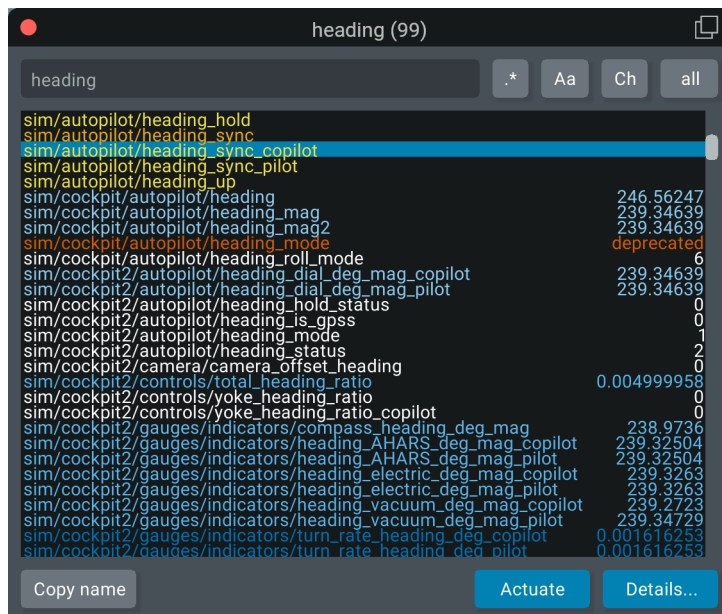


DataRefTool v2.6.6

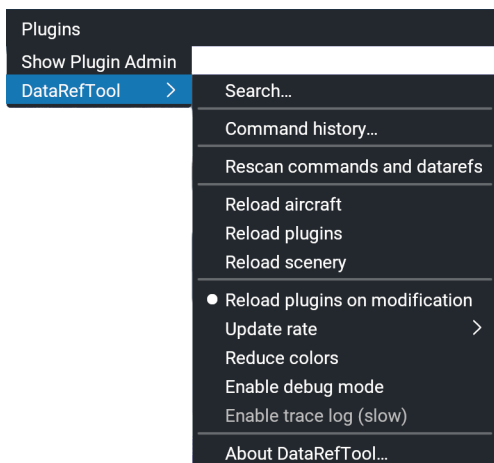
DataRefTool is a plugin for browsing and modifying X-Plane datarefs and commands.



DataRefTool.com

Installation

1. Download DataRefTool from datareftool.com
2. Unzip the file (called DataRefTool_v2.6.6.zip).
3. Move the DataRefTool_v2.6.6 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

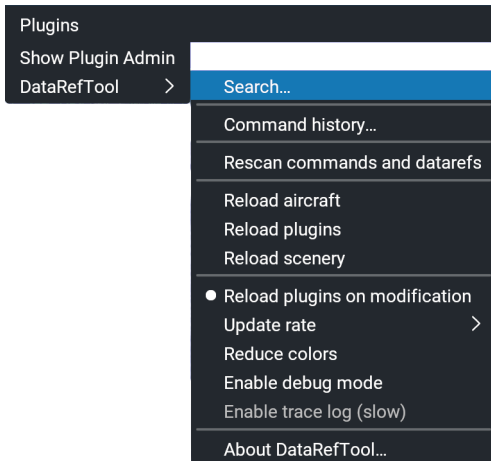
- OS: MacOS Sierra (10.12+) or later / Windows 10+ / Linux
- X-Plane v12.04 or later

Getting started

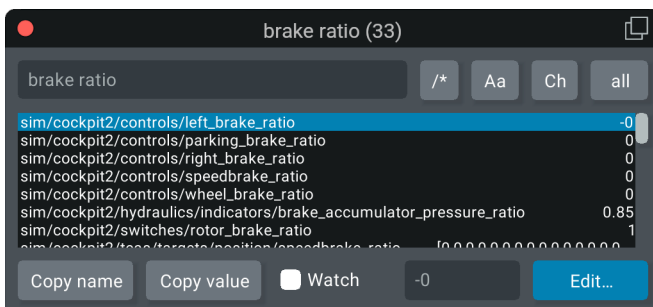
Now that DataRefTool is installed, here's how to use it.

Searching for datarefs

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

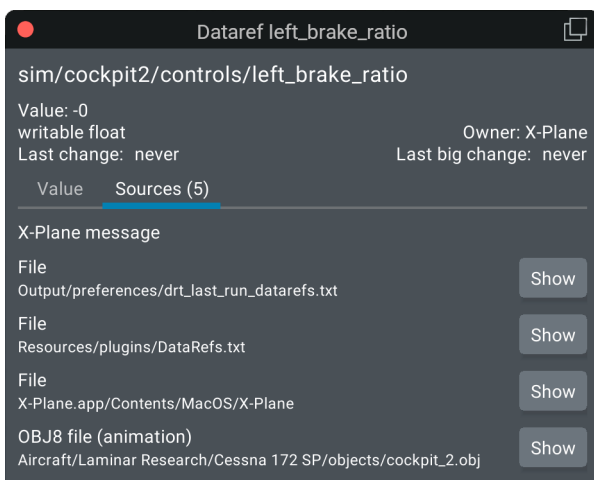


When a search term is typed, you'll see a listing of all the datarefs and commands that match.



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

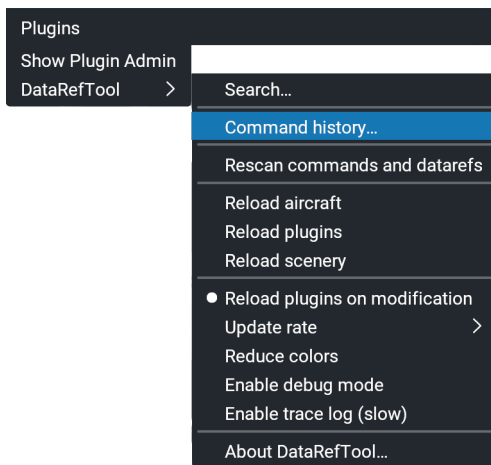
For more detail, click the "Edit" or "View" button.



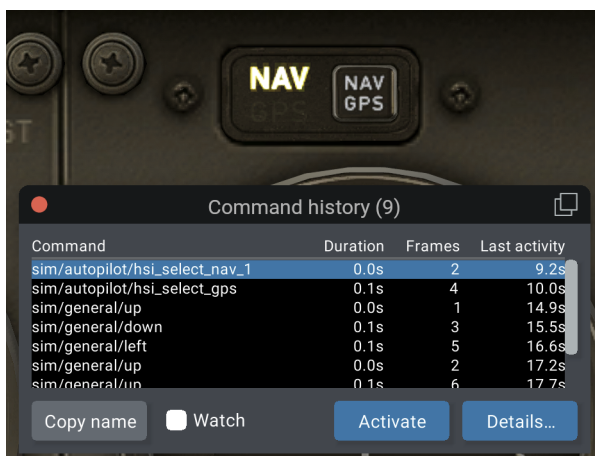
Next, let's look at how to identify commands.

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.



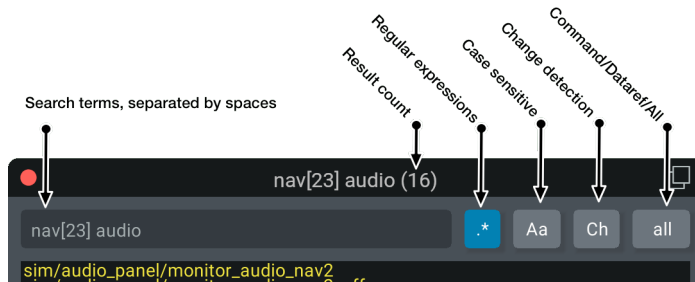
We can see what command was activated with that button.

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

Features

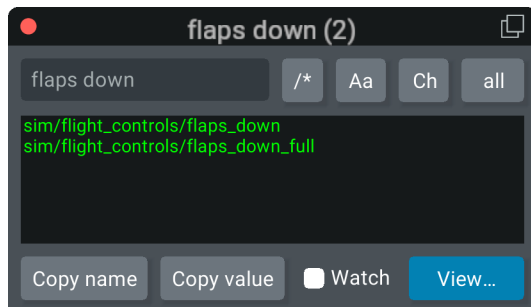
Search

- **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

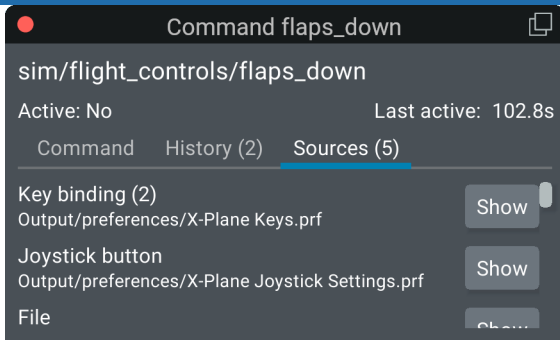
Commands are an **event**, with a beginning and end; for example, a button being pushed, or a switch being flipped. To find a command, use the search window to search by name.



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 |

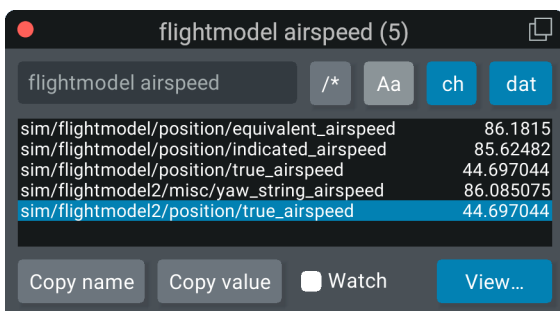
Clicking **View...** to find more details about commands and datarefs.



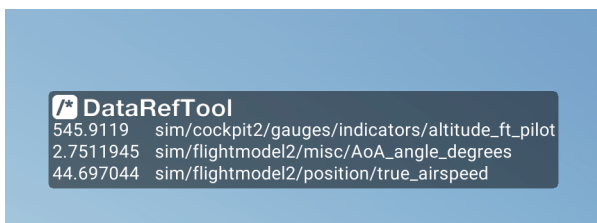
Datarefs

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_v2.6.6/64/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 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