Understanding ROS2 nodes

ROS graph

→ The ros graph is a network of ROS 2 elements processing data together at one time.

→ It encompasses all executables and the connections between them.

ROS Node

→ Each node in ROS should be responsible for a single, module purpose.

→ Each node can send or receive data to other node via topics, services, actions, or parameters.

⇒ A full robotic system is comprised of many nodes working in concert.

⇒ In ROS 2, a single executable can contain one or more nodes.

Remapping

→ Allows you to reassign default node properties, like node name, topic names, service names etc to custom values.

Understanding ROS 2 topics

⇒ Topics are a vital element of the ROS graph that acts as a bus for nodes to exchange messages.

⇒ A node may publish data to any number of topic & simultaneously have subscriptions to any number of topics.

ros2 interface show
- → Publisher & Subscribers must send & receive the same type of message to communicate.
- → ros2 interface show geometry_msgs/msg/Twist
  - → For details about Twist msg.

Understanding ROS 2 Parameters

⇒ A parameter is a configuration value of a node.
- → You can think of parameters as node setting.

⇒ In ROS2, each node maintains its own parameters.
- → All parameters are dynamically reconfigurable, and built off of ROS2 Services.