

GREASE WEAZLE

Software Manual



This is not intended as a definitive manual, but will provide a basic understanding of the GreaseWeazle and its software. GreaseWeazle software is an active development product and will change over time.

General Principals of the GreaseWeazle

- The GreaseWeazle board when connected to a floppy drive will allow the software the flexibility to access all parts of the floppy disk that the floppy drive allows.
- The GreaseWeazle does not deal with file formats but rather disk orientation. Once data is read into an image format it is up to the imaging software to read the files within. The GreaseWeazle needs to know what part of the disk to read such as tracks and sectors.
- While there is some third-party software that allow GreaseWeazle drives to work like a traditional floppy drive, generally the software will read and/or write disk image files from and/or to a floppy disk.

Host tools the Command-line Software

This is not a definitive guide to the command-line, but will express the basics that will help you understand usage. If using a GUI interface like gWeazleGUI you will likely need to specify the path to the “host tools”. As such, this software will still be needed.

The python coded command-line software can be downloaded from the repository and will run on any computer that can run python3 code.

<https://github.com/keirf/greaseweazle/releases>

Once installed, you open a terminal or command-line prompt where the release zip file was extracted to or for Mac/Linux you can install via pipx or python. Additional instructions for Mac and Linux can be found here:

<https://github.com/keirf/greaseweazle/wiki/Software-Installation>.

The main command will be the “gw” command. The simplest command “gw -help” will display all of the gw actions that are available. The “-help” parameter will be useful in learning about usage of any given action and/or all the available actions. To get help for an action execute gw with the action and finally “-help”.

Example: “.\\gw.exe info -help” (PowerShell). Keep in mind the “.exe” part is specific to Windows and would not be included in other operating systems.

Below is an example of “gw -help”

```
Windows PowerShell

PS C:\Users\acura\Downloads\greaseweazle-1.22-win64\greaseweazle-1.22> .\\gw -help
Usage: C:\Users\acura\Downloads\greaseweazle-1.22-win64\greaseweazle-1.22\gw.exe [--time] [action] [-h] ...
--time      Print elapsed time after action is executed
-h, --help  Show help message for specified action

Actions:
info        Display information about the Greaseweazle setup.
read        Read a disk to the specified image file.
write       Write a disk from the specified image file.
convert     Convert between image formats.
erase       Erase a disk.
clean       Clean a drive in a zig-zag pattern using a cleaning disk.
seek        Seek to the specified cylinder.
delays      Display (and optionally modify) drive-delay parameters.
update      Update the Greaseweazle device firmware to latest (or specified) version.
pin         Change the setting of a user-modifiable interface pin.
reset       Reset the Greaseweazle device to power-on default state.
bandwidth   Report the available USB bandwidth for the Greaseweazle device.
rpm         Measure RPM of drive spindle.

PS C:\Users\acura\Downloads\greaseweazle-1.22-win64\greaseweazle-1.22>
```

Once you have plugged the GreaseWeazle into a USB port you can test the connection, the GreaseWeazle will be assigned a COM port for windows or be found in the /dev/ folder on Mac/Linux. To test the connect you can execute the command “gw info” which will show the port the GreaseWeazle device is plugged into as well as other potentially useful information such as serial number, firmware version, and board version.

Occasionally, this command will report “device not found” even after plugging in the GreaseWeazle. The first steps in troubleshooting should be to check the power light on the board, verify the cable, and then execute the command “gw reset”.

```
Windows PowerShell

PS C:\Users\acura\Downloads\greaseweazle-1.22-win64\greaseweazle-1.22> .\\gw info
Host Tools: 1.22
Device:
Port:      COM8
Model:     Greaseweazle V4.1
MCU:       AT32F403A, 216MHz, 224kB SRAM
Firmware:  1.6
Serial:    GW0079A8EF41A140000715140c
USB:       Full Speed (12 Mbit/s), 128kB Buffer
PS C:\Users\acura\Downloads\greaseweazle-1.22-win64\greaseweazle-1.22>
```

You should also check the firmware revision number and verify you are using the latest firmware. <https://github.com/keirf/greaseweazle-firmware/releases>

Following is a list of the primary actions, for usage details of each action you can always execute “gw <action> -help” from the terminal / command-line.

Actions quick reference

“gw info”: GreaseWeasle board and software details.

“gw read”: Allows you to read a diskette into an image file on your local hard drive.

Example: “gw read --format=amiga.amigados mydisk.adf --drive=A”

“gw write”: Allows you to write a diskette from an image file.

Example: “gw write --format=amiga.amigados mydisk.adf --drive=A”

Special care should be taken for the file name suffix (.adf in the above case) since the suffix determines the image format in use.

Some basic parameters for both read and write would be:

“--device=<port>” option allows you specify the port. If you have more than one GreaseWeazle this is how you specify which GreaseWeazle to use. Example: “gw read --device=COM10 ...” In many cases this can be omitted when the default is used.

“--format=<name>” option here you will place the definition of the disk’s orientation there are many pre-defined formats for current list you should execute “gw read -help”. For example: “gw read --format=amiga.amigados ...”. If this parameter is omitted, gw will try to figure out the format for you and this can sometimes be omitted.

“--diskdefs <file>” option allows you to use alternative disk definitions defined in a file rather than the default provided definitions. You can create these such as with the GUI tool gWeazleGUI or download them from someone else who has created a definition. This can be omitted when using the built-in disk definitions.

“--drive=<A,B,0,1,2>” option allows you to specify which drive. In the event you have multiple disk drives connected to your GreaseWeazle board. The default value is “A” and can be omitted when using drive A. For more details see this page: <https://github.com/keirf/greaseweazle/wiki/Drive-Select>

There are several additional options such as “--tracks” which allows you to read specific drive tracks or “--retries” which allows to specify the number of retries that give you more control. I recommend executing the command “gw read -help” or “gw write -help” to see the current list of options.

“gw convert”: Allows you to convert one image format to another supported image format. Many of the same parameters are present except you specify and in and out file. Additionally, device and drive parameters are not relevant.

“gw erase”: Allows you to erase a disk. Pre-erasing a disk before writing can sometimes solve read/write errors.

“gw clean”: Allows you to clean the disk head with a disk cleaning disk by running a zig-zag pattern over the cleaning disk.

“gw seek”: Allows you to move the head to a specific cylinder position on the disk.

“gw delays”: Allows you to set various drive delays used during operations.

“gw update”: Allows you to update the GreaseWeazle board firmware. If there is a new firmware release and your computer is online you can simply execute the command “gw update”. While it may be good practice to always update the firmware, the bootloader does not always need to be updated and should only be updated as necessary since failure would require a full firmware refresh from a special software tool (typically the manufacturer).

“gw pin”: Allows you to read/set user definable GPIO pins

“gw reset”: Allows you to reset the GreaseWeazle. This is a useful command in the event of errors or if something goes wrong it may help restore functionality.

“gw bandwidth”: Allows you to check the current bandwidth between the GreaseWeazle and your computer.

“gw rpm”: Measure the RPM of the drive spindle. You will need to have a disk in the drive to check this.

Troubleshooting

If you are experiencing lots of errors, try “gw reset”, changing USB ports, and/or another disk.

If you are having an issue with a single disk, try pre-formatting. Also, make sure you are using DD disks for DD and HD disks for HD. To use an HD disk for DD you can cover the open hole in corner on the disk with some tape.

For additional troubleshooting see:

<https://github.com/keirf/greaseweazle/wiki/Yann-Serra-Tutorial>

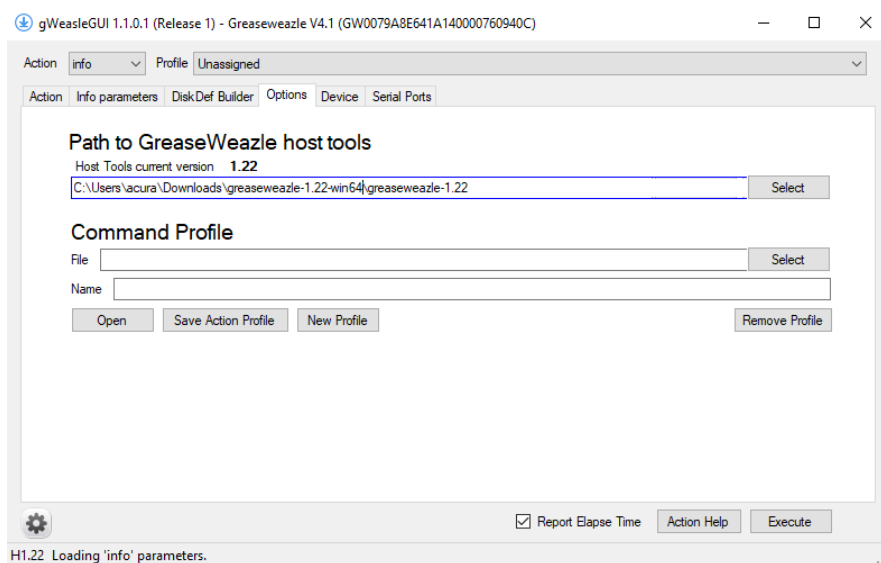
gWeazleGUI

Git: <https://github.com/Akutra/gWeazleGUI/tree/master>

Download: <https://github.com/Akutra/gWeazleGUI/releases>

gWeazleGUI is a GUI that incorporates the features of the command line host tools into a graphical user interface for Windows. One good feature is that gWeazleGUI actually loads the features directly from the host tools command-line during operation.

After downloading the exe simply run the program. You may need to give it permission to run. Upon first run, gWeazleGUI will require the “host tools”. This refers to the command line software by Keir Fraser. You will need to download this software and provide the path where it has been extracted.



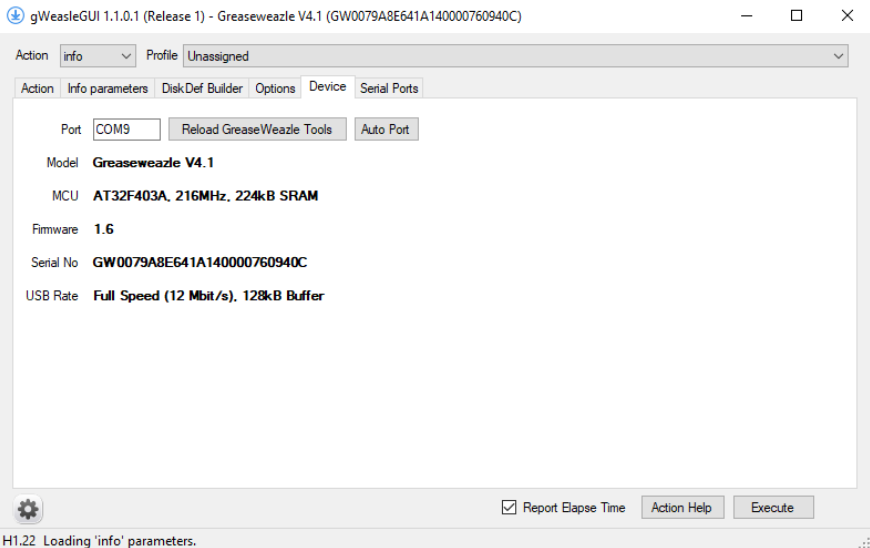
Once you have this you should be ready to go.

The “Command Profile” is where you can save commonly used commands. Once you have selected an action and populated the parameters, you can enter a file name here and give the profile a name then click “Save Action Profile”. The action profile will appear in the “Profile” dropdown even if you close gWeazleGUI and re-open it. You can quickly load this command into gWeazleGUI by selecting it in the “Profile” drop down which will load all the setting you had set when you saved it. Easily reload format, drive, diskdefs, tracks, sectors, etc.

In the interface we see is the Action dropdown menu, the command profile dropdown, and the familiar tab-based interface. The action drop down contains all the “action” available from the command line. You can see the log output “Loading available operations” this is where gWeazleGUI asks the host tools what actions are available then loads them into the dropdown. Since you have “info” as the selected action we see “loading ‘info’ parameters” this is where gWeazleGUI obtains the available parameters for the ‘info’ action from the host tools command line.

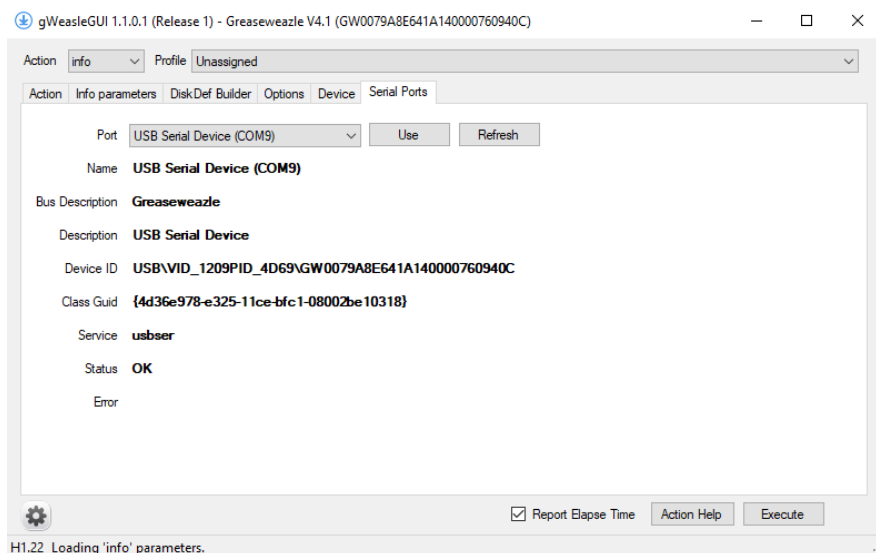
The “device” tab refers to the hardware information. This will contain the current serial port in use which can be changed. You can view all the system serial ports on the “Serial Port” tab.

- “Reload GreaseWeazle Tools” will attempt to reload the host tools with the port specified here and path specified in options.
- “Auto Port” will automatically attempt to determine the port. Click this if gWeazleGUI cannot find your hardware at the given port.
- Here when loaded you see basic information about your GreaseWeazle board. Double click a value to copy to clipboard.



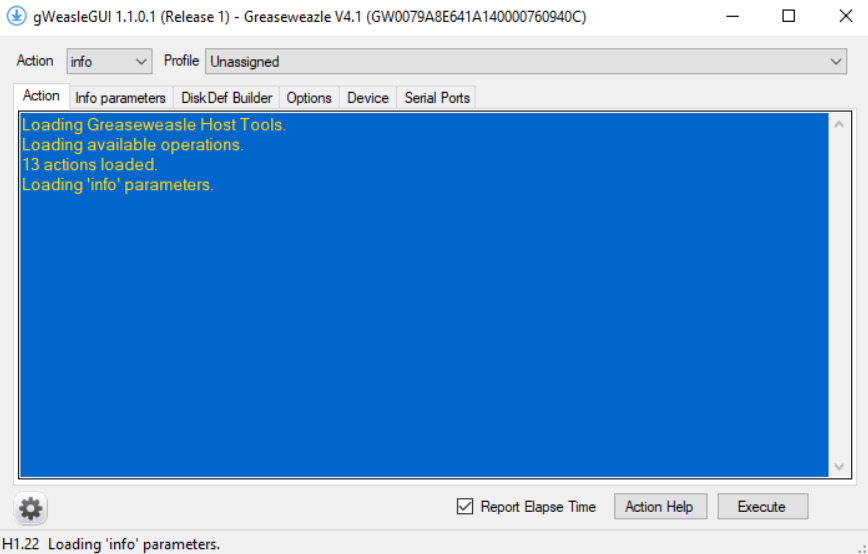
The “Serial Ports” tab shows a list of current serial port registered to the system. This will have a list of serial ports in the port drop down. Notice Bus Description in the screenshot has the name “Greaseweazle” so we know there is a GreaseWeazle at COM9. Click refresh to reload system serial ports in the even you have plugged or

unplugged anything. Clicking “Use” will set this port as the current port to use, which in the screenshot is COM9.



The “action” tab refers to the output log. Where we can see what is happening. At the bottom of the interface, we see:

- The “cog” this will take us to the options tab.
- Report Elapse Time checkbox: Will report action elapse times.
- Action Help: Will show you the command line help for an Action.
- Execute: Will execute an action.
- The status bar; it contains the H1.22 (host tools version) and the last log message.



The “parameters” tab is a dynamic tab. It changes based upon the action selected in the dropdown. For instance, when you select “Read” in the action dropdown menu. The “Read Parameters” will automatically be selected.

In this window all the available supported parameters for reading a floppy disk to an image file will be present. In the read parameters tab we have the basics.

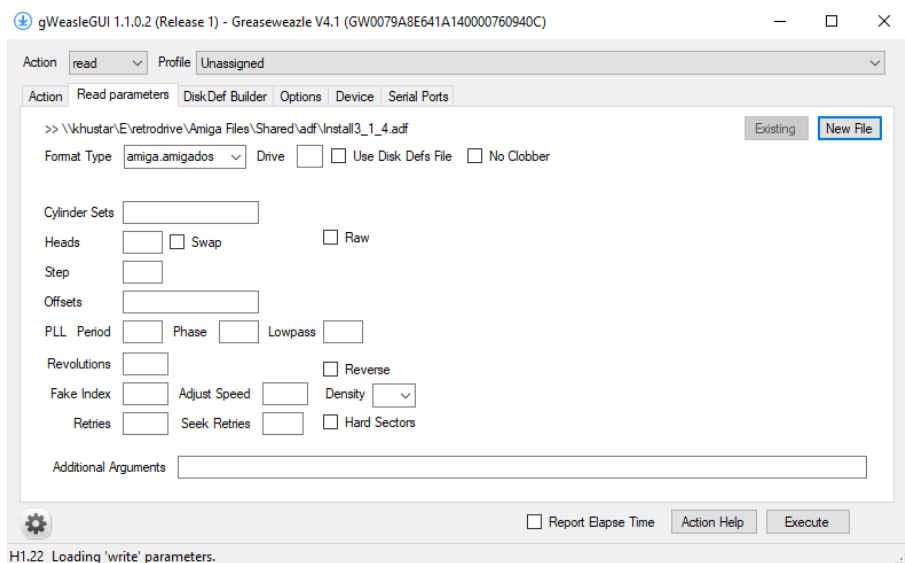
The format type, all the default available GreaseWeazle format types are listed.

Drive value defaults to drive A and can be left blank unless you are using a different drive such as drive B.

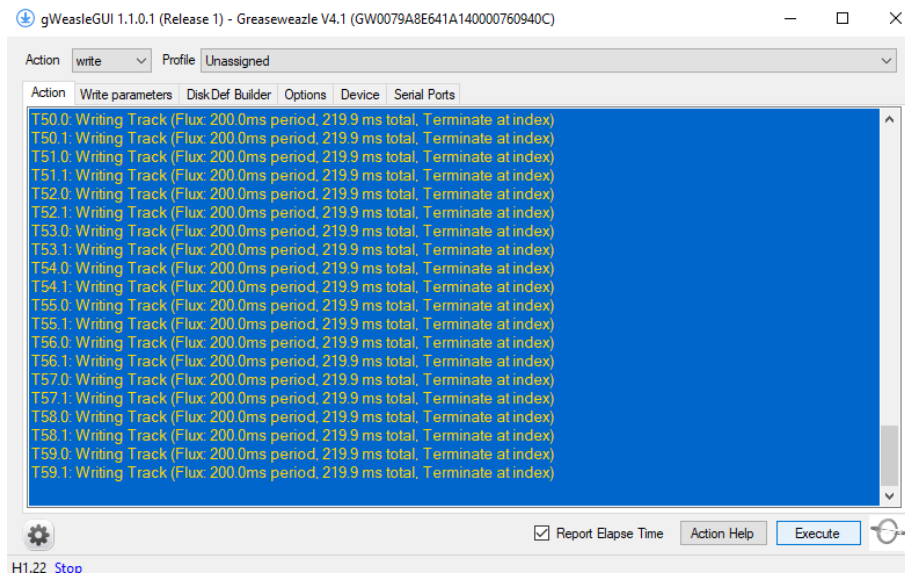
For reading a diskette into an image file, the primary value you will need will be the file. Since you are creating a new image file from an existing diskette only the “New file” button is available. In the write operation where you will take an existing image file and write it to a diskette only the “existing” button will be available. For the “convert” action both buttons are available since you will read an existing file and create a new file in a different format. You will need to pay close attention to the file name suffix since it will determine the image format. For instance, the file name ends with “.adf” will be an ADF image.

If you check the checkbox “Use Disk Defs File” you must have a disk defs file loaded in the DiskDef Builder tab. Checking this check box will reload the format type drop down with the content of the loaded disk def file.

The majority of the parameters can likely be left blank and gWeasleGUI will use the default values, but they are there in case you need them.



Once ready can you click “Execute” to run the command.

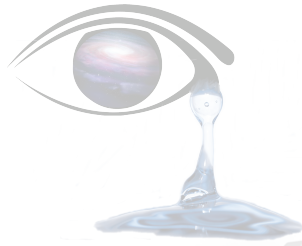


In the lower right corner, you will see the animation showing gWeasleGUI is busy. Since gWeasleGUI is multi-threaded you can still use the interface, but clicking

execute will provide the error that it cannot open the GreaseWeazle port. There is also an option to stop the in-progress action in the lower left. The output on the action tab is the same output you would see in the command line.

The “DiskDef Builder” tab is an advanced topic where you can design your own disk orientation such as sectors, tracks, and speed.

For more information on this visit: <https://support.leapmaker.com/gWeazleGUI.php>



www.LeanMaker.com

Troubleshooting Tips:

- Get a Drive cleaner disk and periodically clean
- When using a disk for the first time you may want to pre-erase the disk (i.e. "gw.exe erase")
- Read/Write errors sometimes will resolve themselves if you erase the disk a few times
- When using HDD disks for DD formats cover the HD hole on the left with tape
- When experiencing errors on every disk, check the power light, cable, and try a different USB port.



LeapMaker Support Page
- Here you can find links and tips
<https://support.leapmaker.com/>