

# ROS2

What, Why and basic verbs and concept



# What

- Open source software development kit for robotics applications.
- Standard
- From research and prototyping through to deployment and production

# Why

why use ros2 for robotics application

✓ Searching for: **why use ros2 for robotics application**

✓ Generating answers for you...

According to the current web page context, ROS2 can help you write more robust, modular, and scalable robotics applications. It takes care of the tooling and plumbing so that you can focus on the core of your application <sup>1</sup>. ROS2 will speed up development time for your robotics projects, especially during prototyping and testing phases <sup>1</sup>. ROS2 is open source and commonly used in robotic projects <sup>2</sup>. It is supported and tested on Linux, Windows, and macOS, as well as various embedded platforms (via micro-ROS), allowing seamless development and deployment of on-robot autonomy, back-end management, and user interfaces <sup>3</sup>.

I hope this helps you understand why ROS2 is a popular choice for robotics applications! Let me know if you have any other questions.

Learn more: [1. roboticsbackend.com](#) +3 more

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- For me it a STANDARD

# Verbs

- DDS
- Node
- Pub / Sub
- Service
- Parameters

# Tools

- Rqt
- Rviz
- Gazebo

# What to remember

- ROS2 is a standard
  - Don't invite the wheel (reuse other works)
- ROS2 is a way of thinking to solve robotics problems
- ROS2 is a SDK

# Learn from others

- [Autonomous, GPS-Denied Quadrotor Flight](#)

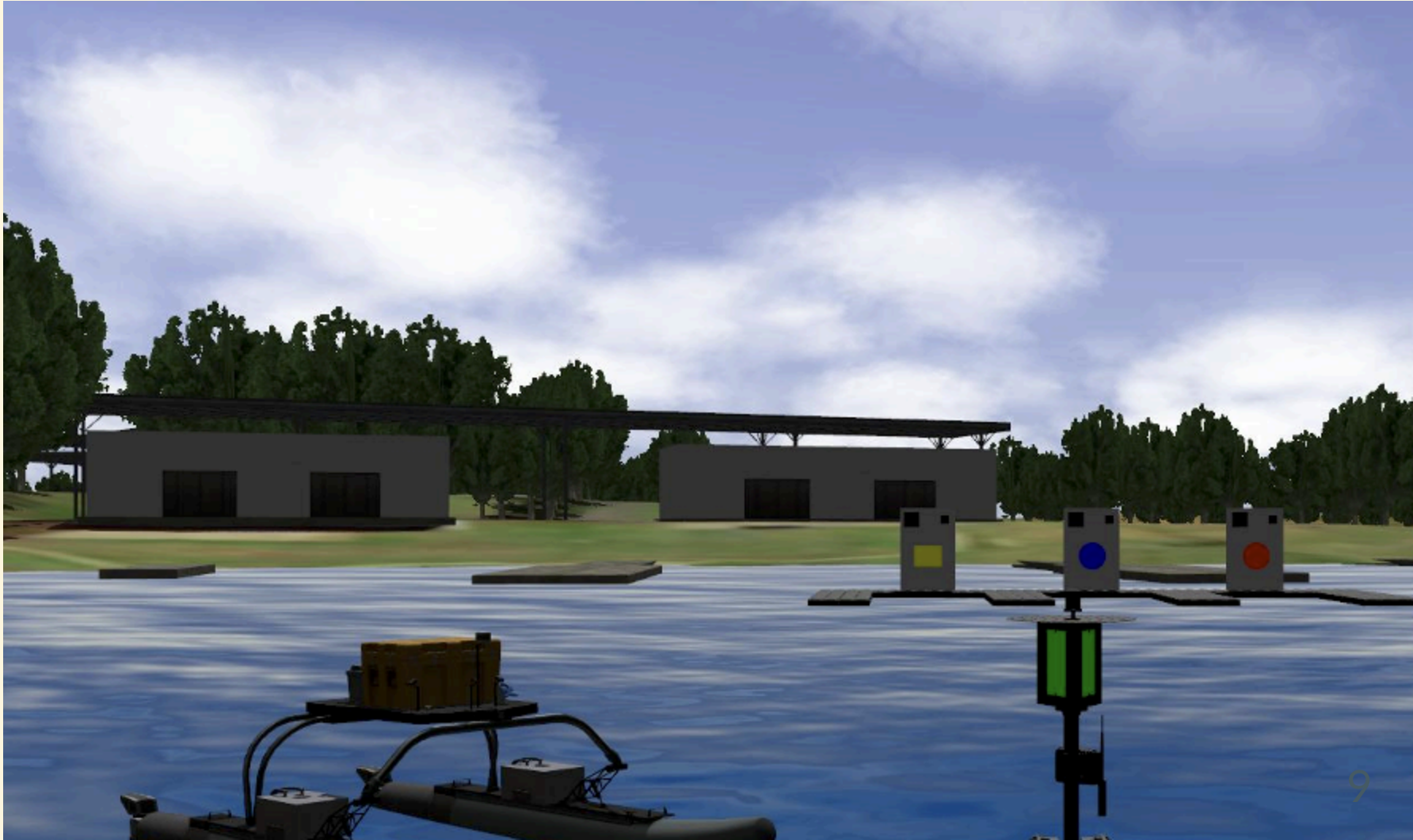
# DARPA



[link](#)



# VRX



# Eye on the prize. glance to the future

- ROS Version
- Simulation
  - Gazebo version
- Flight controller
  - PX4 /ArduPilot

[2024 ROS Metrics Report](#)

# Node message and topic

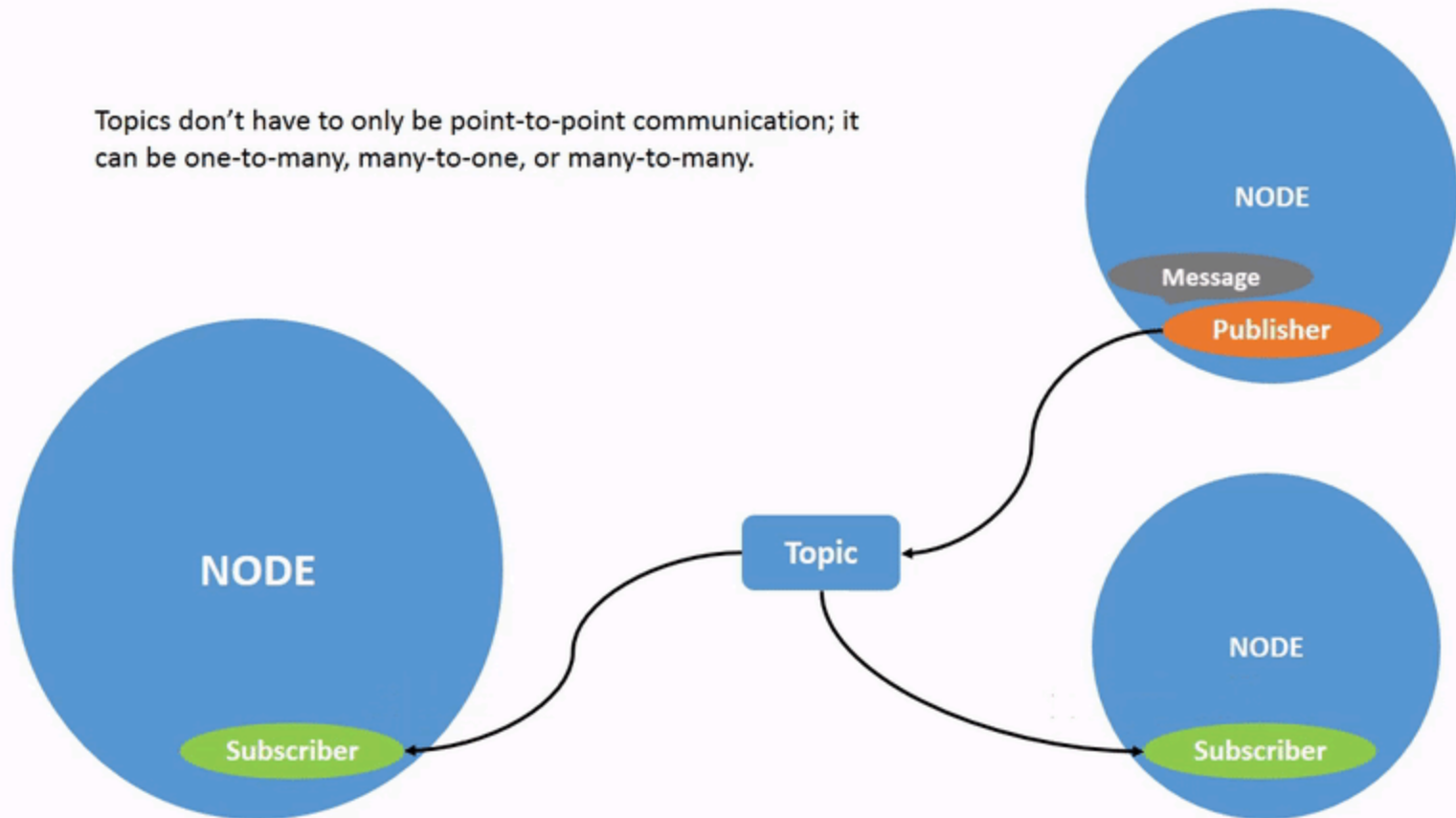
Node: A node is an executable that uses ROS to communicate with other nodes.

Message: ROS data type

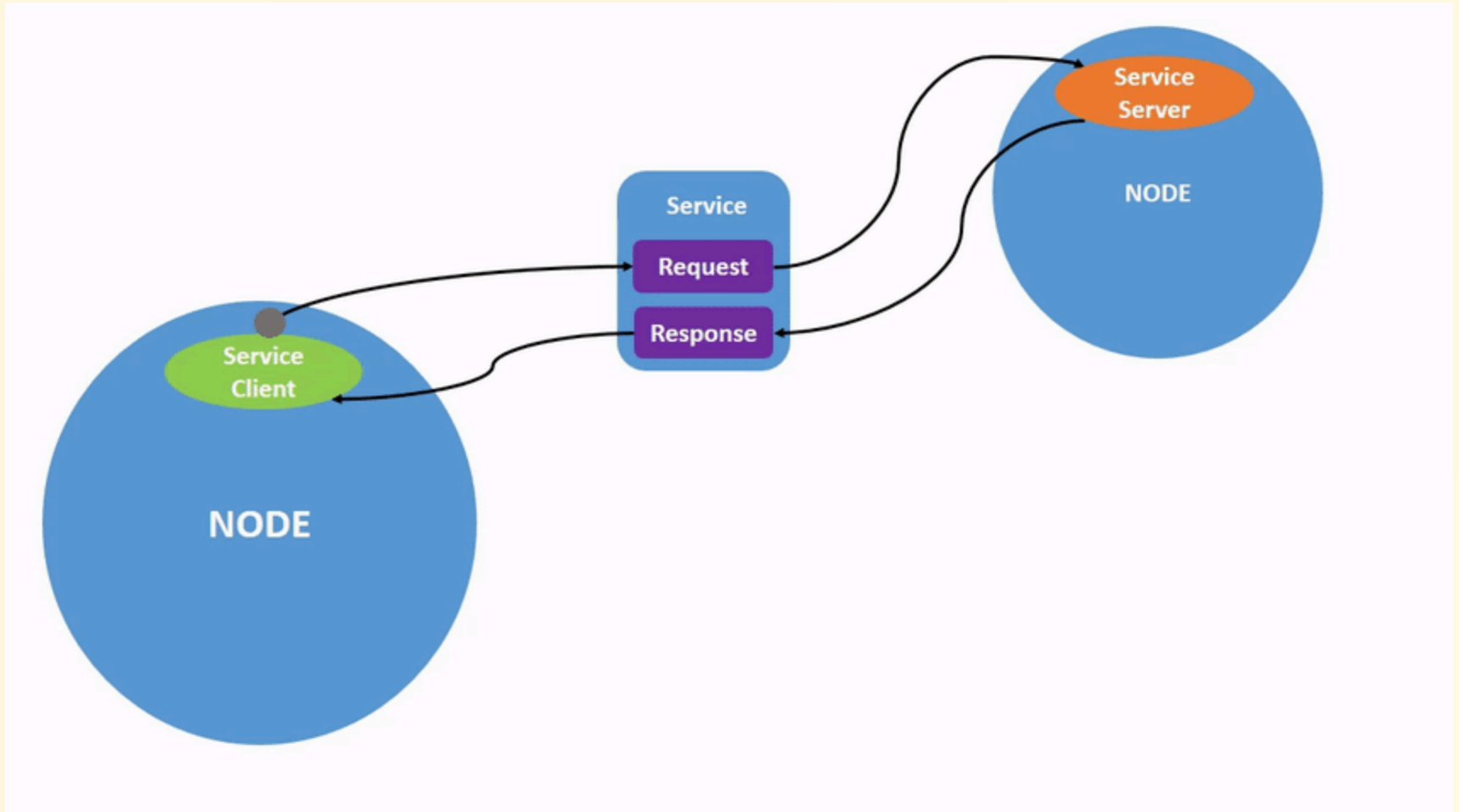
Topics: ROS2 topic is a way of communication between ROS2 nodes

# Pub / Sub

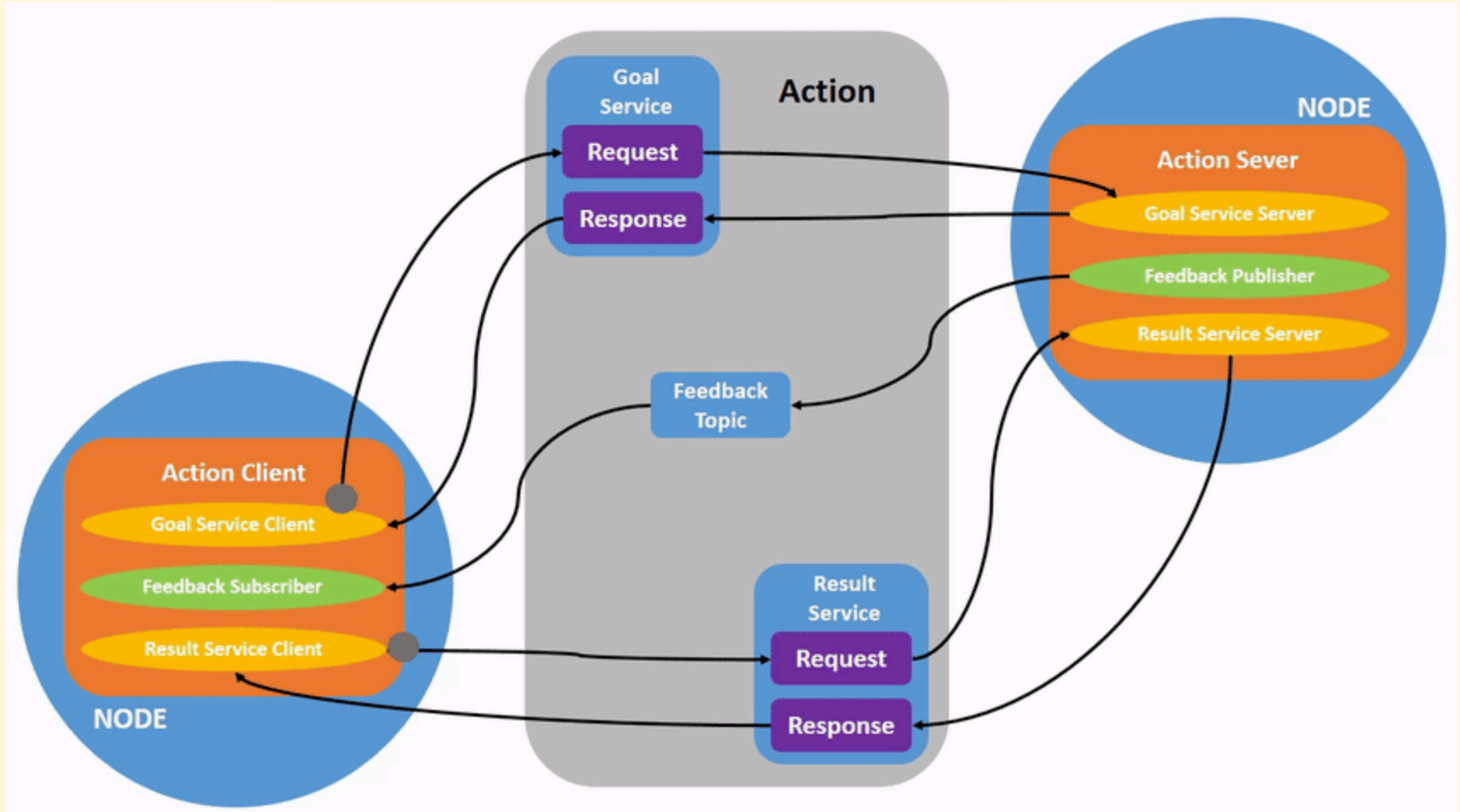
Topics don't have to only be point-to-point communication; it can be one-to-many, many-to-one, or many-to-many.



# Service

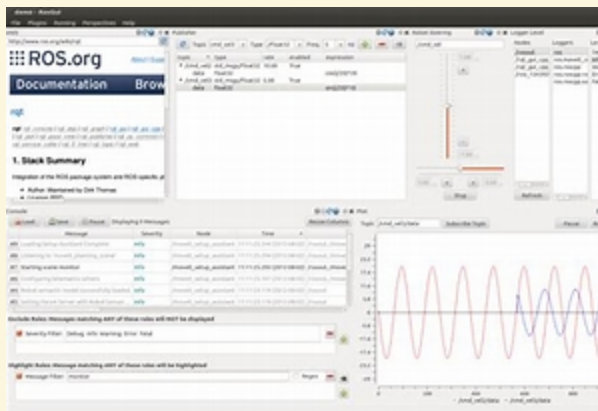


# Action



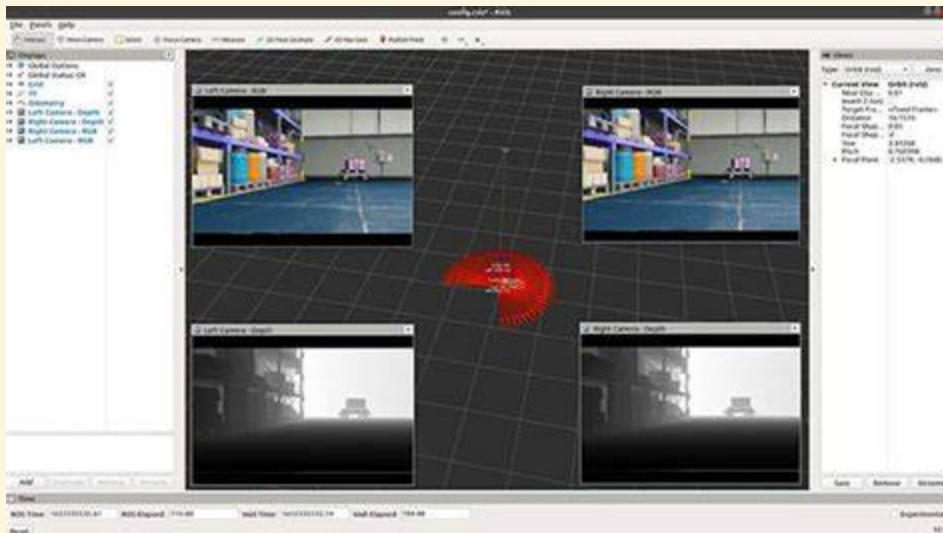
# Rqt

RQT is a Qt-based framework for GUI development for ROS



# Rviz

- Rviz is a 3D visualization tool for ROS
- It allows you to visualize sensor data and other information from your robot in real-time





# Gazebo



# Without words

[video link](#)

# Final

- ROS is a standard
- Way of thinking
- SDK for develop robotics application

