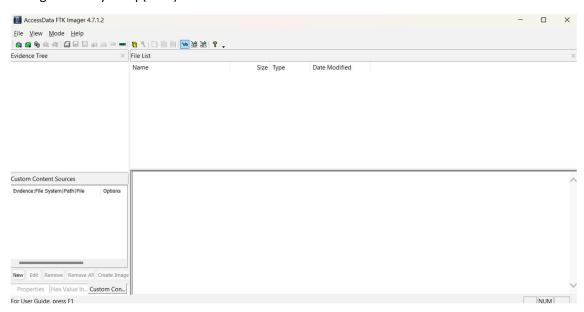
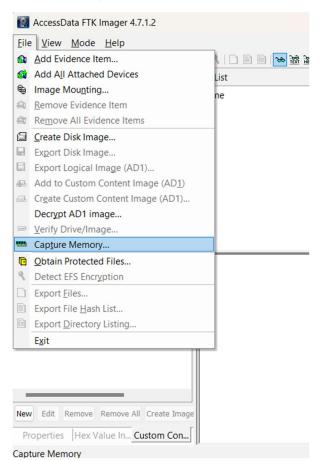
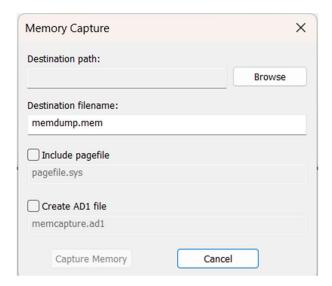
Taking a memory dump(RAM):

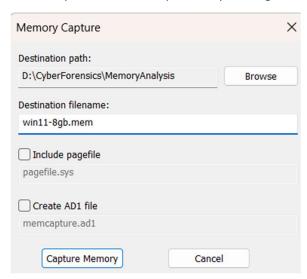


Go to File - > capture memory



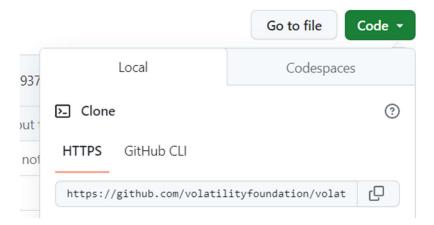


Give a required destination path and you can give file name manually ,next click on capture memory :



Go to volatility GitHub Link:

https://github.com/volatilityfoundation/volatility3



Using git clone can download that all file in yours pc

```
PS C:\Users\HP\Downloads> git clone https://github.com/volatilityfoundation/volatility3.git fatal: destination path 'volatility3' already exists and is not an empty directory.
```

Install snappy tool – it's a package of python used to compress entire ram space for faster processing and faster Querying and it is a compression algorithm supported by google

Install snappy where volatility existed

https://www.lfd.uci.edu/~gohlke/pythonlibs/#python-snappy

```
PS C:\Users\HP\Downloads> pip install C:\Users\HP\Downloads\python_snappy-0.6.1-cp310-cp310-win_amd64.whl
Defaulting to user installation because normal site-packages is not writeable
Processing c:\users\hp\downloads\python_snappy-0.6.1-cp310-cp310-win_amd64.whl
Installing collected packages: python-snappy
Successfully installed python-snappy-0.6.1

[notice] A new release of pip is available: 23.0.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip
PS C:\Users\HP\Downloads> python-exe normal site-packages is not writeable
Requirement already satisfied: pip in c:\program files\python310\lib\site-packages (23.0.1)
Collecting pip
Using cached pip-23.1.2-py3-none-any.whl (2.1 MB)
Installing collected packages: pip
WARNING: The scripts pip.exe, pip3.10.exe and pip3.exe are installed in 'C:\Users\HP\AppData\Roaming\Python\Python310\Scripts' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed pip-23.1.2

[notice] A new release of pip is available: 23.0.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip
PS C:\Users\HP\Downloads> python.exe -m pip install --upgrade pip
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: pip in c:\users\hp\appdata\roaming\python\python310\site-packages (23.1.2)
```

python_snappy-0.6.1-cp310-cp310-win_a	03-05-2023 16:44	Python Wheel	30 KB
⁰ vs_BuildTools	03-05-2023 16:35	Application	3,622 KB
눶 python-3.11.3-amd64	03-05-2023 17:22	Application	24,753 KB
눩 python-3.10.11-amd64	03-05-2023 17:31	Application	28,357 KB
∨ Yesterday			
volatility3	02-05-2023 11:19	File folder	

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\HP> cd .\Downloads\
PS C:\Users\HP\Downloads> pip install C:\Users\HP\Downloads\python_snappy-0.6.1-cp311-win_amd64.whl
Defaulting to user installation because normal site-packages is not writeable
ERROD: python_snappy-0.6.1-cp311-pin_amd64.whl is not a supported wheel on this platfore.

PS C:\Users\HP\Downloads> pip install C:\Users\HP\Downloads\python_snappy-0.6.1-cp310-win_amd64.whl
Defaulting to user installation because normal site-packages is not writeable
Processing c:\users\Hp\Downloads> pip install C:\Users\HP\Downloads\python_snappy-0.6.1-cp310-win_amd64.whl
Defaulting to user installation because normal site-packages is not writeable
Processing c:\users\hp\Downloads\python_snappy-0.6.1-cp310-win_amd64.whl
Dython-snappy is already installed with the same version as the provided wheel.

Use --force-reinstall to force an installation of the wheel.

PS C:\Users\HP\Downloads> cd.\unders\HP\Downloads\python_snappy-0.6.1-cp310-win_amd64.whl
```

Go to volatility directory and list all the files

```
PS C:\Users\HP\Downloads> cd .\volatility3\
PS C:\Users\HP\Downloads\volatility3> dir
   Directory: C:\Users\HP\Downloads\volatility3
Mode
                    LastWriteTime
                                          Length Name
             02-05-2023
                            11:19
                                                 .github
             02-05-2023
                                                 development
                            11:19
             02-05-2023
                            11:19
             02-05-2023
                            11:19
                                                 test
                                                 volatility3
             02-05-2023
                            11:19
             02-05-2023
                            11:19
                                            558 .gitignore
             02-05-2023
                                             520 .readthedocs.yml
             02-05-2023
                            11:19
                                            8200 .style.yapf
            02-05-2023
                            11:19
                                            1416 API_CHANGES.md
                                            3956 LICENSE.txt
           02-05-2023
                            11:19
                                            207 MANIFEST.in
-a----
             02-05-2023
                            11:19
             02-05-2023
                            11:19
                                             83 mypy.ini
             02-05-2023
                            11:19
                                            6094 README.md
             02-05-2023
                                             781 requirements-dev.txt
                            11:19
             02-05-2023
                            11:19
                                             76 requirements-minimal.txt
             02-05-2023
                                             639 requirements.txt
                            11:19
             02-05-2023
                                            1946 setup.py
                            11:19
                                             300 vol.py
             02-05-2023
                            11:19
```

First install all the requirements

PS C:\Users\HP\Downloads\volatility3>

To check version of volatility3

```
PS C:\Users\HP\Downloads\volatility3> python vol.py -v
Volatility 3 Framework 2.4.2
INFO volatility 3.Ci: Volatility plugins path: ['C:\Users\HP\Downloads\volatility3\\volatility3\\plugins', 'C:\Users\HP\Downloads\volatility3\\v
olatility3\\framework\\plugins']
INFO volatility3\\framework\\plugins']
INFO volatility3\\framework\\plugins']
usage: volatility3\\framework\plugins']
usage: volatility [-h] [-- conFig] [--parallelism [{processes,threads,off}]] [-e EXTEND] [-p PLUGIN_DIRS] [-s SYMBOL_DIRS] [-v] [-l LOG] [-o OUTPUT_DIR]
[-g] [-r RENDERER] [-f FILE] [--write-config] [--save-config SAVE_CONFIG] [--clear-cache] [--cache-path CACHE_PATH] [--offline]
[-single-location SINGLE_LOCATION] [--stackers [STACKERS ...]] [--single-swap-locations [SINGLE_SWAP_LOCATIONS ...]]
plugin ...
volatility: error: Please select a plugin to run
```

Take a memory dump file and take its path

Gives information which taken from memory

In this command: python vol.py -f D:\CyberForensics\MemoryAnalysis\win11x64-8GB.mem windows.info

python vol.py → to Check Volatility

-f → to get file path

D:\CyberForensics\MemoryAnalysis\win11x64-8GB.mem \rightarrow Path where dump file is there windows.info \rightarrow name of plugin

```
PS C:\Users\HP\Downloads\volatility3> python vol.py -f D:\CyberForensics\MemoryAnalysis\winl1x64-8GB.mem windows.info
Volatility 3 Framework 2.4.2
Progress: 100.00 PDB scanning finished
Variable Value

Kernel Base 0xf80286200000
DTB 0xlae000
Symbols file:///C:/Users/HP/Downloads/volatility3/volatility3/symbols/windows/ntkrnlmp.pdb/D60801EB7A8A7D46D5EF38DD5556547C-1.json.xz
Is64Bit True
ISPAE False
layer_name 0 WindowsIntel32e
memory_layer 1 FileLayer
KdVersionBlock 0xf80286090900
Major/Minor 15.22621
MachineType 34404
KeNumberProcessors 8
SystemTime 2023-05-04 04:56:05
NtSystemRoot C:\WINDOWS
NtProductType NtProductWinNt
NtMajorVersion 0
PE MajorOperatingSystemVersion 10
PE MajorOperatingSystemVersion 10
PE MajorOperatingSystemVersion 10
PE MaiorOperatingSystemVersion 10
PE MaiorOperatingSystemVersion 5
Vun Jul 24 04:13:48 1977
```

To check what are the plugins:

To check what are available plugins

```
PS C:\Users\MP\Downloads\volatility3> python vol.py -f "D:\CyberForensics\MemoryAnalysis\win11x64-868.mem" windows
Volatility 3 Framework 2.4.2
usage: volatility [-h] [-c CONFIG] [--parallelism [[processes, threads, off]] [-e EXTEND] [-p PLUGIN_DIRS]
[-s SYMBOL_DIRS] [-v] [-l LOG] [-o OUTPUT_DIR] [-q] [-r ERNDERGR] [-f FILE] [--write-config]
[-sinple-location SINGLE_LOCATION] [--stackers [STACKERS ...]]
[-sinple-location SINGLE_LOCATION] [--stackers [STACKERS ...]]
[-sinple-location SINGLE_DOCATION] [--stackers [STACKERS ...]]
volatility: error: argument plugin: plugin windows matches multiple plugins (windows.bigpools.BigPools, windows.cachedump, windows.callbacks.Callb acks, windows.cmdline.CmdLine, windows.driverscan.DriverScan, windows.dwiverren.DeviceTree, windows.driverscan.DriverIrp, mindows.driverscan.DriverScan, windows.dwipriles.DumpFiles, windows.envars.Envars, windows.filescan.FileScan, windows.driverscan.DriverScan, windows.dwipriles.DumpFiles, windows.indiows.indiows.indiows.joblinks, bloblinks, windows.Indiows.modules.CstDs, windows.gretists.CstDs, windows.dwipriles.DumpFiles.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.DriverTroph.Dr
```

pslist - Process list

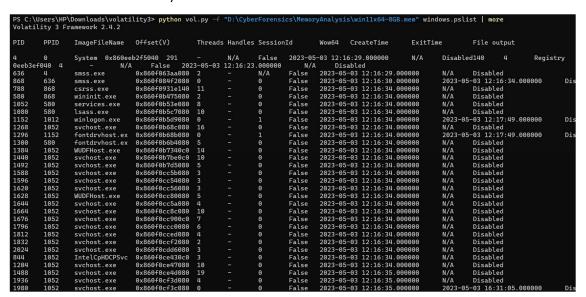
pslist is a plugin that gives information like

PID - Process ID

PPID - Parent Process ID

Image File Name - all those exe's

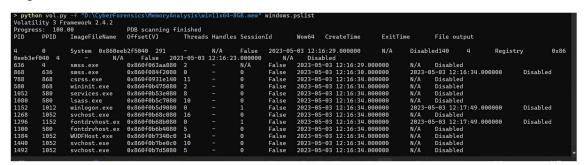
Threads - It shows how many threads are exectuted



It shows System is the 1st processor



To get entire information at a time



For filtering purpose we use Select-String

Analysing chrome

To know what handles

windows.handles -h (Help menu for windows handles)

If you don't use pid it gives all of handles not only file handles in the memory image its going to be a lot of data