



KUKA

Installation Instructions Firmware v2.00 for KUKA youBot

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A. Requirements

This manual describes how to upgrade the firmware of axis controllers on the KUKA youBot to version v2.00. For a successful upgrade you will need:

- a KUKA youBot in any configuration (only arm, only platform, platform with one arm)
- the controller hardware can be of version 174/841 or 1632/1610
- the upgradetool (firmware binaries are included) from www.kuka-labs-forum.com
- a PC (or the internal youBot PC) with Ubuntu Linux 12.04 (Precise Pangolin)
- this document

B. Safety Indication

Please consider the following instructions to not harm the youBot while running the upgradetool:

- Only use the upgradetool for its dedicated purpose: to upgrade youBot firmware
- Make sure there is no other EtherCAT device from other manufacturers connected to the youBot
- **After firmware upgrade check and use your youBot applications and other related software with care!**
- Check parameter settings and configuration of your applications.
- The upgradetool will write new parameters to the controller. Please make sure that you store any other parameter configurations before upgrading.
- If you have platform with two arms, run the upgradetool for the platform with one arm, then run it again for the second arm separately.

C. Upgrade procedure

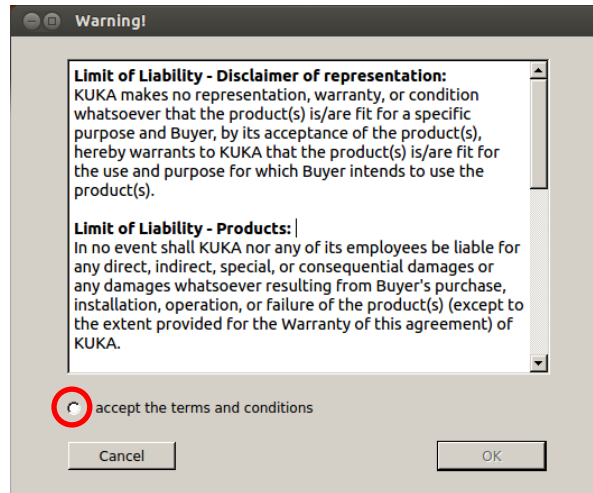
Please consider the following instructions to not harm the youBot while running the Upgradetool. Please do not quit or restart the Upgradetool while running the upgrade process:

1. Check if all motors of platform and arm are switched on. Ensure connection to PC containing the Upgradetool.
2. Extract the archive `UpgradetoolFW200.zip` containing the Upgradetool
3. Open a terminal with `Alt+Strg+T` or via the Unity Launcher
4. Type: `cd <path-to-Upgradetool>`
5. Type: `sudo chmod u+x UpgradetoolFW200`
6. Type: `sudo ./UpgradetoolFW200`

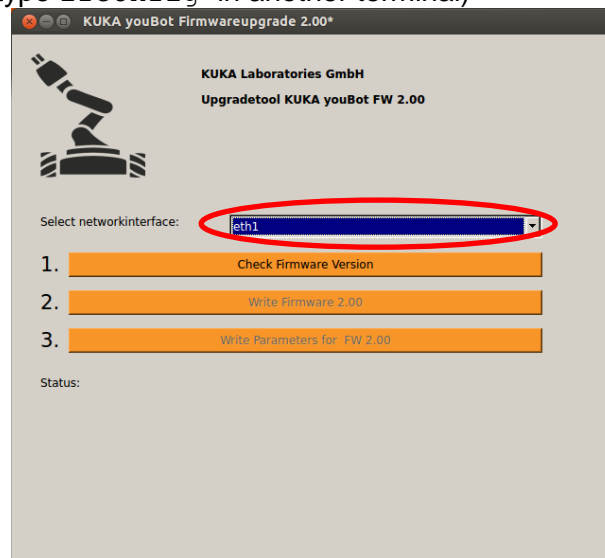


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7. Please accept the terms and conditions



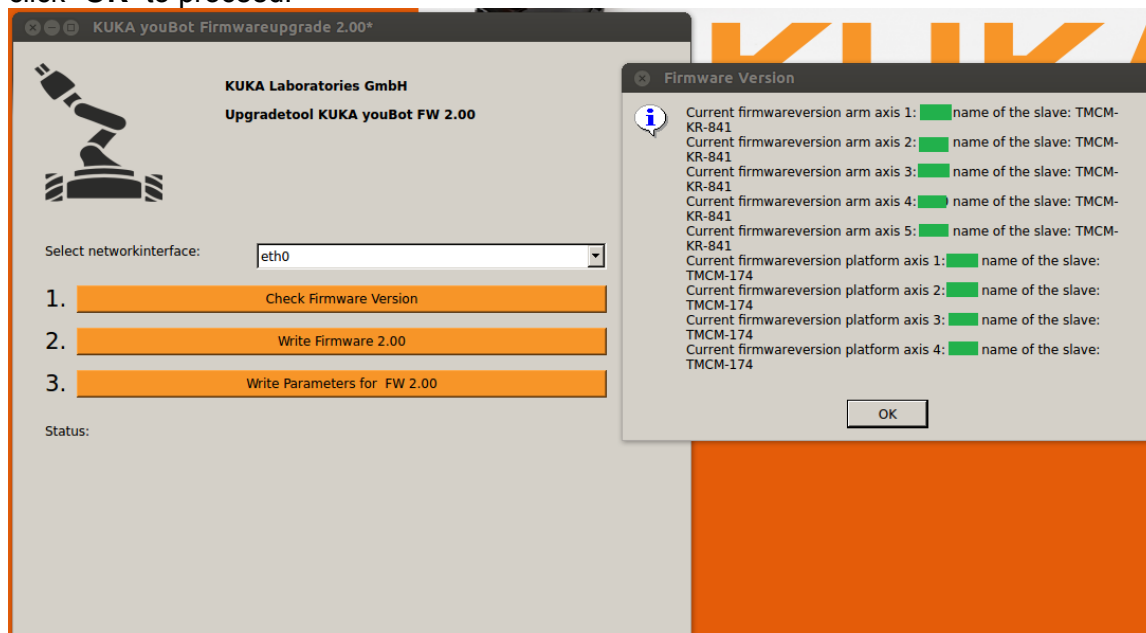
8. In the new appearing window select the ethernet device where you plugged the youBot. (To check you can type `ifconfig` in another terminal)





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9. Press button “**Ceck Version**”. You should see all controller listed for arm and platform in a popup window (in our example axis controllers are TMCM-KR-841(arm) and TMCM-174(platform); instead of green rectangles you should see your current firmware version). If you connected only the platform or arm you should see just these slaves. If you see something else, switch off the motors and restart the procedure. Otherwise click “**OK**” to proceed.

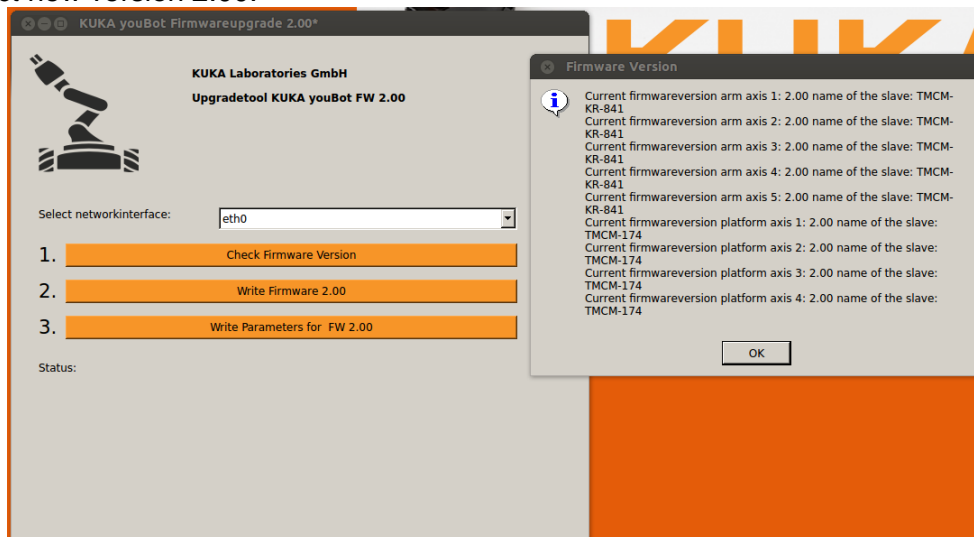


10. Press button “**Write Firmware 2.00**” and confirm the write process with “**yes**”.
11. Check terminal output: (it should be successful for every axis! If not restart the whole procedure!)
- ```
write firmware to arm axis 1
write successful
...
```
12. Switch off youBot motors completely then restart motors. **Please keep the Upgradetool running! Do not restart the Upgradetool!**



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13. Press again the button “**Check Version**”. You should see all controller listed with the correct new version 2.00.



14. Press button “**Write Parameters**”.

15. Check terminal output:

```
Write parameter
parameters are written
arm process terminated
parameters are written
process terminated
```

## D. Troubleshooting

In case of occurring errors, please do the following:

- If you do not get “**write successful**” for each axis, restart the Upgradetool.
- If you see “**Not all slaves reached operational state**”, restart the Upgradetool
- If you see “no slaves found”, please check if you have correctly plugged the youBot arm and/or platform
- If you got an misordered slave list, restart the procedure