Robot Operating System

Introduction

What is ROS?

ROS is an open-source robot operating system. ROS is not an operating system in the traditional sense of process management and scheduling; rather, it provides a structured communications layer above the host operating systems of a heterogeneous compute cluster[1].

ROS is licensed under an open source, BSD license.

1 Quigley, Morgan & Conley, Ken & Gerkey, Brian & Faust, Josh & Foote, Tully & Leibs, Jeremy & Wheeler, Rob & Ng, Andrew. (2009). ROS: an open-source Robot Operating System. ICRA Workshop on Open Source Software. 3.

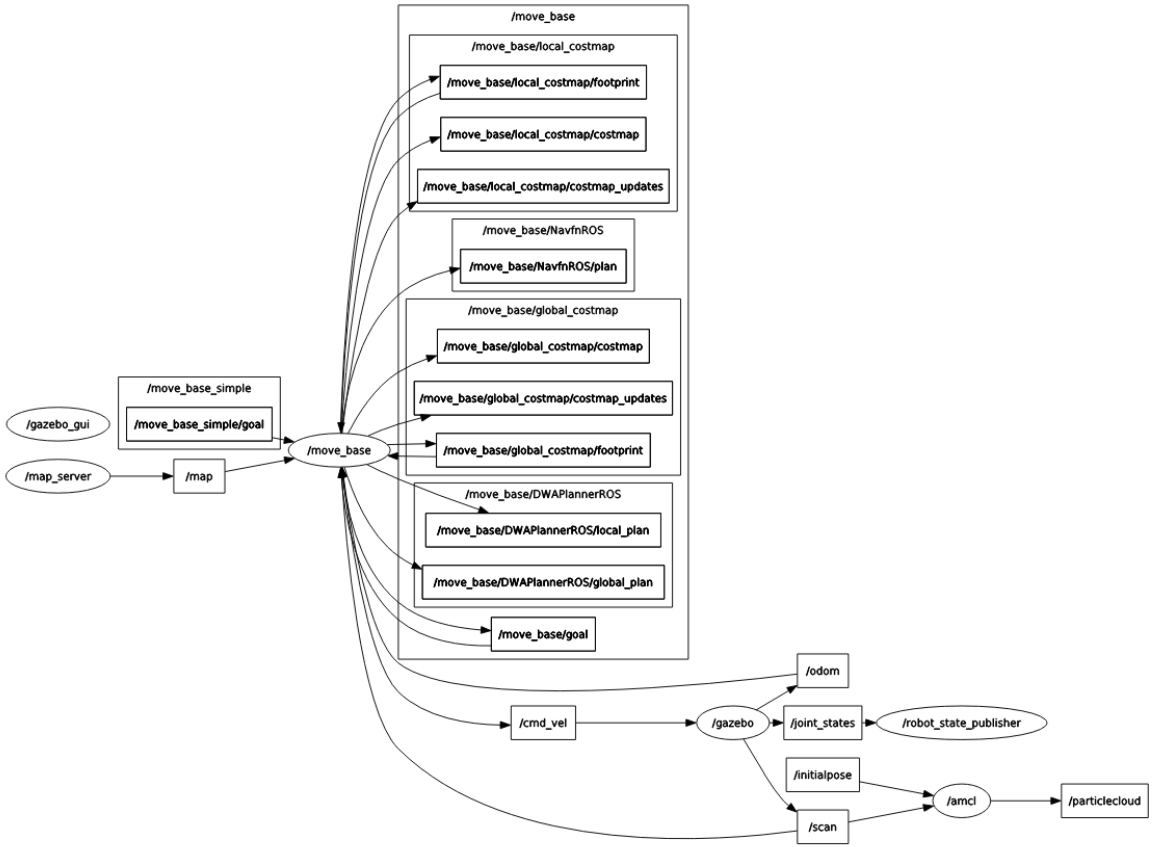
ROS

Libraries and tools

Visualizers

Package management

Running code across multiple computers



History

- Phd student Morgan Quigley in STAIR project (2005)
- Keenan Wyrobek and Eric Berger started to solve two main robotic challenges.
- Scott Hassan investor and the founder of Willow Garage
- Ros was developed at Willow Garage
- In 2009, the first distribution of ROS was released: ROS Mango Tango.
- In 2013 Willow Garage shut down
- Open Source Robotics Foundation took the lead of ROS development
- In 2015 ROS2 appeared

Why ROS?

- **Free and Open-Source**
- **Reliable community**
- **Provides tools and libraries for many robotic applications**
- **Multi-platform**

Installation

Just Follow steps at

www.wiki.ros.org

Creating workspace

Just Follow steps at

www.wiki.ros.org

References

- https://www.theconstructsim.com/history-ros/
- Quigley, Morgan & Conley, Ken & Gerkey, Brian & Faust, Josh & Foote, Tully & Leibs, Jeremy & Wheeler, Rob & Ng, Andrew. (2009). ROS: an open-source Robot Operating System. ICRA Workshop on Open Source Software. 3.
- O'Kane, Jason M. "A gentle introduction to ROS." (2014).