Table of Contents

1. Driving of willy

1.1. Steps for autonomous driving

These steps will start the autonomous driving of willy. Do you want to drive manually by using the keyboard? Then take a look at the steps for manual driving underneath.

1. **Deploy the brakes**
   To start Willy, the brakes need to be deployed. Otherwise, Willy will not be able to drive. To deploy the brakes you have to use the levers on the front of the motors. You can check if the brakes are deployed by trying to push Willy. The brakes are applied when the wheels can't rotate anymore.
2. **Turn the power on**
   Willy needs power to be able to operate. Make sure the power levers on the side of Willy are both turned on (under the voltage display).
3. **Turn the motor controller off**
   Willy cannot start when the motors are turned on. To turn the motor controller off, use the switch on the bottom of the pc case. (or the emergency button for convenience)
4. **Start Willy by running the startup command**
   Willy is now able to start. You can easily start willy by running our startup package. To run this package, navigate to the following directory:
   `/home/willy/Documents/WTGD/willy`
   Run the following command to build the package:
   `catkin_make`
   Then make the terminal point to the source code by running the following command:
   `source devel/setup.bash`
   Finally run the package using the following command:
   `roslaunch willy_navigation willy_navigation.launch`
   Willy will now start the software and hardware to start the autonomous driving project.

Do not forget to release the emergency stop when the steps above are finished. Otherwise willy will not drive.

1.2. Steps for manual driving

These steps are optional. Only execute the following steps if you want to drive Willy manually.

1. **Deploy the brakes**
   To start Willy, the brakes need to be deployed. Otherwise, Willy will not be able to drive. To deploy the brakes you have to use the levers on the front of the motors. You can check if the brakes are deployed by trying to push Willy. The brakes are appled when the wheels can't rotate anymore.
2. **Turn the power on**
   Willy needs power to be able to operate. Make sure the power levers on the side of Willy are both turned on (under the voltage display).
3. **Turn the motor controller off**
   Willy cannot start when the motors are turned on. To turn the motor controller off, use the switch on the bottom of the pc case. (or the emergency button for convenience)
4. **Start Willy by running the startup command**
   Willy is now able to start. You can easily start willy by running our startup package. To run this package, navigate to the following directory:
   `/home/willy/Documents/WTGD/willy`

Run the following command to build the package:
`catkin_make`
Then make the terminal point to the source code by running the following command:
`source devel/setup.bash`
Finally run the package using the following command:
`rosrun driving_willy main`
Willy will now start the software and hardware to start the manual driving project.

Do not forget to release the emergency stop when the steps above are finished. Otherwise willy will not drive.

Keys for the control of Willy

```
Q -> Stop moving
```

```
W -> Move forward
```

```
A -> Move left
```

```
S -> Move backward
```

```
D -> Move right
```

2. Remote

2.1. Setup Wifi connection

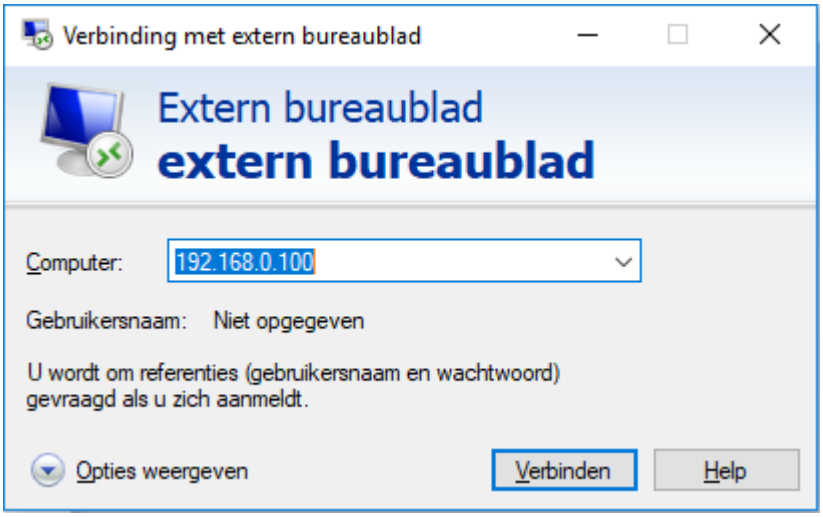
Before any form of connection can be realized, a wireless connection is required. When the power switch is turned on, the router will setup a wifi access point. Connection with the access point can be set with the following data.

SSID: Willy WPA2-password: See password file.

2.2. Remote Desktop connection

If a wifi connection is established. A RDP connection can be realized. The following working method applies to a Windows environment.

Start → Run → MSTSC → 192.168.0.100 0 → Connect

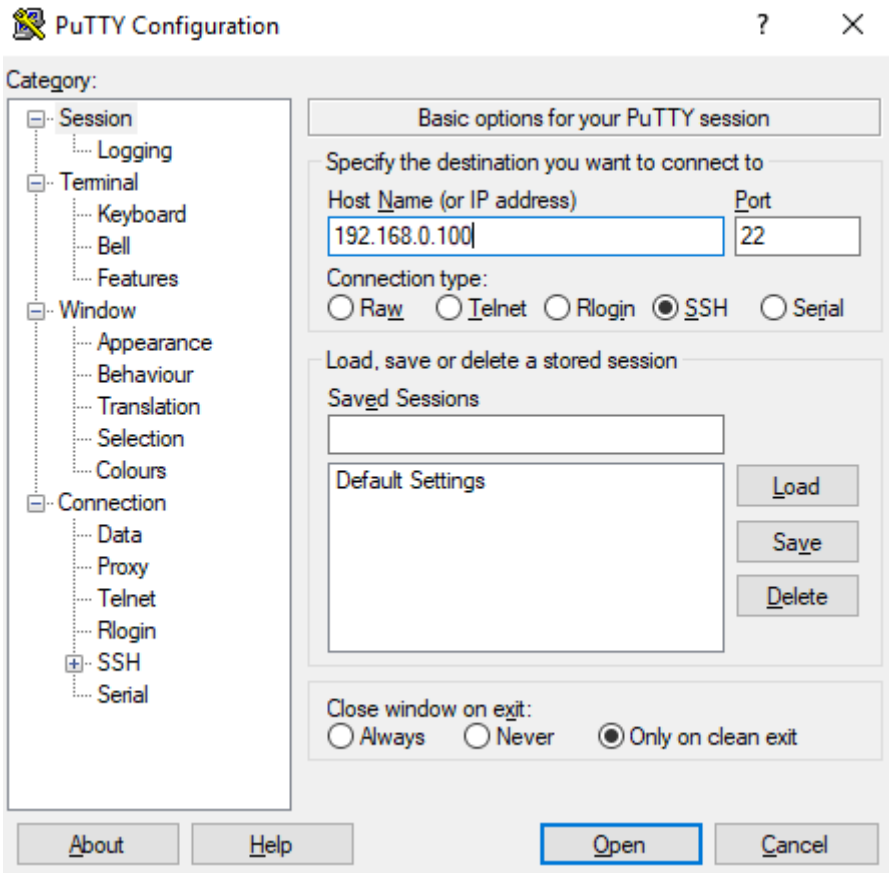


Local login credentials can be used when logging in.

2.3. SSH

If a wifi connection is established. An SSH connection can be realized. SSH can be setup through a SSH client such as 'Putty'. The default port 22 is required with the IP of '192.168.0.100'. See the screenshot below for details.

Local login credentials can be used when logging in.



Welcome

Project Willy

- Willy
- Publicity
- Sponsors

Startup Willy

- Driving Willy
- Remote
- Willy Web

Configuration

- GIT Setup
- Ubuntu
- Remote
- Wiki

ROS

- Introduction to ROS
- Navigation

Technical

- Development Guide

3. Willy-Web

3.1. Setup Wifi connection

Before any form of connection can be realized, a wireless connection is required. When the power

switch is turned on, the router will setup a wifi access point. Connection with the access point can be set with the following data.

SSID: Willy WPA2-password: See password file.

3.2. Web platform

Visit http://192.168.0.100 in your browser. Login using the password found in the password file to authenticate. After this authentication you can enter your name and start using the platform.