

ROS & Gazebo Community Update

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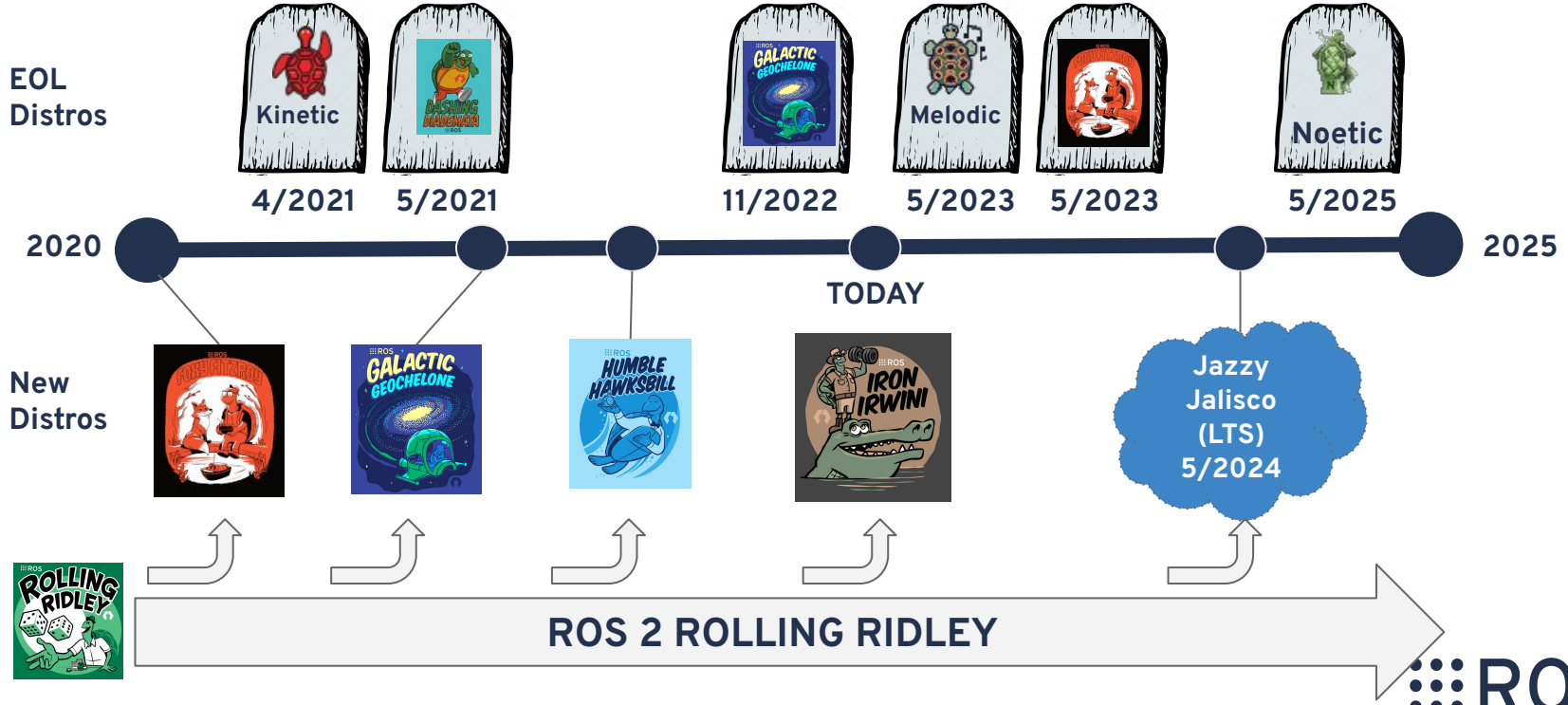
1.

ROS 2 Transition / Jazzy Jalisco

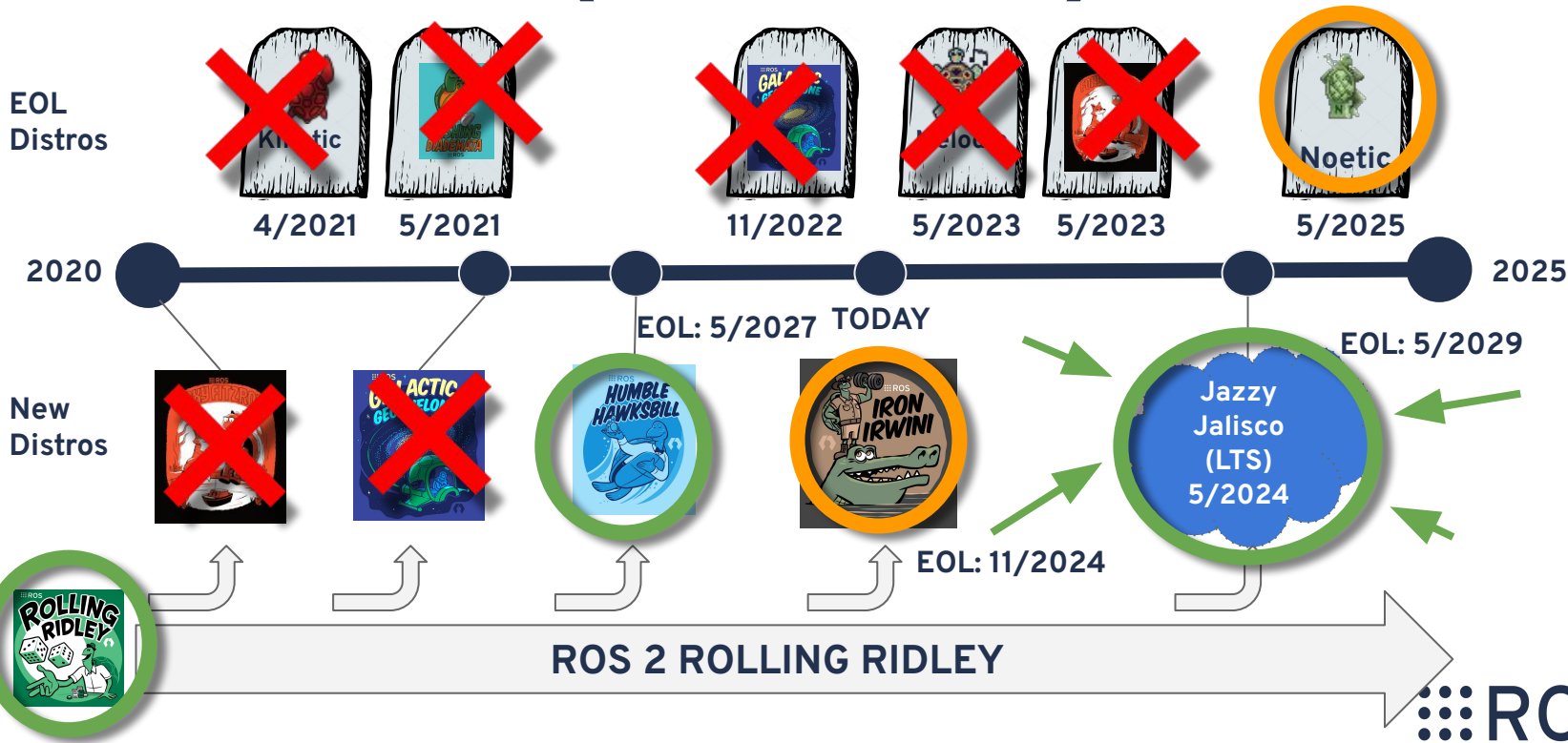
We've only got good news!

 ROS™

ROS Distros (REP-2000)



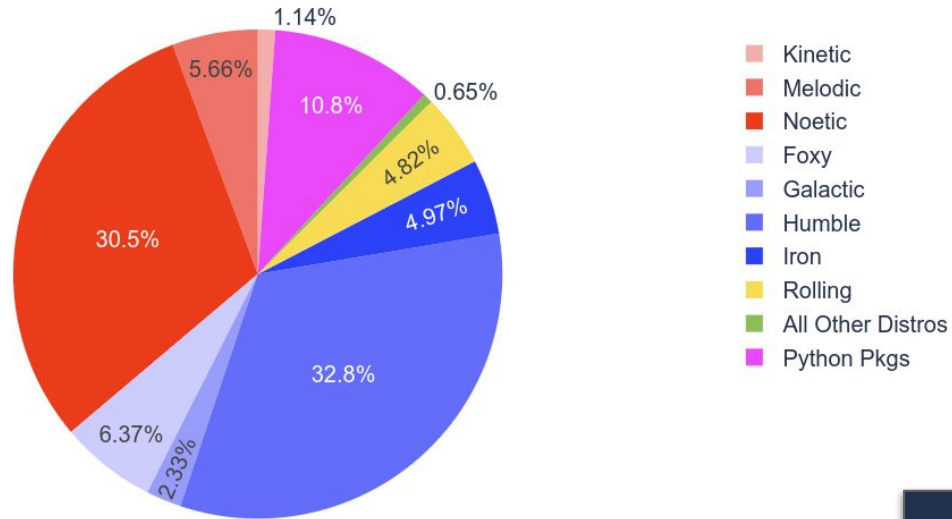
ROS Distros (REP-2000)



Composition of Distro Downloads

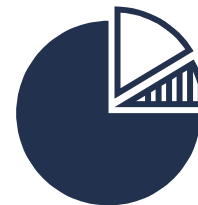


ROS Package Downloads by Distro October 2023



ROS.org metrics only.
Does not include mirrors

Distros by Year / Percentage



Distro	October 2023	October 2022	YoY Change
Kinetic	1.14%	2.12%	-0.98
Melodic	5.66%	17.19%	-11.53
Noetic	30.51%	34.8%	-4.29
Foxy	6.37%	13.59%	-7.22
Galactic	2.33%	8.12%	-5.79
Humble	32.79%	10.04%	+22.75
Iron	4.97%	0%	+4.97
Rolling	4.82%	3.38%	+1.44

Package downloads, by distro, as a percentage of all downloads from the ROS servers in October of 2022, and 2023.



17,720,181

ROS 2 packages downloaded in October 2022



25,057,278

ROS 2 packages downloaded October 2023



+41.41%

Increase in ROS 2 packages downloaded year over year



300,700,000

Estimated number of ROS 2 packages downloaded
in all of 2023





18,232,926

ROS 1 packages downloaded in October 2023



25,057,278

ROS 2 packages downloaded in October 2023



57.88%

Percent of ROS downloads that are ROS 2



+18.05%

Increase in ROS 2 downloads over the previous year!

ROS 2 was 39.82% in October 2022





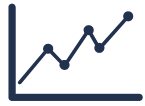
46,510,788

Total packages downloaded in October 2023



47,067,925

Total packages downloaded October 2022



-1.18%

Decrease in total package downloads for October*

* We believe Docker installs are starting to impact over binary package installs.



550,365,601

Total downloads in all of 2023, up +9.97% overall



All Package
Downloads

ROS™

ROS 2 Jazzy



Zenoh RMW

Jazzy's big ticket item is RMW Zenoh. This feature will only be available when you build from source. *It will be feature complete but we need community help for extensive testing.*

ROS Bag as a Service

Jazzy will support ROSBag record and replay as a ROS service. This should make it much easier to test and debug your system.

Gazebo Improvements

We're working to release Gazebo Harmonic into Jazzy. This should make it much easier to build simulations, and toggle between sim and real.

Jazzy Release Process



Feature Freeze: 2024-04-15

Last call for Iron Features is US Tax day. After the 15th we're working on final testing and packaging. If you want to get your feature into Jazzy you have about three weeks.

Testing Party 2024-05-01

Our testing and tutorial party is returning as a first class function in Jazzy. It is all-contributors and users on deck to test Jazzy and review our documentation to ensure accuracy.

Release on 2024-05-23





Gazebo Classic End-Of-Life



- Gazebo is our FOSS simulator (aka digital twin)
- Gazebo Classic (i.e. Gazebo 11, Gazebo 9) **goes end of life in January 2025**
- Named versions of Gazebo (e.g. Harmonic) are ok
- Migration guide: bit.ly/GazeboMigrationGuide



HARMONIC

Gazebo Harmonic

October 2nd, 2023

bit.ly/GzHarmonicRelease



ROS™

GZ / ROS Compatibility

bit.ly/GzCompatibility

Summary of Compatible ROS and Gazebo Combinations

This table includes all currently supported versions of ROS and Gazebo. All other ROS and Gazebo releases are end of life and we do not recommend their continued use.

	GZ Citadel (LTS)	GZ Fortress (LTS)	GZ Garden	GZ Harmonic (LTS)
ROS 2 Jazzy (LTS) ¹	✗	✗	⚡	✓
ROS 2 Rolling	✗	✓	⚡	⚡
ROS 2 Iron	✗	✓	⚡	⚡
ROS 2 Humble (LTS)	✗	✓	⚡	⚡
ROS 2 Foxy (LTS)	✓	✗	✗	✗
ROS 1 Noetic (LTS)	✓	⚡	✗	✗

- ✓ - Recommended combination
- ✗ - Incompatible / not possible.
- ⚡ - Possible, *but use with caution*. These combinations of ROS and Gazebo can be made to work together, but some effort is required.

¹ When ROS 2 Jazzy is released, it will be paired with Gazebo Harmonic.

ROS

DOCUMENTATION

It is like pie: everyone wants a slice, but very rarely are people in the kitchen baking!





Wiki and ROS 1 EOL

- Wiki.ros.org: built over a decade, full of good ROS 1 content.
- Wiki will eventually go read-only. Date TBD: ~2025.
- Some wiki content is stale. Some is very useful!
- ROS 2 documentation belongs on docs.ros.org
- New ROS 2 rule: **the docs live with the code.**
- ROS package docs are visible on docs.ros.org

What comes next?

- We're still working on a formal plan!
- We need package developers to get their ball on *Rolling*.
- We're going to need a lot of help, and people to start testing the waters.





Migrating Content

- Migrating content from the ROS Wiki to ROS 2 is fairly straight forward.
- Most direct route is through HTML. **PanDoc** can convert HTML to reStructuredText.
- Full guide: bit.ly/WikiMigrateHowTo



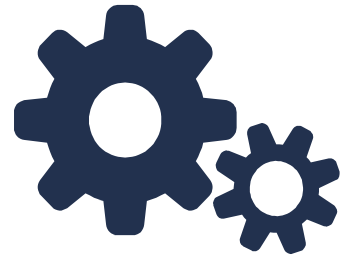
Your Project / Package

- ROS 2 packages should use **reStructuredText** & **Doxygen**
 - Familiarize yourself with **Sphinx** and **ROSDoc2**
- There are also hooks for README **Markdown** files.
- *Consider releasing your package so it is visible on docs.ros.org*
- **Make docs part of your code review process!**



docs.ros.org Integration

- ROS 2 packages should use reStructuredText & Doxygen
 - Familiarize yourself with Sphinx and ROSDoc2
- Released packages automatically hosted on docs.ros.org
- There are also hooks for README.md to Sphinx
- Full guide: bit.ly/HowToROSDox



What Comes Next?

- Look for a formal announcement this summer.
- We're considering a REP for package.xml to provide more information to better expose package docs via tags
- We still have rough edges to sand off and need volunteers! (style guide, lists of topics, message documentation, etc)
- Review / send PRs to docs.ros.org

4.

Other Community Concerns

Events and new communication platforms

Other Community Changes



Discord

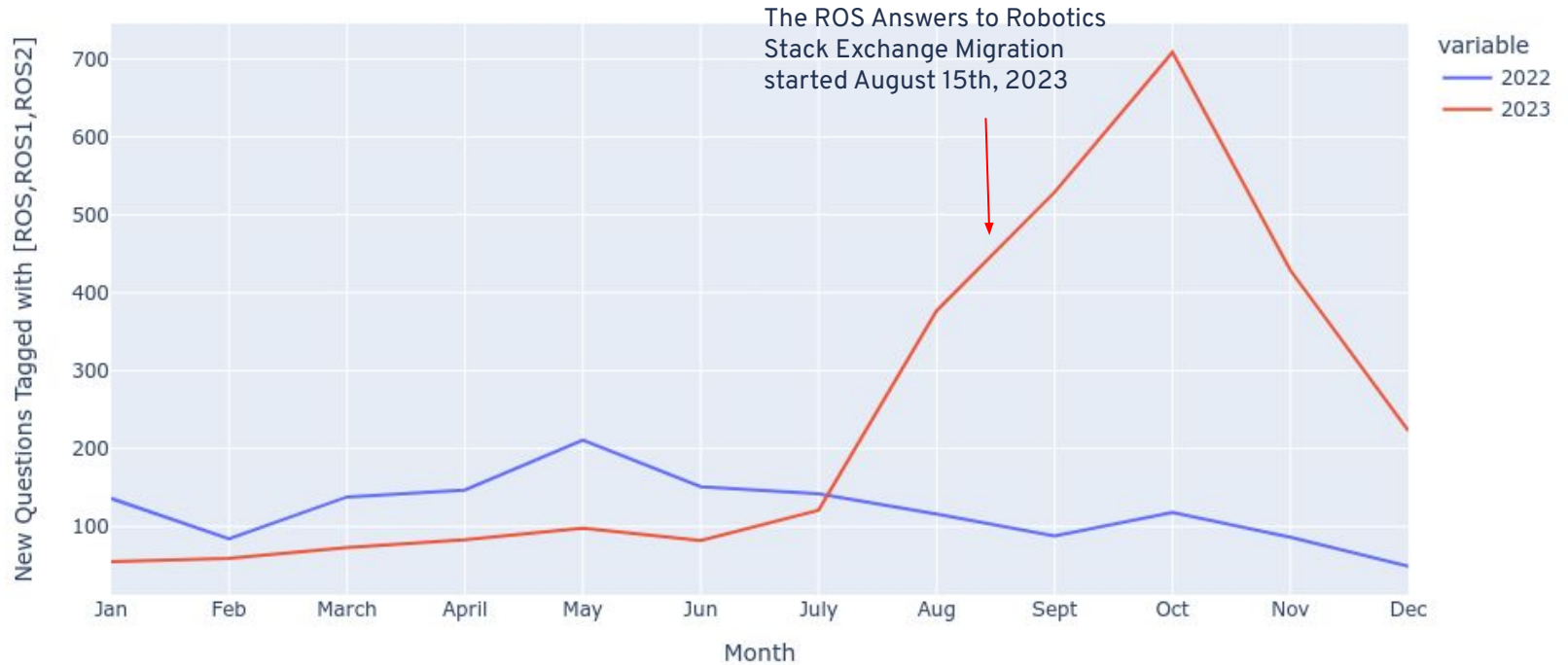
We launched a community Discord server last year. Most of the core devs are there and do respond! Good for quick questions and fast fixes.

bit.ly/ROSDiscord 🖱️

Robotics Stack Exchange

Late last year we moved from answers.ros.org to Robotics Stack Exchange. Many of the questions were moved over. ROS Answers is now read only mode.

Robotics Stack Overflow Questions Per Month





2836 ROS Questions Asked

On Robotics S.E. in 2023, a +32.9% increase over 2022



86.67% of Question are about ROS 2

2458 questions tagged "ros2" vs 378 tagged "ros"



49.79% of Questions were Answered

In 2023 there were 2836 questions and 2134 answers
(*questions can have multiple answers, or not be marked as
"Answered"*).*

* RSE bots prune unanswered questions after one year, so this number will change.

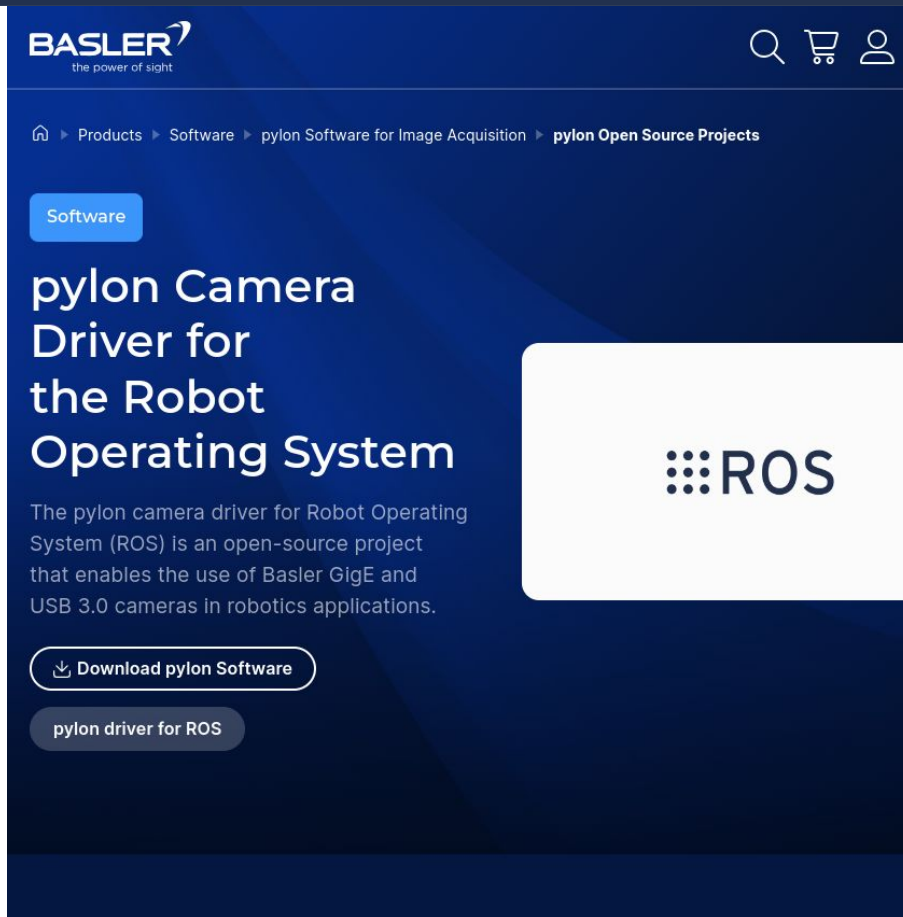


Hardware Vendor Support for ROS

Funding for a summer student to address ROS vendor support.

We want to know what works and doesn't work with your vendors!

Are you working with a vendor now? We would love to meet them!



The screenshot shows the Basler website interface. At the top left is the Basler logo with the tagline "the power of sight". To the right are icons for search, shopping cart, and user profile. Below the navigation bar is a breadcrumb trail: Home > Products > Software > pylon Software for Image Acquisition > pylon Open Source Projects. A blue button labeled "Software" is positioned above the main heading "pylon Camera Driver for the Robot Operating System". The text below the heading describes the pylon camera driver as an open-source project for ROS that supports Basler GigE and USB 3.0 cameras. A button with a download icon and the text "Download pylon Software" is located below the description. At the bottom of the page, there is a button labeled "pylon driver for ROS". On the right side of the page, there is a white box containing the ROS logo (a 3x3 grid of dots) followed by the text "ROS".

BASLER
the power of sight

🔍 🛒 👤

🏠 > Products > Software > pylon Software for Image Acquisition > **pylon Open Source Projects**

Software

pylon Camera Driver for the Robot Operating System

The pylon camera driver for Robot Operating System (ROS) is an open-source project that enables the use of Basler GigE and USB 3.0 cameras in robotics applications.

📄 Download pylon Software

pylon driver for ROS

⋮ ROS

ROSCon

October 21st-23rd

Odense, Denmark

The ROSCon call for proposals is now open!

Sponsorship call: *soon!*



Odense

ROS™



Upcoming Events

- Planning an event at Automate 2024 in Chicago
- PyCon in Pittsburgh Mid May – looking for locals
- More regular, local events! We need more hosts!
 - Want to run an event ⇒ info@openrobotics.org

QUESTIONS?!



- Need Help ⇒ katscott@intrinsic.ai
- I'm also easy to find on all the platforms if you forget
- <https://github.com/ros2>