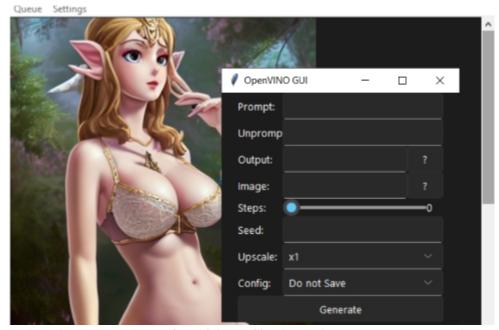
# -- CPU RETARD GUIDE (GUI)--

Stable Diffusion running on potatoes, for potatoes™



NOTE: This is an incredibly barebones implementation of Stable Diffusion, do not expect cutting edge features

If you have a compatible GPU which has **2-4gb Vram** or more, try the **Voldy** guide For most purposes, it may be more practical to use a web service or a collab for Stable Diffusion But there is something special about being able to generate on your own humble CPU *All credit goes to bes-dev and rpyth* 

#### • Features

Txt2img/img2img Negative prompts Prompt queueing Upscaling

## • Minimum Requirements:

Windows/Linux
Python 3.8.+ (included in Miniconda)
CPU compatible with OpenVINO (most CPUs)
8gb RAM (barely enough, 16gb+recommended)

#### • How fast is it?

It may not be nearly as fast as a dedicated GPU due to memory speed bottlenecking, but it is no slouch either
For any CPU from the past 10 years, including laptop ones, it shouldn't take too much longer than a couple minutes per 512x result
The openVINO framework is incredibly optimized and fast, especially for Intel CPUs, and will squeeze the maximum potential out of your hardware

### **1** Guide

**Step 1. Install Git** if you do not have it already

-When installing, make sure to select the Windows Explorer integration > Git Bash

Step 2. (W10) Press Windows Key + I to open your control panel and search for "Developer Mode", turning it on

Step 3. Download Miniconda HERE. Download Miniconda 3

-Install Miniconda in the default location. Install for all users.

#### Step 4. Clone the repo

- -Right click in your desired location and select 'Git Bash here'
- -Enter git clone https://github.com/bes-dev/stable\_diffusion.openvino

Alternatively, you can download it as a .zip **Here** and extract

#### **Step 5.** Open Anaconda Prompt (miniconda3).

Navigate to the /stable-diffusion-v1-4-openvino folder wherever you downloaded using "cd" to jump folders. (Or just type "cd" followed by a space and then drag the folder into the Anaconda prompt.)

**Step 6.** Enter the following commands into Miniconda to set up your environment:

- conda create --name vin python=3.9 pip
- conda activate vin
- conda install pip

- pip install -r requirements.txt
- pip install Pillow pyyaml sv-ttk

Wait patiently while necessary resources are installed, this may take a while

#### Step 7. Download the pyGUI scripts

Extract and copy all files within to your main /stable-diffusion-v1-4-openvino folder, and hit replace on any file conflicts

#### **Step 8.** Download the **RealESRGAN upscaler** (linux ver)

Unzip and place the folder inside /stable-diffusion-v1-4-openvino

And you're done

## Usage

- 1. Open the Miniconda prompt and navigate to /stable-diffusion-v1-4-openvino like before
- 2. Type conda activate vin (You will need to do this every time you run the script)
- 3. Type python pygui.py

#### FIRST TIME SETUP

Go to Settings -> Configure

- -Hit [?] to open file browser and and link the RealESRGAN executable by hitting 'open'
- -Link the your **demo.py** file from the openvino folder the same way
- -Add the path to your Python executable, it should be <a href="C:\ProgramData\Miniconda3\python.exe">C:\ProgramData\Miniconda3\python.exe</a>
- -Hit save

#### **GENERATION**

- Go to Queue -> Add Item to enter a new prompt
- Or Queue -> Restore Item to load your last entered prompt

**Prompt:** Keywords describing what you want, be descriptive for best results

**Unprompt:** Keywords describing what you *don't* want in your image

Output: Output path and name of your output .png

**Image:** Img2Img, select an image file to create variants of it

**Steps:** How many iterations should be done for the output. More = better. **35-55** is the sweet spot. >75 is overkill

**Seed:** Seed for the output, randomized by default **Upscale:** Choose how you want your image upscaled

Config: Save info about your output

#### Links/Notes

- If you are getting Python version errors with 3.10 and don't want to have conflicting installations, try the portable Winpython 3.9
- You can queue up **Multiple** different prompts to run one after another.

This can be very convenient since you don't need to wait foran output to finish to enter a new prompt)

- If you don't select an output folder, they will be output in /appdata/local/tmp. Hit 'save as' so you don't lose them)
- If your outputs are or become **unusually slow** (10-15+ minutes), it's likely that your RAM limit was exceeded and SD is using the swap partition on your drive as makeshift RAM. (Common issue with 8gb)
- Stable Diffusion openVINO Github
- Stable Diffusion openVINO page
- Litechan page
- Progrock upscaler (compatible with openVINO

Close all other programs and free up more memory

#### --SPEED PER RESULT--

(Intel(R) Core(TM) i5-8279U) **7.4 s/it** 3.59 min (AMD Ryzen Threadripper 1900X) **5.34 s/it** 2.58 min (Intel(R) Xeon(R) Gold 6154 CPU) **1 s/it** 33 s