

# Getting started with the Pick-it URCap

Pick-it integrates seamlessly with Universal Robots by means of a URCap plugin. This plugin exposes a set of Pick-it specific command blocks that make the creation of vision-guided programs simple and easy. This document explains how to install the Pick-it URCap plugin and introduces the functionality it provides.

Some of the benefits using the Pick-it URCap plugin:

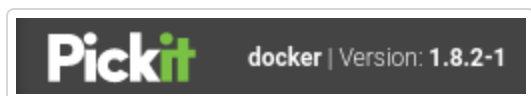
- Less typing and less code.
- Graphical command interface with in-place documentation.
- Pick-it 2D view available from the UR Teach Pendant.

## Pre-requisites

### Pick-it

Verify that the installed **Pick-it version is 1.8.2 or greater**. The software version can be verified at the top left of the web interface.

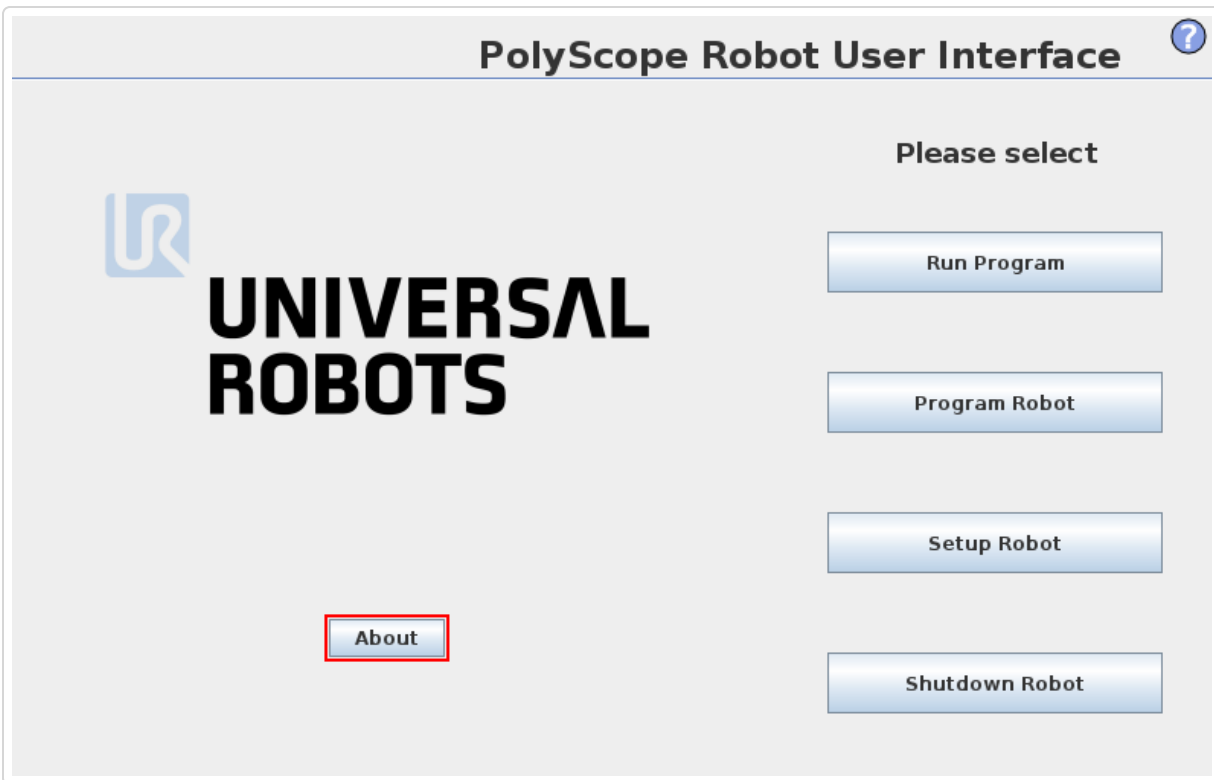
When the version is not displayed at the top left of the web interface you are running an older version of Pick-it which needs to be updated first.



In order to have your Pick-it system updated, you can always contact your support team:  
[support@pickit3d.com](mailto:support@pickit3d.com) (mailto:support@pickit3d.com).

### Robot

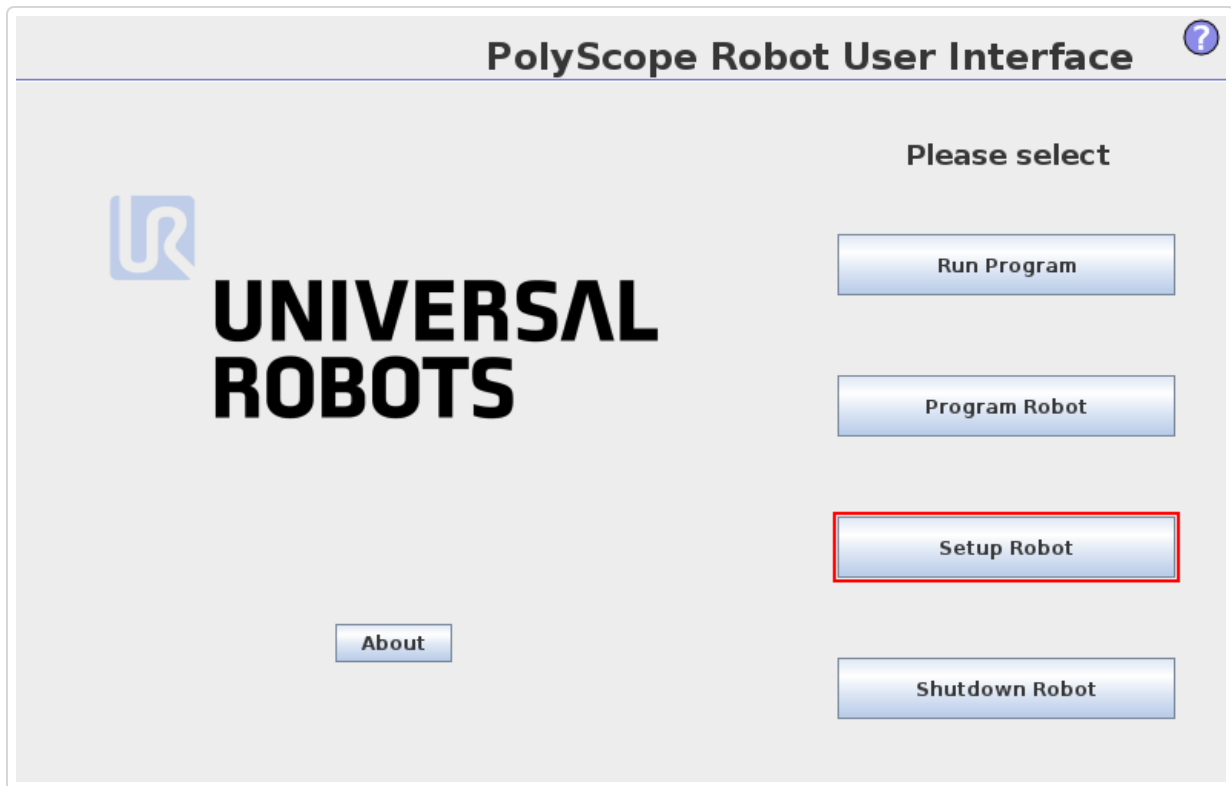
Verify that the installed **Polyscope version is 3.4.0 or greater**. The software version can be verified by clicking the **About** button on the home screen.



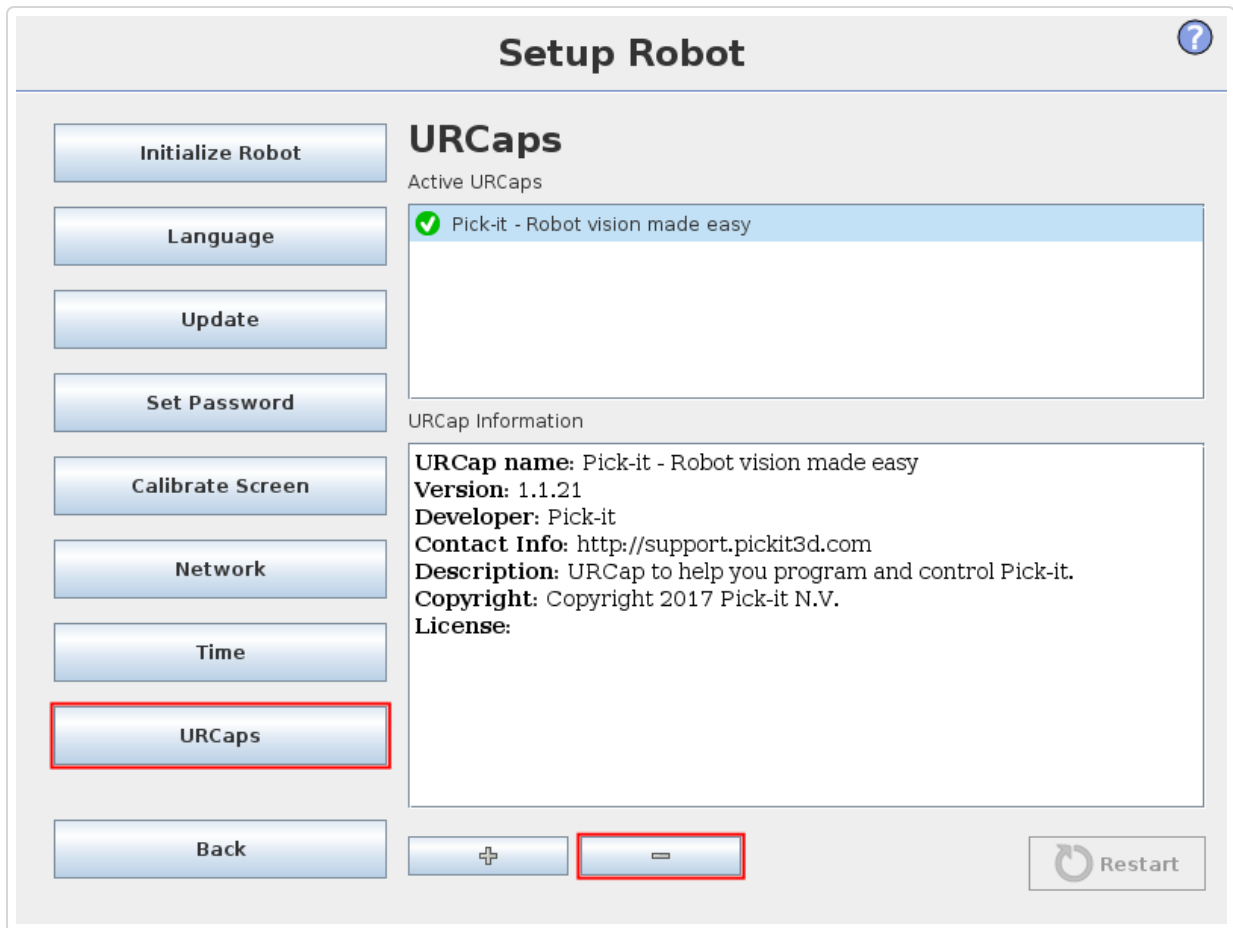
## Installing the Pick-it URcap plugin

To install the Pick-it URcap plugin, follow these steps:

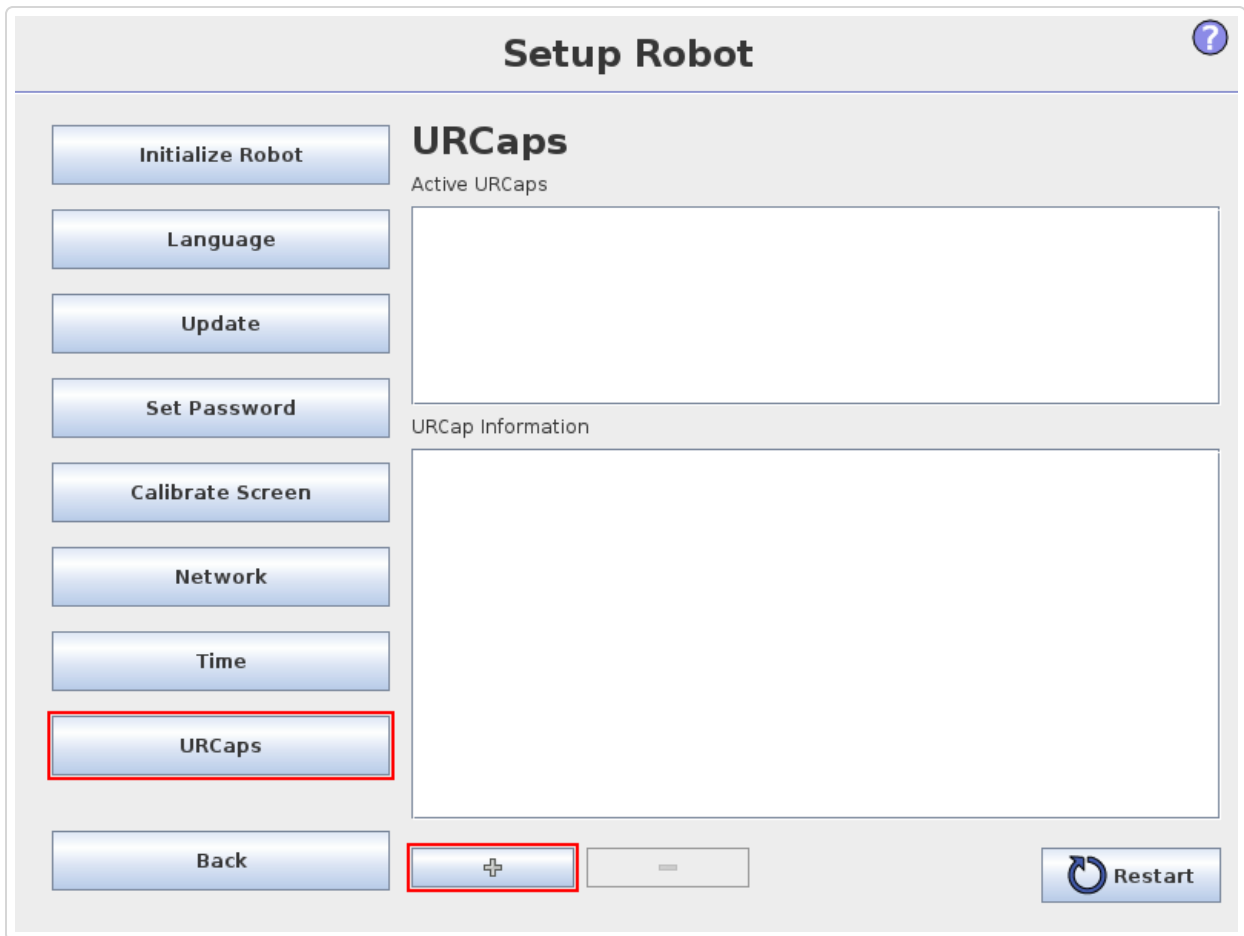
1. Download (<https://drive.google.com/uc?export=download&id=1659qe3f37iX7hlq0bgA1sCaGIE4QKGy0>) the zip archive containing the latest version of the URcap.
2. Unzip the archive and copy its contents to a USB drive. The contents consist of a single folder named `pickit_UR`.
3. Insert the drive into the USB port of either the robot controller or teach pendant while it is turned on.
4. On the Polyscope home screen, press **Setup Robot**.



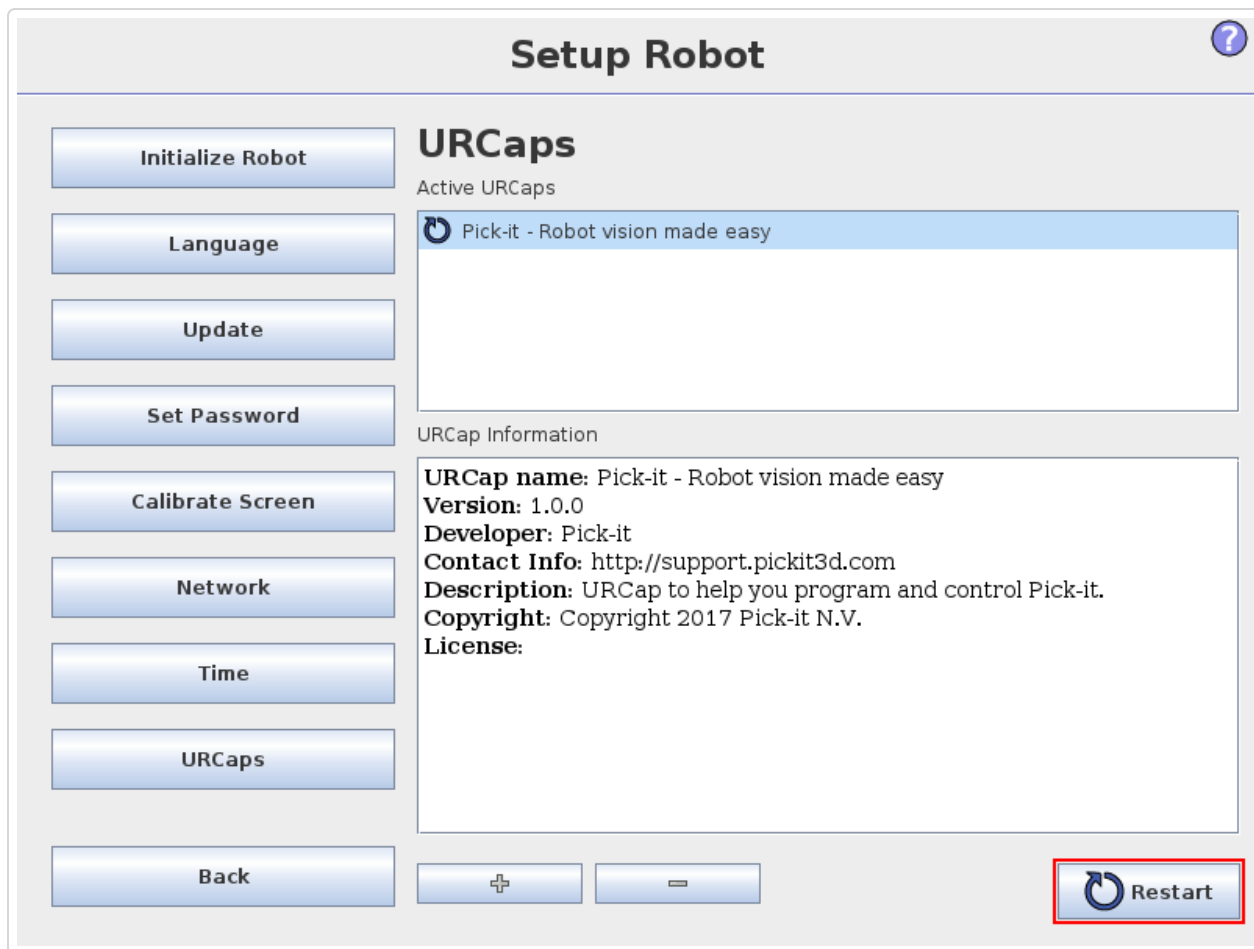
5. Inside the **Setup Robot** menu, press **URCaps**.
6. If there's a previous installation of the Pick-it URCap plugin (appears listed under Active), it should be removed by selecting it and pressing -.  
Polyscope will indicate that a restart is needed to apply the changes. Press the restart button to continue, and after restart head back to the **Setup Robot** menu, **URCaps**, and make sure that Pick-it is not listed in the Active URCaps.



7. In the **Setup Robot** menu, press **URCaps**, then **+**



8. Navigate to the `pickit_ur` folder of the USB drive, and select the `pickit_urcap-[version].urcap` file.
9. Polyscope will indicate that a restart is needed to apply the changes. Press the restart button to continue.



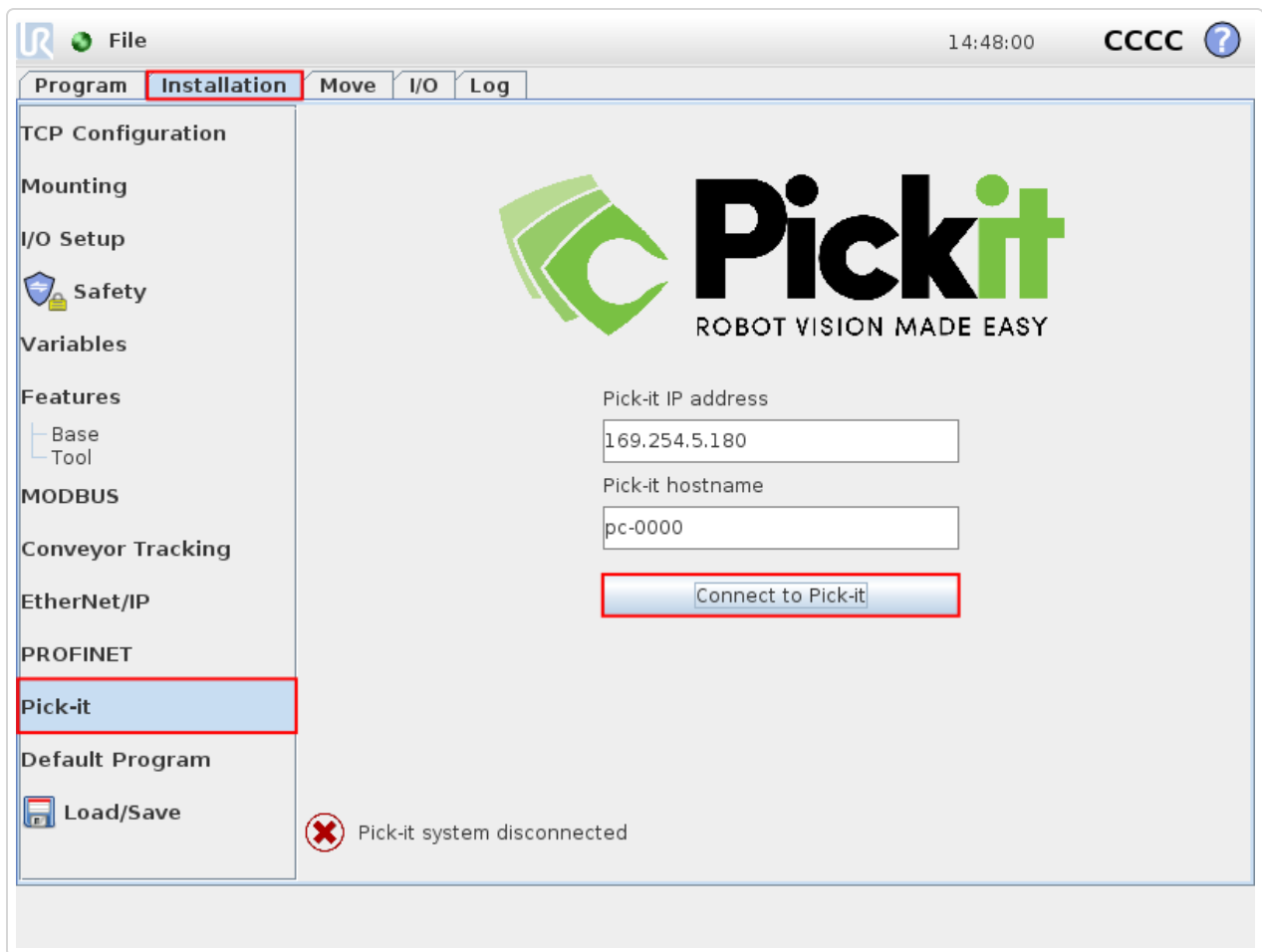
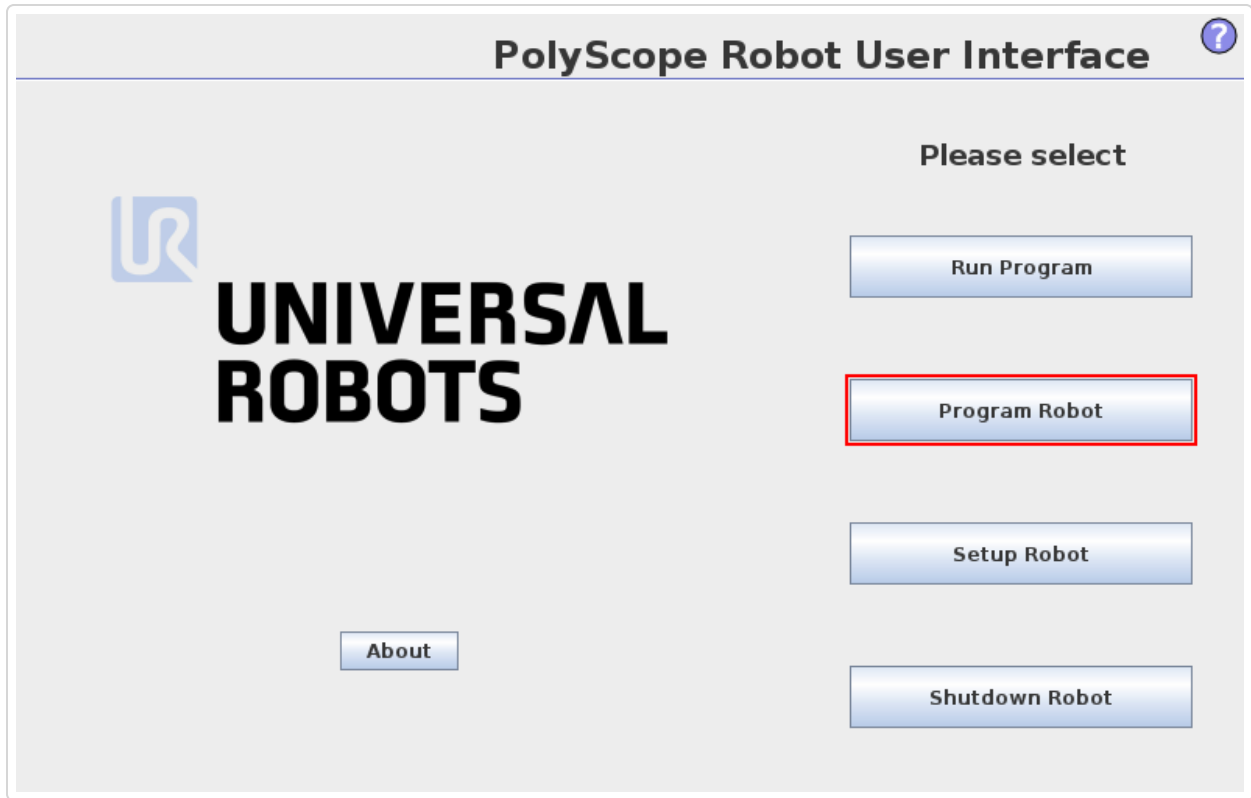
10. Once Polyscope restarts, the plugin will be deployed and ready to use. Make sure your Pick-it system is running and connected to the robot's network to continue.

## Using the Pick-it URCap plugin

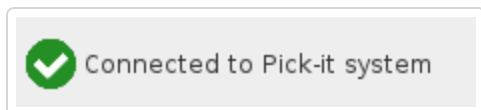
To use the Pick-it URCap plugin two things must be done: Connect to a running Pick-it system, and write a program that uses Pick-it specific commands.

### Connect to a running Pick-it system

From the main screen, go to **Program Robot** and select the **Installation** tab. The configuration screen of the Pick-it plugin is accessible by selecting **Pick-it** on the left panel.



If Pick-it is running and connected to the robot's network, the status indicator should read **Connected to Pick-it system** as in the above figure. If this is not the case, set the IP address and hostname of your Pick-it system and press "Connect to Pick-it". When the connection to the Pick-it system is successful the status indicator at the lower left should look like this:



## Writing programs

The Pick-it plugin exposes a new set of commands that add to the set of Polyscope's existing commands, as well as a number of helper functions and global variables. A complete description of the interface, and how to access it from the Polyscope interface can be found in [The Pick-it URCap interface \(//support.pickit3d.com/article/80-the-pick-it-urcap-interface\)](https://support.pickit3d.com/article/80-the-pick-it-urcap-interface) article.

## Example programs

The Pick-it URCap plugin installation makes available a few example programs under

`/programs/pickit_samples` folder of the robot. The can be also downloaded independently of the URCap here (<https://drive.google.com/open?id=1Gf63Y35NaVxbP4mwc5YUC5SU8u8RYvyO>). These programs are a great way to get familiar with the Pick-it URCap plugin, and can serve as a template to build your own applications. The following articles provide detailed descriptions of example programs:

- Universal Robots URCap example picking program ([//support.pickit3d.com/article/76-universal-robots-urcap-example-program](https://support.pickit3d.com/article/76-universal-robots-urcap-example-program))
- ([//support.pickit3d.com/article/76-universal-robots-urcap-example-program](https://support.pickit3d.com/article/76-universal-robots-urcap-example-program)) Robot camera calibration with the URCap plugin ([//support.pickit3d.com/article/77-robot-camera-calibration-with-the-urcap-plugin](https://support.pickit3d.com/article/77-robot-camera-calibration-with-the-urcap-plugin))

✉ Still need help? [Contact Us \(//contact\)](https://support.pickit3d.com/contact)

*Last updated on March 12, 2018*