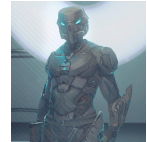


Spynaptron Install Guide

Version 1_1_15



Before you begin make sure your Graphics Card has at least 4GB of VRAM and is listed on this NVidia website of CUDA capable cards here :-

<https://developer.nvidia.com/cuda-gpus>

Step 1, Install / Verify version of Graphics Driver.

Regardless if this is a machine with the graphics driver already installed or a new install we will go to the nvidia driver site to check the version is compatible and then download and install if necessary

The Nvidia Driver website is here —

<https://nvidia.com/en-us/drivers>

Choose your hardware and Windows version.

Manual Driver Search

Search by product, product type or series

Data Center / Tesla

T-Series

Tesla T4

Windows 10 64-bit

12.4

English (US)

Find

Make sure to select CUDA 12.4

12.4

Any CUDA Toolkit Version

12.6

12.4

12.2

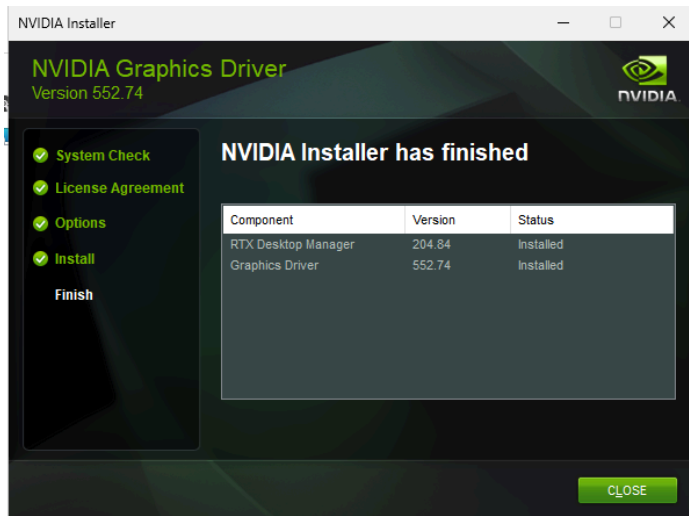
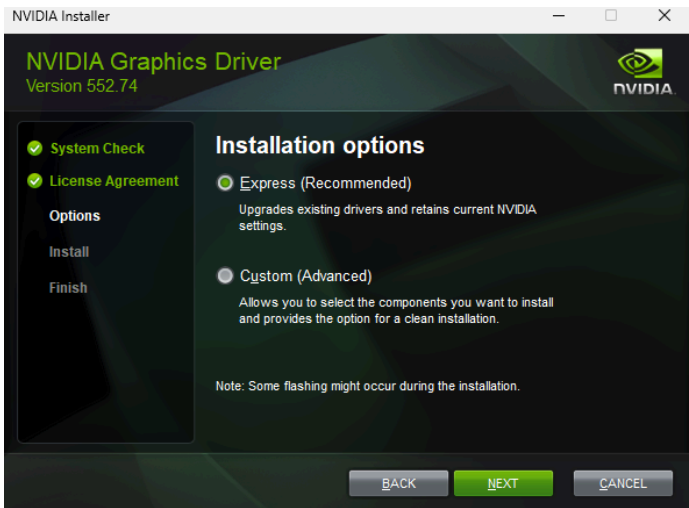
12.0

IF this is a new install simply Download the file and Launch the installation process.

OR

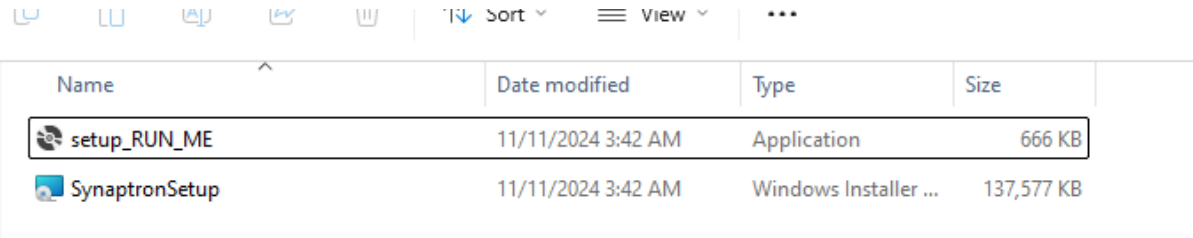
IF you already have a driver installed make sure it is Greater than the version indicated on the NVidia website just prior to View and Download.



Driver Version:	CUDA Toolkit:	Release Date:	File Size:	Info:	
552.74	12.4	Tue Jul 09, 2024	502.61 MB	Production Branch WHQL	View



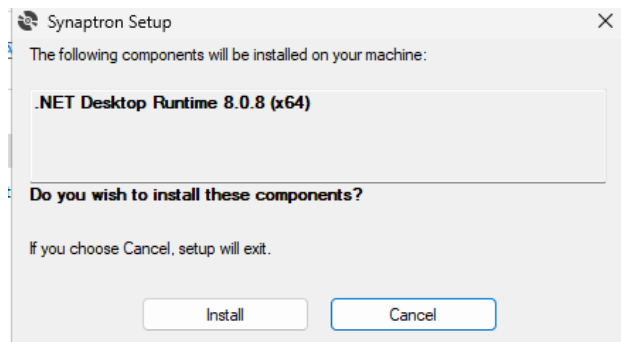
Step 2, Install Synaptron Application.

Launch Setup_.exe, you may get this preliminary step below if your machine does not have .net desktop runtime 8 already installed.

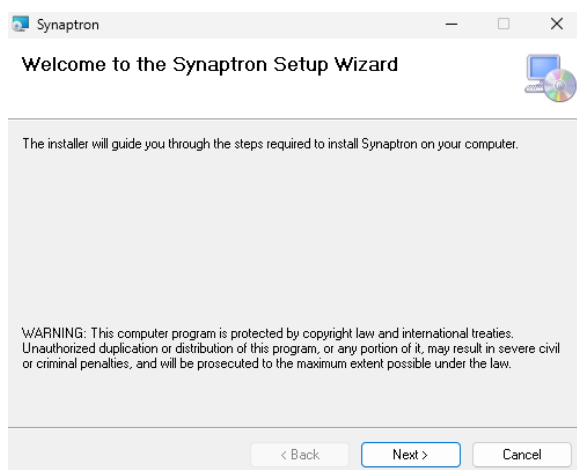


Name	Date modified	Type	Size
 setup_RUN_ME	11/11/2024 3:42 AM	Application	666 KB
 SynaptronSetup	11/11/2024 3:42 AM	Windows Installer ...	137,577 KB

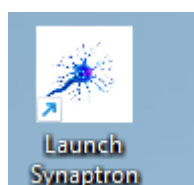
NOTE YOU MAY GET MESSAGES FROM WINDOWS USER ACCOUNT CONTROL ABOUT PERMISSION TO INSTALL, YOU CAN SAFELY ANSWER YES TO THESE



After this you will see the Synaptron setup wizard where you can simply press next until you get to the end of the process.



Once this install is complete, launch Synaptron from this desktop icon.



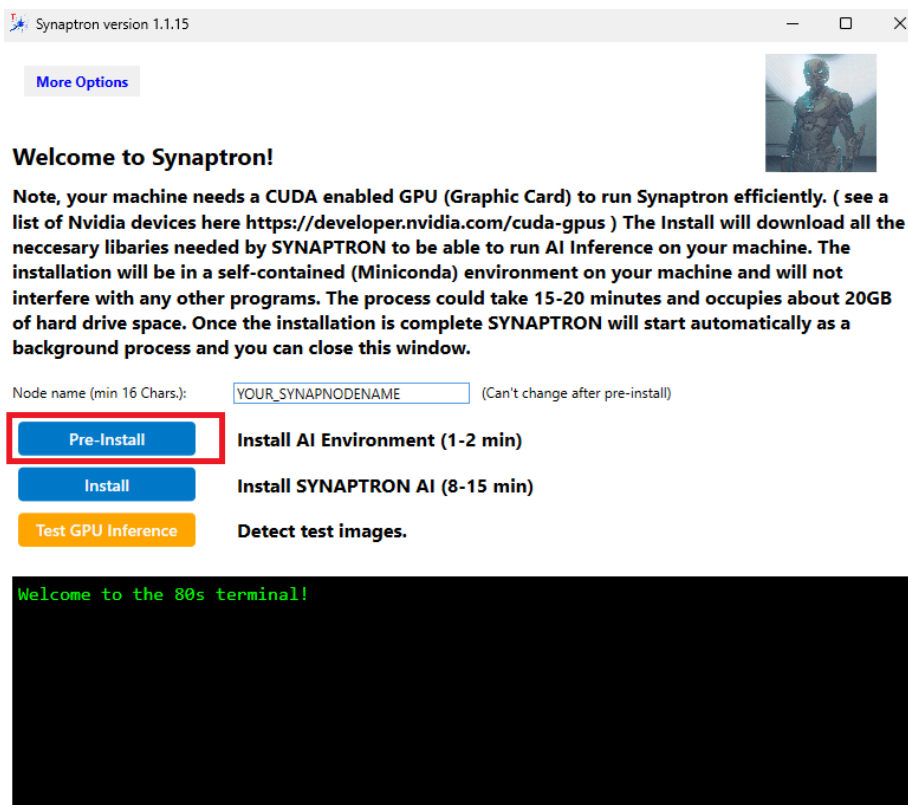
Step 3, RUN Synaptron Application and install inference engine.

Here you will need to follow 3 steps (2 Blue buttons then one optional Orange)

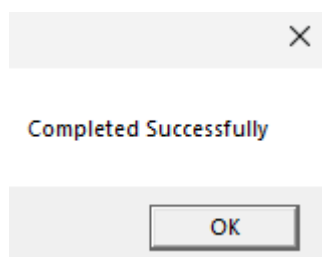
FIRST PICK ANY NODE NAME YOU LIKE THAT IS 16 OR MORE CHARACTERS
TYPE THIS NAME INTO THE BOX LIKE THIS

Node name (min 16 Chars.): (Can't change after pre-install)

PRESS “Pre Install” - This takes 1-2 minutes and installs the required Python version and the Conda environment management software. Press the blue button and wait for the process to complete, on completion you will see the output below.




When this is complete you will see:-



Next PRESS Install - This installs all the libraries required to run Synaptron, Machine Learning and CUDA. Press the blue button and wait for the process to complete.

Synaptron version 1.1.15

More Options



Welcome to Synaptron!

Note, your machine needs a CUDA enabled GPU (Graphic Card) to run Synaptron efficiently. (see a list of Nvidia devices here <https://developer.nvidia.com/cuda-gpus>) The Install will download all the necessary libraries needed by SYNAPTRON to be able to run AI Inference on your machine. The installation will be in a self-contained (Miniconda) environment on your machine and will not interfere with any other programs. The process could take 15-20 minutes and occupies about 20GB of hard drive space. Once the installation is complete SYNAPTRON will start automatically as a background process and you can close this window.

Node name (min 16 Chars.):
 (Can't change after pre-install)

Pre-Install

Install

Test GPU Inference

Install AI Environment (1-2 min)

Install SYNAPTRON AI (8-15 min)

Detect test images.

Channels:

- defaults

Platform: win-64

Collecting package metadata (repodata.json): ...working... done

Solving environment: ...working... done

Downloading and Extracting Packages: ...working... done

Preparing transaction: ...working... done

Verifying transaction: ...working... done

On Completion ,

Node name (min 16 Chars.):
 (Can't change after pre-install)

Pre-Install

Install

Test GPU Inference

Install AI Environment (1-2 min)

Install SYNAPTRON AI (8-15 min)

Detect test images.

Completed Successfully

OK

Collecting websocket-client==1.0.0

Downloading websocket_client-1.0.0-py2.py3-none-any.whl.metadata (5.8 kB)

Downloading websocket_client-1.0.0-py2.py3-none-any.whl (68 kB)

Installing collected packages: websocket-client

Successfully installed websocket-client-1.0.0

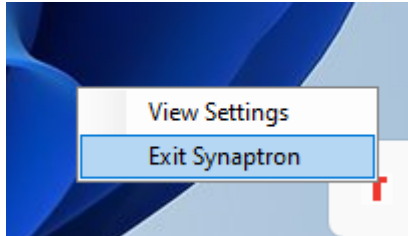
All packages have been installed.

BATCH FILE EXECUTED SUCCESSFULLY IN: 00:11:01.6064486.

Launching Optimum...

Launching Optimum Complete

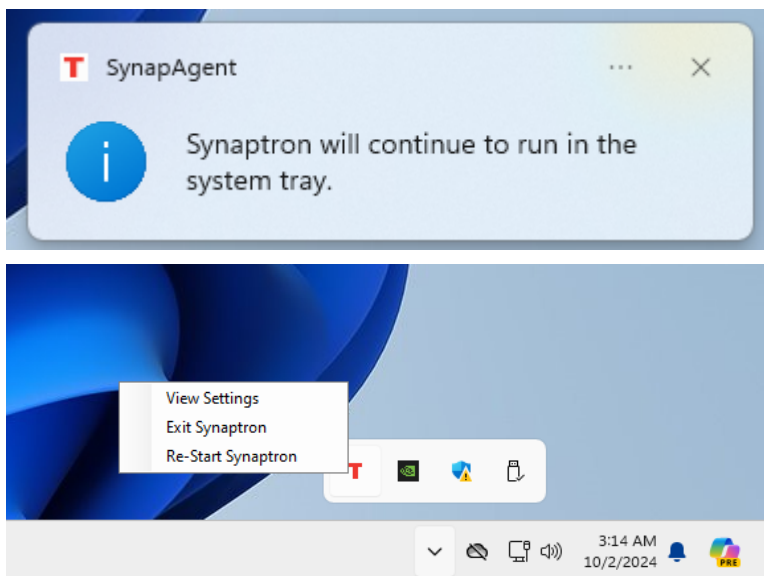
Restart Synaptron



And reopen by clicking on the synaptron icon on the desktop...

Congratulations you are DONE, and have completed the Synaptron node installation.

NOTE : At this point you are all done and you can safely close the main window and Synaptron will keep running in the background in the system tray as shown below.



(optional) If you want Synaptron to launch automatically after a reboot please follow these additional steps:-

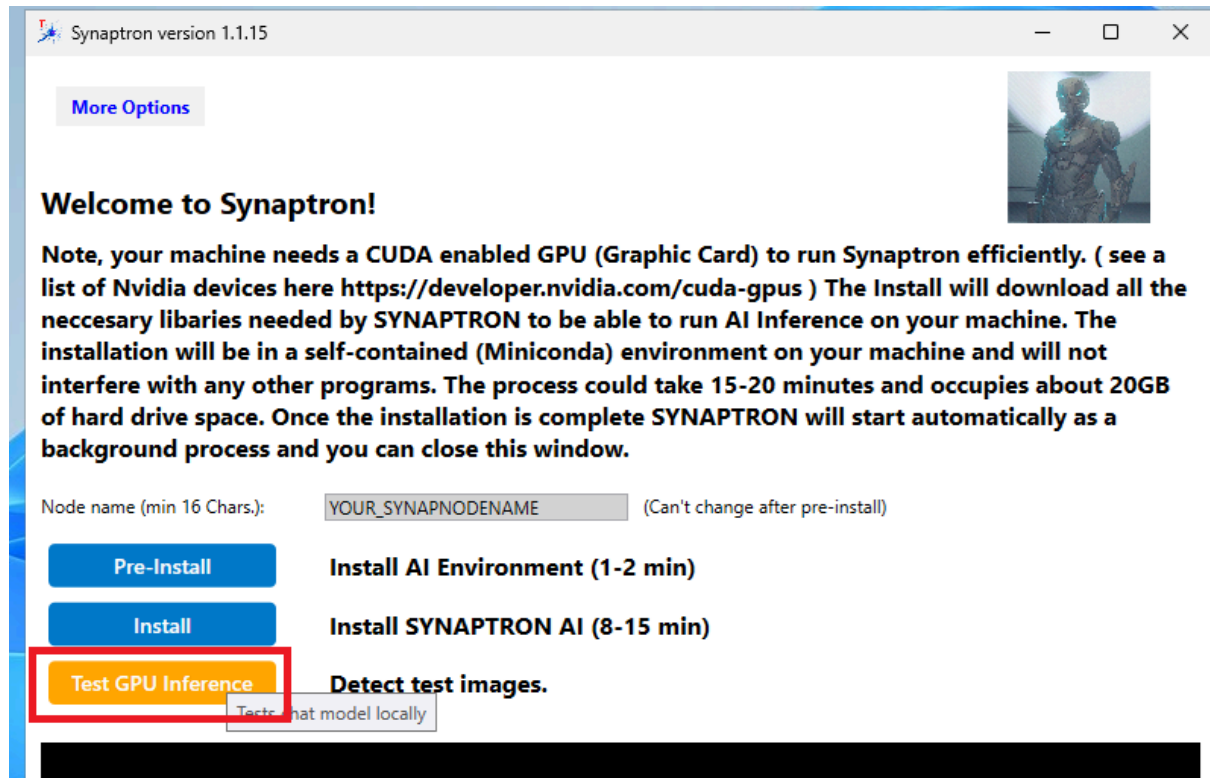
Add to the Startup Folder

1. Press **Win + R** to open the Run dialog.
2. Type **shell:startup** and press Enter. This opens the Startup folder, where any shortcut placed will launch automatically at boot.
3. Create a shortcut to your system tray app's executable file:
 - Right-click in the folder, select **New > Shortcut**, and follow the prompts to locate your SynaptronAgent exe file
(default = C:\Program Files\Synaptron\SynapAgent.exe)
4. Once the shortcut is added to this folder, your app will start automatically on boot.

Test Image Detection (optional) -

This loads the image detection model into GPU memory and scans some standard images to verify that the inference is running...

Click the orange Button



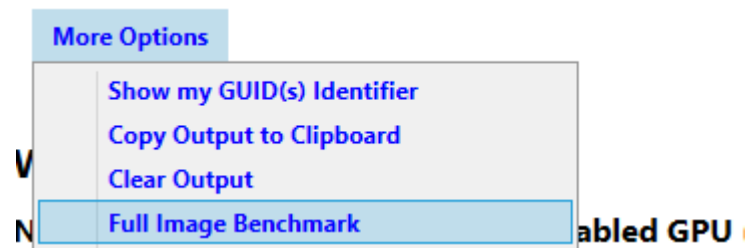
Output should be something like this

Test GPU Inference **Detect test images.**

```
Detected dog with confidence 1.0 at location [227.76, 21.62, 442.53, 358.42];|||Execution Time: 5.46 seconds
Detected cat with confidence 0.998 at location [181.01, 104.73, 516.46, 384.83];|||Execution Time: 3.77 seconds
Detected backpack with confidence 0.995 at location [184.83, 239.15, 218.21, 321.31];Detected car with confidence 0.999 at location [512.52, 224.19, 639.75, 330.34];Detected car with confidence 0.985 at location [411.18, 228.46, 446.37, 255.98];Detected person with confidence 0.931 at location [554.35, 215.37, 568.33, 227.38];Detected traffic light with confidence 0.957 at location [253.89, 235.25, 271.78, 265.3];Detected person with confidence 0.976 at location [514.54, 218.6, 528.01, 243.0];Detected person with confidence 0.987 at location [0.01, 231.63, 69.89, 423.12];Detected person with confidence 0.973 at location [316.45, 224.9, 325.17, 247.59];Detected person with confidence 1.0 at location [180.91, 204.46, 262.34, 419.2];Detected car with confidence 0.997 at location [69.72, 235.6, 162.37, 281.08];Detected backpack with confidence 0.905 at location [18.79, 253.42, 63.38, 323.57];Detected traffic light with confidence 0.984 at location [352.61, 172.66, 369.54, 183.24];Detected car with confidence 0.999 at location [338.15, 228.33, 448.7, 309.67];Detected car with confidence 0.998 at location [433.27, 228.89, 515.69, 277.93];|||Execution Time: 3.87 seconds
```


Full Image Benchmark..(optional)

Tests processing of 50 images as a speed benchmark...



Output will be something like this:-

```
|||Execution Time: 3.07 seconds
Detected person with confidence 0.999 at location [942.32, 901.45, 990.4, 1025.04];Detected sports ball with confidence 0.996 at location
[595.8, 784.04, 614.18, 802.6];Detected person with confidence 1.0 at location [416.25, 784.69, 617.5, 1184.85];Detected person with
confidence 0.998 at location [605.38, 919.79, 644.91, 1021.43];|||Execution Time: 3.02 seconds
|||Execution Time: 3.77 seconds
Detected motorcycle with confidence 0.999 at location [156.73, 898.48, 523.02, 1167.13];|||Execution Time: 3.42 seconds
|||Execution Time: 3.70 seconds
|||Execution Time: 3.75 seconds
Detected bird with confidence 0.988 at location [77.02, 120.22, 523.89, 343.6];|||Execution Time: 3.77 seconds
Total BENCHMARK >>>> Vers: 1_1_15: 226078.33075523376
```