

Chapter 1 — Basic Control (Rosmaster R2)

[DIAGRAM — SIMPLE CONCEPT]

Robot → Receives commands → Moves Forward / Backward / Turn
Controller → Sends signals → Robot responds

1. Overview

Basic control means sending simple movement commands to your Rosmaster R2. These include forward, backward, left turn, right turn, and stop.

2. Powering the Robot

- Turn on the robot's main switch.
- Ensure the battery is charged.
- Confirm the Jetson Xavier NX is fully booted.

3. Connecting to the Robot

- Connect to the robot's Wi-Fi access point OR your home network.
- Open a terminal on your computer.
- SSH into the robot:

```
ssh ubuntu@192.168.x.x
```

4. Basic Movement Commands

Using ROS1, publish velocity commands to the robot:

```
rostopic pub /cmd_vel geometry_msgs/Twist '{linear: {x: 0.1}, angular: {z: 0.0}}'
```

This makes the robot drive forward at 0.1 m/s.

5. Safety Tips

- Keep speed low during learning (0.15 m/s max).
- Always have room in front of the robot.
- Keep hands away from motors and wheels.
- Be ready to press the stop command.