How to set up Kuka varpoxy so that you can write and read messages in grasshopper

1. **Download grasshopper plugin (to be supplied, see the example file for reference)**
2. **Connect your computer to the robot via Ethernet cable (may need adapter)**
3. **Open Kukvar proxy on the robot (tab + alt to change to windows screen).**
4. **On your computer - Set up Ethernet IP address to communicate (see gh example file for correct IP)**
5. **On KRC - Pop up screen will appear, Turn on debugging while testing connection (turn off for best working results)**
6. **On your grasshopper file toggle connection component (far left in file)**
7. **Confirm on kukavarproxy pop up window on robot (‘1 client connected)**
8. **You are connected!!**

How to read and write via grasshopper

1. **To read current robot status, toggle on the read position component. You should have current position information in relevant panel after this.**
2. **See additional component for sorting out specific variables**

Writing to robot

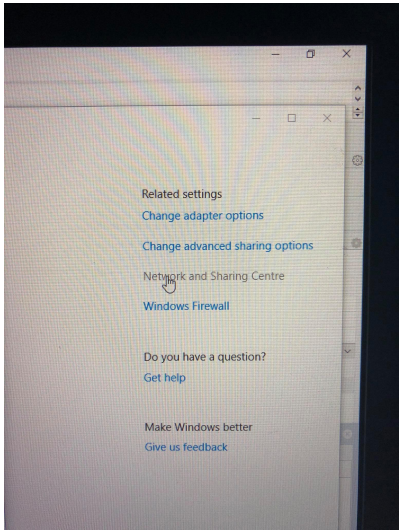
1. **The way that you will write to the robot is by sending updated values of variables (global variables) that you will declare in a dat. File that you will create. You will also declare these variables at the begin of your kuka src file. (please see photos and example document in Kuka for specific reference)**

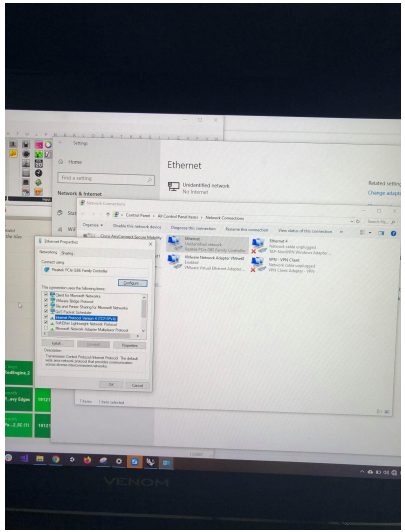
You will still be writing a src file for the robot programming though will reference in variables that you will change via writing them from GH file. In your writing and reading components you have to state what variables you will be reading and writing too.

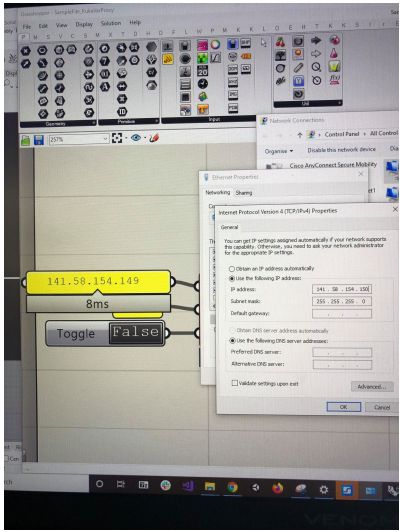
In order to see your variables updated on the Robot you must first run your program through the initialisation section, to formally declare your variables. You can then go, monitor > variables > single and type in your variable name, then click enter to see.

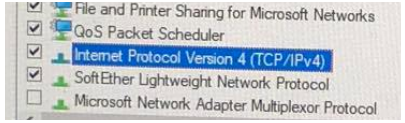
Warning: current bug, if you disconnect the connect component by toggling off then the data will not be stored in reading components and you will have to restart GH or rhino to regain connection.

Translation of planes (tcp orientation and phase planes) Be sure to check whether they correlate to what you see on the robot as there may be some bugs in the way planes are translated to GH.

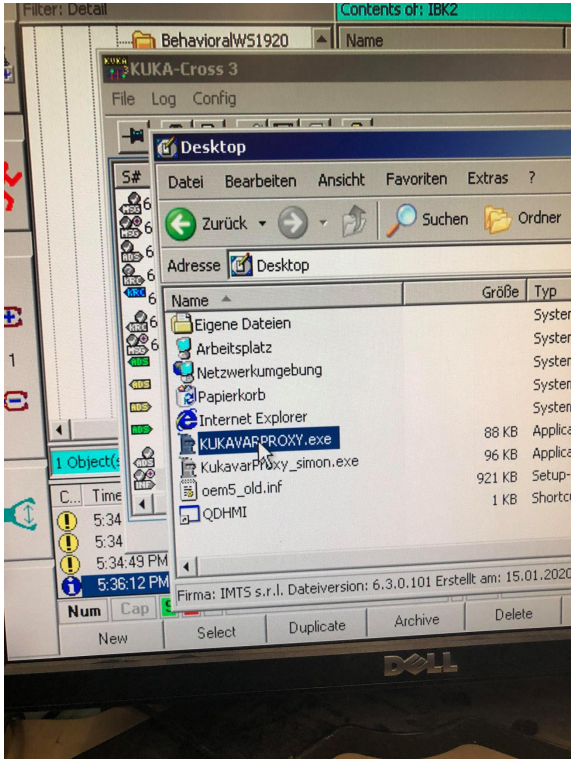


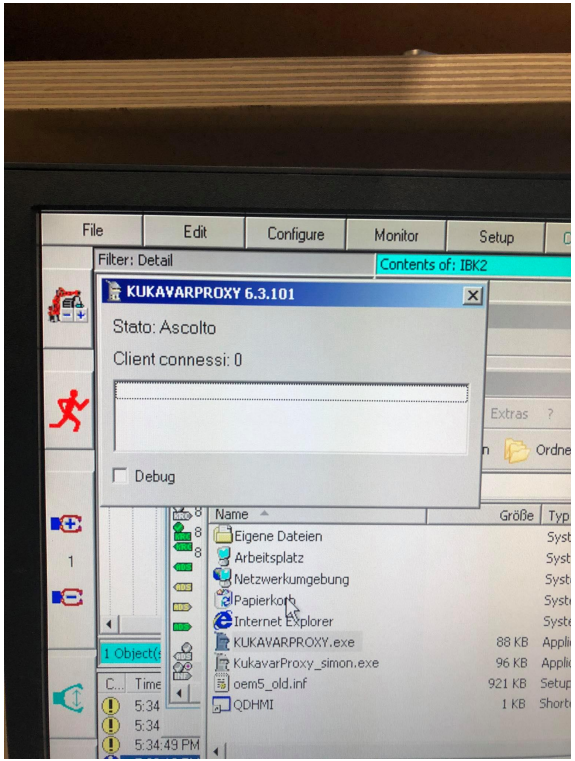


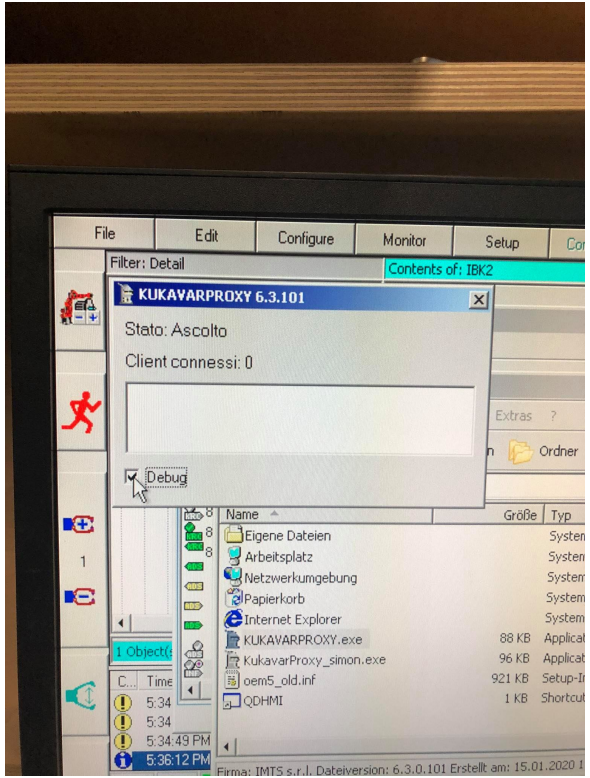




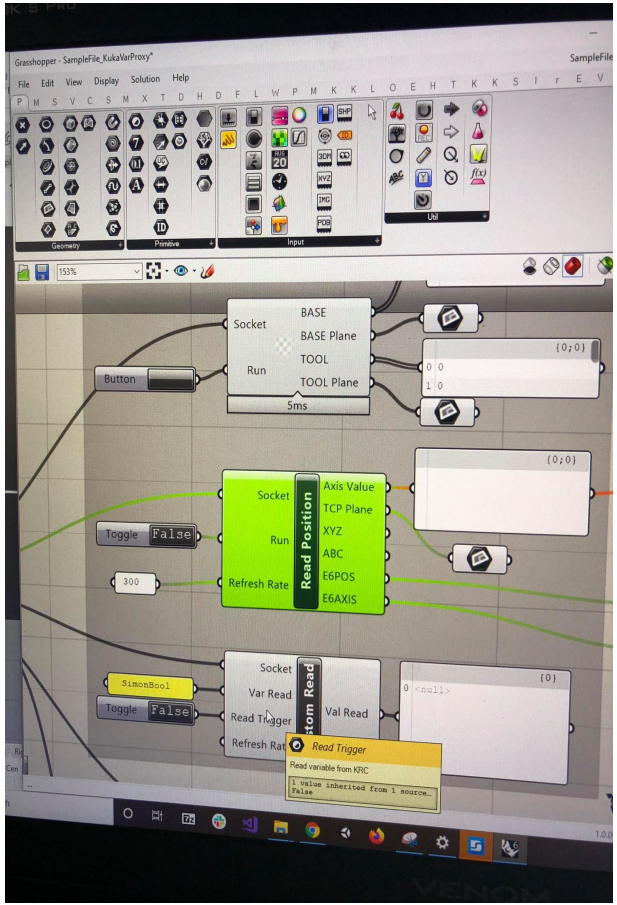
Connecting your computer to robot through ethernet (download grasshopper plugin first)

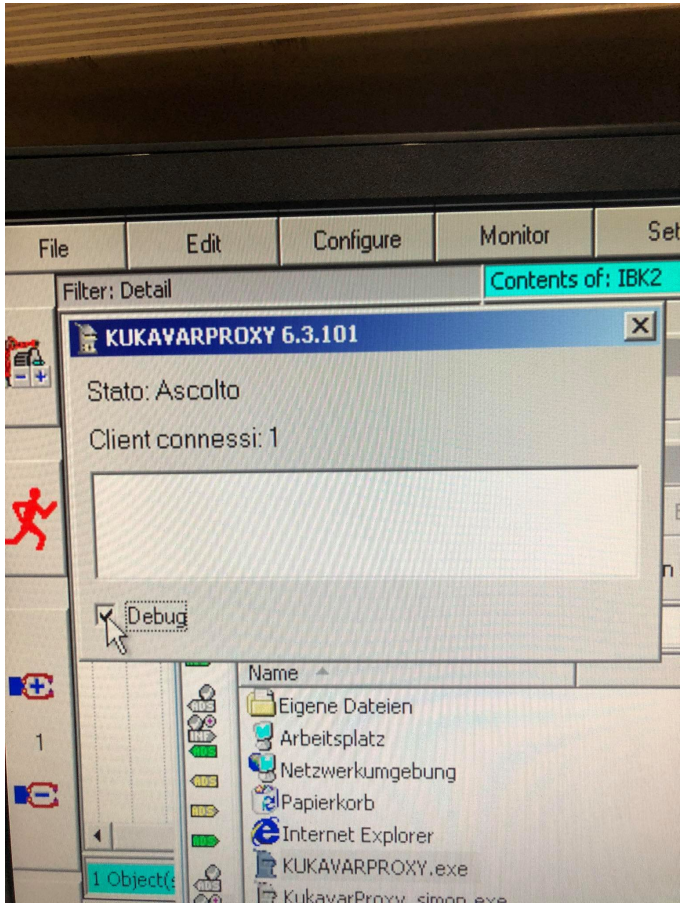


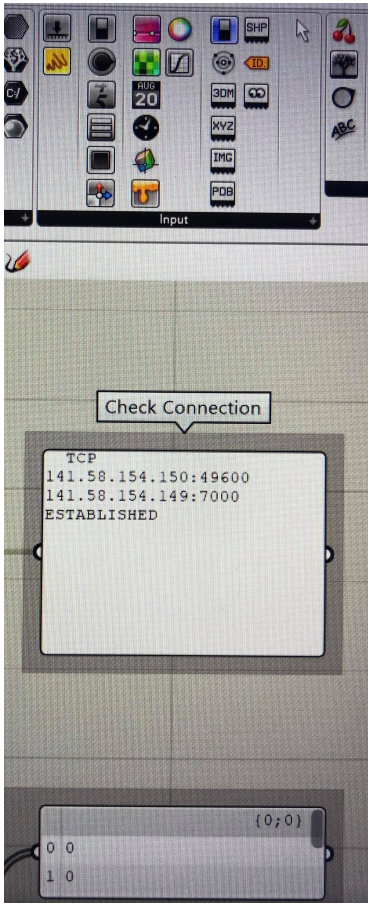




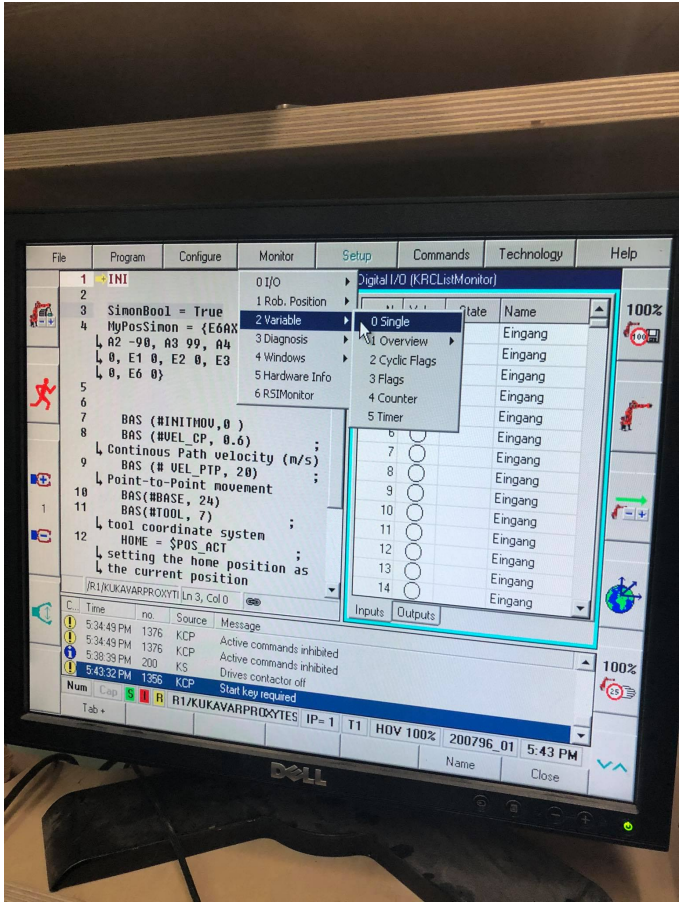
Open kuka varproxy on robot (alt + tab in expert mode to change to windows)

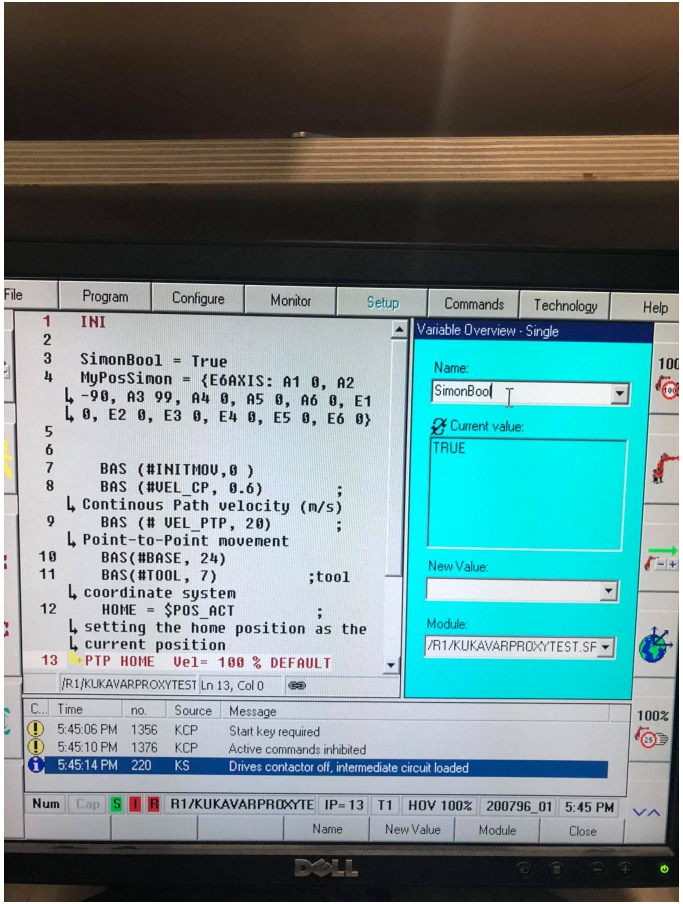




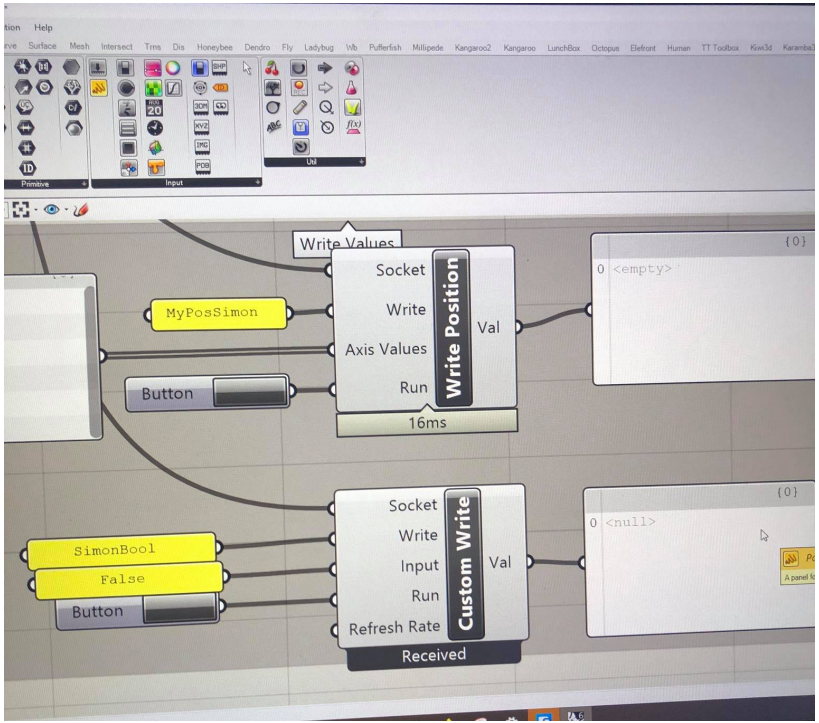


First test: getting robots current position (open example gh)

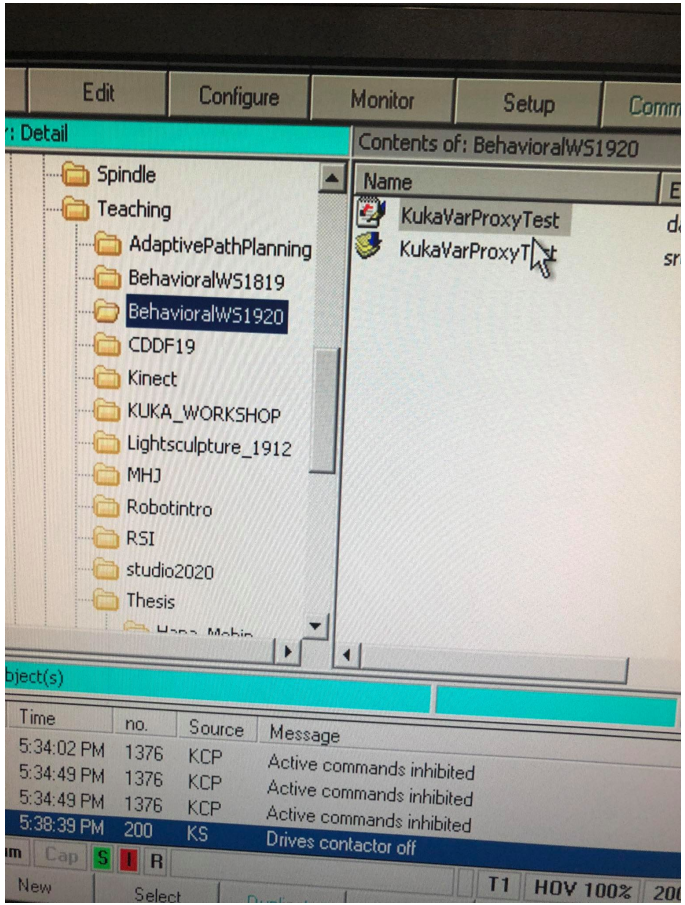


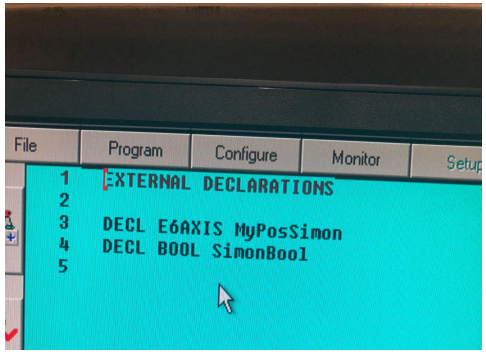


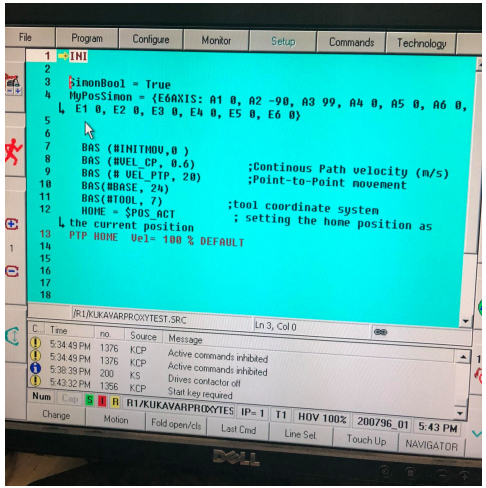
To check kukA's position on KRC



Second Test: writing global variable to Kuka







Opening example file. And changing variable (Dat files contain variables that will be changed by GH)