🤖 ROS 2 Jazzy Jalisco on macOS

Setup and Run Guide

> **ℹ Note**
>
> This guide explains how to install **ROS 2 Jazzy Jalisco** on macOS and run the image publisher/subscriber demo.
> If **ROS 2 Jazzy** is already installed on your system, you may skip directly to **Clone Repository** and **Run the Project**.

> **ℹ Note**
>
> **macOS support note:**
> ROS 2 Jazzy Jalisco is supported on macOS via **Homebrew**. This setup is intended for development and evaluation purposes.
> Camera access on macOS is limited by OS security policies and may require explicit permissions or external USB webcams.

Official ROS documentation:
https://docs.ros.org/en/jazzy/Installation/macOS-Install-Binary.html

Install ROS 2 Jazzy (Fresh System)

Skip this section if ROS 2 Jazzy is already installed.

Install Homebrew (if not installed)

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/
    install/HEAD/install.sh)"
```

Install ROS 2 Jazzy

```
brew update
brew install ros/jazzy/ros-jazzy-desktop
```

Source and Verify ROS

```
source /opt/homebrew/opt/ros-jazzy/setup.bash
echo "source /opt/homebrew/opt/ros-jazzy/setup.bash" >> ~/.zshrc
```

Verify installation:

```
ros2 --help
echo $ROS_DISTRO
```

Expected output:

- ROS 2 help menu

- `jazzy`

Clone Project Repository

```
mkdir -p ~/work
cd ~/work
git clone https://github.com/VamsiU987/ros_camera.git
cd ros_camera
```

Expected structure:

```
publisher/
subscriber/
output/
README.md
```

Run the Project

◼◖ Terminal 1 — Publisher

```
source /opt/homebrew/opt/ros-jazzy/setup.bash
cd ~/work/ros_camera
export ROS_DOMAIN_ID=0
python3 publisher/image_publisher.py
```

◉ Terminal 2 — Subscriber

```
source /opt/homebrew/opt/ros-jazzy/setup.bash
cd ~/work/ros_camera
export ROS_DOMAIN_ID=0
python3 subscriber/image_subscriber.py
```

> **⚠ Important**
>
> The `ROS_DOMAIN_ID` value must match in both terminals.

Expected Output

- Images saved to:
  /work/ros_camera/output/images/

- Metadata file:
  /work/ros_camera/output/metadata.json

Camera Notes on macOS

- Grant camera access to Terminal under: **System Settings → Privacy & Security → Camera**

- External USB webcams are recommended

- If camera access fails, the publisher falls back to synthetic images