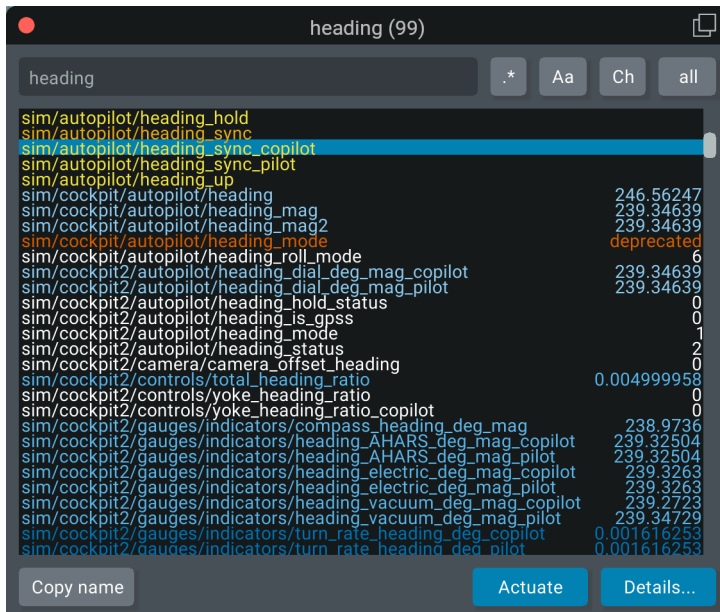


# DataRefTool v2.6.5

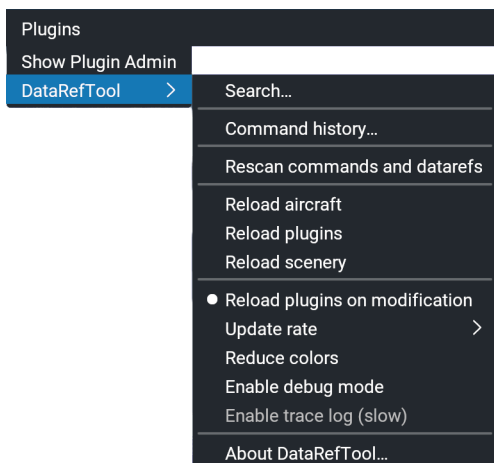
DataRefTool is a plugin for browsing and modifying X-Plane datarefs and commands.



[DataRefTool.com](https://DataRefTool.com)

## Installation

1. Download DataRefTool from [datareftool.com](https://datareftool.com)
2. Unzip the file (called DataRefTool\_v2.6.5.zip).
3. Move the DataRefTool\_v2.6.5 folder to X-Plane 12/Resources/plugins/.
4. Start X-Plane, and you should see "DataRefTool" as an item on the "Plugins" menu.



## System requirements

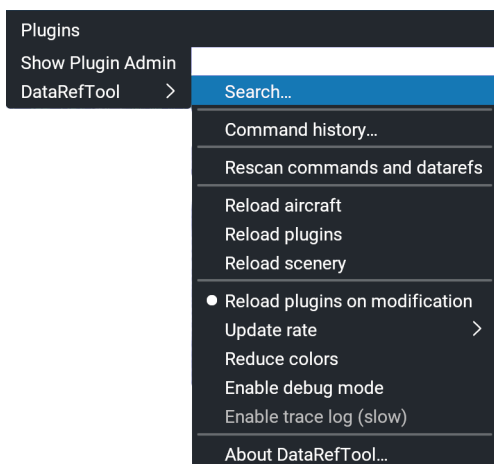
- OS: MacOS Sierra (10.12+) or later / Windows 10+ / Linux
- X-Plane v12.04 or later

## Getting started

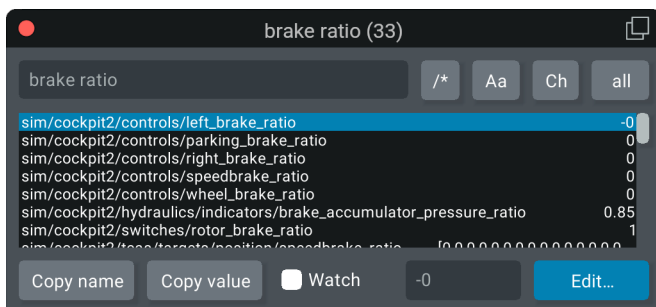
Now that DataRefTool is installed, here's how to use it.

### Searching for datarefs

First, we start with the primary search window, which you can open from the Plugins > DataRefTool > Search... menu option.

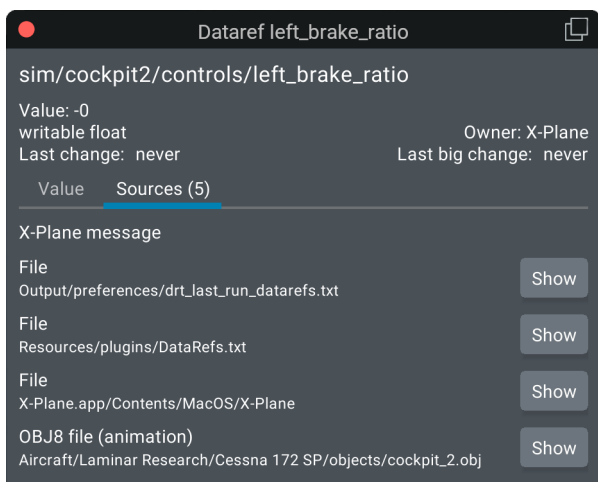


When a search term is typed, you'll see a listing of all the datarefs and commands that match.



After clicking on a dataref or command, relevant actions appear at the bottom of the window.

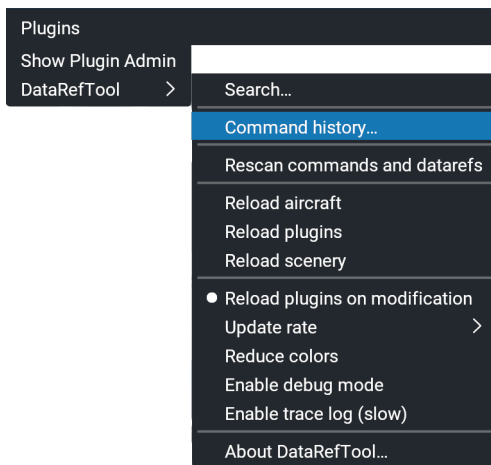
For more detail, click the "Edit" or "View" button.



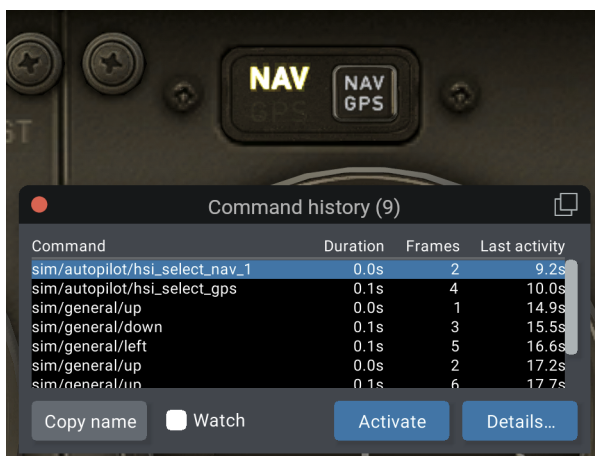
Next, let's look at how to identify commands.

## Finding commands

Sometimes, it's useful to identify a command used by the simulator. For example, maybe you'd like to identify a button in the cockpit, and map it to a button on your joystick. To figure out what command is triggered by a button in the cockpit, start by opening the command history.



Next, let's click the cockpit button we are trying to identify. I used the "NAV | GPS" button in the Cessna 172.



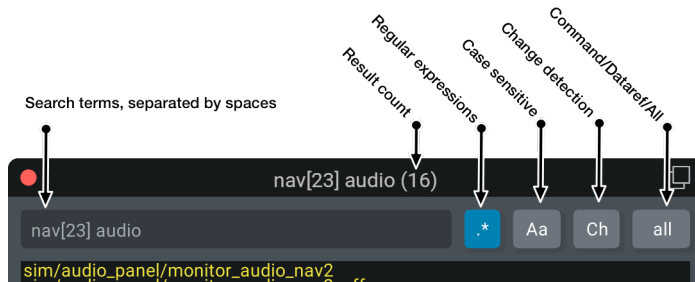
We can see what command was activated with that button.

Next, we'll continue with a feature-by-feature overview.

## Features

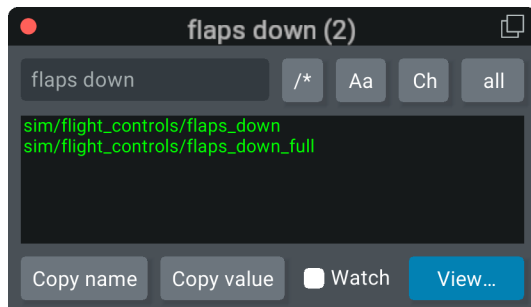
### Search

- **Type:** everything **all**, only commands **com**, or only datarefs **dat**
- **Activity:** everything **Ch**, all changes **ch**, or only big changes **CH**
- **Regex:** off **.\***, or on **.\*** ([Regex is a sequence of characters that describes a search pattern in text](#))
- **Case sensitive:** off **Aa**, or on **Aa**
- Multiple search terms, separated by spaces
- Exclude terms starting with a minus sign



### Commands

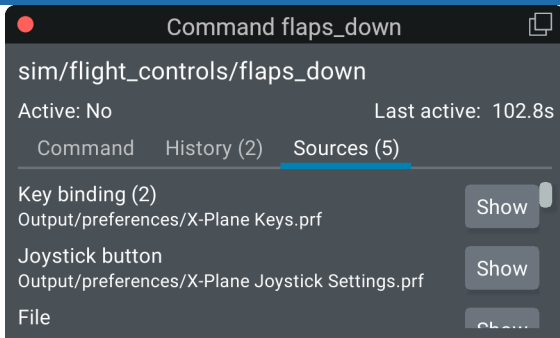
Commands are an **event**, with a beginning and end; for example, a button being pushed, or a switch being flipped. To find a command, use the search window to search by name.



If you don't know the name, try opening the command history. When you use the command (by pressing a cockpit control, for example), you will see it in the command history.

Command	Duration	Frames	Last activity
sim/flight_controls/flaps_up	0.1s	3	7.2s
sim/flight_controls/flaps_down	0.2s	5	8.0s
sim/flight_controls/flaps_down	0.1s	2	17.3s

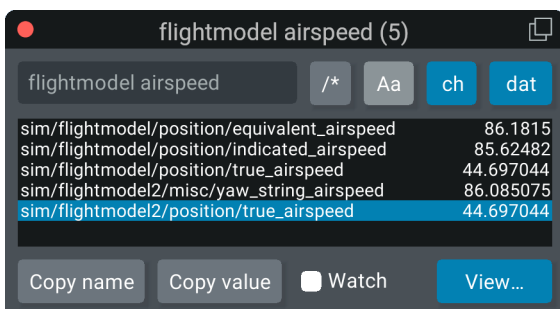
Clicking **View...** to find more details about commands and datarefs.



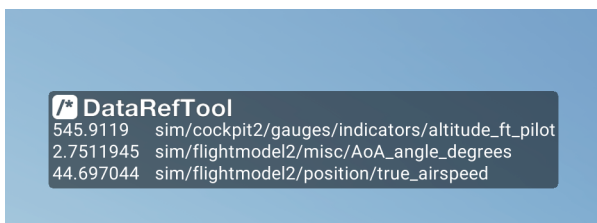
## Datarefs

Datarefs are a **quantity** or **value** in the simulator. Like commands, you can find them by name in the search window.

If you know that a dataref is changing in value, use the **ch** change filter button.



To keep an eye on the value of a dataref, add it to the Watch window by clicking the **Watch** checkbox. When your mouse is close to the window, you can drag it around.



## Troubleshooting

### Plugin doesn't show up

After installing DataRefTool, if you don't see it in the Plugins menu in X-Plane, please check the following:

- Verify that you have unzipped the correct folder into X-Plane 12/Resources/plugins/. The plugin file should be located at X-Plane 12/Resources/plugins/DataRefTool\_v2.6.5/64/win.xpl. If not, please download the plugin again and reinstall it using the instructions in this document.
- If the plugin is installed at the correct location, you should be able to find a message in the Log.txt file describing why the plugin couldn't start.
- After trying this, if you can't figure out how to resolve the problem, please either email me or post in the X-Plane.org forums (see the links in the "Resources" section below).

### Crashes

DataRefTool reads all dataref values every frame. Sometimes, other plugins may have bugs causing a crash to happen when DataRefTool reads their datarefs.

When a crash happens for this reason, a description will be left in the Log.txt:

```
DataRefTool encountered a segmentation fault while reading dataref:
someplugin/output/hydraulic1_low
Please report this crash to the plugin developer.
```

To avoid this crash, DataRefTool can ignore this dataref.  
Add this line to X-Plane 12/Resources/plugins/drt\_ignore.txt:

```
someplugin/output/hydraulic1_low
```

After that, this specific dataref shouldn't crash DRT again.  
Since we cannot safely continue, X-Plane will now exit.

Follow those instructions to ignore that dataref, and work around the crash.

Sometimes, a plugin has many datarefs that cause crashes. Rather than adding each dataref one by one, you can ignore many datarefs by including a prefix. For example, instead of filling your drt\_ignore.txt with this:

```
someplugin/electric/dc_volts_display
someplugin/output/RMI_pointer1
someplugin/output/RMI_pointer2
someplugin/output/RMI2_pointer1
someplugin/output/RMI2_pointer2
someplugin/output/VOR2_sel_loc
```

Instead, exclude them all with the common prefix they all share:

```
someplugin/
```

Which will have the same effect.

Finally, if you're experiencing a crash, please report it to the maker of the plugin. I'm happy to help as well; I've worked with many plugin makers to fix situations causing crashes.

### Finding all commands and datarefs

From version 2.5 on, all datarefs and commands will be found by DataRefTool using X-Plane's API access. This does require that the X-Plane websocket API is enabled in settings (Settings > Network > Accept incoming connections).

## References

### Colors

DataRefTool uses different colors to indicate datarefs or commands in different states:

Default	Reduce colors	
White	White	Dataref: not changed recently
Light cyan	Sky blue	Dataref: recent small changes
Light magenta	Blue	Dataref: recent large changes
Green	Yellow	Command: not used recently
Yellow	Orange/vermillion	Command: used recently
Red-orange	Vermillion	Dataref: deprecated
Red-orange	Reddish purple	Dataref or command: ignored

The alternate color scheme aims to accomodate colorblind users, and is based on the [Wong color palette \(Figure 2\)](#)

### Keyboard shortcuts

In general, normal text editing shortcuts are respected:

- **Ctrl-X** / **⌘X** : cut
- **Ctrl-C** / **⌘C** : copy
- **Ctrl-V** / **⌘V** : paste
- **Ctrl-A** / **⌘A** : select all

In the search window, there are some additional things you can do:

- **Ctrl-N** / **⌘N** : open a new search window
- **Ctrl-W** / **⌘W** : close current window
- **Tab** / **Shift-Tab** : switch between search field and results

Search field:

- **Ctrl-F** / **⌘F** or **Ctrl-L** / **⌘L** : go to the search field
- **Ctrl-alt-C** / **⌘C** : Toggle Change detection
- **Ctrl-alt-I** / **⌘I** : Toggle Case-insensitive search
- **Ctrl-alt-R** / **⌘R** : Toggle Regex search
- **Ctrl-alt-S** / **⌘S** : Toggle Source (dataref/command/all)

Search results:

- **Enter** or **Return** : open details window for the current dataref/command
- **Ctrl-C** or **⌘C** : Copy currently-selected dataref name
- **Ctrl-alt-C** or **⌘C** : Copy currently-selected dataref value
- Type a number : Set new value for currently-selected scalar dataref (int/float/double only)
- **Space** : activate current command
- **J** / **K** or **⬆** / **⬇** : Go up or down in the list (like vim)

Additional keyboard shortcuts (to open a search window, for instance) can be added by searching for "datareftool" in X-Plane's keyboard settings.



## Resources

- [DataRefTool.com](https://DataRefTool.com) is the official website for DataRefTool. Visit here to get updates.
- The [X-Plane.org forum discussion thread for DataRefTool](#) is a great resource for asking questions and keeping up to date with DataRefTool.
- Feel free to reach out with any other questions. I'd love to hear how you're using DataRefTool, or if you have ideas for ways it can be improved. [lee@leebaker.com](mailto:lee@leebaker.com)