How to Increase a Dedicated Video Ram (VRAM) on Windows 10

By Kevin Arrows   •   November 5, 2020   🔖 4 minutes read

The graphics card is the most determining piece of hardware of your system when it comes to impacting your overall PC performance. If your graphics card (dedicated or integrated) is old with mediocre specs, you'll most likely be prohibited from accessing new and hot applications and games. If you don't have the money for a brand new GPU, you might be able to fool your system by faking a VRAM increase.

What is VRAM?

Most of the errors generated by a lacking graphics card have something to do with the **video RAM (VRAM).** VRAM is a special type of RAM that is responsible for holding on to information that the GPU needs. It enhances performance by allowing the GPU to fetch info and beam it to your monitor in a hasty matter.

VRAM is much faster in performing GPU related tasks because it's specifically built for this high-intensity purpose and it's physically much closer to the GPU. You're probably aware that integrated graphics card are budget-friendly but come nowhere near to the graphics output of dedicated solutions. But keep in mind that having more VRAM won't necessarily enhance the performance of your computer.

Having insufficient VRAM means that your system needs to make use of standard RAM – this translates into performance drops, lower frame rate, texture pop-ins and other things of this kind.

If you are prevented from running certain games or applications because you have insufficient VRAM, you have a few ways forward.

How to Increase the Dedicated VRAM of your GPU

Of course, the best way of increasing your video RAM is to buy a new graphics card. If your dedicated GPU is outdated or you're still relying on your integrated graphics card, upgrading to a new GPU model will give a huge boost to the overall performance (if you have CPU and RAM good enough to sustain the growth).

However, in the event that you don't have the money for an upgrade, there are two other ways that you can use to increase the dedicated VRAM of your GPU (at least on paper). Feel free to follow whichever method seems more approachable considering your particular situation.

How to check the amount of video RAM

Before you begin the process of faking a VRAM increase, it's important that you don't lose track of the real count. Here's a quick guide on seeing the amount of video RAM (VRAM) that you have on your computer.

Note: The steps below were created with Windows 10 in mind but you'll most likely be able to recreate them on older Windows versions. For additional help, refer to the Note paragraphs under each step.

1. Press **Windows key + R** to open up a **Run** box. Then, type **"ms-settings:easeofaccess-display"** and hit **Enter** to open the **Display** tab of the **Settings** app.
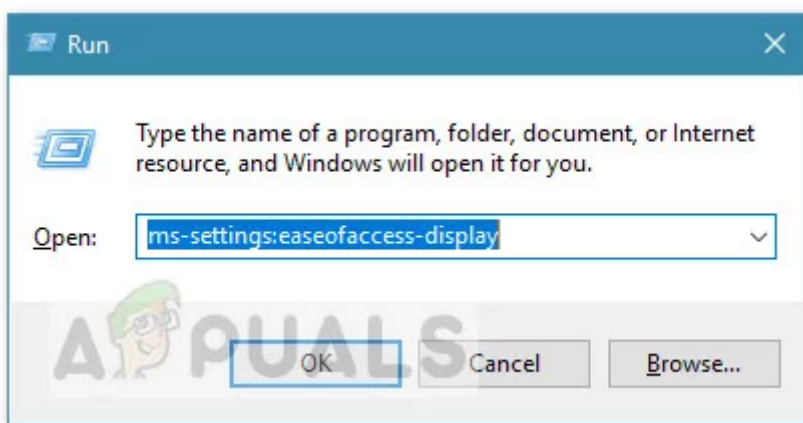

Note: For Windows 7 and Windows 8, replace the command above with **dpiscaling** and hit **Enter**.

2. Scroll down and click on **Advanced display settings,** then click on **Display adapter properties** for **Display 1**.
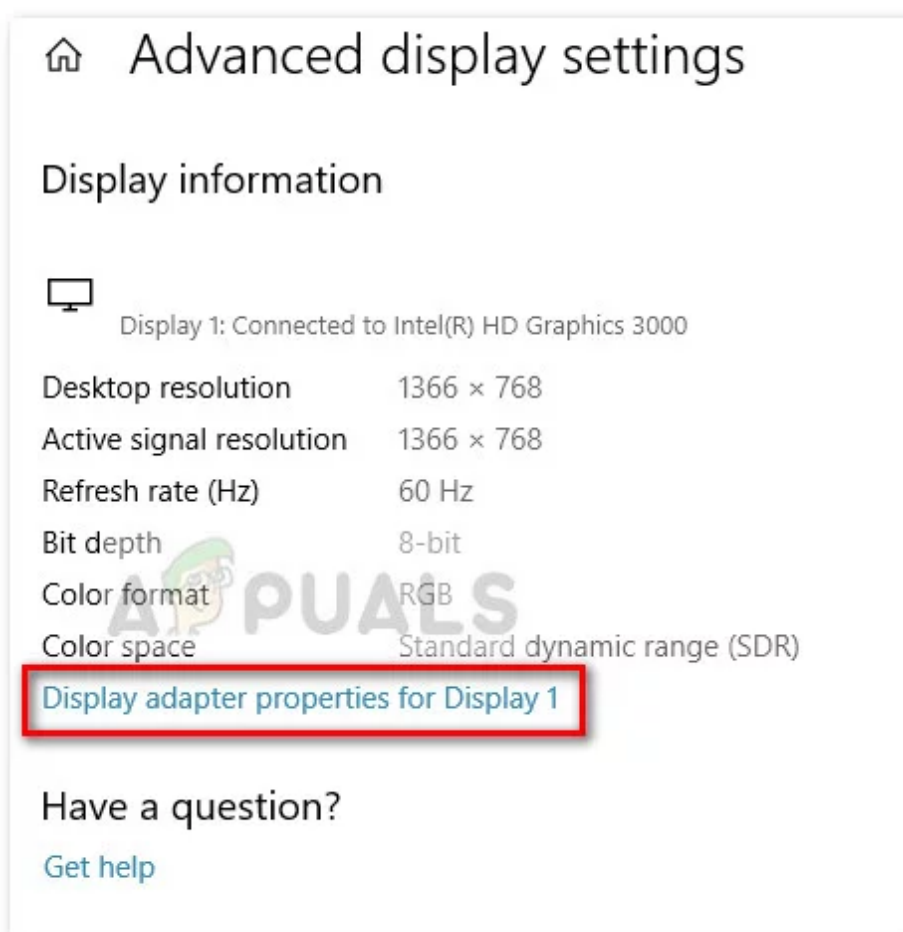
3. You can check out your VRAM count under **Adapter information** at **Dedicated Video Memory**. But keep in mind that if you have both a dedicated GPU and an integrated graphics card, this window will show you the integrated solution if your PC is in idle.
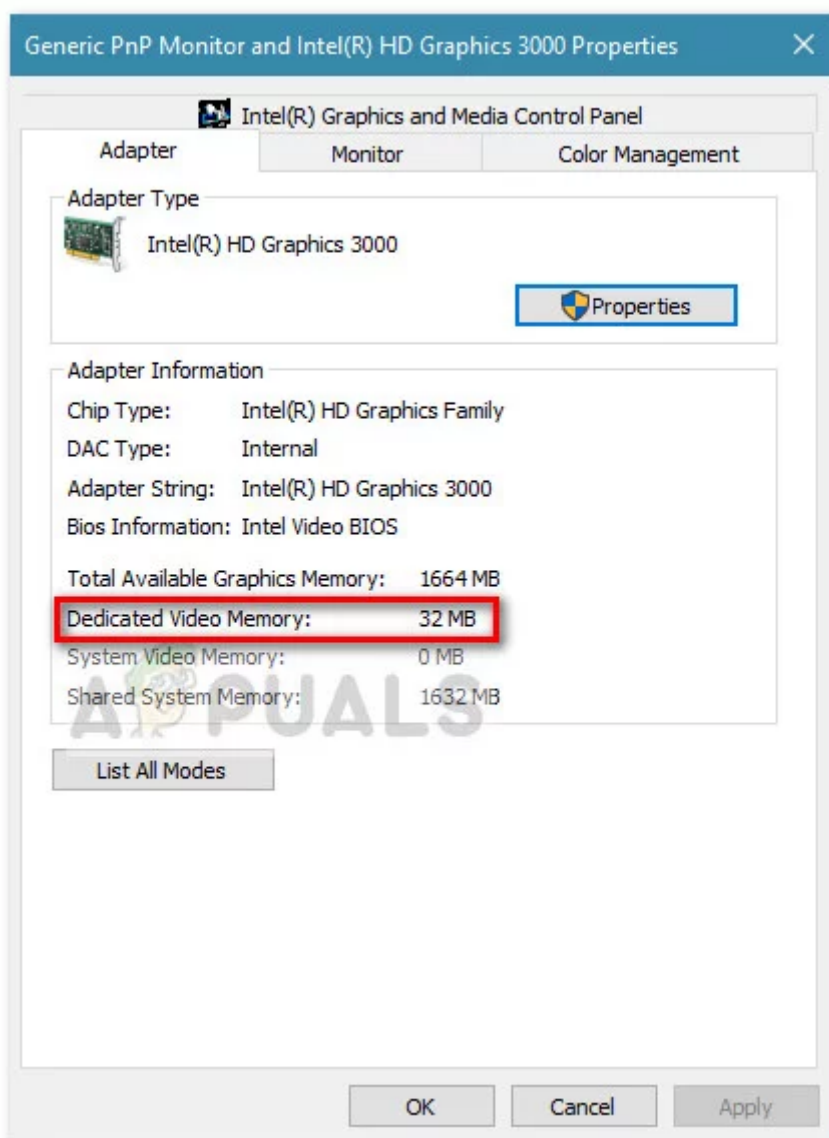
Note: If you're dedicated GPU is idle, you can force your system to switch to it by performing a stressful activity. Also, you can access your dedicated GPU utility (e.g. NVIDIA Control Panel) and see the dedicated Video Memory from there.

Method 1: Increasing Dedicated VRAM from BIOS

The first and the most recommended make-do solution is to adjust the VRAM allocation from your computer BIOS. Sure, this method is not applicable on all motherboards, but most manufacturers include an option tweak the VRAM allocation.

Here's a quick guide on increasing the dedicated VRAM from the BIOS settings:

1. Restart your computer and enter the BIOS settings at the next startup by pressing the dedicated BIOS key repeatedly during the bootup. Try pressing F2, F5, F8 or Del key repeatedly. If that doesn't work, search online for specific steps on entering the BIOS settings in relation to your motherboard manufacturer.

2. Once you reach the BIOS menu, look for a menu similar to **Graphics Settings**, **Video Settings** or **VGA Share Memory Size**. You can typically find it under the **Advanced** menu.

3. Then, up the Pre-Allocated VRAM to whichever option suits you best.

4. Save the configuration and restart your computer. At the next startup, use the procedure above to see if the VRAM count has been increased.

If this method wasn't applicable or you're looking for a different approach that doesn't involve altering BIOS settings, continue down to **Method 2**.

## Method 2: Increasing the Dedicated VRAM via Registry Editor

Keep in mind that for most integrated graphics cards, the amount of VRAM reported in the **Adapter Properties** window is completely irrelevant for the actual performance since the system will automatically adjust it on an on-demand basis.

However, some games and other application types will not allow you to run them if you are under the minimum specified VRAM. In this case, you can use a Registry Editor trick to modify the values so that the game will

no longer encounter the error. Here's a quick guide on how to this:

Note: Keep in mind that the following steps are only applicable for integrated GPUs from Intel. Also, this method won't give you any performance or extra boost in your games/applications this method will only trick the games/applications to run on lower VRAM.

1. Press **Windows key + R** to open up a Run box. Then, type "**regedit**" and hit **Enter** to open Registry Editor.
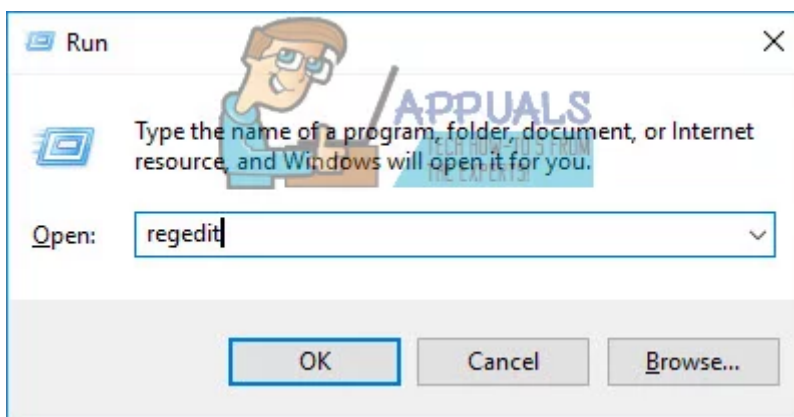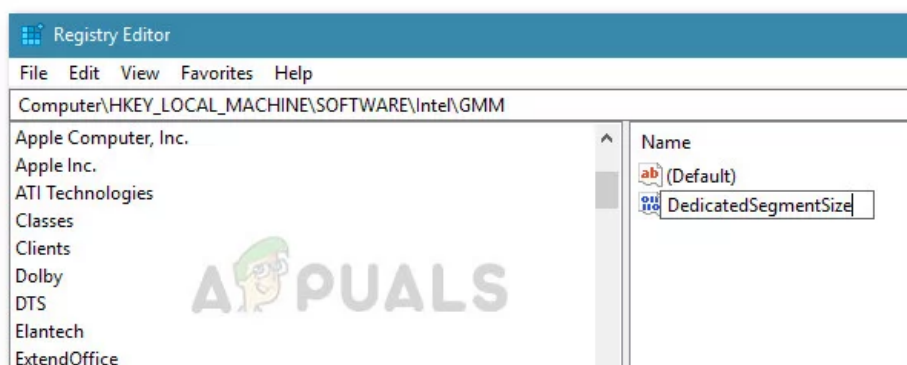

2. Inside Registry Editor, use the left-hand pane to navigate to the following location:
   **HKEY_LOCAL_MACHINE \ Software \ Intel**

3. Right-click on the Intel key and choose **New > Key** and name it **GMM**.

4. With the GMM key selected, move over to the right pane and select **New > Dword (32-bit) Value** and name it **DedicatedSegmentSize**.

5. Double-click on **DedicatedSegmentSize**, set the **Base** to **Decimal** and insert a value from **0** to **512**. This value will be the amount of VRAM displayed inside the **Adapter Properties** menu.
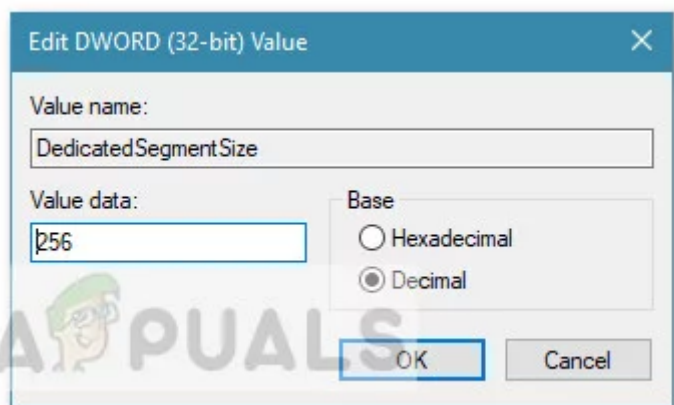
6. Save the changes and restart your computer to enforce the changes. At the next startup, see if you can start the game without the error.

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Ⓓ Ⓕ Ⓣ Ⓖ | Name |

○ **alex** • 3 years ago
   this at least make me feel a little bit better after regretting buying
   a surface pro
   6 ⌃ | ⌄ 1 • Reply •

   ○ **Michael LeCompte** → alex • 2 years ago
      Should have done the thorough research before putting
      your savings into a new PC! Plus it's best to purchase 2
      times the required power for what you need the PC for,
      just to be safe so you don't end up like me, obsolete too
      quick and struggling to save up the moneys needed for a
      new PC! Plus this whole cryptocurrency craze is really
      ruining it for us people trying in vein to get the nceserry
      upgrades!!!!!
      3 ⌃ | ⌄ 5 • Reply •

      ○ **Saitama_Sensei** → Michael LeCompte • a year ago
         dislikers are owners of potato machine.
         2 ⌃ | ⌄ • Reply •

○ **Dhananjay** • a year ago
   bro. it's not working in hp elitebook 8440p, can ypu please help
   me.
   5 ⌃ | ⌄ 1 • Reply •

   ○ **Shane Warren Technican** → Dhananjay • a year ago
      Is there an option to increase in the bios?
      1 ⌃ | ⌄ 2 • Reply •

○ **ThatGhostMan100** • a year ago • edited
   Mine says I have 9190 MB total available graphics memory and
   2048 MB dedicated. I use my PC for gaming and 2gb is usually
   enough but most games now require 3-4 or more. How do I
   increase my dedicated vram to 4gb?
   Also I am using a Ryzen 3 2200g with Radeon Vega 8 integrated
   graphics on a Gigabyte Aorus Elite b450 motherboard. Says bios

I wouldn't recommend increasing it beyond that point because it won't increase any performance and might just end up hurting the stability of your computer. The best thing to do if you want to go ahead with increasing it is to just increase from the registry as indicated in the post.

2 ∧ | ∨ • Reply •

Matt Thompson ➜ ThatGhostMan100 • 3 months ago
You're in the same boat as me (Ryzen 5 3500U/Radeon Vega 8) and I don't think you actually can allocate more than 2GB VRAM. My Asus X512DA has 4GB permanently installed in Slot A and I would like to dedicate the entire Slot A to VRAM, using Slot B for SDRAM. I don't think that's actually possible, and certainly not with the stock UEFI.

∧ | ∨ • Reply •

Marmeduuk ➜ ThatGhostMan100 • a year ago
you should watch out with putting that CPU under to much stress, you can double check online but a lot off people say that the stock cooler it comes with can't provide enough cooling to dissipate the heat. If you really wanna get more performance with an APU you can always overclock it but you definitely need a better cooler than the stock one and a motherboard that can handle it as well

∧ | ∨ • Reply •

William B • a year ago
The regedit method worked for me. I went from 128 to 576 with no issues at all. I'm running an ancient HP Pavillion (550-192). Good luck everyone!

2 ∧ | ∨ • Reply •

Manu • 3 years ago
Thx for the intel registry setting man <3
Finally got a way to increase ded.Vram on my surface!!!

2 ∧ | ∨ • Reply •

dtfyg • a year ago
In bios, I have pretty much no display options except for 256 and 512. Changing either does nothing. I've previously already done the regedit method which is how I'm at 576 mb. Is there any other

KILLME • 6 months ago

Hi,
I am wondering if method 2 will work on my system.
I have 16gb of Ram and Intel 620 graphics.
I want to be able to play some games at 30 FPS.
Thanks

1 ∧ | ∨ • Reply •

Zubyan Gul **Technican** ➜ KILLME • 6 months ago

Yes, it will work on your PC. Unfortunately, it won't
increase performance of your Intel HD GPU method
number 2 is just for faking your VRAM and make some
programs think that your VRAM is high enough to use
them.

∧ | ∨ • Reply •

KILLME ➜ Zubyan Gul • 6 months ago

Yep, makes sense

∧ | ∨ • Reply •

Tyson-TVN • 10 months ago

I have tried the first method, but I couldn't find anything related to
VRAM Settings in the BIOS Menu.
Then when I tried the second method, I was able to complete the
procedure but there was no change in the VRAM. I tried
increasing and decreasing it but there was no change at all.
I am using a HP Pavilion laptop-Windows 10, RAM 8+8GB.

1 ∧ | ∨ • Reply •

Shane Warren **Technican** ➜ Tyson-TVN • 10 months ago

It is best that you don't change its value then. It might
render the system unstable.

1 ∧ | ∨ • Reply •

Tyson-TVN ➜ Shane Warren • 10 months ago

Ok, thanks a lot.
Is there any other way I could run my game?

Should be mentioned on the bottom of the screen. Can you attach a screenshot of your bios?

⌃ | ⌄ • Reply •

Jacob • a year ago

I have **2 GB of RAM** and **64 MB DRAM**. So if I increase the DRAM value to **256 MB of DRAM**, will it affect my actual performance?.....will it increase my system's graphical capability a little ?.....(Intel i3 core 540). Oh and what do you mean by *Available Graphics Memory*... And Thanks.

1 ⌃ | ⌄ • Reply •

Shane Warren **Technican** ➔ Jacob • a year ago

If you do it through the Bios it will increase but otherwise through registry it won't increase actual performance.

⌃ | ⌄ • Reply •

Preston ➔ Shane Warren • 6 days ago

dram is needed

⌃ | ⌄ • Reply •

Raiyan Bin Rais ➔ Shane Warren • a year ago

Hey I found that for **my** computer in the **bios** you can go up to **256mb** (*there was an option for maximum DRAM but it didn't do anything*) . So I selected that option and **though** it didn't show up in that **adapter information** , it did **improve** my dedicated video memory (*I've tested it playing games and using MSI Afterburner's OSD*).

︿ | ﹀ • Reply •

Zubyan Gul **Technican** → Jacob
• 8 months ago

That means your Computer can max support up to 256MB if 256 MB was already selected and you selected maximum from BIOS it really won't change anything also I assume that you have an Intel GMA Graphics right? correct me if I am wrong please, in that case, you can't really change the amount of VRAM but you can do something things to speed up your GPU's performance which can be done through Intel GPU settings it won't do much but it will definitely help.

︿ | ﹀ • Reply •

Zubyan Gul **Technican** → ExpertNugget • a month ago

Unfortunately, you can't increase the dedicated VRAM of dedicated graphics cards. This is only for integrated GPUs.

⌃ | ⌄ • Reply •

jason • a month ago

How do I get into the bios on a mac running bootcamp

⌃ | ⌄ • Reply •

Zubyan Gul **Technican** → jason • a month ago

Macs do not run BIOS, but use a compatibility layer called CSM-BIOS. There is no user interface. CSM-BIOS builds the boot device list on the fly based on what is currently plugged in. Also, you cant increase your VRAM on Mac.

⌃ | ⌄ • Reply •

AnshuxD • 2 months ago

a e e ee

⌃ | ⌄ • Reply •

Zubyan Gul **Technican** ➜ davage • 3 months ago
Yes, this should work for the AMD Chipsets as well!

△ | ⌄ • Reply •

Asyraf Amin • 3 months ago
hi, dxdiag shows vram 1010mb..but from display adapter
properties shows 1024mb
my game cannot play since the requirement is 1024mb
can it be changed?