

RELEASE NOTES FOR PATHPILOT V3.2.1

January 2024

MAJOR ENHANCEMENTS

- Introduced deterministic IK solver for improved accuracy.
- Enhanced RViz 3D robot preview integration for better visualization.
- Resolved jogging issue requiring restart.
- Implemented new subprogram quick buttons for efficiency.

OTHER UPDATES

- Improved error messaging in robot programs for clarity.
- Updated TRPL documentation and addressed various UI bugs and exceptions.
- Enhanced usability features like ESC key program stop and wider ENTER key handling.
- Addressed several software stability issues.
- Added new TRPL commands and features for better programming flexibility.
- Made various UI tweaks related to program warnings and usability.

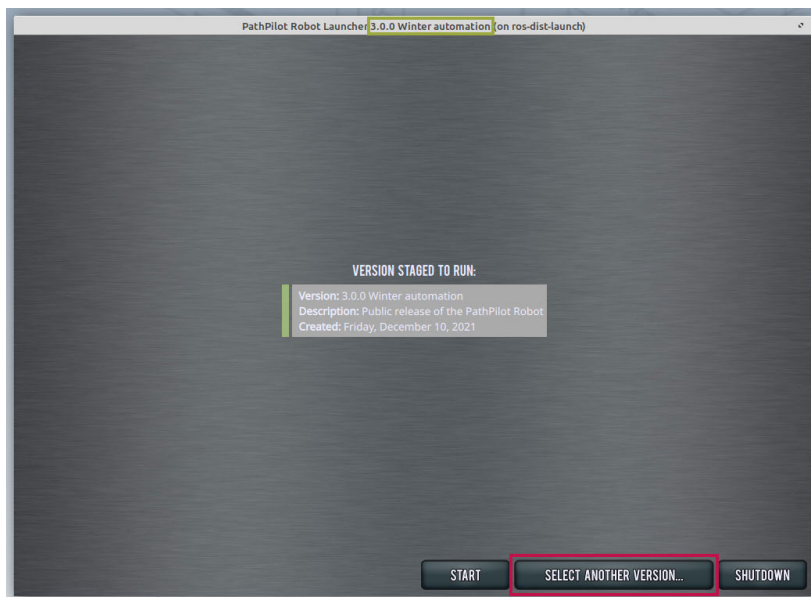
UPDATE THE TORMACH PATHPILOT ROBOT CONTROLLER

Before You Begin

- From the [PathPilot support center](#), download the most recent PathPilot update file. Transfer the update file to a USB drive.
- If the controller doesn't recognize your USB drive, or if you have other problems, go to "Troubleshooting" (page 6) for detailed steps on creating and formatting your drive.

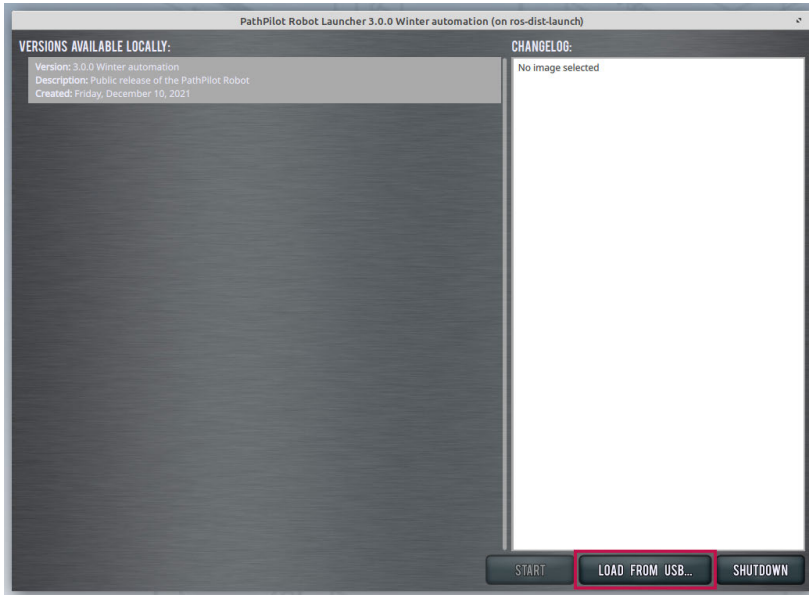
Install an Update File from a USB Drive

1. Insert the USB drive into the USB port on the PathPilot controller.
2. Start the PathPilot Robot Launcher. Take note of the Launcher version in the top bar (for example, **3.0.0**). In most cases, the system starts the latest available version of the Launcher on the system. If the version is already the same as the one to which you want to upgrade, you can skip the following steps.
3. Select **Select Another Version....**



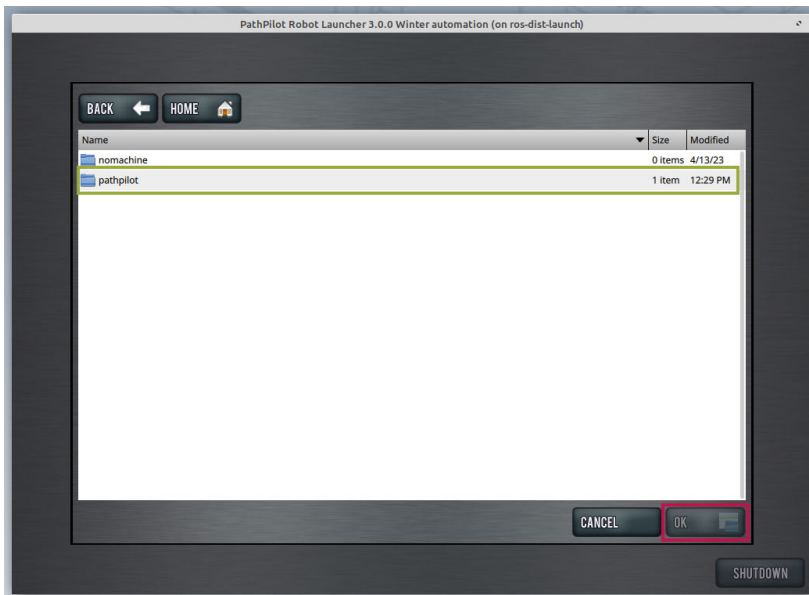
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4. Select Load from USB....



The file selector displays with a base path of `/media`, where attachable drives are mounted by standard.

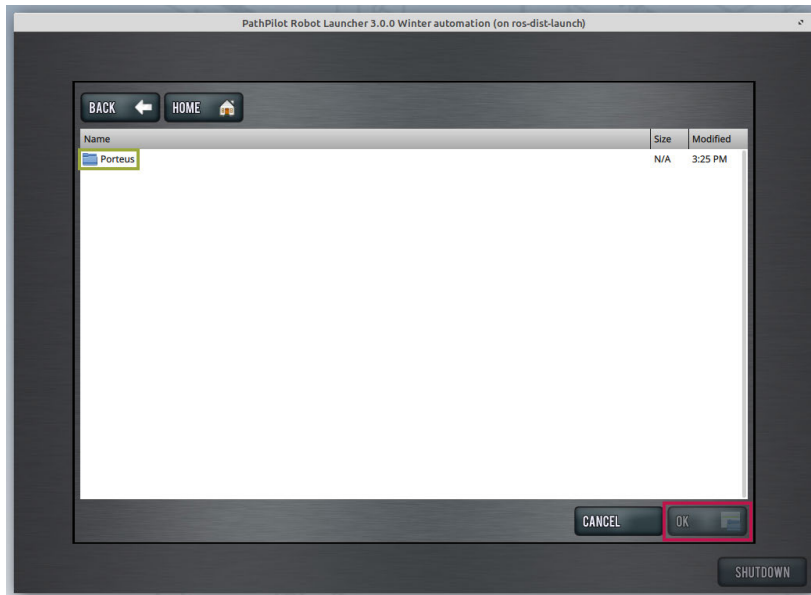
5. Select the folder corresponding to the name of the logged-in user (usually **pathpilot**), and select **OK**.



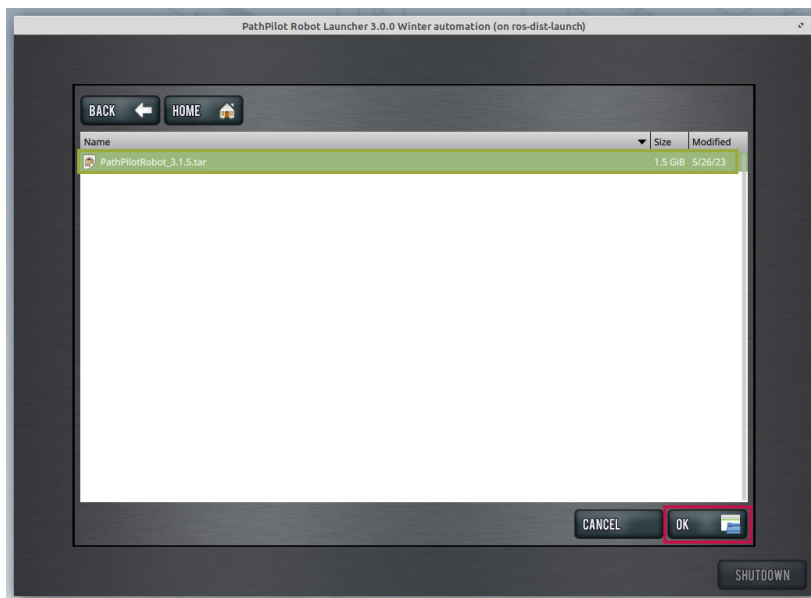
Note: If you've created another user on your controller, it also displays in the file selector. In most cases, only **pathpilot** displays.

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- From the list of drive (partition) labels, select your USB drive, and select **OK**.



- Select the Tormach PathPilot Robot update file. (Only files which end with **.tar** are shown, even if the drive includes other files.) Select **OK** to start the update.



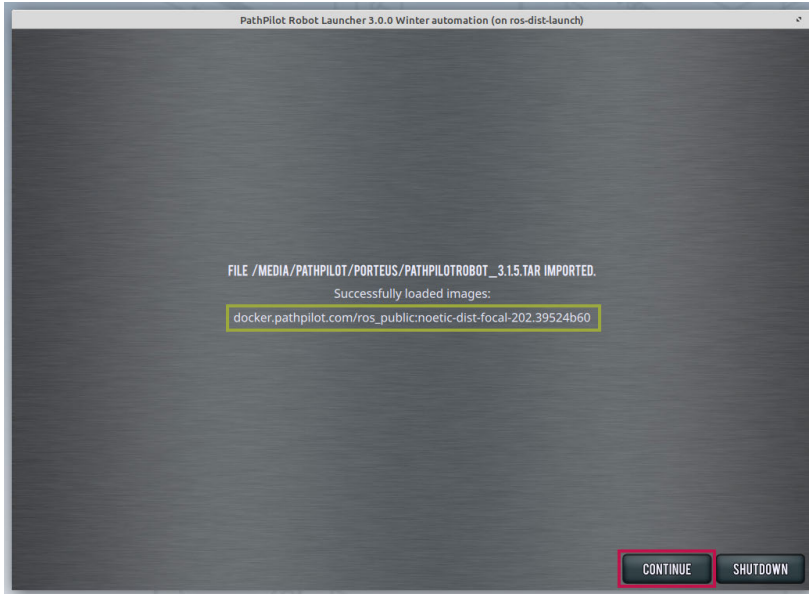
The update starts, which may take several minutes.



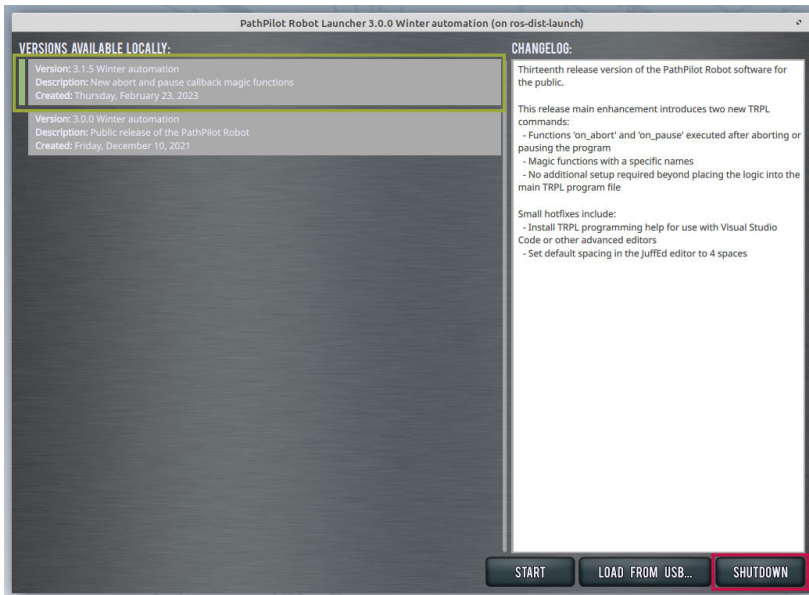
Note: The progress is shown as a percentage loading of each sequential layer, and there are more than 10 layers.

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8. After finishing the loading process, the list of successfully loaded versions displays (along with any possible errors). Select **Continue**.



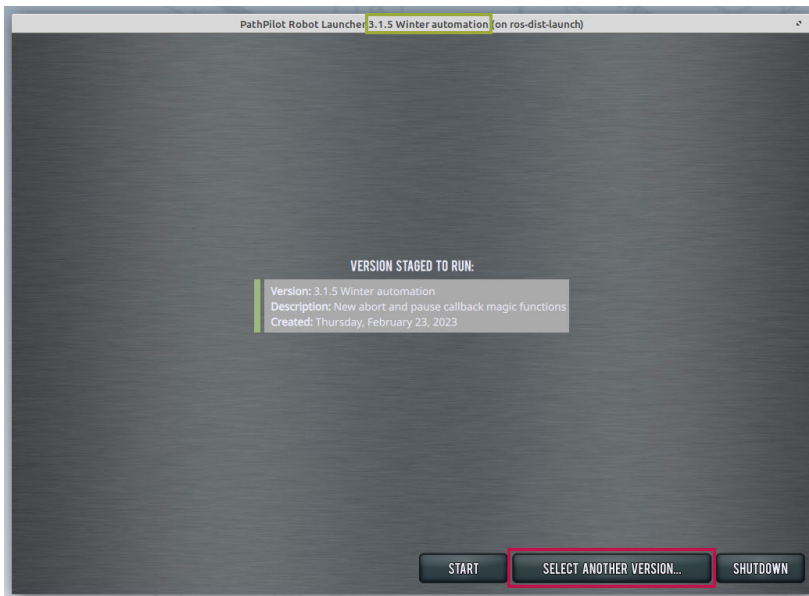
9. The newly loaded version displays in the list of available versions. To ensure that the update installed correctly, select **Shutdown**.



10. From the desktop, select the PathPilot Robot icon to restart PathPilot.

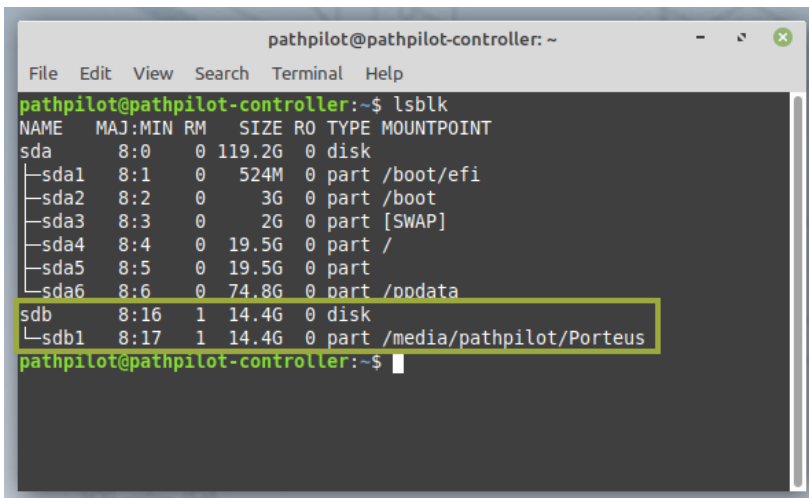
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11. Verify that the version specified in the top bar corresponds to the higher version available (usually the newly updated version). If the version staged to launch is not the one you desire, select **Select another version...** and, from the list, select the correct version.



Troubleshooting

1. To prepare a functional USB drive, insert the drive into the USB port of the PathPilot controller.
2. Open a terminal window and execute the command `lsblk`. From the list of storage devices displayed, note the path of the inserted USB drive.



3. Unmount the mounted partition with the command `sudo umount /dev/sd<XY>`.

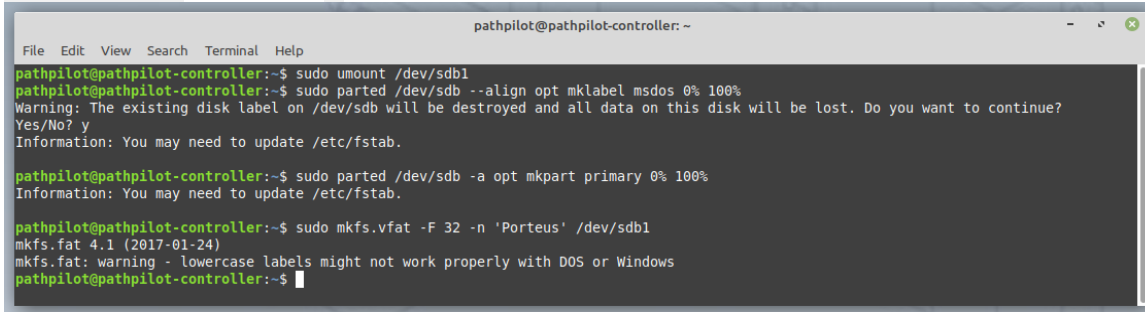


Note: All commands are path specific. The system usually sets the drive on the `/dev/sdb` path, but not always.

4. Create a partition table on the drive with the command `sudo parted /dev/sdb --align opt mklabel msdos 0% 100%`. The program ``parted`` may require interaction — usually, a request for confirmation with `y`.

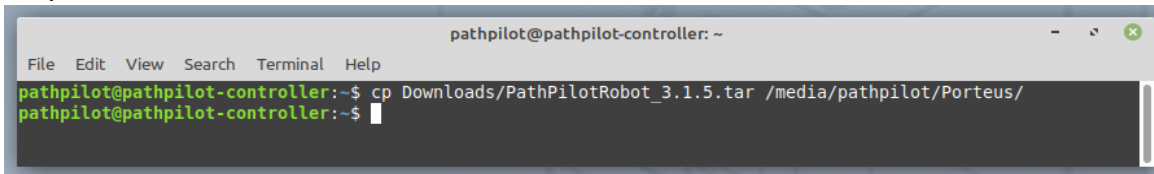
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5. Create a partition with the command `sudo parted /dev/sdb -a opt mkpart primary 0% 100%`.
6. Format the created partition with the command `sudo mkfs.vfat -F 32 -n 'Porteus' /dev/sdb1`. (The flag `n` specifies the label. You may want to choose your own.)



```
pathpilot@pathpilot-controller: ~  
File Edit View Search Terminal Help  
pathpilot@pathpilot-controller:~$ sudo umount /dev/sdb1  
pathpilot@pathpilot-controller:~$ sudo parted /dev/sdb --align opt mklabel msdos 0% 100%  
Warning: The existing disk label on /dev/sdb will be destroyed and all data on this disk will be lost. Do you want to continue?  
Yes/No? y  
Information: You may need to update /etc/fstab.  
pathpilot@pathpilot-controller:~$ sudo parted /dev/sdb -a opt mkpart primary 0% 100%  
Information: You may need to update /etc/fstab.  
pathpilot@pathpilot-controller:~$ sudo mkfs.vfat -F 32 -n 'Porteus' /dev/sdb1  
mkfs.fat 4.1 (2017-01-24)  
mkfs.fat: warning - lowercase labels might not work properly with DOS or Windows  
pathpilot@pathpilot-controller:~$
```

7. Reinsert the USB drive into the USB port. The operating system automatically mounts the partition. You can verify by running the `lsblk` command again.
8. Copy the Tormach PathPilot Robot update file to the drive. You may store the file deeper in the folder structure.
9. If you downloaded the file to a standard location, you can copy the file with command `cp Downloads/PathPilotRobot_3.1.5.tar /media/pathpilot/Porteus`. This process may take a while.



```
pathpilot@pathpilot-controller: ~  
File Edit View Search Terminal Help  
pathpilot@pathpilot-controller:~$ cp Downloads/PathPilotRobot_3.1.5.tar /media/pathpilot/Porteus/  
pathpilot@pathpilot-controller:~$
```