Robotic Operating System

Version 1.0

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Contents

List of Code Listings

Part I
Introduction

1 Motivation

2 Improvement with respect to ROS

1. Quality of Design and Implementation
2. System reliability
3. Real-time control
4. Validation, verification and certification
5. Flexibility in communication
6. Support for small embedded systems

3 ROS2 Tree

- Communication
  - topics
  - services
  - actions
- Testing
  - QA
  - performance
  - security
- Diagnostics

Part II
ROS Levels

Part III
ROS2 Graph

The ROS graph is a network of ROS2 elements processing data together at one time.

Nodes

Each node in ROS should be responsible for a single task (single, modular purpose). There are many ways by which nodes can exchange data each others: topics, services, actions, or parameters.

Topics

Topics allows to send continuous streams of data between two or more topics:

- publisher: if data is sent (publish to a topic)
- subscriber: if data is received (subscribe to a topic)

Services

Services are based on call-and-response model, providing data only under request by a client:

- service server: who provides the service (response)
- service client: who call the service (request)

Parameters

Parameters are configuration values of a node, corresponding to passing arguments to an executable.

Actions

Actions are an advance way to exchange data for long running tasks, using the client-server model of the topics and the call-and-response model of services, with the difference that can be deleted.

- goal service: service request
- feedback topic: data about the state of the task
- result service: service result

Part IV
Client Libraries

/	rclcpp	rclpy
/	rclcpp::ok()	/
/	rclcpp::WallRate	/