

# FRC Yazılımı 101

*FRC YAZILIMCISININ EL KİTABI*

# İçerik

- **Giriş:**

*WPILib Kavramı – Tarihi – Java ve C++*

- **Toolar:**

*WPILib IDE – REV Client – Phoenix Tuner – NI – Driver Station – Git*

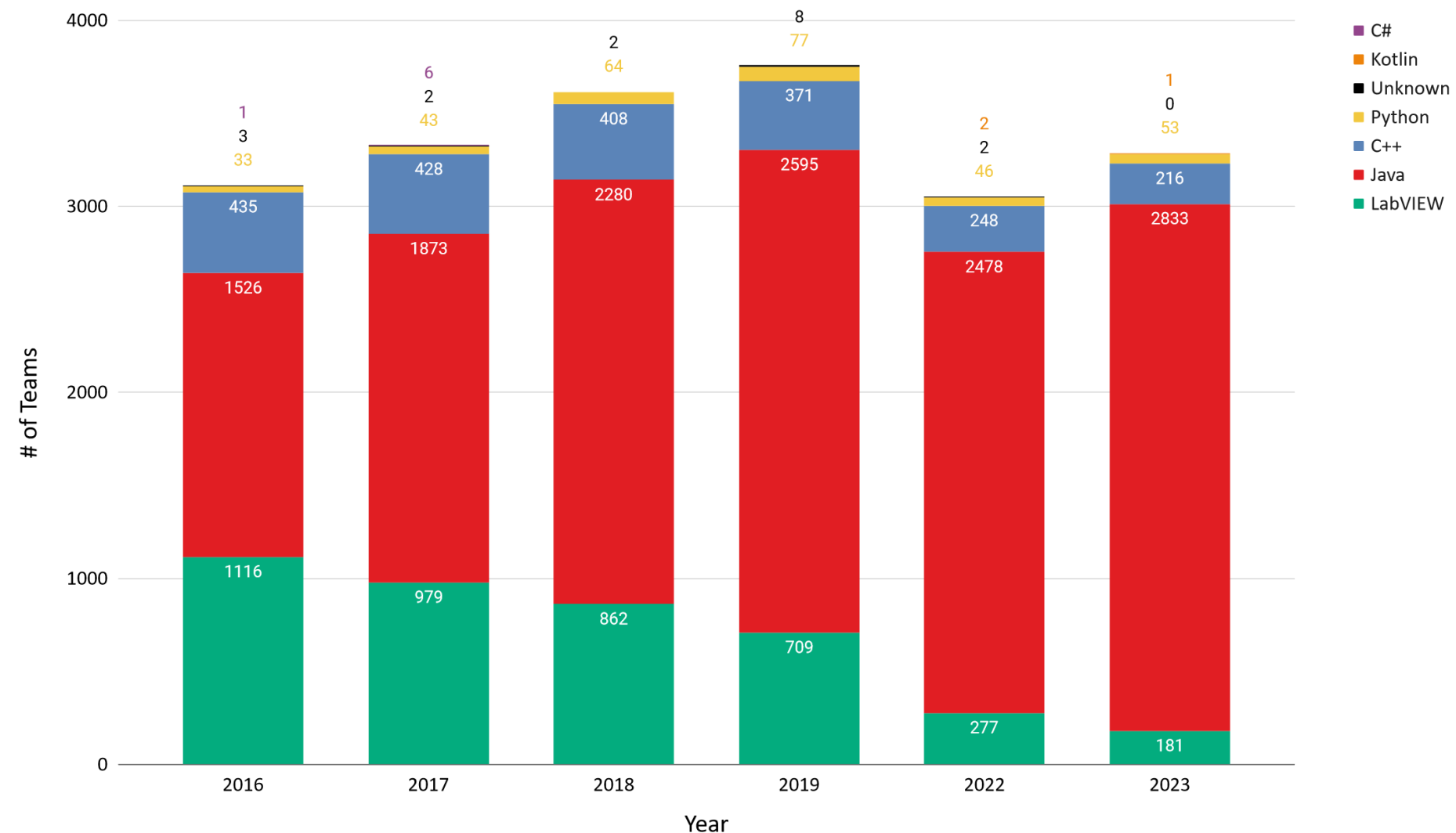
- **Programlamak:**

*Proje Oluşturma – Dependency – Coding Session*

# WPILib Nedir

- Bir Framework
- Worcester Polytechnic 2005
- cRIO 2009
- C++, Java ve LabVIEW

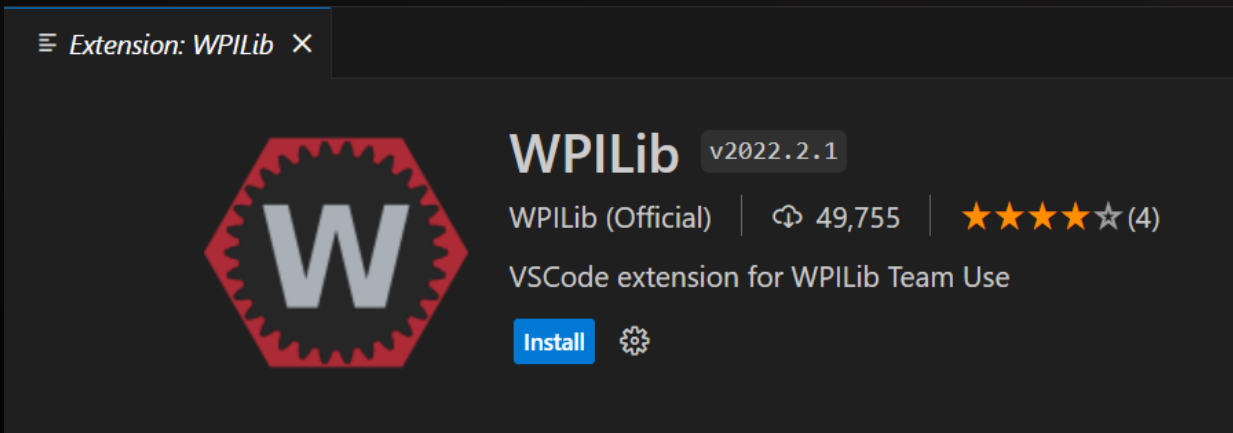
FRC Programming Language Usage



# Toollar

# WPILib IDE

- IDE Kavramı
- Resmi Destek
  - Windows 10/11 x64
  - Ubuntu 22.04
  - macOS 11>
- VSCode Extension
- Yıllık Sürümler



## Downloading

WPILib Installer

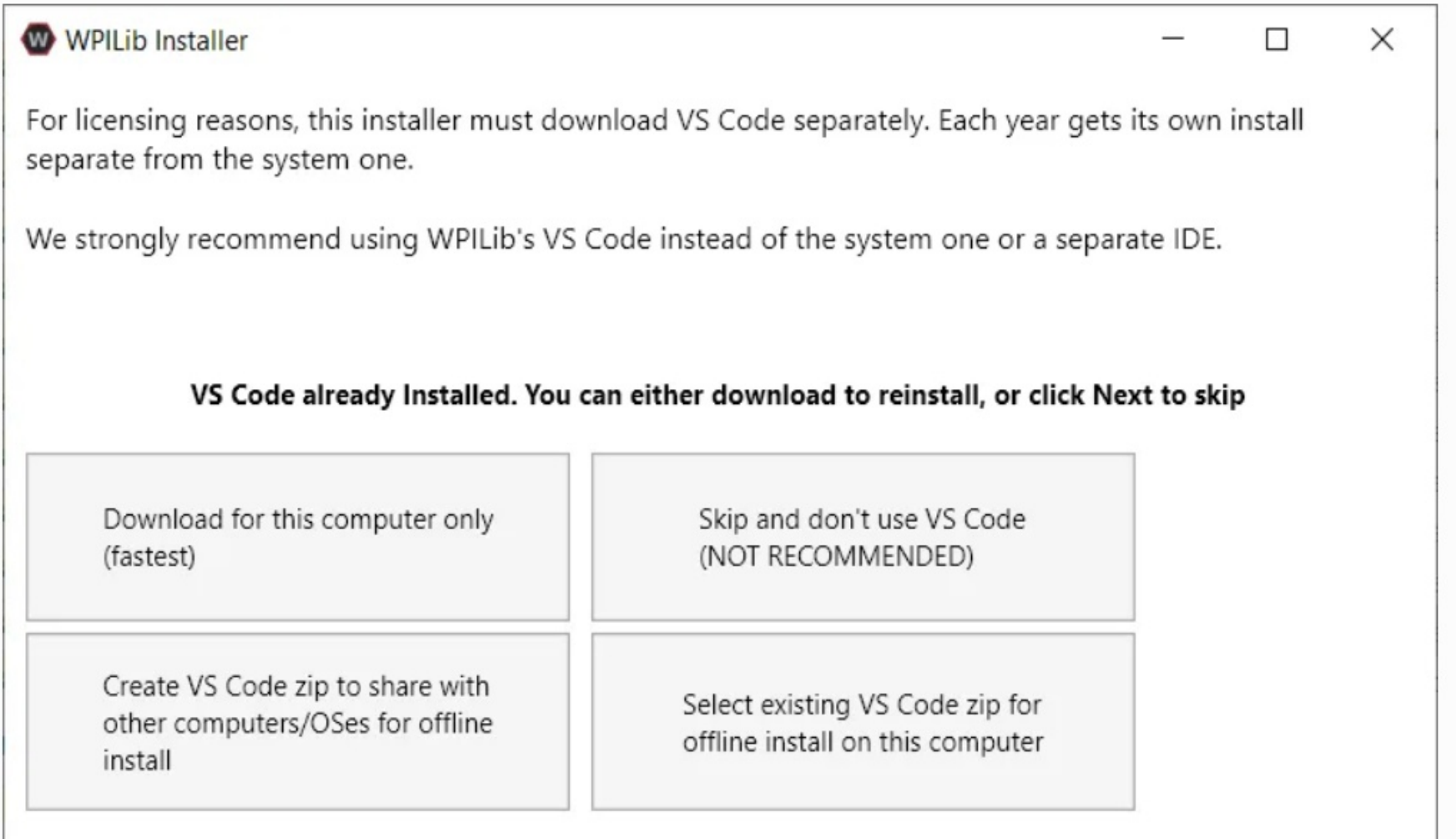
WPILib 2023.4.3 Release - March 29, 2023

Downloads

Downloads for other platforms

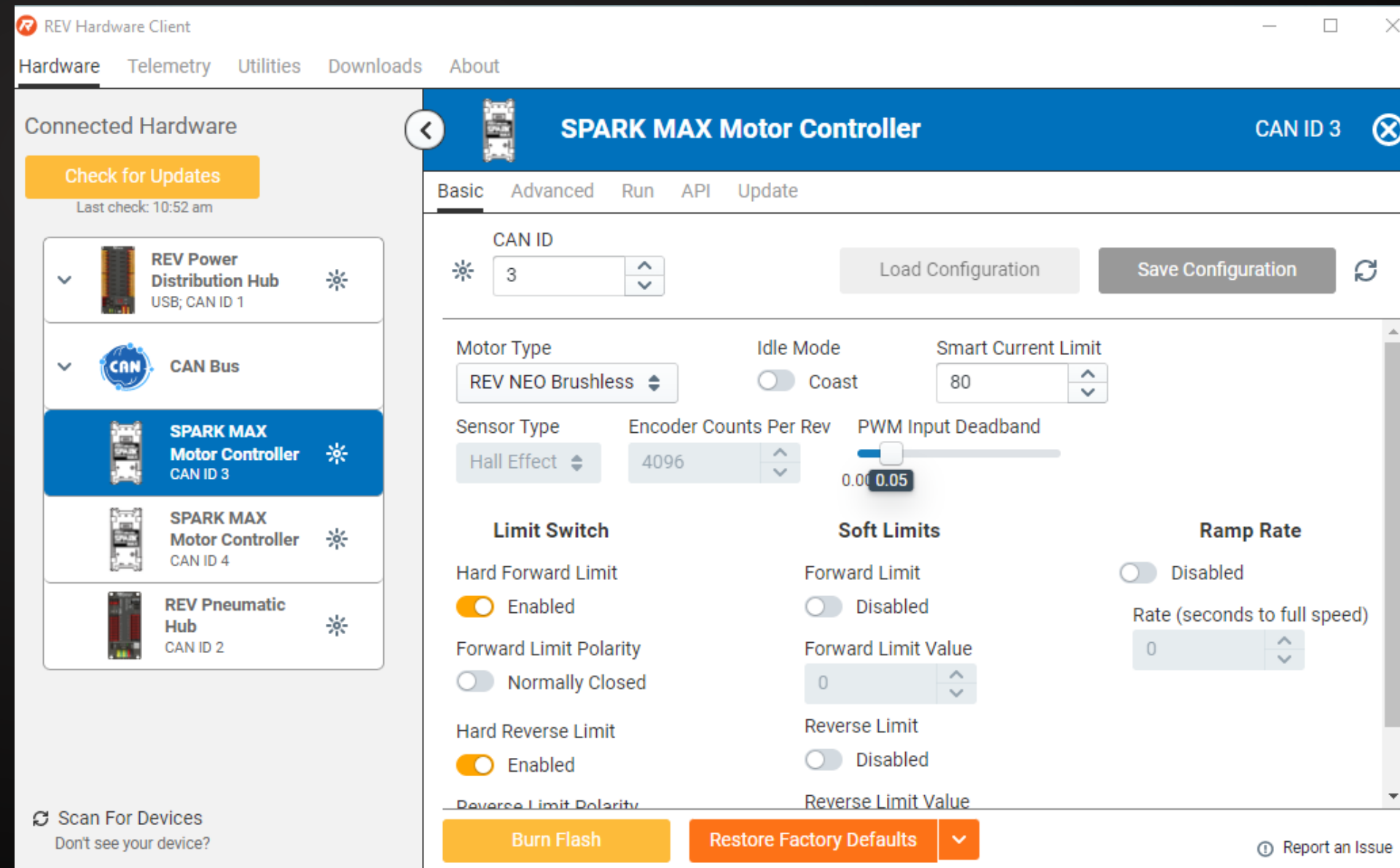
Release Notes

You can download the latest release of the installer from [GitHub](#).



# REV Hardware Client

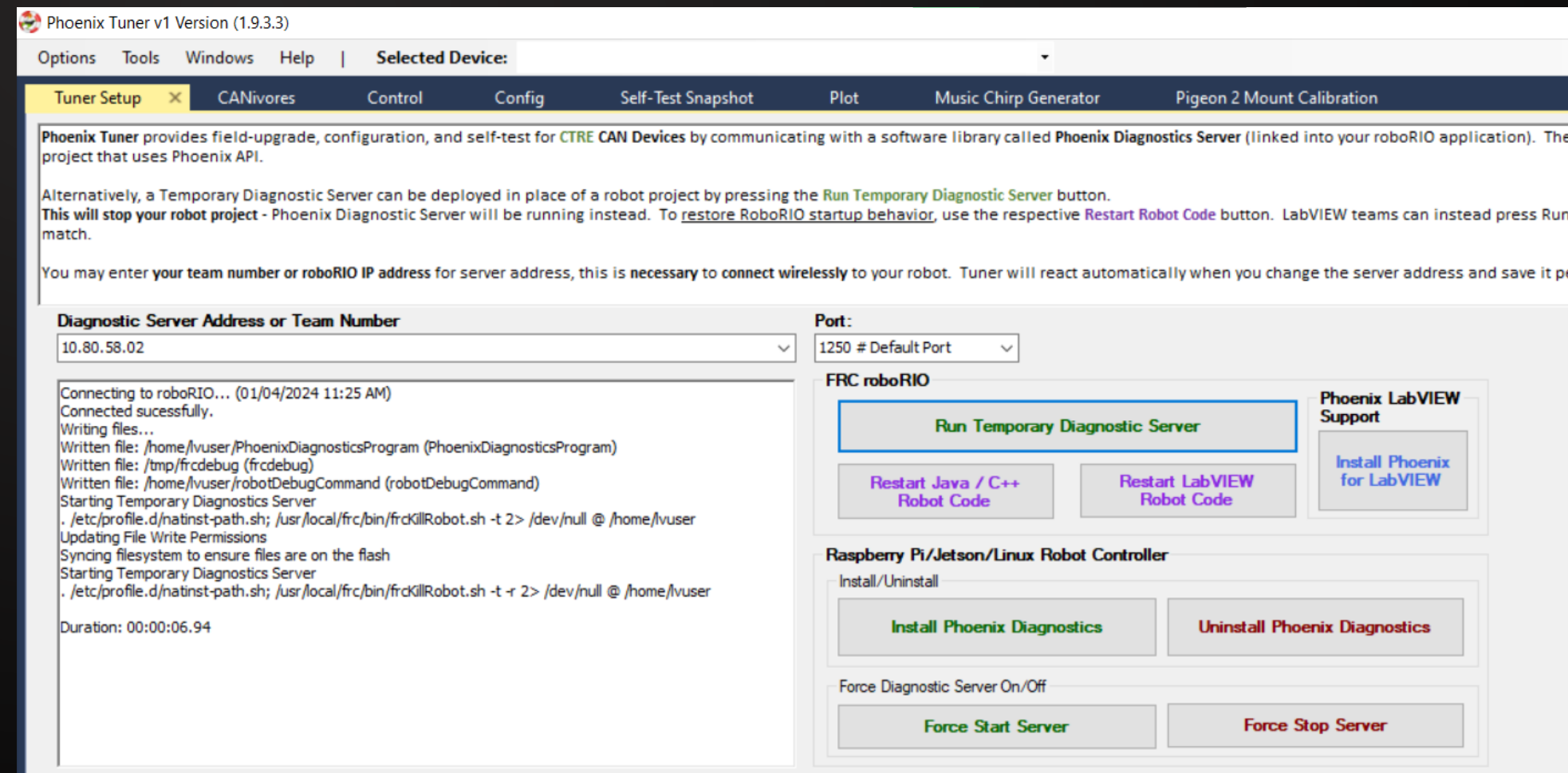
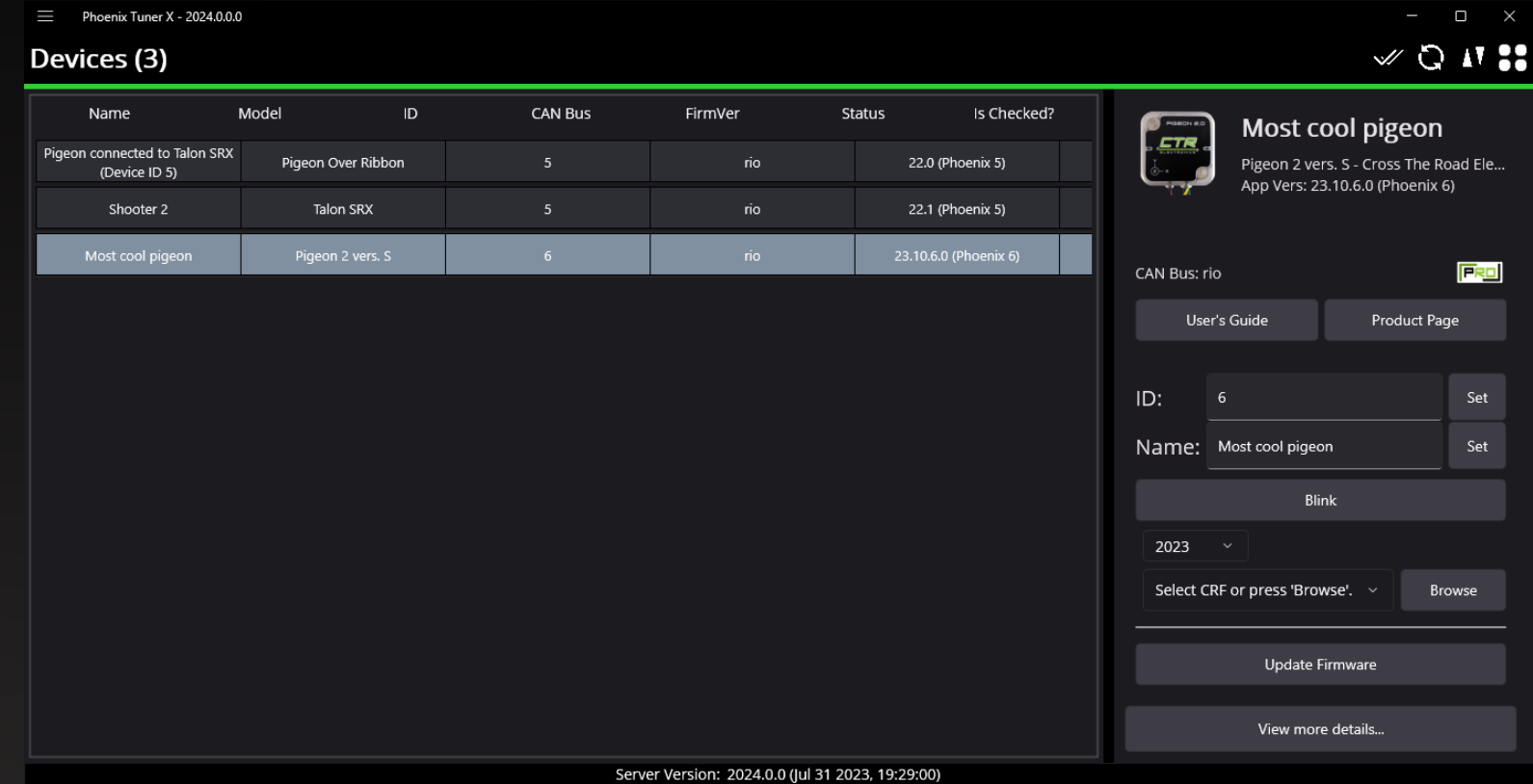
- FTC ve FRC
- REV Ürünleri
  - Control Hub
  - Spark Max
  - Power Distribution
  - Pneumatic Hub
- Update & Detection
- Config





# Phoenix Tuner X

- Benzer işlevler
- CTRE ve bazı Ürünler
  - Talon
  - Victor
  - CIM ve Falcon
- V1 ve X Farkları



# Radio Configuration Tool

- Kablosuz ve Kablolu bağlantı
- Yarışma alanında radyo konfigürasyonu

FRC Radio Configuration Utility

File Tools Help


**Team Number:**  **Robot Name:**

**WPA Key:**  **Firewall:** ☐

**Radio:**  **BW Limit:** ☒

**Mode:**  **Load Firmware**

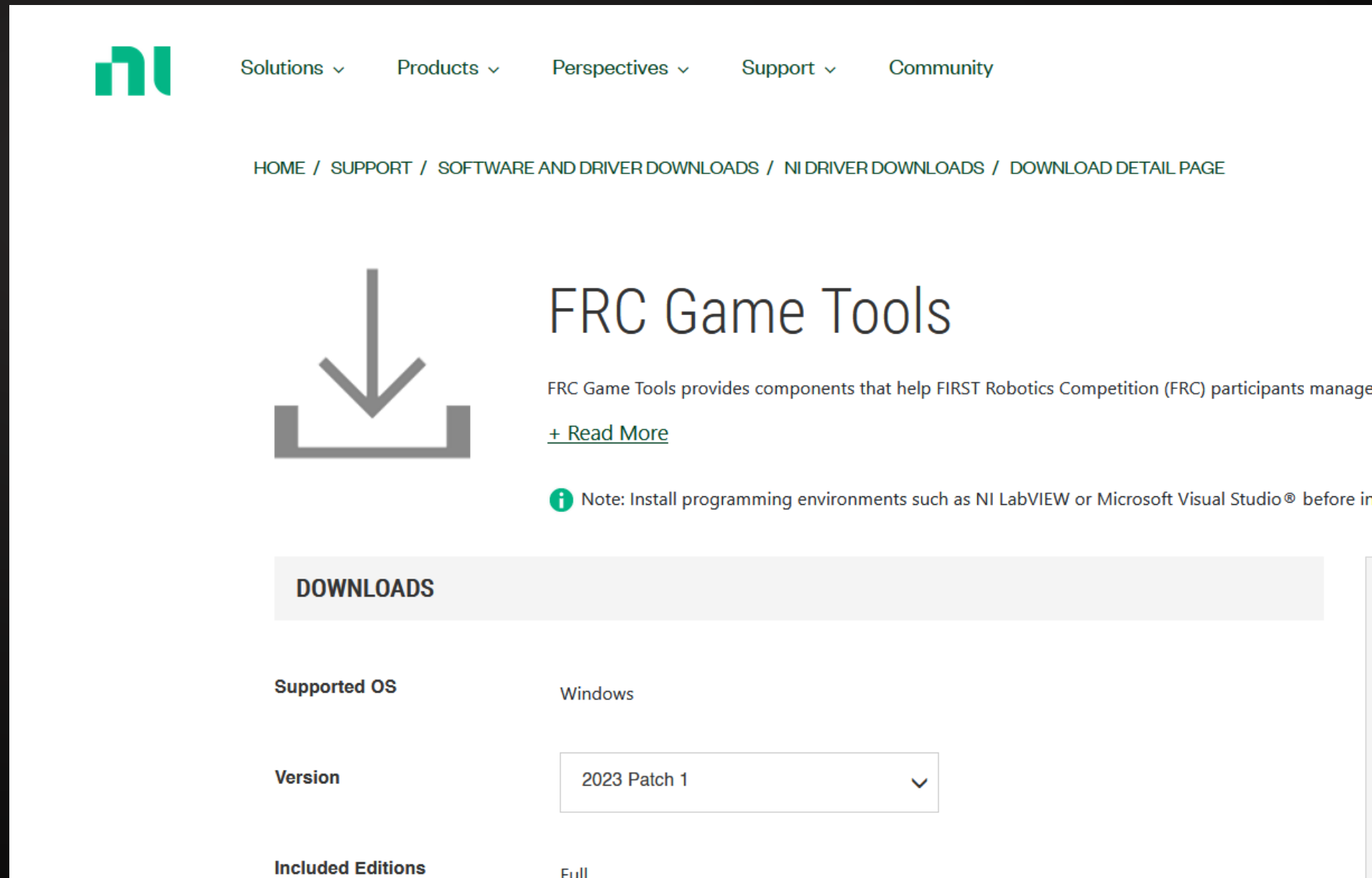
**Configure**





# FRC Game Tools (NI)


- Reimage Tool
- Driver Station



The screenshot shows the NI website's download page for FRC Game Tools. The page features the NI logo, navigation links for Solutions, Products, Perspectives, Support, and Community, and a breadcrumb trail: HOME / SUPPORT / SOFTWARE AND DRIVER DOWNLOADS / NI DRIVER DOWNLOADS / DOWNLOAD DETAIL PAGE. A large download icon is displayed next to the title 'FRC Game Tools'. Below the title, a brief description states: 'FRC Game Tools provides components that help FIRST Robotics Competition (FRC) participants manage...'. A '+ Read More' link is provided. A note with an information icon states: 'Note: Install programming environments such as NI LabVIEW or Microsoft Visual Studio® before installing FRC Game Tools'. The 'DOWNLOADS' section is partially visible, showing 'Supported OS' as Windows, 'Version' as 2023 Patch 1 (with a dropdown arrow), and 'Included Editions' as Full.


ni Solutions ▾ Products ▾ Perspectives ▾ Support ▾ Community

HOME / SUPPORT / SOFTWARE AND DRIVER DOWNLOADS / NI DRIVER DOWNLOADS / DOWNLOAD DETAIL PAGE

 FRC Game Tools

FRC Game Tools provides components that help FIRST Robotics Competition (FRC) participants manage...

[+ Read More](#)

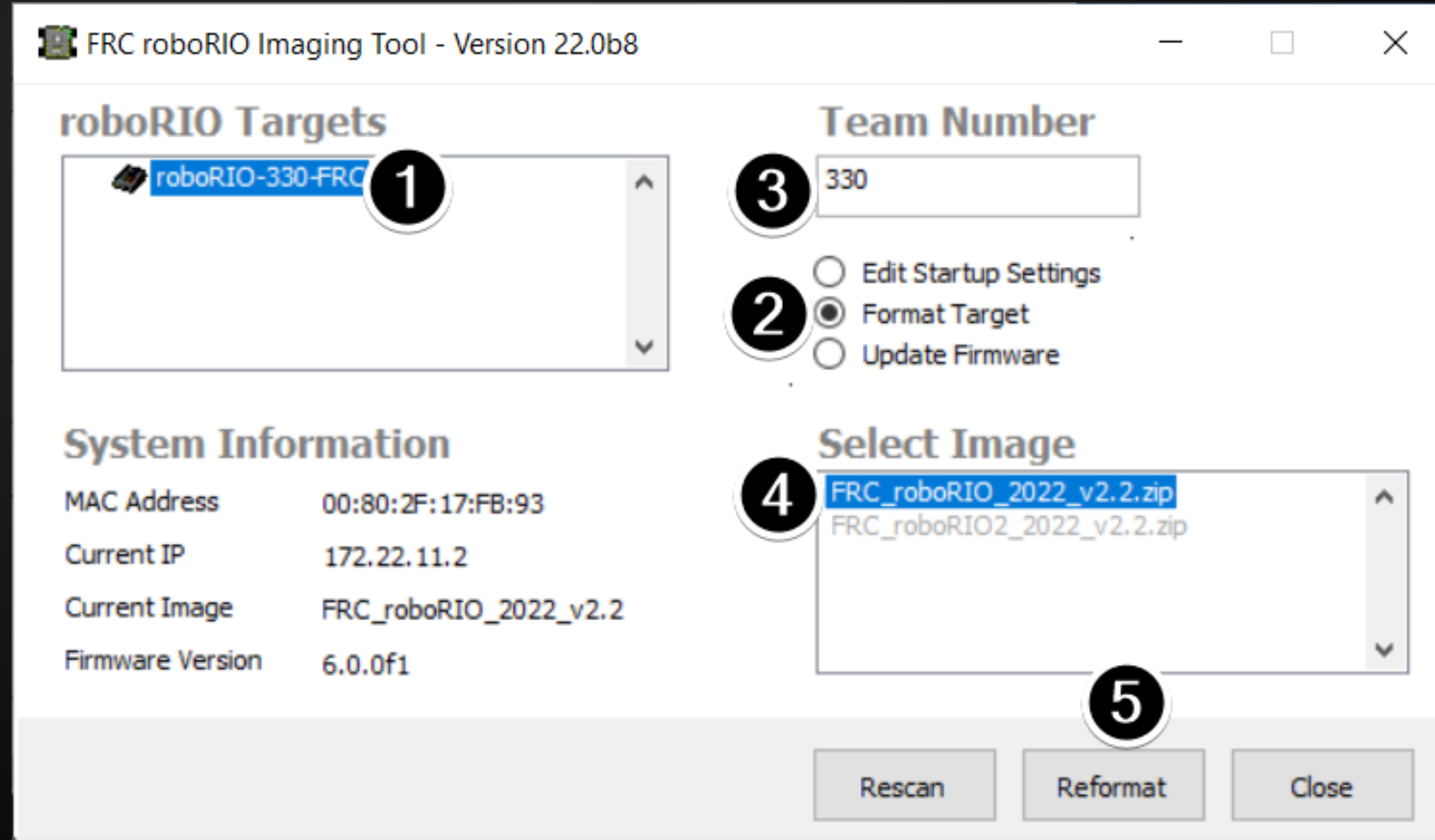
 Note: Install programming environments such as NI LabVIEW or Microsoft Visual Studio® before installing FRC Game Tools

**DOWNLOADS**

Supported OS	Windows
Version	2023 Patch 1 ▾
Included Editions	Full

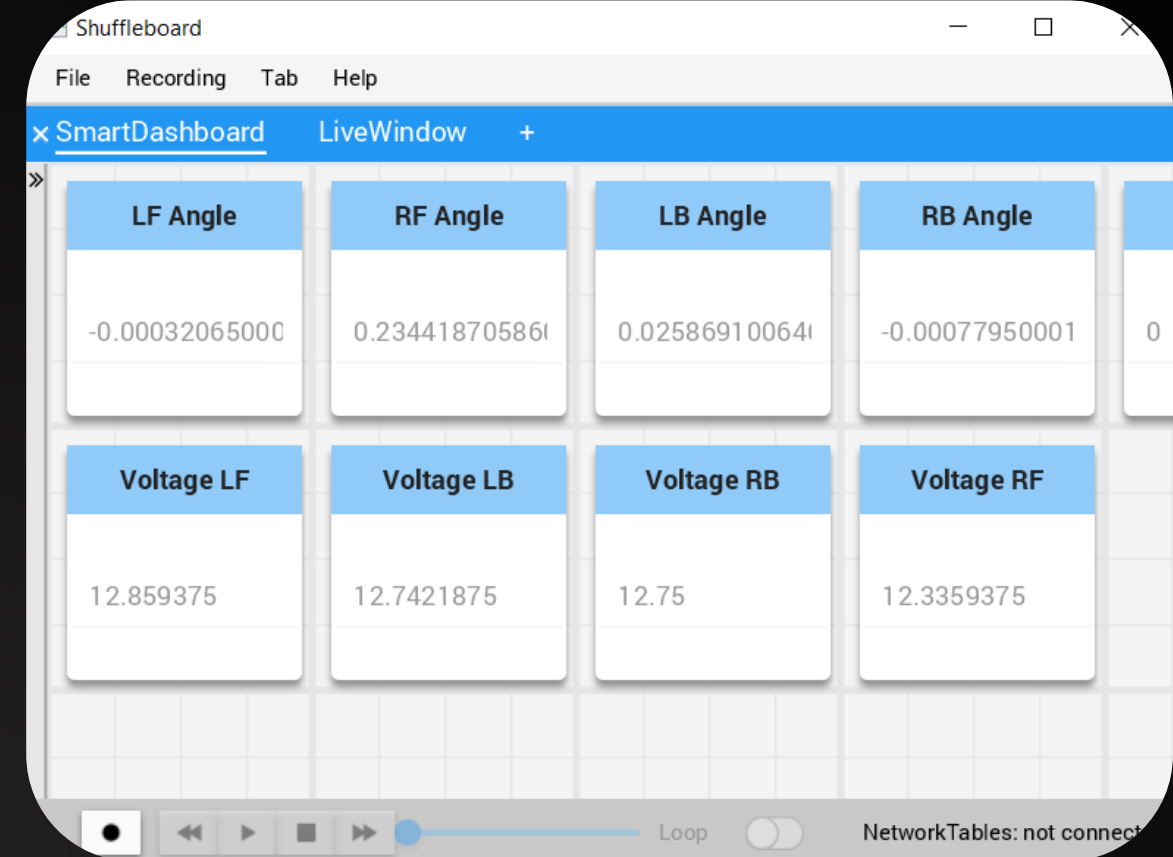
# RoboRIO Reimage Tool

- Image Kavramı
- roboRIO 1 ve 2.0 için farklar



# Driver Station

- Enable/Disable
- Teleop/Otonom
- Loglar
- Boardlar ve Debug
- Joystick
- Voltaj



The screenshot displays the Driver Station interface with several panels:

- Pinging:** A list of connection targets with status indicators: Enet Link, Robot Radio, Robot, FMS, Enet 169.254.254.97, Wifi (active), USB, and Firewall (Dom, Pub, Prv).
- Versions & Info:** Displays system information: DS: 23.1, RIO: FRC\_roboRIO2\_2023\_v3.2, Lib: Java 2023.4.3, Free RAM (MB): 239, Free Disk (MB): 6737.
- Reboot/Restart:** Buttons for 'Reboot roboRIO' and 'Restart Robot Code'.
- Operational Modes:** A vertical stack of buttons for 'TeleOperated', 'Autonomous', 'Practice', and 'Test'.
- Elapsed Time:** Shows '0:00.0'.
- Battery and CPU:** 'PC Battery' is shown with a full green bar, and 'PC CPU %' is shown with a partially filled yellow bar.
- Window and Team Station:** A 'Window' button with a maximize icon and a 'Team Station' dropdown menu currently set to 'Red 3'.
- Robot Status:** Two identical panels on the right, each showing 'Team # 8058', a robot icon, and status for 'Communications', 'Robot Code', and 'Joysticks' (all red). Below each is the text 'No Robot Communication'.

# Programlamak

# CodeBase Oluşturalım

- Kurulum
- Komutlar
- Proje Oluşturma
- Vendor Dependency
- Yazmak
- Timed ve Command Base
- Sürücülerini Tanımlamak

# Git(Hub)

- Git:
  - ~~CVCS~~-DVCS
- Github
  - Hosting
  - Collaboration
  - Publishing
  - Infrastructure
- FRC'de Önemli

main

8 Branches 0 Tags

## Switch branches/tags

Find or create a branch...

Branches

Tags

✓ main

default

drive

igalhanized

improved

main\_components

minor\_cv

new-is-always-better

wanna\_live

View all branches

gradlew