ROS2 Jazzy Installation Guide for Ubuntu: 24.0.4

## What is ROS2 Jazzy?

ROS2 Jazzy, also known as Jazzy Jalisco, is the latest long-term support (LTS) release of the Robot Operating System (ROS). It serves as a robust platform for developing robot applications, offering a wide range of software libraries and tools that cater to various robotics needs. This version is designed to support developers working on advanced industrial, commercial, and real-time robotics projects, with improved performance, scalability, and security through its modern middleware architecture (DDS).

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## Installation Guide

To install ROS2 Jazzy on Ubuntu 24.04, you can follow these steps:

1. Set Up Locale\*\*:

Make sure to set your locale correctly. You can run:

```bash

sudo apt update

sudo apt install locales

sudo locale-gen en\_US.UTF-8

```

1. Add the ROS2 Repository\*\*:

```bash

sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb\_release -cs) main" > /etc/apt/sources.list.d/ros-latest.list'

```

1. Install Dependencies\*\*:

```bash

sudo apt install curl gnupg2 lsb-release

curl -sSL http://get.gpg | sudo apt-key add -

sudo apt update

```

1. Install ROS2 Jazzy Binary\*\*:

You can install ROS2 Jazzy Desktop by running:

```bash

sudo apt install ros-jazzy-desktop

```

1. Setup Environment\*\*:

After installation, you should source your local setup file:

```bash

source /opt/ros/jazzy/setup.bash

```

For more detailed guides, visit the [official ROS2 documentation](https://docs.ros.org/en/jazzy/Installation.html).

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## Pros & Cons

### Pros:

* Long-term Support\*\*: Jazzy will be supported until 2029, providing stability for long-term projects.
* New Features\*\*: Includes improvements in performance and support for more sophisticated robotics applications.
* Modern Middleware\*\*: Utilizes Fast DDS for better communication between nodes, enhancing scalability and reliability.

### Cons:

* Potential Instability\*\*: While Jazzy introduces new features, it may come with untested components that could lead to bugs in some use cases.
* Learning Curve\*\*: New users may find the transition from previous versions challenging due to structural changes in underlying packages.

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## Next Steps

After installing ROS2 Jazzy, you can take the following steps to get started:

1. Explore Tutorials\*\*: Visit the [ROS2 Tutorials](https://docs.ros.org/en/jazzy/Tutorials.html) for guided learning and to understand the framework better.
2. Join the Community\*\*: Engage with the ROS community through forums and social media to exchange knowledge and seek help whenever needed.
3. Develop Projects\*\*: Start developing your robotics projects using the comprehensive tools provided by ROS2 Jazzy to apply what you’ve learned.