

VERSABUILT ROBOTICS



UR Robot Power-Up and Configuration Manual

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Power-Up Robot

Section 1

Power Up Robot

Refer to UR Manual for initial power and safety settings

General instructions for initial setup:

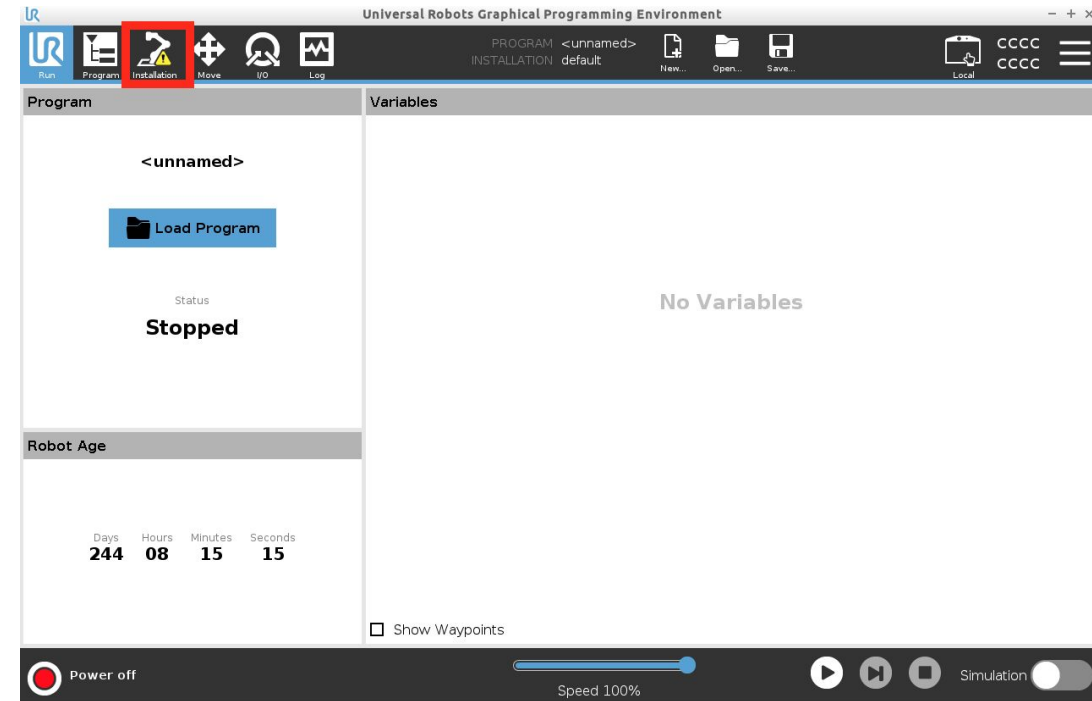
- Power Up Robot
- Move robot from boxed position:
 - FreeDrive the robot *refer to UR manual for FreeDrive in Local modeor
- Use pre-installed program on teach pendant to move the robot
 - Select OPEN > PROGRAM
 - Select “Put_into_box_E-Series_UR10.urp”
 - Hold down PLAY button to move the robot into a standing position

Note: password for robots supplied by VersaBuilt is “versabuilt”, otherwise the default password from UR is “easybot”)

Power Up Robot - Safety Settings

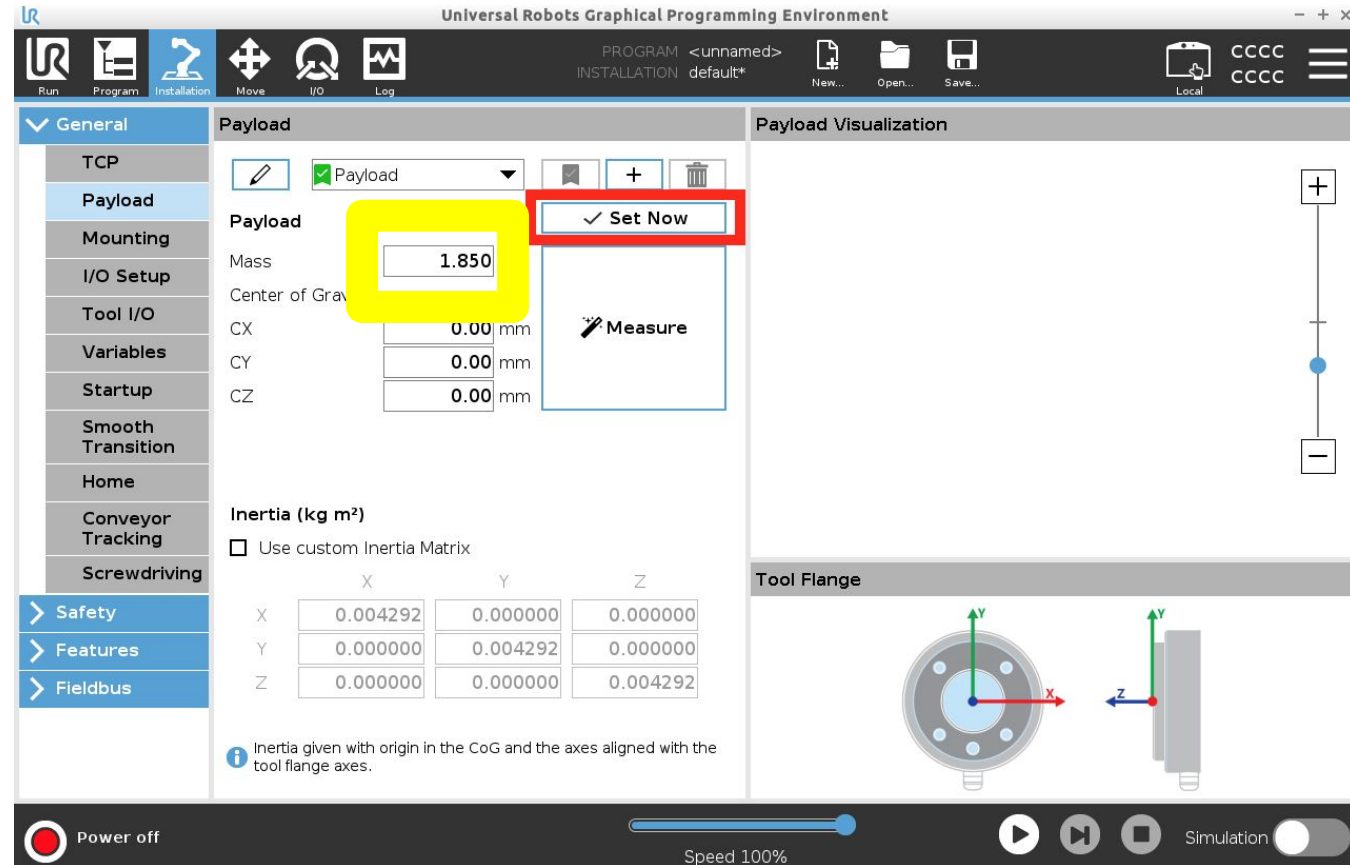
Refer to UR Manual for initial power and safety settings

- Safety Settings are responsibility of the customer
- On Teach Pendant, Select:
 - Installation
 - Safety > Robot Limits
 - Factory Presets, 2nd from left (Most Restricted to Least Restricted)



Installation - Set default Gripper payload

- On Teach Pendant, Select:
 - Installation
 - General > Payload
 - Enter value below in “Mass” field
 - Select “Set now”



Gripper	UR10 Payload (kg)	UR20/UR30 Payload (kg)
MultiGrip	1.85	2.10
DuoGrip 400	3.96	4.26
DuoGrip 2000	6.02	6.32

Network Configuration and Remote Mode

Section 2

UR Network Settings

The following section includes details for configuring the UR Robot for complete VersaBuilt Automation Systems, with VSC control

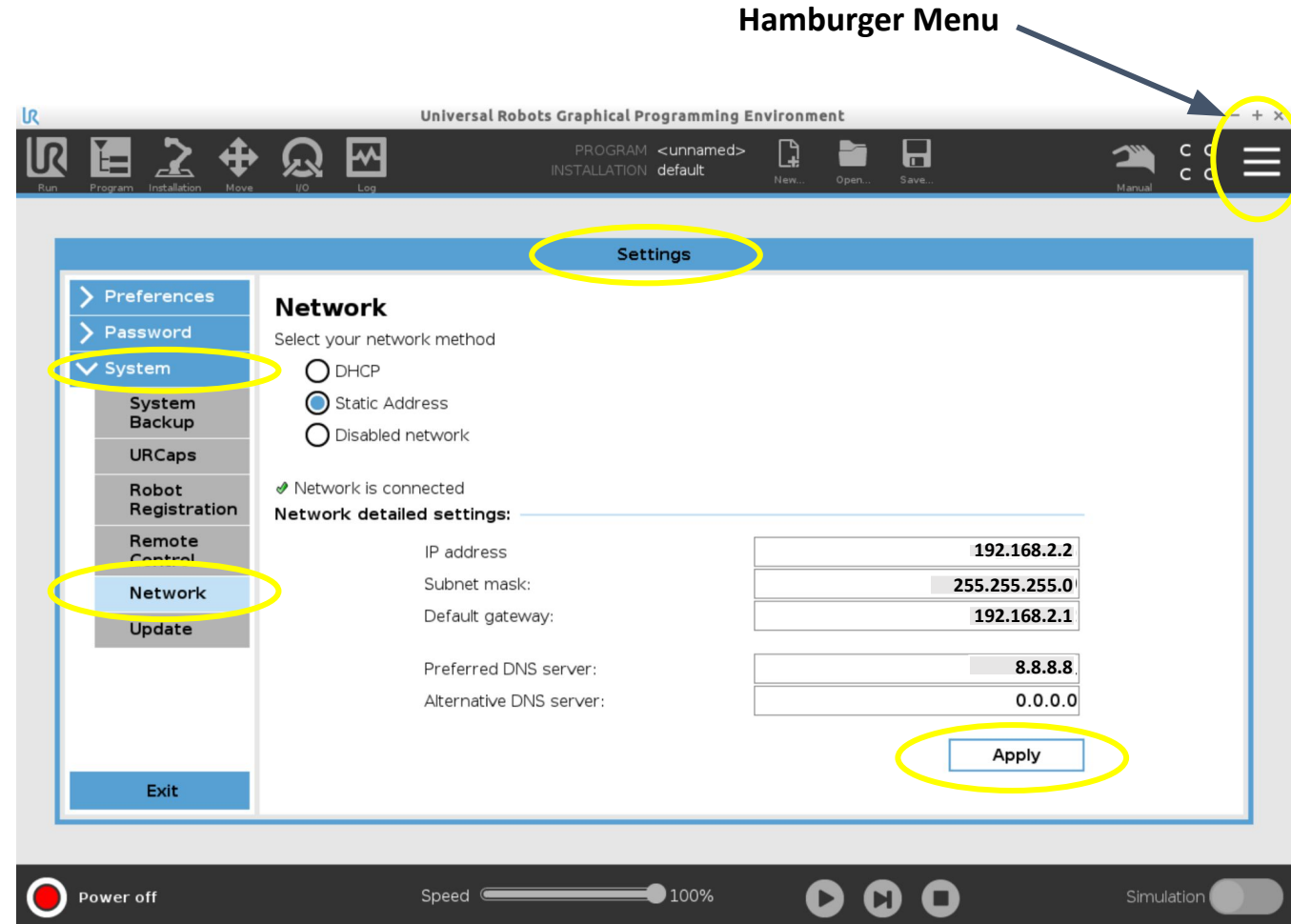
UR Network Settings

On UR Teach Pendant

- Navigate to the **Settings** page by clicking on the “Hamburger” menu (three horizontal bars in the upper right corner of the screen)
- Select **System**, then **Network**.
- Select **Static Address** for the network method. Enter the following Network detailed settings:

IP Address:	192.168.2.2
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.2.1
Preferred DNS Server:	8.8.8.8
Alternate DNS Server:	0.0.0.0

Press the **Apply** button to save the changes.



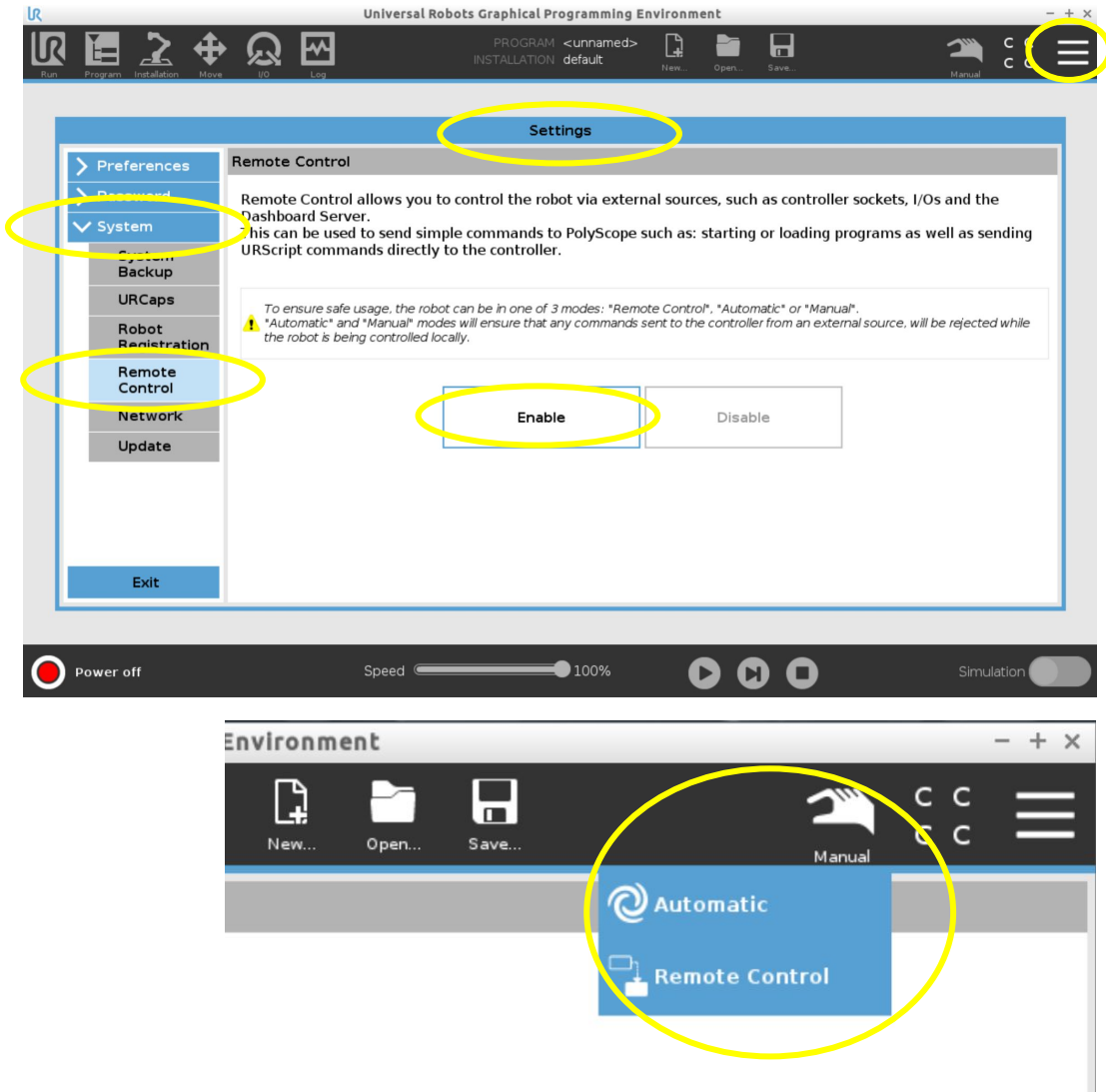
Enable Remote Control

Enable Remote Control Option

- Navigate to the Settings page by clicking on the “Hamburger” menu (three horizontal bars in the upper right corner of the screen)
- Select System
- Select Remote Control.
- Press the **Enable** button, enabling *the option* to put the UR robot into remote control mode (*required for VSC to Robot communication*).

Enable Remote Control by the VSC

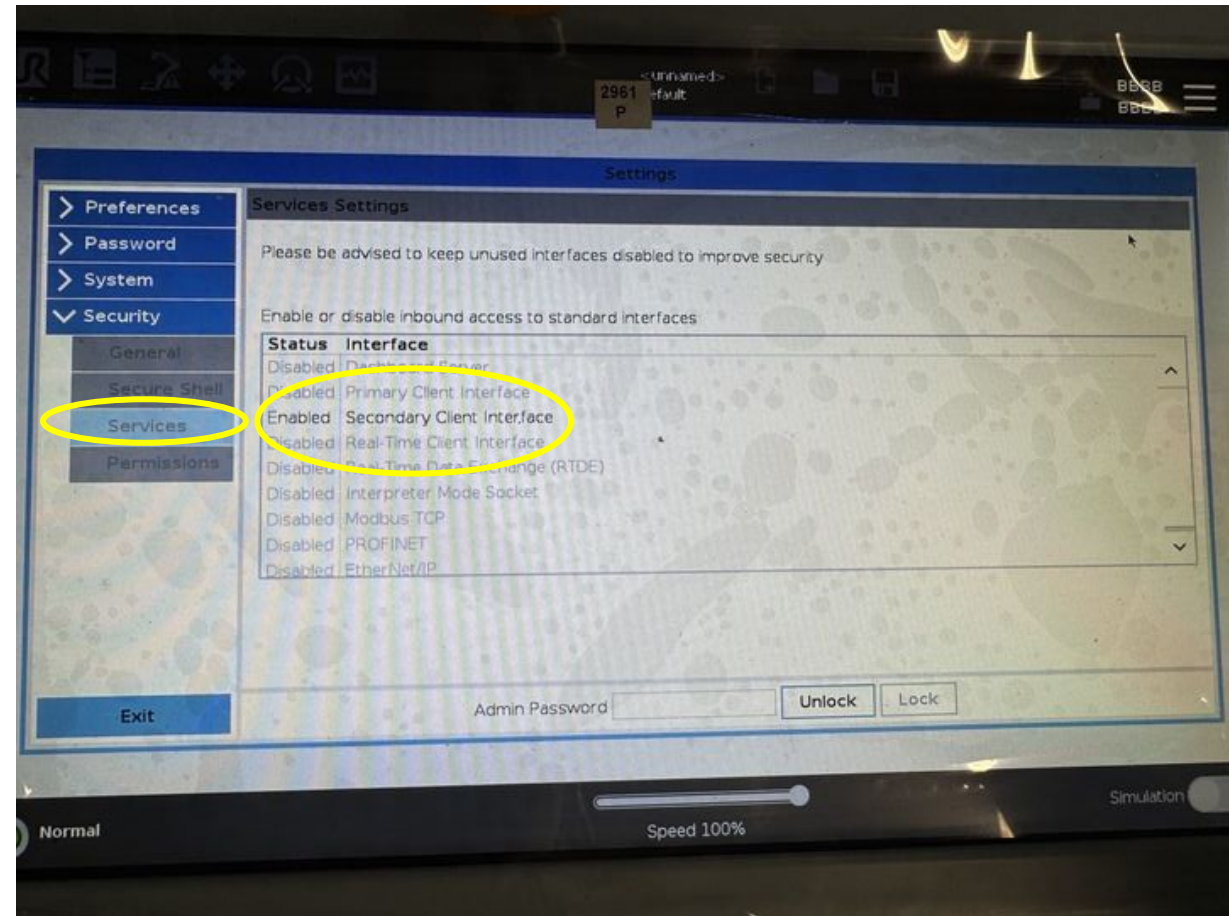
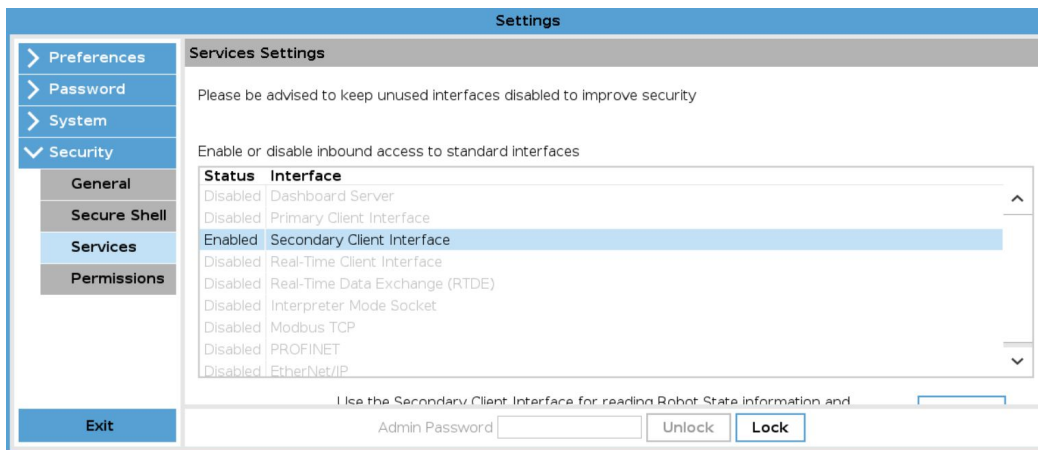
- When the Remote Control option is enabled, an icon will appear next to the “safety checksum”.
- Click on the icon and select the **Remote Control** option to allow the VSC to control the robot. To shift control back to the UR robot teach pendant, click on the icon and select Manual or Automatic mode.



Enable Secondary Client Interface

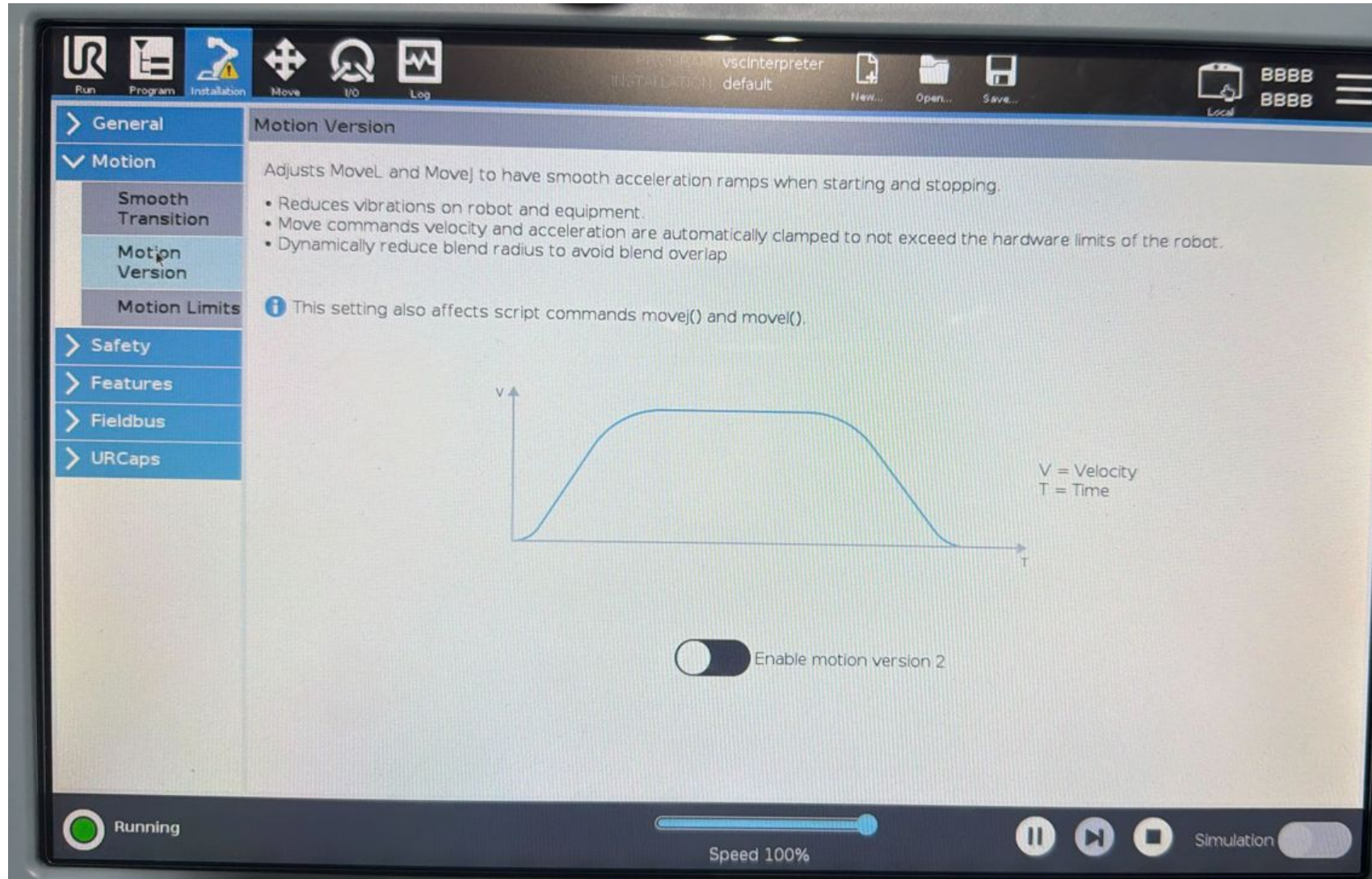
Enable Secondary Client Interface Service

- Navigate to the Settings page by clicking on the “Hamburger” menu (three horizontal bars in the upper right corner of the screen)
- Select Security
- Select Services.
- Unlock the screen with the Admin Password. Ensure the Status of the **Secondary Client Interface** is set to **Enabled**.
- Disable all other Services.



Motion Version *Disable Motion Version 2

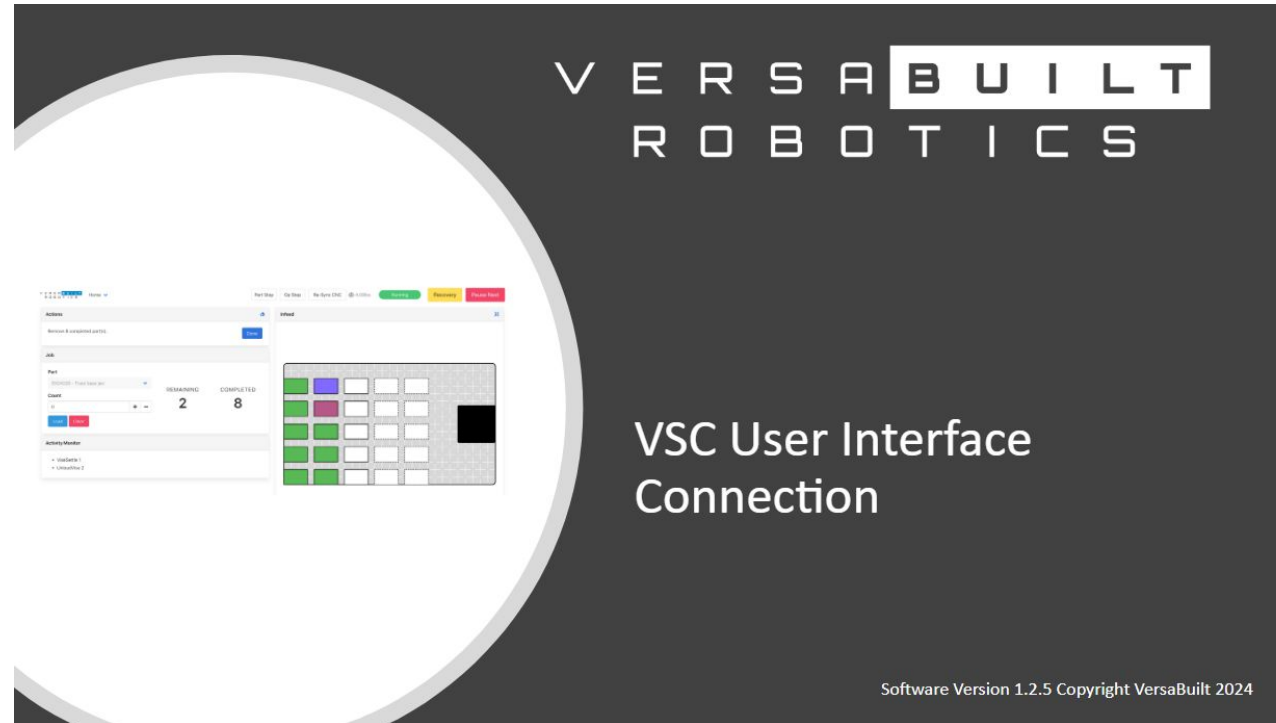
Disable Motion Version 2 for robot systems with polscope version 5.21.0



Connect to User Interface

Connect to user interface

Refer to the VSC User Interface Manual



Configuring Interpreter Mode

for VSC Software version 1.2.6 or later

Section 3

Interpreter/Dashboard Server

The following pages include detailed steps for enabling the Interpreter/Dashboard Server, required for VSC software versions 1.2.6 or greater. To see your VSC software version, navigate to the About page of the VSC User Interface.

Verify the following:

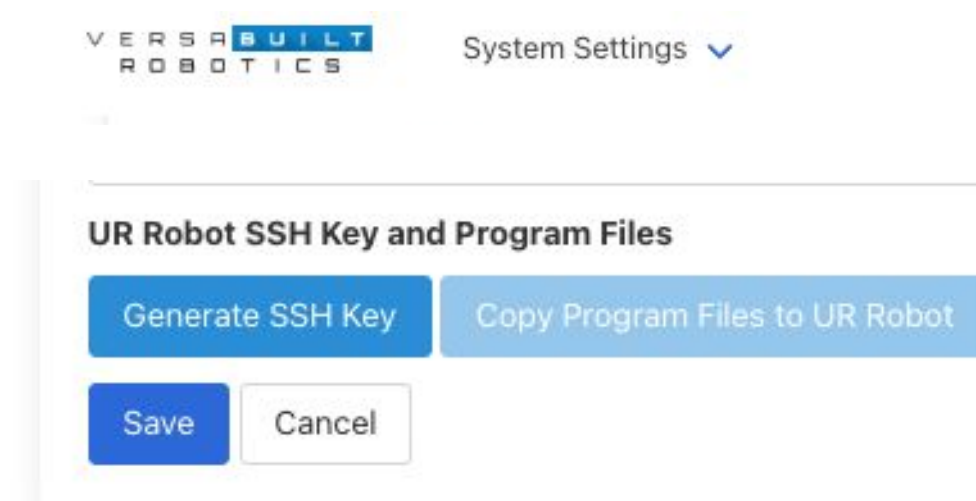
- Access to User Interface (Refer to User Interface Manual)
- Networking connections and addresses are correct (Refer to Networking Manual)
- During the each step, the VSC Enable Button is selected to allow user selections on the VSC interface

Note: password for robots supplied by VersaBuilt is “versabuilt”, otherwise the default password from UR is “easybot”)

Interpreter/Dashboard Server

Step 1 of 4 - Generate SSH Key on VSC Interface & Copy to USB

1. Generate and Copy SSH Key from the VersaBuilt System Controller (VSC) to a USB
 - a. With the **VSC User Interface**, navigate to the **Settings** page
 - b. Press the Edit System Settings button
 - c. At the bottom of the page press the **Generate SSH Key button**
 - d. A prompt will instruct you to:
 - i. Insert a USB drive into the USB port of the VSC.
 - ii. Press the Generate button to create a new key or the Cancel button to cancel generating a new key.
 - iii. After pressing the Generate SSH Key button. **A green message will appear that states SSH key generated & saved to settings and USB drive.**
 - iv. Once a new key has been generated and stored on the USB drive, it must be installed on the UR Robot.
 - e. Remove the USB from the VSC.
 - f. Verify on a computer or teach pendant that a “**robot_id_ed25519.pub**” is saved on the USB. If the file is not on the USB then it is likely being written to the BackupVSC USB drive. Reach out to VersaBuilt via support@versabuilt.com for assistance accessing the file.

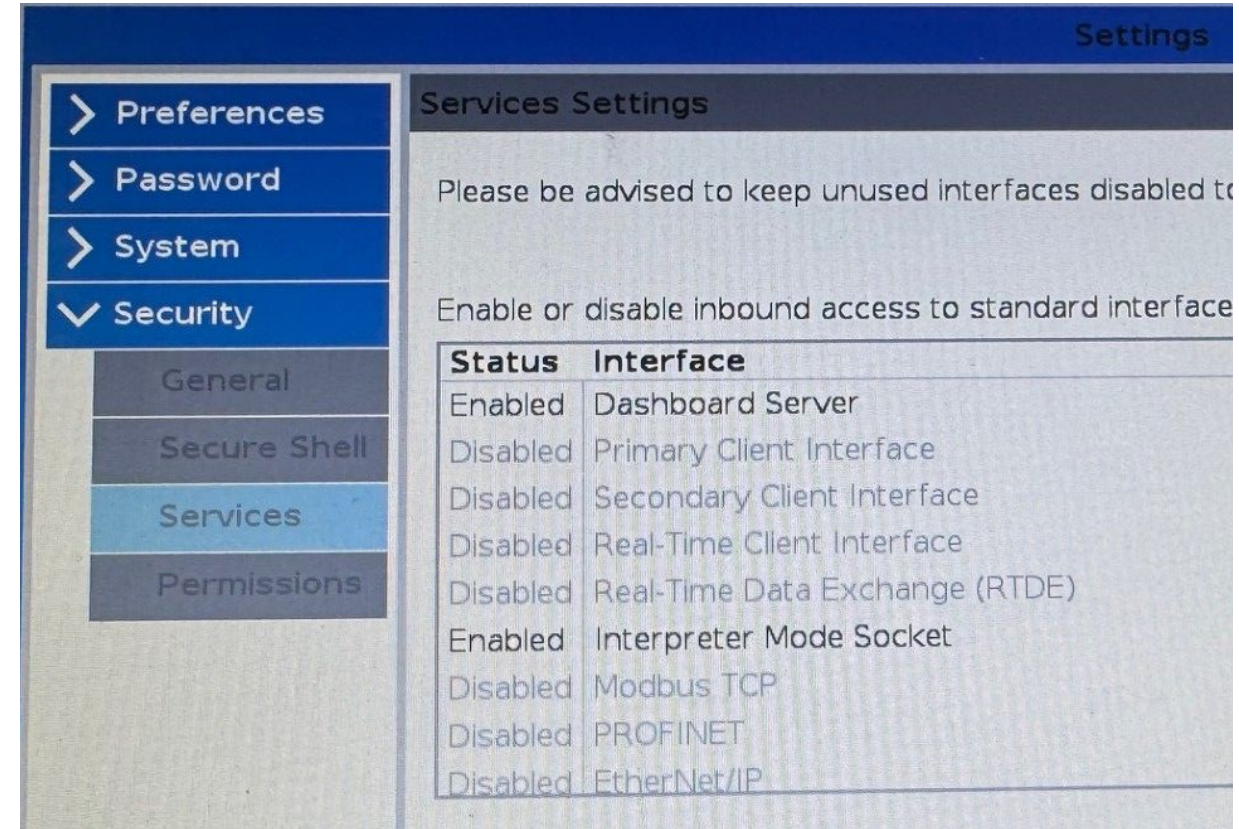


Note: press VSC Enable Button at the start of any process involving the VSC user interface for any changes to take effect

Interpreter/Dashboard Server

Step 2 of 4 - Configure UR Teach Pendant

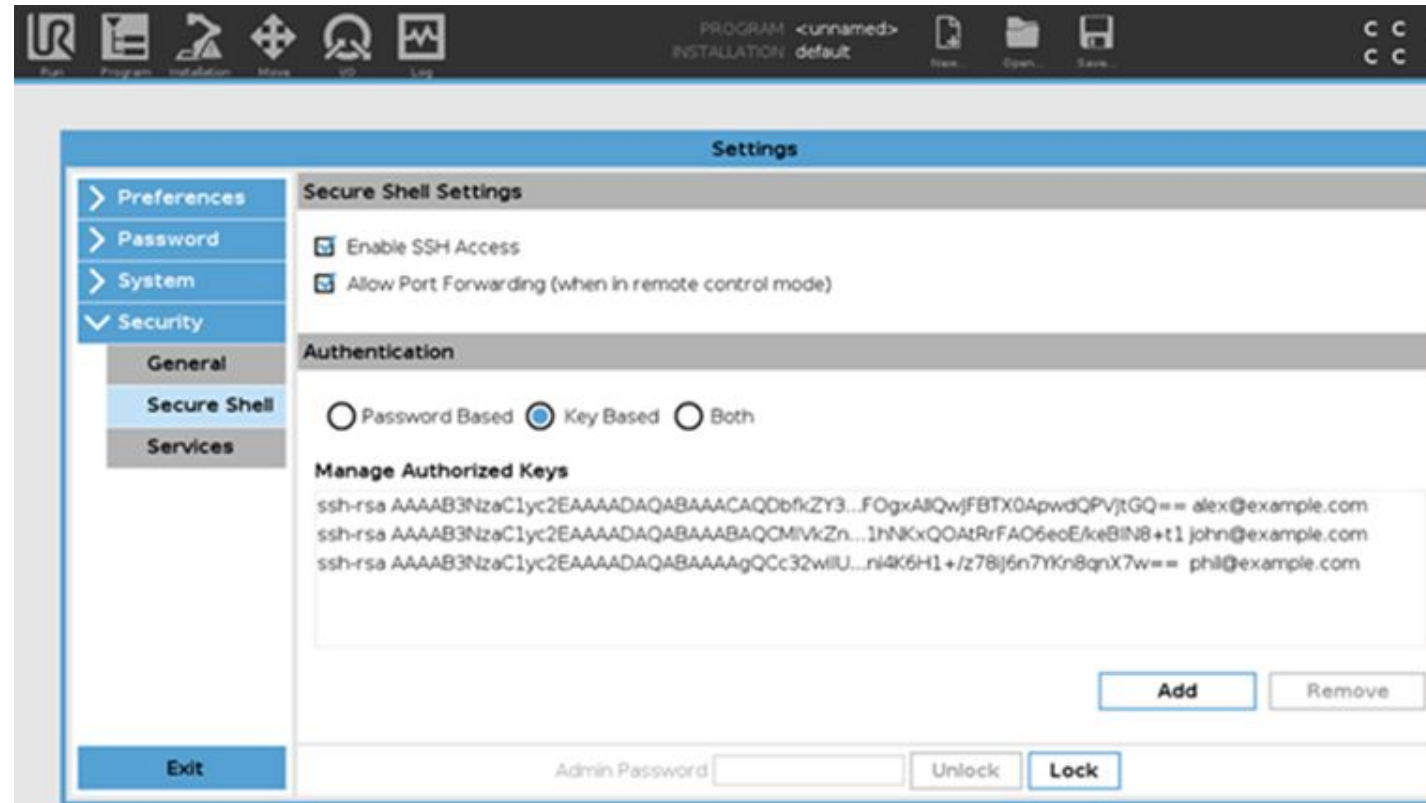
2. On the UR Teach Pendant, change "Services" to Enable Dashboard Server and Interpreter Mode Socket
 - a. With power on, robot startup complete, and ethernet connections complete between the robot and VSC.
 - b. Ensure the robot is in Local Mode
 - c. Press the hamburger button in the upper right corner of the teach pendant.
 - d. **Go to Settings > Security > Services**
 - i. Enter in the Admin Password -> Press Unlock
 - ii. Disable Secondary Client Interface (won't matter if it is enabled)
 - iii. Enable Dashboard Server
 - iv. Enable Interpreter Mode Socket



Interpreter/Dashboard Server

Step 2 of 4 (continued) - Configure UR Teach Pendant

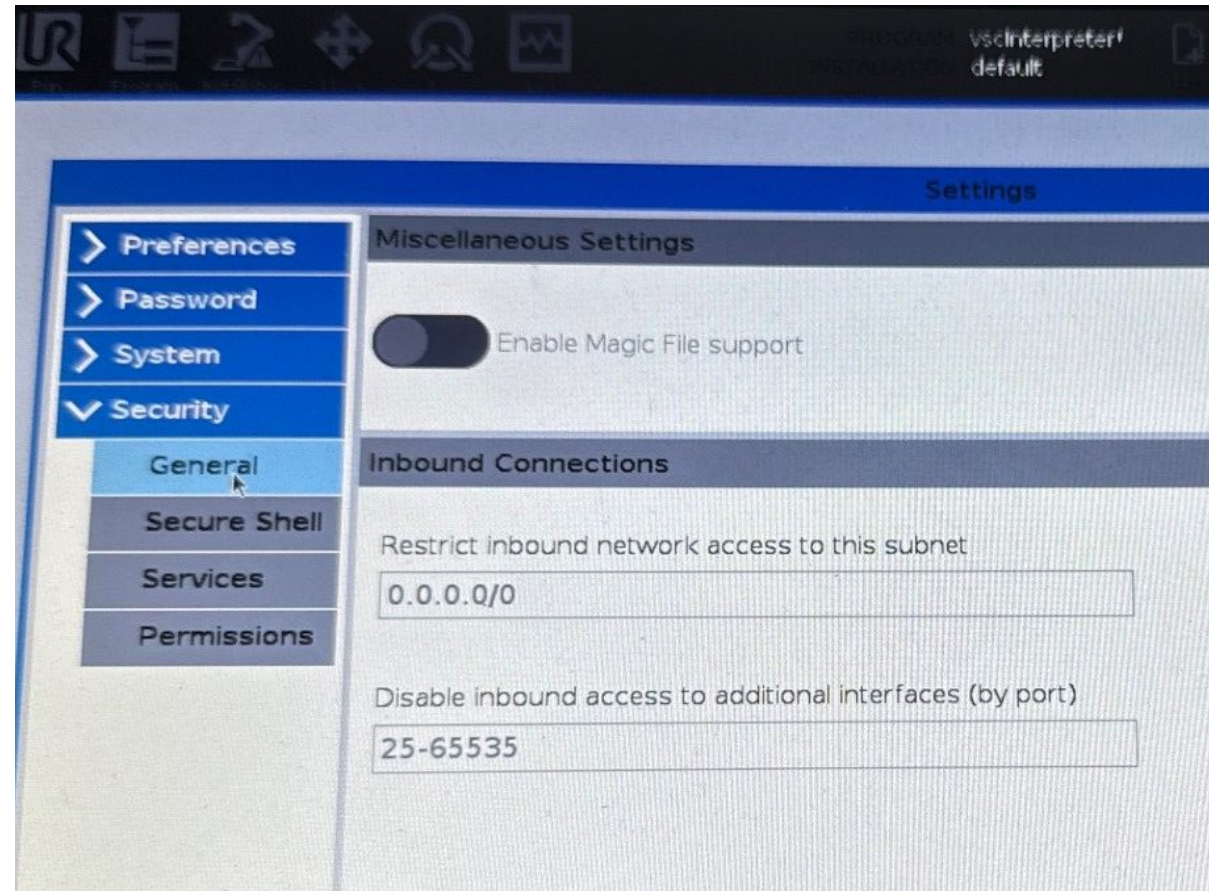
- e. Go to Settings > Security > Secure Shell
 - i. Verify the Enable SSH Access and Allow Port Forwarding are selected
 - ii. Under Authentication make sure the “Key Based” radio button is selected
 - iii. Select the Add button
 - 1. After entering in your Admin Password (password for robots supplied by VersaBuilt is “versabuilt”, otherwise the default password from UR is “easybot”)
 - 2. Navigate to the USB drive folder
 - 3. Select the “robot_id_ed25519.pub” file



Interpreter/Dashboard Server

Step 2 of 4 (continued) - Configure UR Teach Pendant

- f. Go to Settings > Security > General
 - i. Make sure the port selection for Disable inbound access to additional interfaces starts after port 22, the suggested data to enter is **25-65535**, as shown in the image to the right



Interpreter/Dashboard Server

Step 3 of 4 (continued) - Copy program automatically from VSC to UR Controller

3. On the VSC User Interface
 - a. Select the Copy Program Files to UR Robot button on the VSC Settings page under Edit System Settings. This step will write a “**vscInterpreter**” file to the UR Controller.
 - b. It will prompt you to go to the UR Teach Pendant

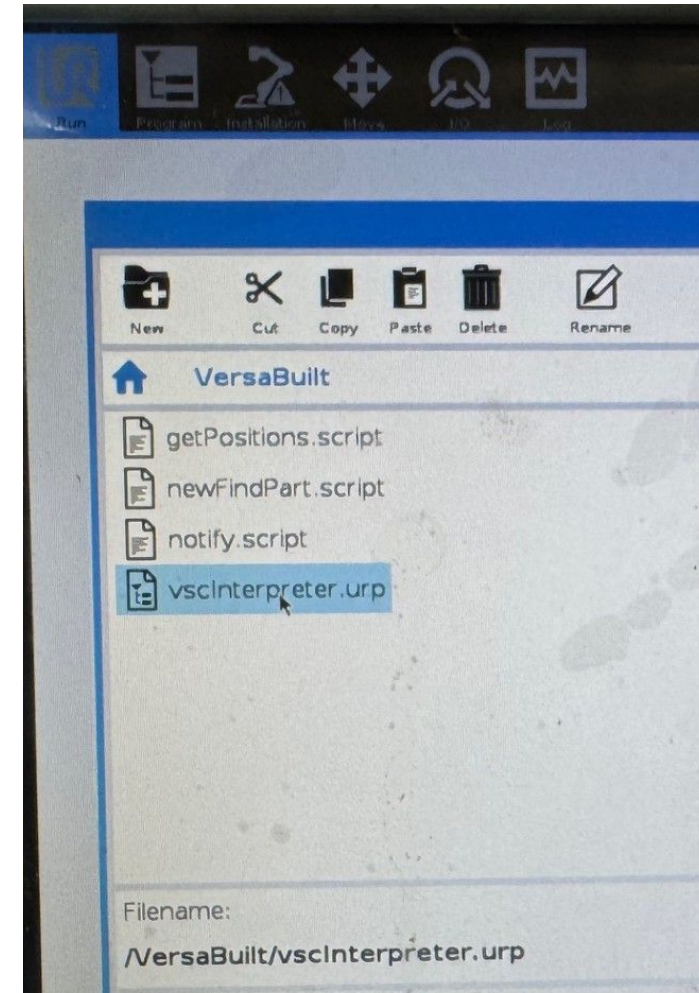


Copy Program Files to UR Robot

Interpreter/Dashboard Server

Step 4 of 4 (continued) - Open, Play, Test, and Save Interpreter file

4. On the UR Teach pendant
 - a. In Local Mode or Manual Mode and open the program vscInterpreter (found in Programs > Home -> VersaBuilt -> vscInterpreter) and Select Open
 - b. You will be prompted to confirm a change to the installation file
 - c. Select the installation file defined by your risk assessment and save the vscInterpreter file on the teach pendant (typically clicking “yes”)
 - d. Press play to verify that the vscInterpreter program runs successfully.
 - e. If there is an asterisk next to the vscInterpreter program name in the navbar (*vscInterpreter), then this means the program is not saved. Press the Save button in the top navigation bar on the teach pendant
 - f. Once confirmed, stop the vscInterpreter program and enter Remote Mode on the teach pendant



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