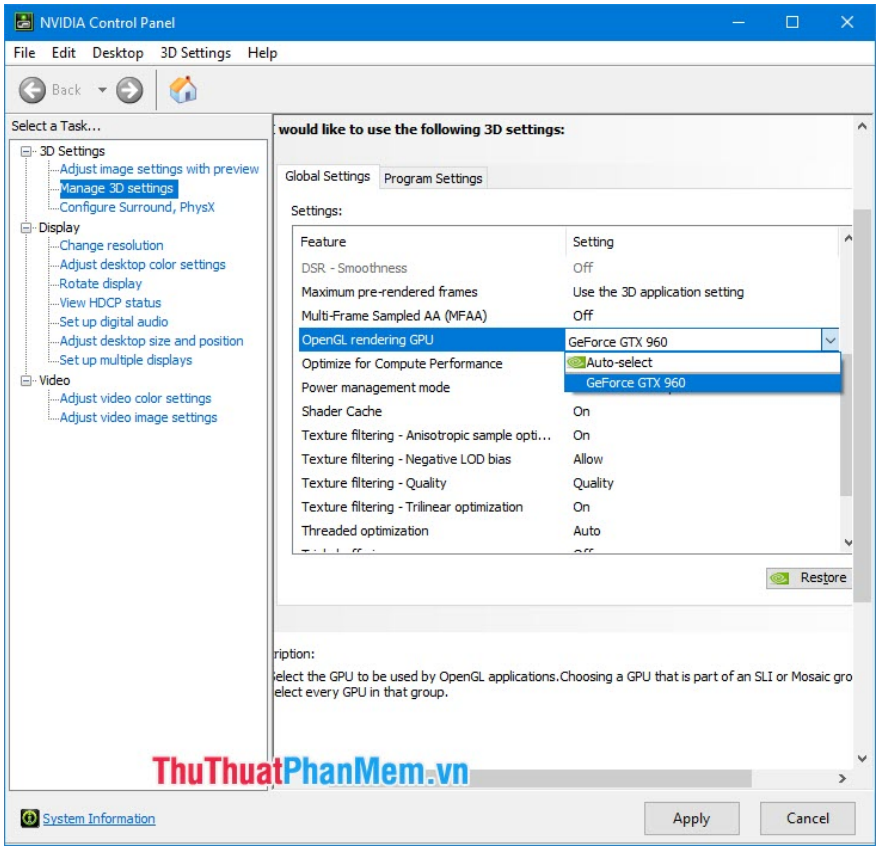
2.8. Multi-Frame Sampled AA (MFAA)

This is Nvidia's new anti-aliasing technology that speeds up the process of antialiasing by preloading a graphic template programmed into the processing software.



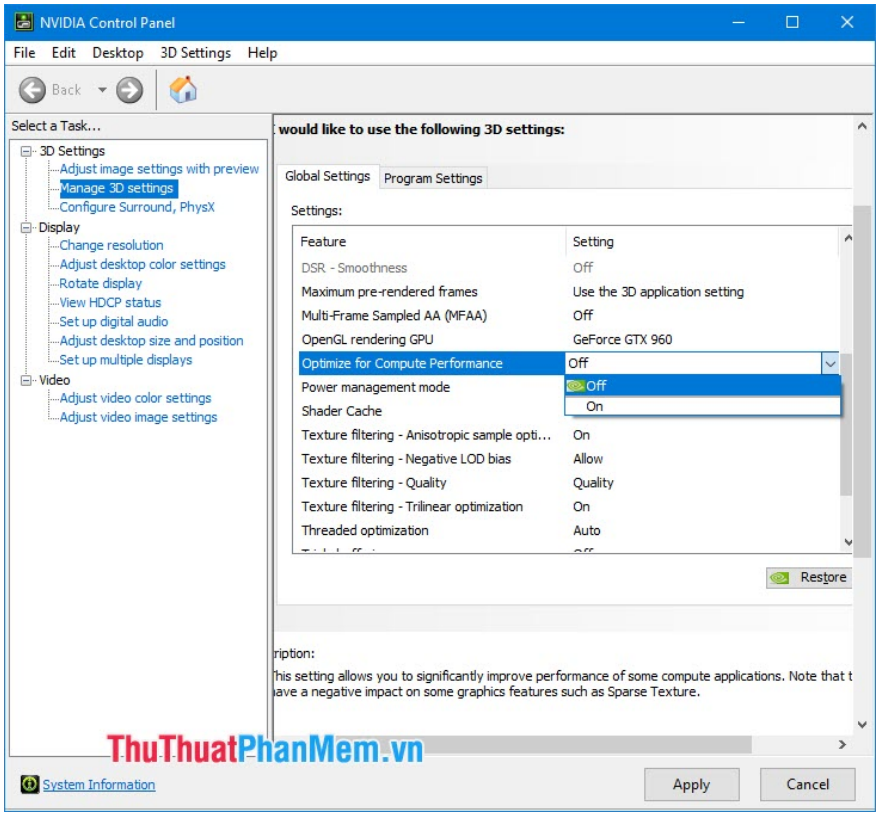
2.9. OpenGL rendering GPU

This option gives you priority to use onboard graphics card or Nvidia card. If your machine has two parallel cards (on laptops) then of course you should choose Nvidia card to handle the main graphics.



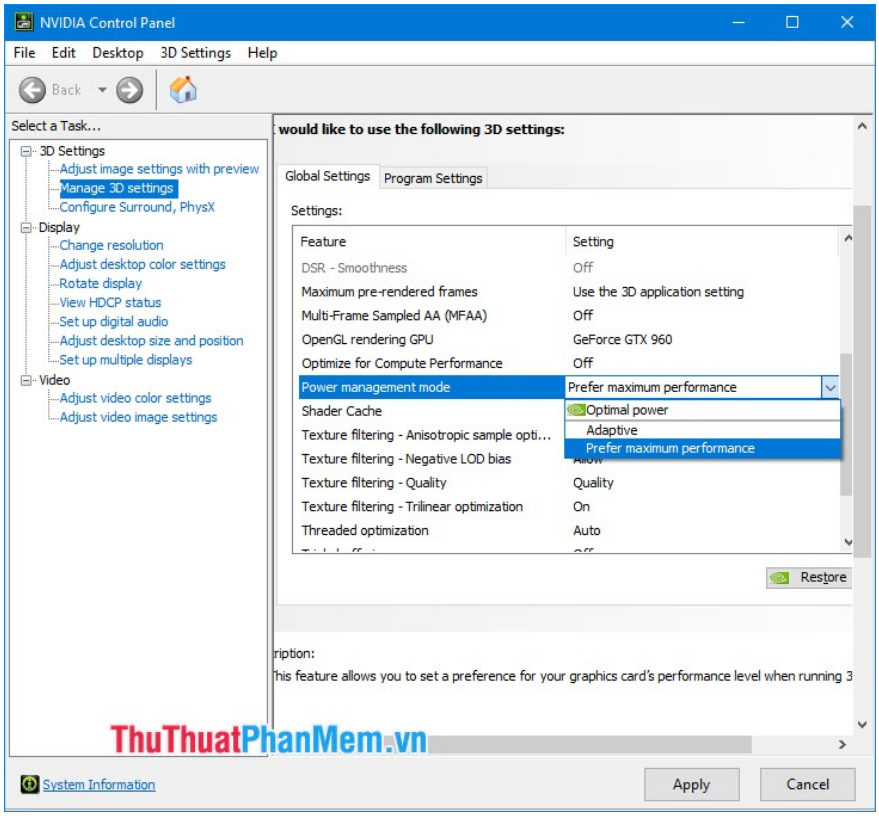
2.10. Optimize for Compute Performance

This feature serves for image and video processing programs such as Adobe Premiere, Adobe Encoder, etc. so that Nvidia cards can optimize computing power and allocate performance in accordance with software and chapter volume. The process needs processing. You can turn it off if you do not use Nvidia card for work.



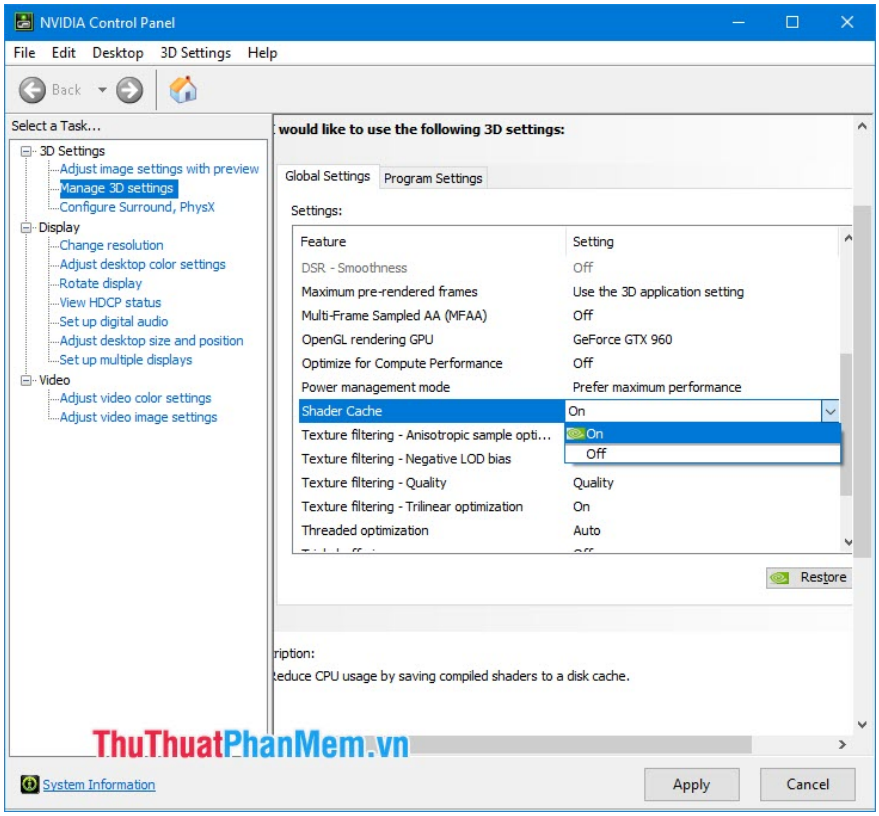
2.12. Power management mode

Power management mode will help you control the consumption of electricity. If you use a laptop with an Nvidia card, the Optimal power option will give you an impressive battery life and if you are plugging in or using a desktop computer, we should set **Prefer maximum performance** to give good performance. Best.



2.13. Shader Cache

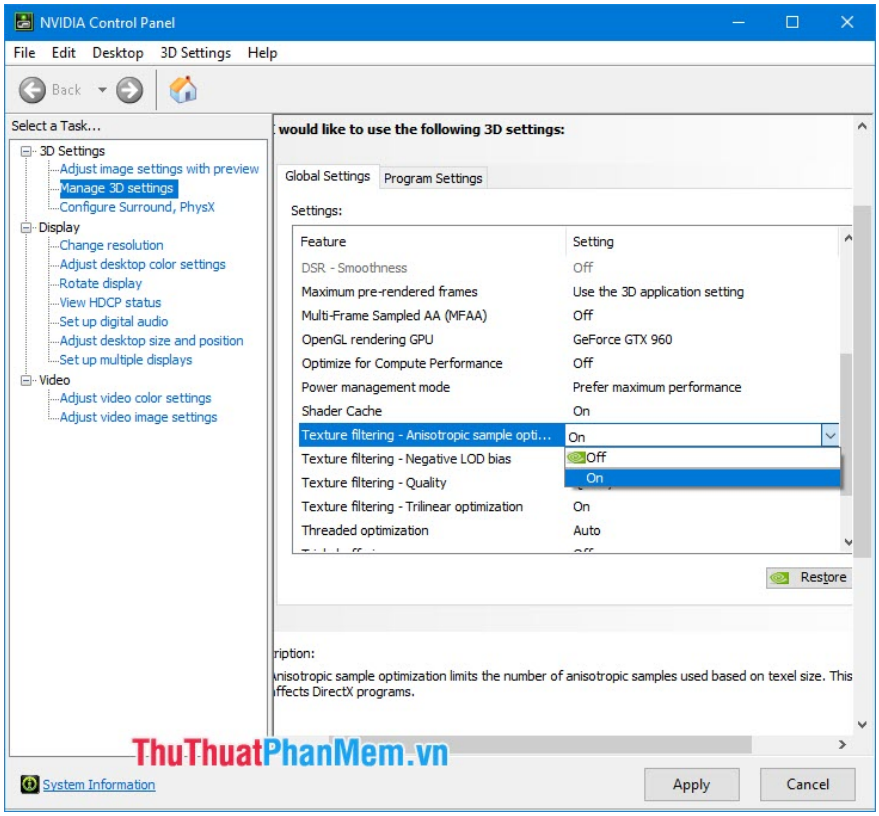
When processing shaders, a large amount of data will be stored in your computer's memory to speed up processing. If your computer is equipped with an SSD, this feature is really useful and helps your card to handle graphics faster. If your card is too strong, this feature is not necessary and when turned off, will help release some memory capacity.



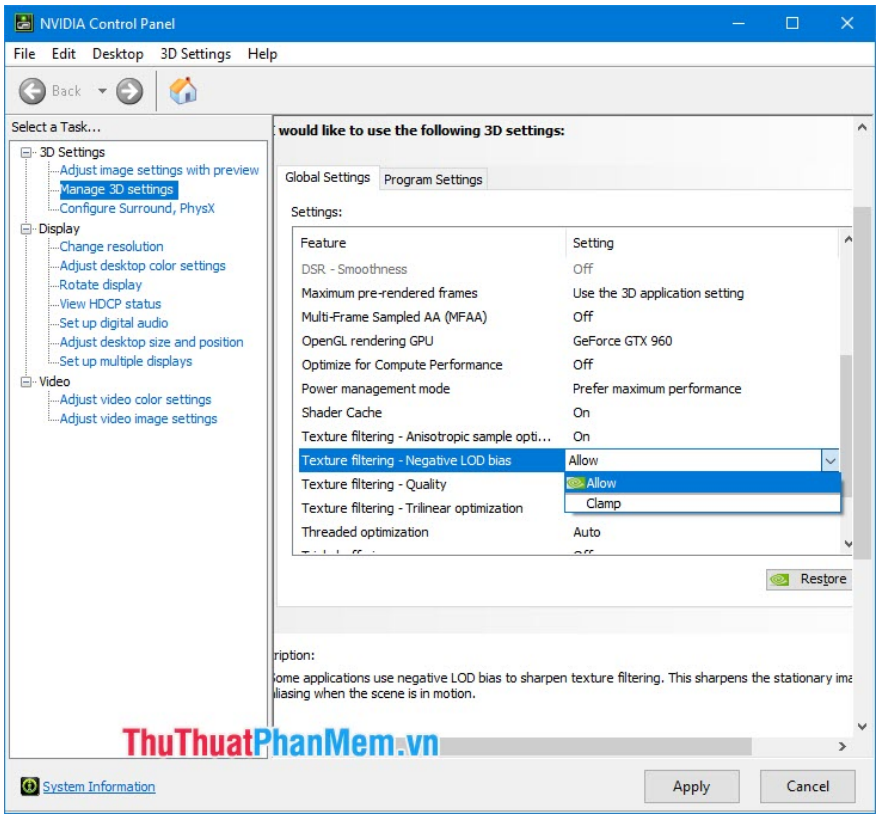
2.14. Texture filtering - Anisotropic sample optimization / Negative LOD Bias / Quality / Trilinear optimization

This is a setting to increase the detail of images and games, and we often see texture settings in the game from Low to Ultra.

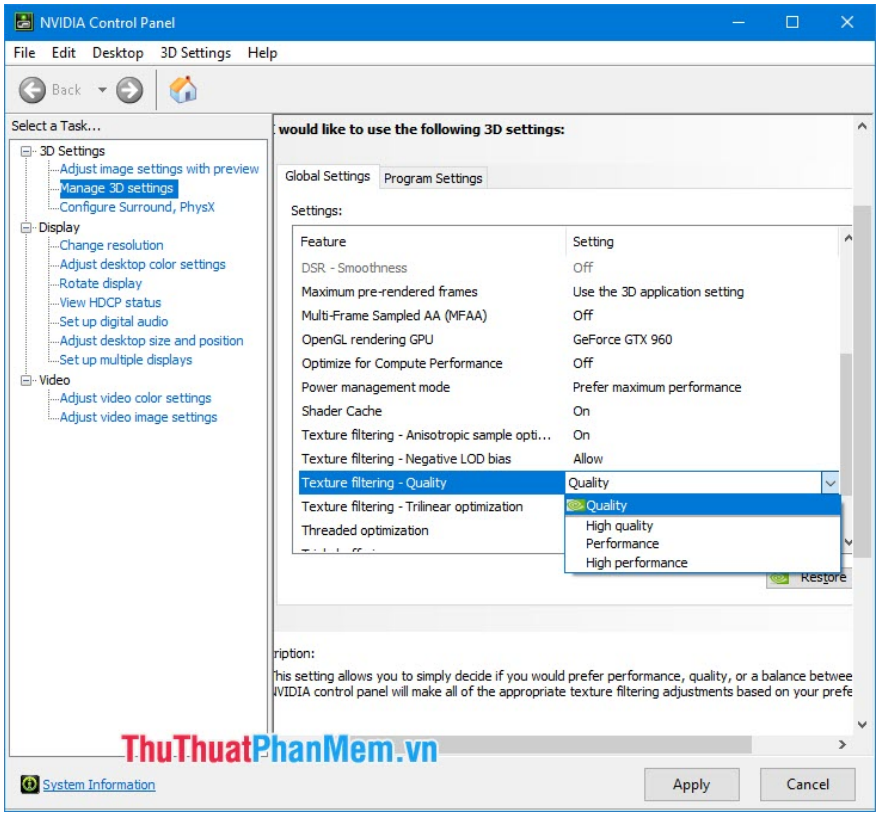
Anisotropic sample optimization: Optimized for setting graphic details. You should set this item to **Off** so your card is not limited in processing capacity.



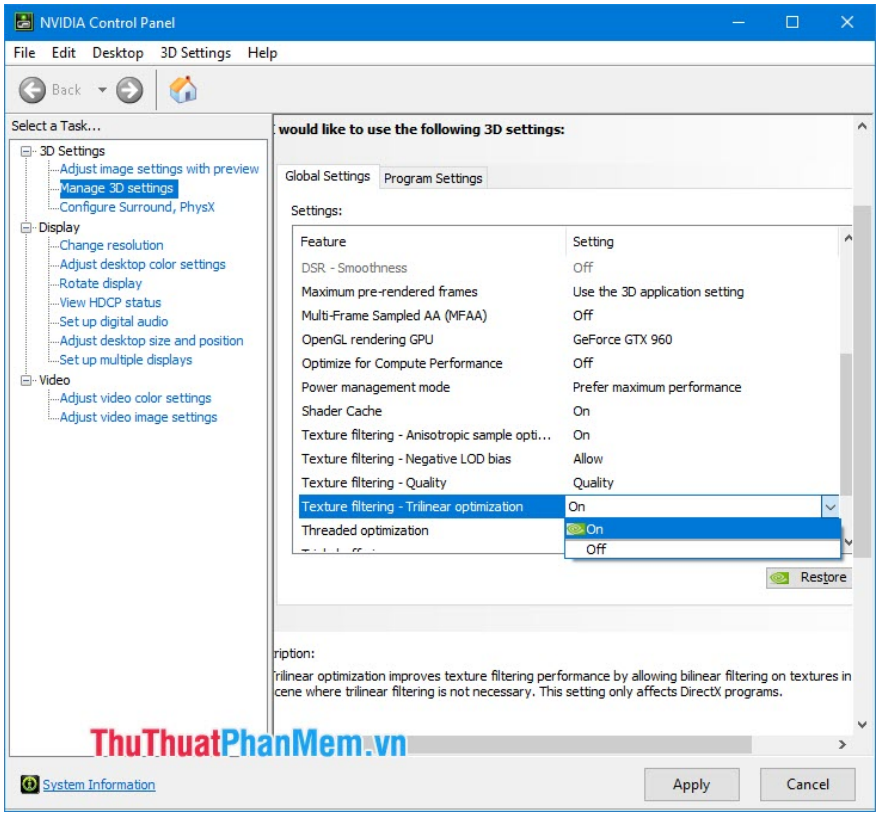
Negative LOD bias **:** This option adjusts the level of detail and you should set it to **Allow** if you turn off the ***Anisotropic sample optimization*** and vice versa, set to **Clamp** if you turn on ***Anisotropic sample optimization*** .



Quality: If you want the best performance when playing games, the **High performance** optionwill give you a little higher FPS and the **High Quality** optionwill bring a nice, more realistic picture but in return the performance drops. down a bit.

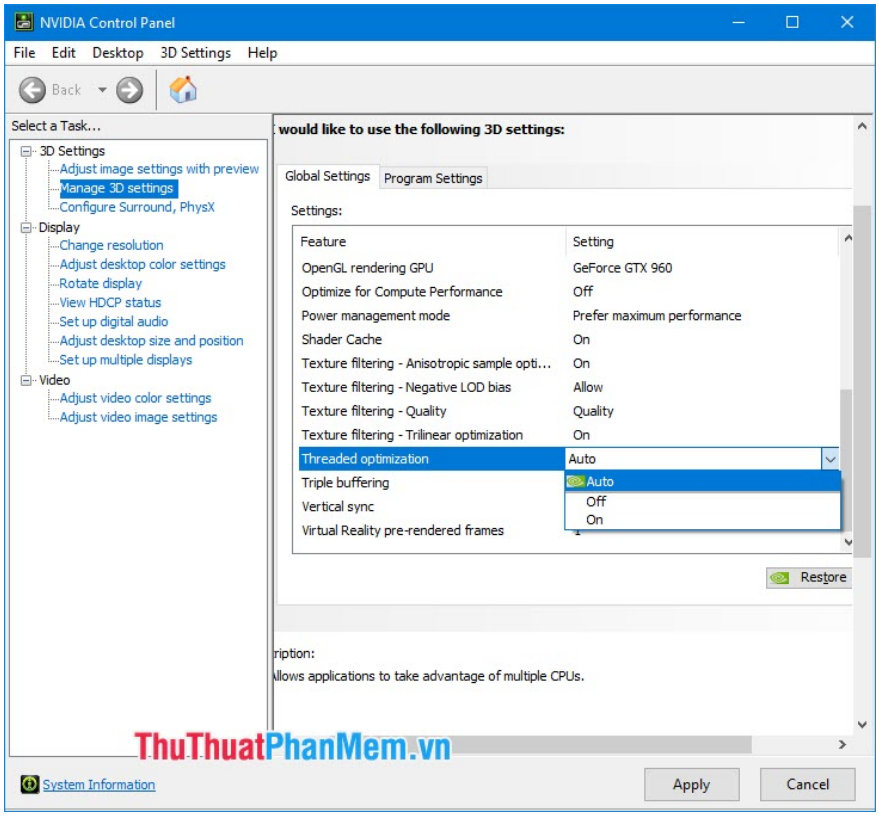


Trilinear optimization: helps to blur two colors to create true color. You can turn it off or on depending on your device configuration and the game you plan to play.



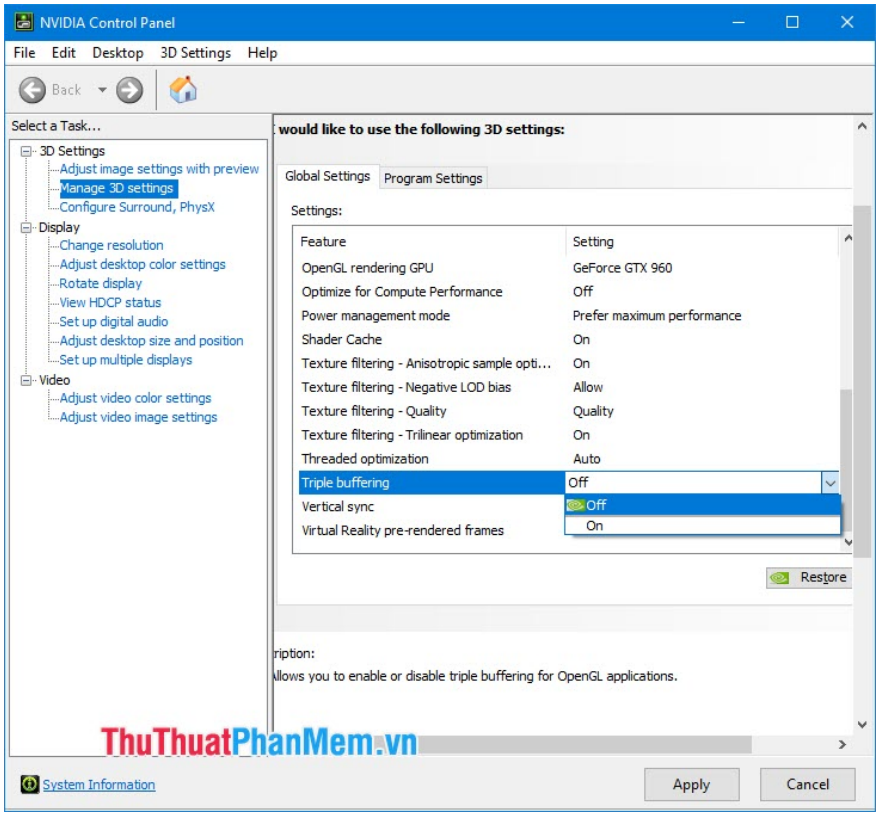
2.15. Threaded optimization

This feature helps optimize the number of threads used on the CPU, especially on CPU models that support **Hyper Threading** . Turning on this feature will give you a slight increase in FPS when the CPU is clocked automatically, and sometimes it will drop faster depending on CPU performance.



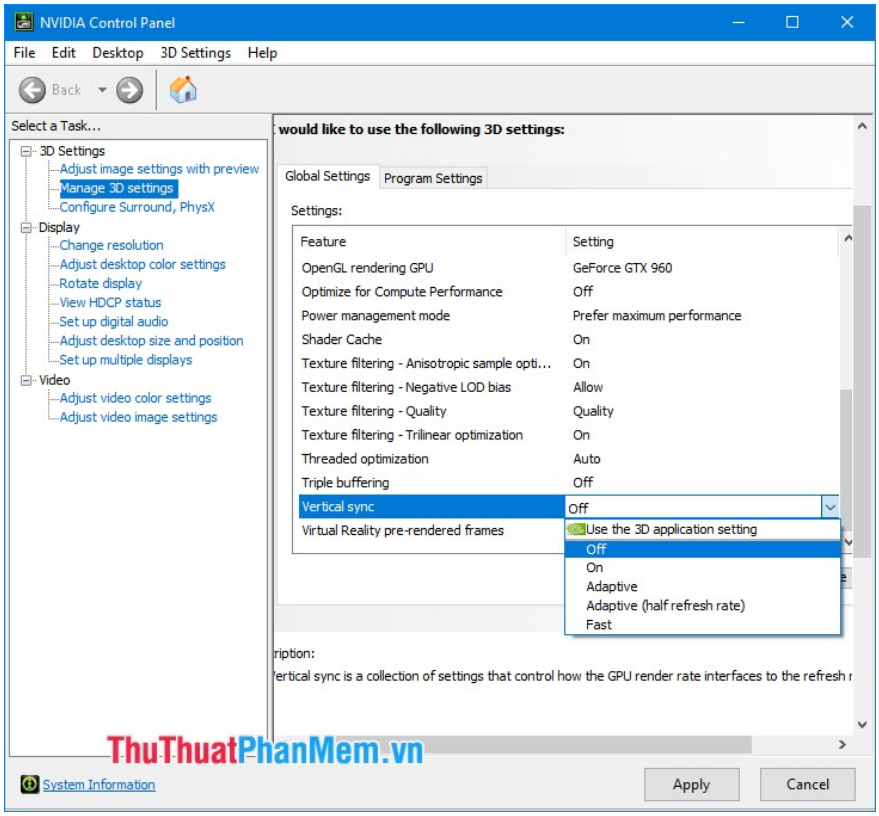
2.15. Triple buffering

Triple buffering takes care of the smoothing of the frame to prevent the FPS from being halved. You should set this option when you turn on **V-Sync** .



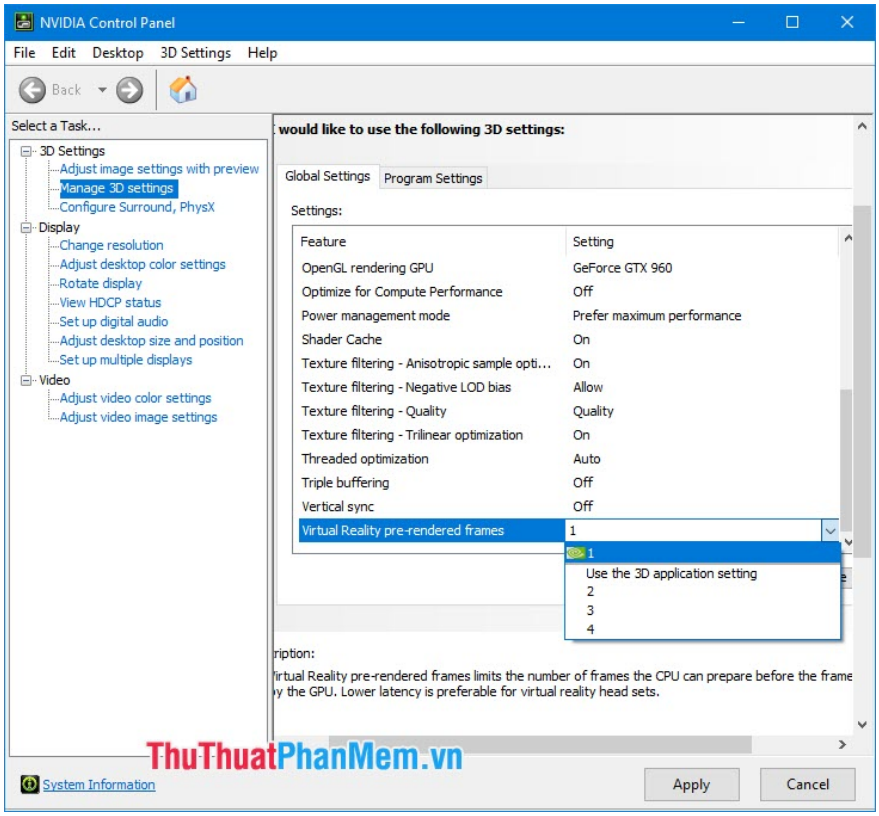
2.16. Vertical sync

V-sync, also known as vertical frame sync. This feature will help keep the FPS steady and not fall too low.



2.17. Virtual Reality pre-rendered frames

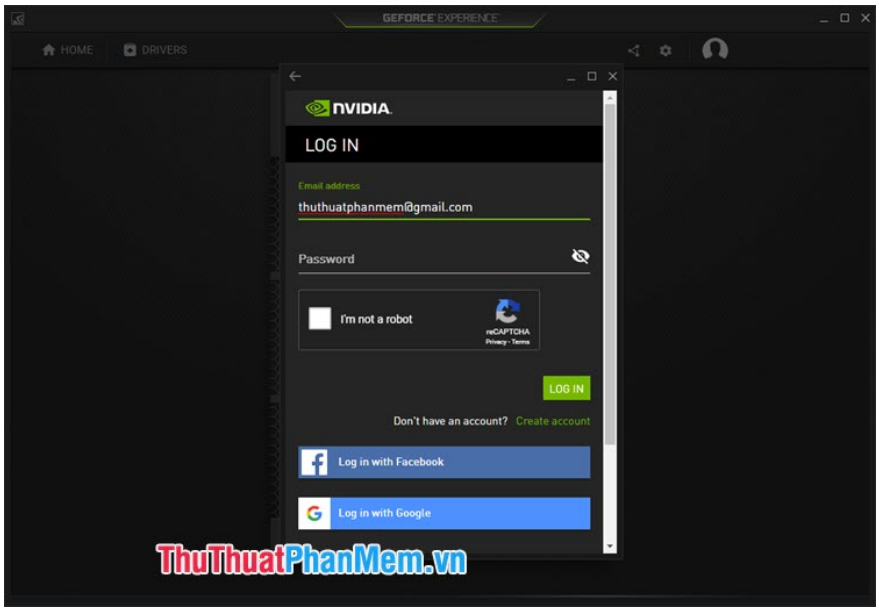
The **Virtual Reality pre-rendered frames** feature has the same function as **Maximum pre-rendered frames** which is a **pre-rendered** frame model to improve image performance and make the image smoother. However, this feature is for games that support VR, and you should leave it at the default of 1 to optimize performance and computing resources.



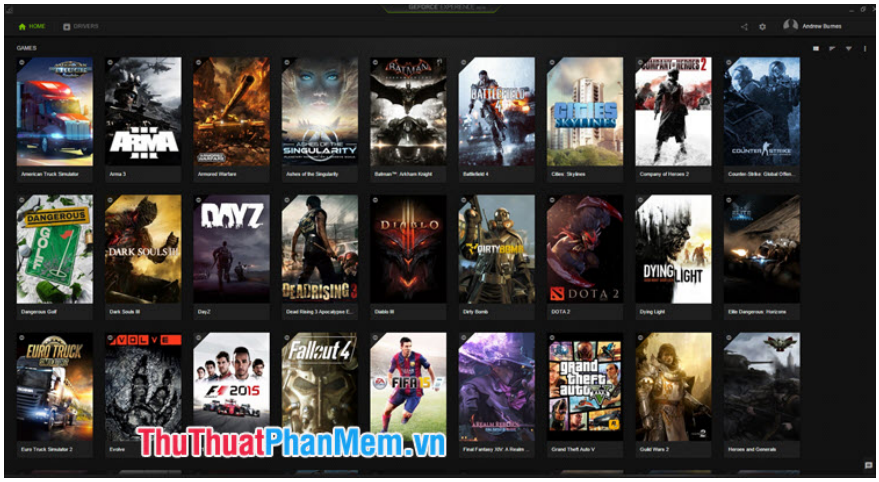
3. Use the Geforce Experience to optimize

First, download and install Geforce Experience at https://www.nvidia.com/en-us/geforce/geforce-experience/

Geforce Experience is Nvidia's ultimate gaming accelerator and accelerator. First, you need to download and install Geforce Experience. Next, you need to create an account to log in to the Geforce Experience service. You can use your Gmail and Facebook accounts to quickly create a Geforce Experience account.



After successful login, open any game to play and then, the list of games you have ever played will display inside the list of Geforce Experience. To optimize, just click on the game you need and run in Geforce Experience, the game will automatically be optimized.



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