

2024 ROS

Metrics Report

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Contents

- ROS.org Metrics
- External Website Metrics
- Distro Metrics
- Code & Academic Metrics



1.

ROS.org Metrics

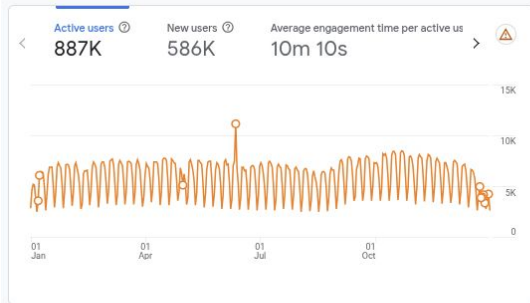
ROS community websites that are hosted by the OSRF and support our open source community.





ROS.org Metrics

- We usually use October as our benchmark month for ROS data.
- Some metrics use the most recent data available.
- Where possible we show annual data and year over year data.



Realtime data not supported for this comparison.

[Learn more](#)

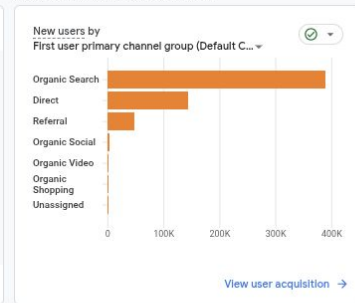
Insights

Your insights will appear here soon.

In the meantime, you can create new custom insights to monitor your most important metrics. [Learn more](#)

[View all insights](#)

WHERE DO YOUR NEW USERS COME FROM?



WHAT ARE YOUR TOP CAMPAIGNS?

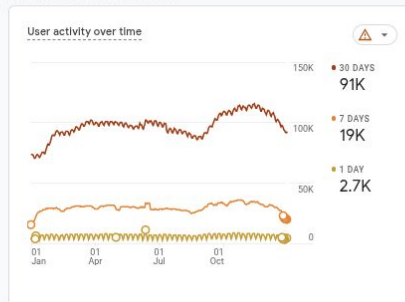
Sessions by Session primary ch...

SESSION PRIMARY ...	SESSIONS
Organic Search	3M
Referral	374K
Direct	369K
Unassigned	75K
Organic Social	23K
Organic Video	10K
Organic Shopping	1.3K

[View traffic acquisition](#)



HOW ARE ACTIVE USERS TRENDING?



HOW WELL DO YOU RETAIN YOUR USERS?



WHICH PAGES AND SCREENS GET THE MOST VIEWS?

Views by Page title and screen class

PAGE TITLE AND SCREEN ...	VIEWS
Installation - ROS 2 Docum...	478K
ROS 2 Documentation - RO...	363K
Ubuntu (Debian packages) - ...	346K
Tutorials - ROS 2 Docum...	285K
Ubuntu (deb packages) - R...	217K
ROS 2 Documentation - RO...	189K
Installation - ROS 2 Docum...	153K

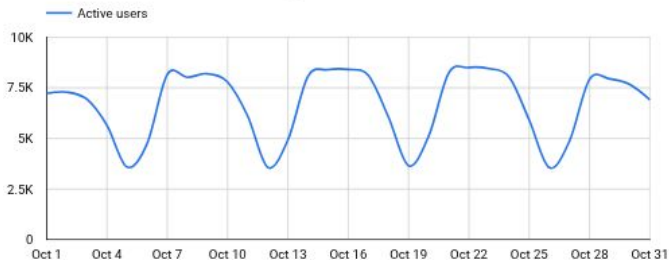
[View pages and screens](#)

docs.ros.org

Google Analytics 4 results for 2024

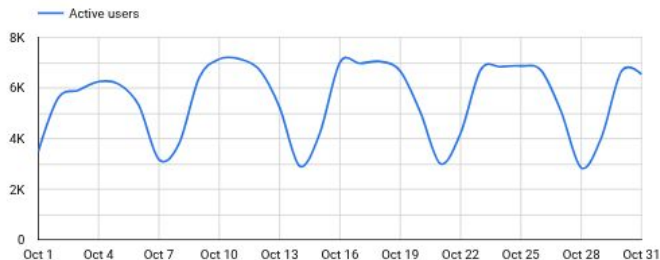
ROS™

docs.ros.org October 2023 vs. October 2024



G4 DATE ▾		Active users
1.	Oct 1, 2024	7,223
2.	Oct 2, 2024	7,287
3.	Oct 3, 2024	6,936
4.	Oct 4, 2024	5,645
5.	Oct 5, 2024	3,588
6.	Oct 6, 2024	4,747
7.	Oct 7, 2024	8,160
Grand total		115,506

1 - 31 / 31 < >



G4 DATE ▾		Active users
1.	Oct 1, 2023	3,487
2.	Oct 2, 2023	5,612
3.	Oct 3, 2023	5,909
4.	Oct 4, 2023	6,251
5.	Oct 5, 2023	6,154
6.	Oct 6, 2023	5,319
7.	Oct 7, 2023	3,174
Grand total		93,340

1 - 31 / 31 < >

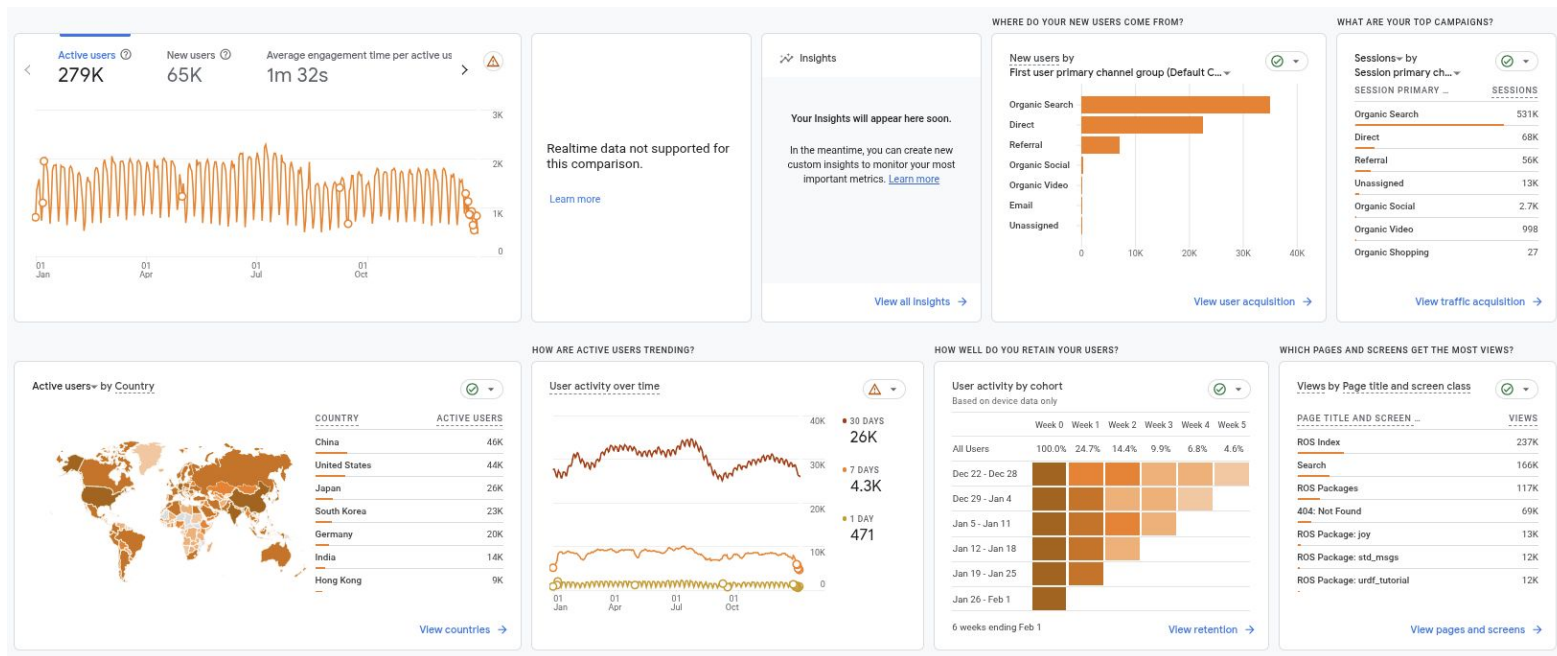
Active users
115,506

Active users
93,340

docs.ros.org

ROS 2 documentation users increased by +23.75%



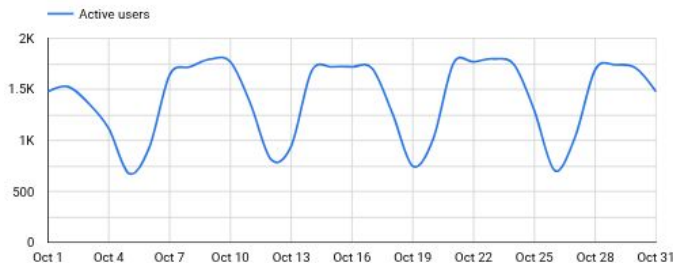


index.ros.org

Google Analytics Results for 2024

ROS™

index.ros.org October 2023 vs. October 2024

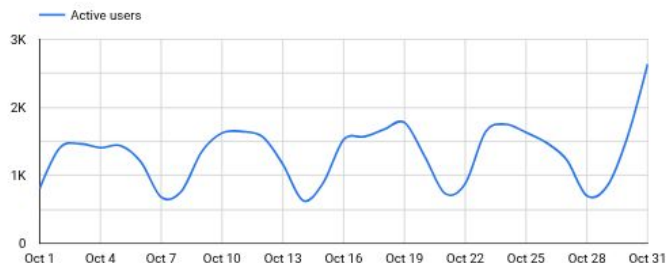


G4 DATE ▾	Active users
1. Oct 1, 2024	1,475
2. Oct 2, 2024	1,525
3. Oct 3, 2024	1,363
4. Oct 4, 2024	1,115
5. Oct 5, 2024	675
6. Oct 6, 2024	930
7. Oct 7, 2024	1,038
Grand total	30,814

Active users

30,814

1 - 31 / 31 < >



G4 DATE ▾	Active users
1. Oct 1, 2023	806
2. Oct 2, 2023	1,408
3. Oct 3, 2023	1,464
4. Oct 4, 2023	1,408
5. Oct 5, 2023	1,439
6. Oct 6, 2023	1,198
7. Oct 7, 2023	681
Grand total	29,769

Active users

27,887

1 - 31 / 31 < >

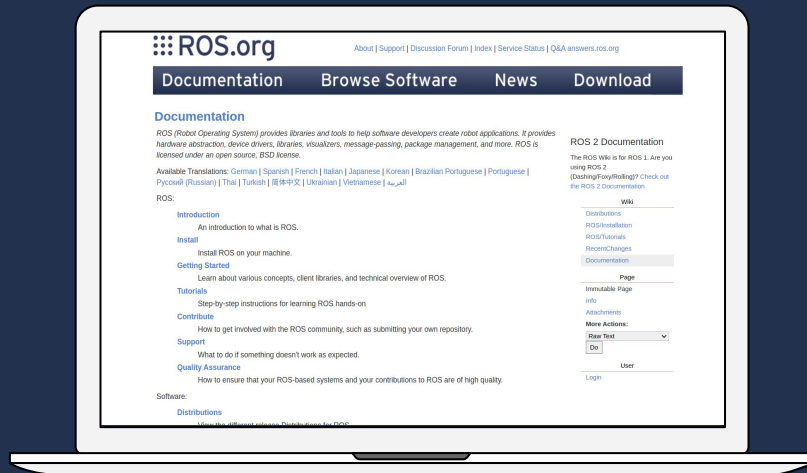
index.ros.org

ROS Index users increased by +10.84%

ROS™

ROS Wiki

Knowledge base for ROS 1 information





16,773 Wiki Pages

As of 2/4/2025. 0% since 1/8/2024



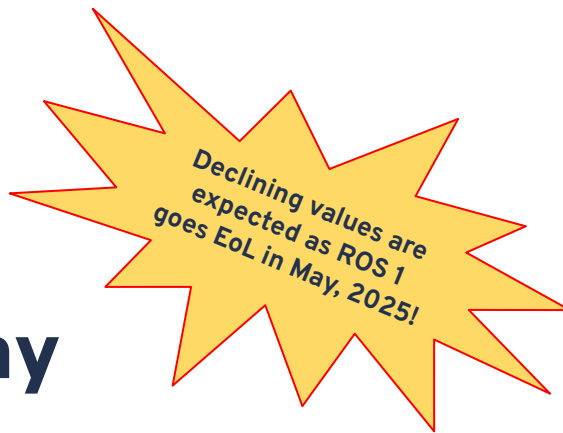
0.06 Wiki Edits Per Day

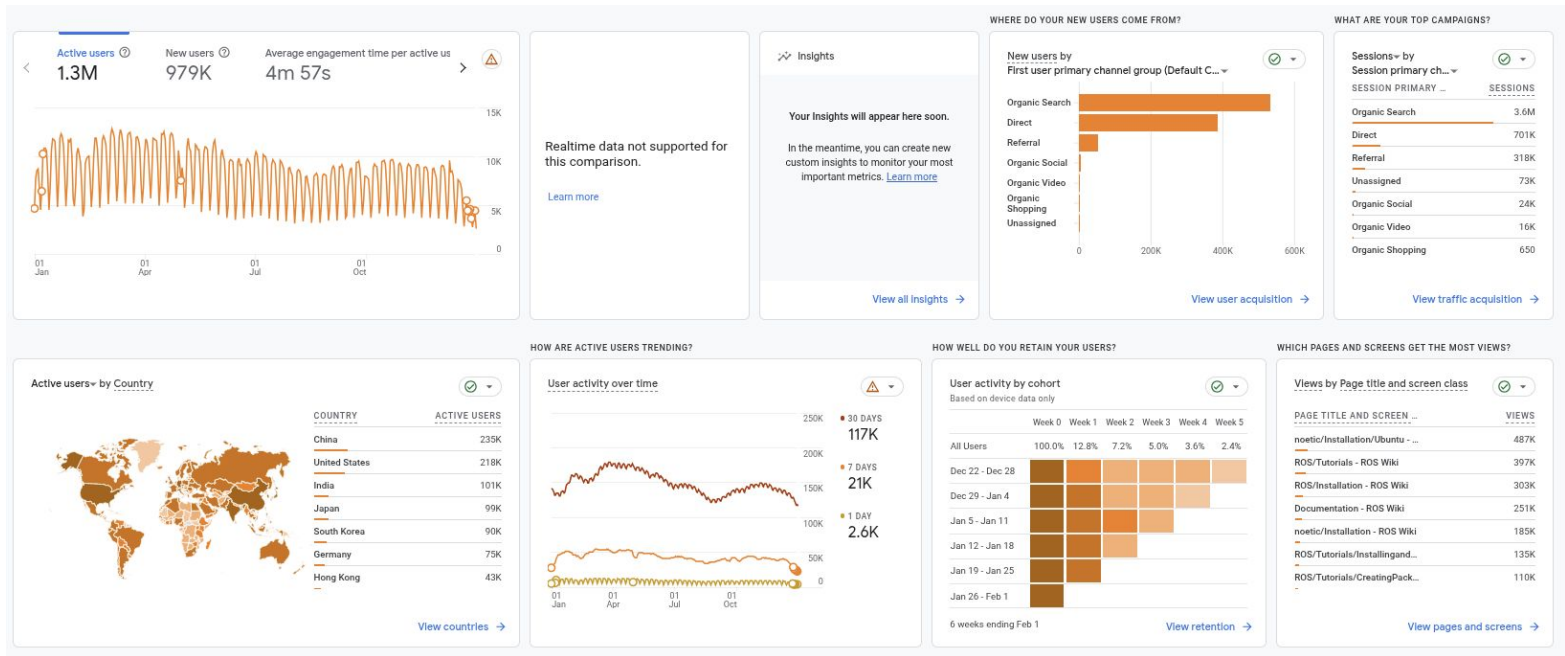
As of July 2024 vs 0.06 in July 2023



9.5M+ Page Views in 2024

This is down about 5% over 2023.



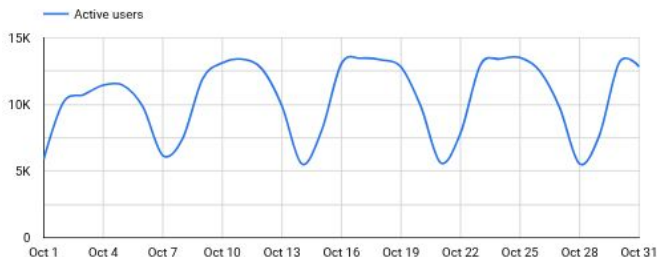
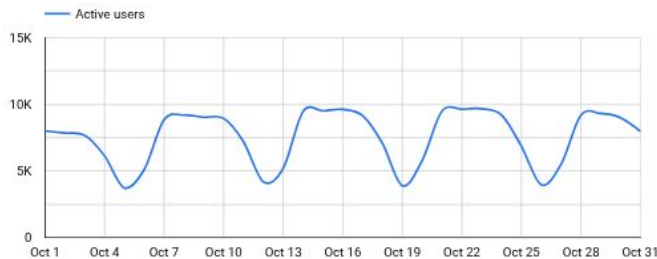


wiki.ros.org

Google Analytics 4 results for 2024

ROS™

wiki.ros.org October 2023 vs. October 2024



G4 DATE	Active users
1. Oct 1, 2024	8,003
2. Oct 2, 2024	7,850
3. Oct 3, 2024	7,669
4. Oct 4, 2024	6,127
5. Oct 5, 2024	3,729
6. Oct 6, 2024	5,115
7. Oct 7, 2024	8,847

Grand total 151,796

1 - 31 / 31 < >

G4 DATE	Active users
1. Oct 1, 2023	5,887
2. Oct 2, 2023	10,187
3. Oct 3, 2023	10,731
4. Oct 4, 2023	11,447
5. Oct 5, 2023	11,439
6. Oct 6, 2023	9,806
7. Oct 7, 2023	6,183

Grand total 186,578

1 - 31 / 31 < >

Active users

151,796

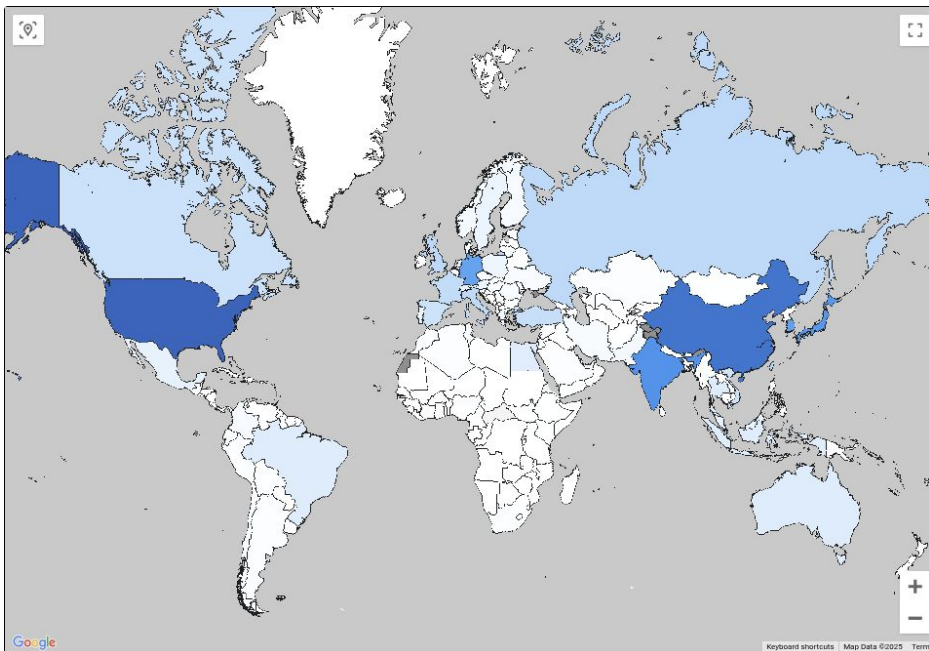
Active users

186,578

wiki.ros.org

ROS wiki users decreased by -18.64%. This is good! We want to encourage users to switch to docs.ros.org.





<input type="checkbox"/>	Country ▾ +	↓ Active users	New users
<input type="checkbox"/>	Total	1,348,690 53.29% of total	982,138 41.08% of total
<input checked="" type="checkbox"/>	1 China	235,150	163,198
<input type="checkbox"/>	2 United States	217,801	153,364
<input type="checkbox"/>	3 India	100,771	72,687
<input type="checkbox"/>	4 Japan	99,109	65,420
<input type="checkbox"/>	5 South Korea	90,264	64,628
<input type="checkbox"/>	6 Germany	75,428	50,077
<input type="checkbox"/>	7 Hong Kong	43,374	23,260
<input type="checkbox"/>	8 Taiwan	34,939	22,488
<input type="checkbox"/>	9 United Kingdom	34,443	24,373
<input type="checkbox"/>	10 Singapore	33,967	20,051
<input type="checkbox"/>	11 Russia	31,598	23,024
<input type="checkbox"/>	12 France	27,734	18,418
<input type="checkbox"/>	13 Italy	27,030	18,617
<input type="checkbox"/>	14 Türkiye	26,473	19,117
<input type="checkbox"/>	15 Canada	26,166	18,324
<input type="checkbox"/>	16 Spain	21,160	14,257
<input type="checkbox"/>	17 Vietnam	17,878	12,885
<input type="checkbox"/>	18 Australia	16,712	11,525
<input type="checkbox"/>	19 Thailand	16,349	11,966
<input type="checkbox"/>	20 Brazil	15,229	10,436

wiki.ros.org

Traffic volume by country

ROS™

Public Wiki Mirrors Not Included



Asia

Singapore, China, Tokyo, Japan, Ho Chi Minh, Vietnam

Europe

Ireland, Freiburg, Germany, Barcelona, Catalonia

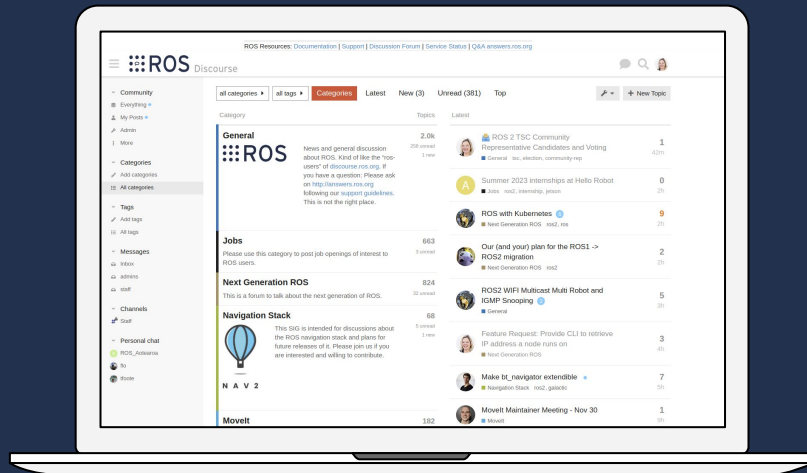
North America

College Park, Maryland, Saint Louis, Massachusetts, Potsdam, New York

South America

Sao Paulo, Brazil

ROS Discourse ROS Community Discussion Forum



ROS Discourse User Metrics

2024-01-04

	24 hours	7 days	30 days	All time
Topics	8	28	82	8.3k
Posts	71	224	913	76.9k
Sign-ups	21	59	238	9.8k
Active users	224	472	1.0k	—
Likes	23	89	460	44.9k
Chat messages	0	1	34	1.0k

	Dec 2024	Full 2024
Topics	96	1052
Posts	312	3952
Signups	185	2583
Users	N/A	11918
Likes	586	6915

*In 2024 Discourse changed how it presents forum statistics. We've aggregated similar data from past reports for consistency. Going forward we'll only report yearly values.

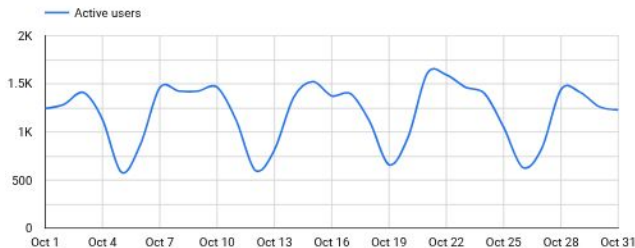


ROS Discourse



	2023	2024	Change
Annual Topics	1,053	1,052	-0.1%
Annual Posts	4,438	3,952	-10.95%
Annual New Users	2,558	2,583	+1%
Annual Likes	8,869	6,915	-22.03%

discourse.ros.org October 2023 vs. October 2024



G4 DATE	Active users
1. Oct 1, 2024	1,244
2. Oct 2, 2024	1,288
3. Oct 3, 2024	1,409
4. Oct 4, 2024	1,130
5. Oct 5, 2024	580
6. Oct 6, 2024	876
7. Oct 7, 2024	1,459
Grand total	27,089

Active users
27,089



G4 DATE	Active users
1. Oct 1, 2023	806
2. Oct 2, 2023	1,408
3. Oct 3, 2023	1,464
4. Oct 4, 2023	1,408
5. Oct 5, 2023	1,439
6. Oct 6, 2023	1,198
7. Oct 7, 2023	681
Grand total	29,769

Active users
29,769

discourse.ros.org

According to Google Analytics ROS Discourse viewership grew by **+18.27%**! Keep in mind that viewers, are different from logged in users.

ROS™

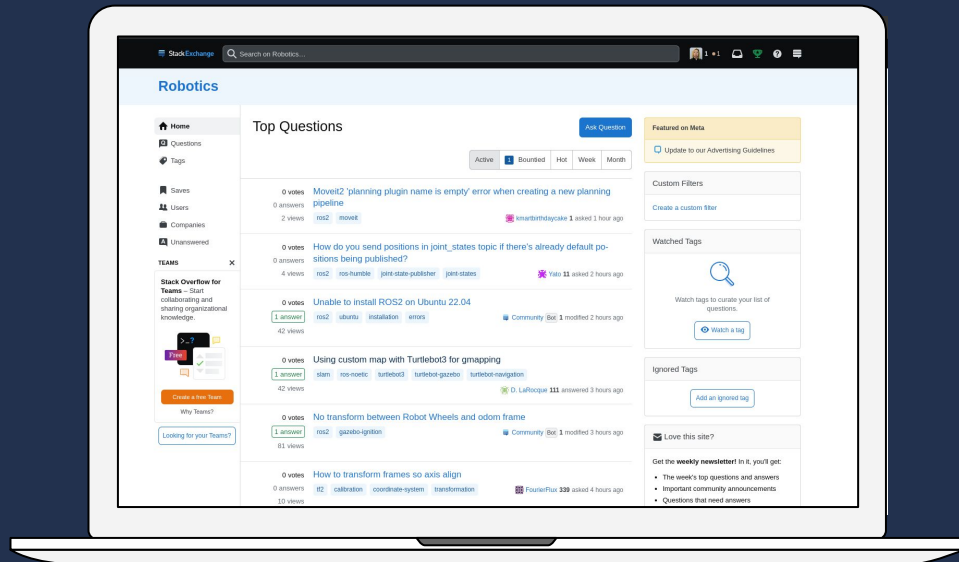
2.

External Website Metrics

The ROS Community can be found participating in numerous communities across the web.

Robotics Stack Exchange

In 2023 we moved from ROS Answers to Robotics Stack Exchange





4842 ROS Questions Asked

On Robotics S.E. in 2024, a 170% increase over 2023

92.94% of Question are about ROS



2

4500 questions tagged "ros2" vs 342 tagged "ros"



33.66% of Questions were Answered

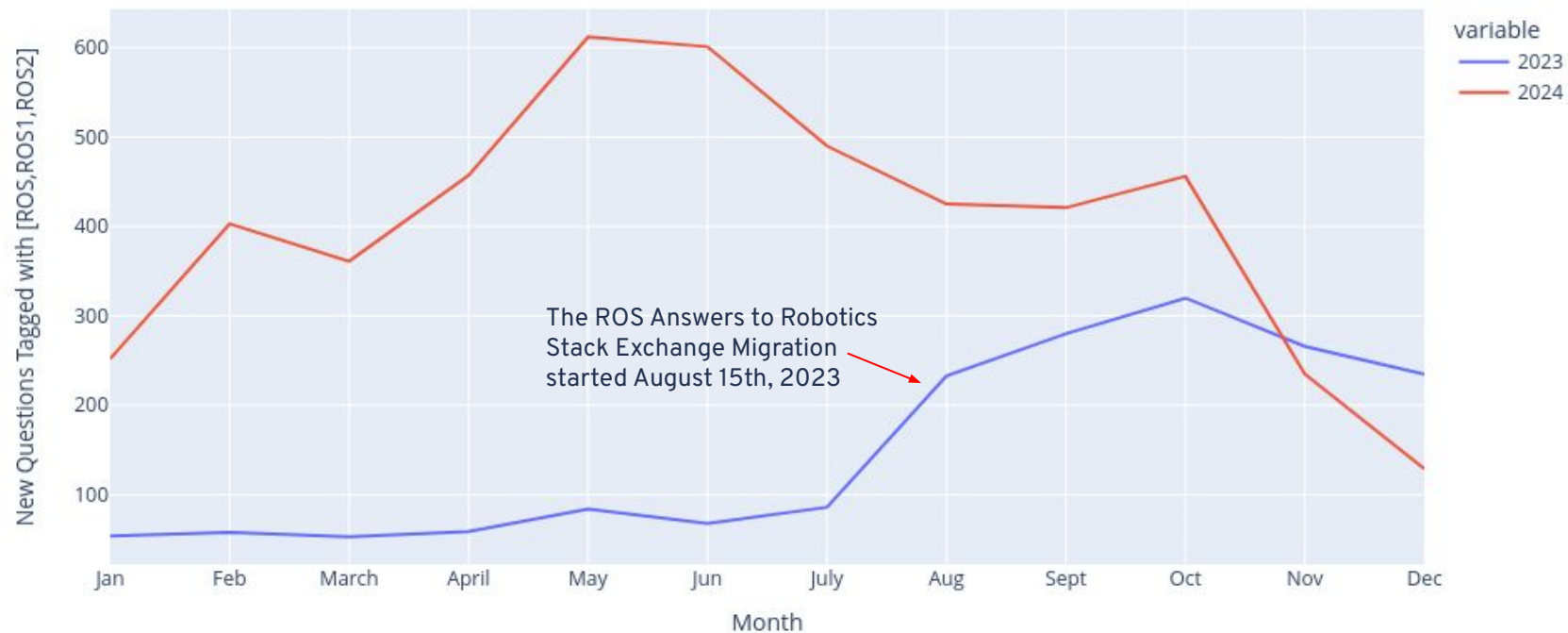
In 2024, 4842 questions and 2923 answers

Questions can have multiple answers, or not be marked as "Answered".*

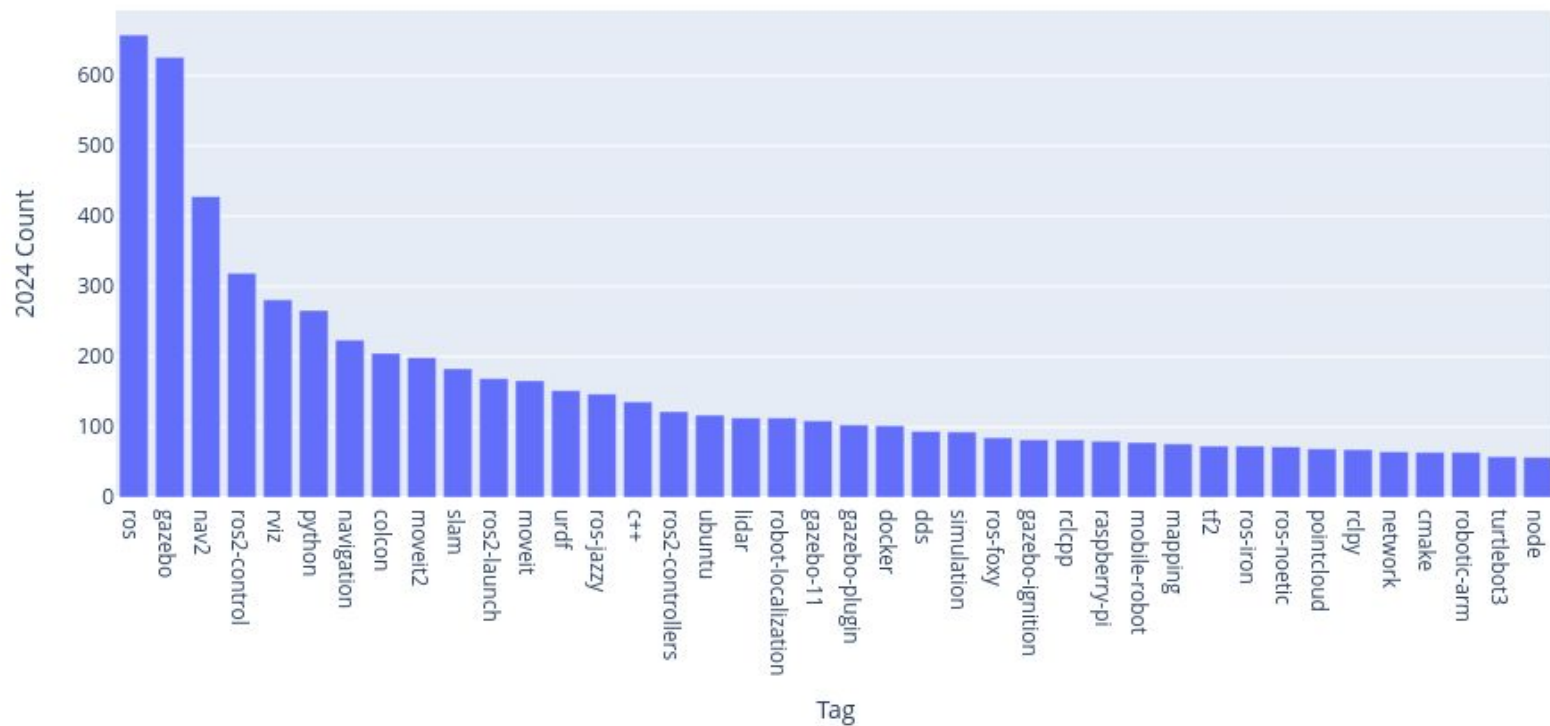
* RSE bots prune unanswered questions after one year, so this number will change.



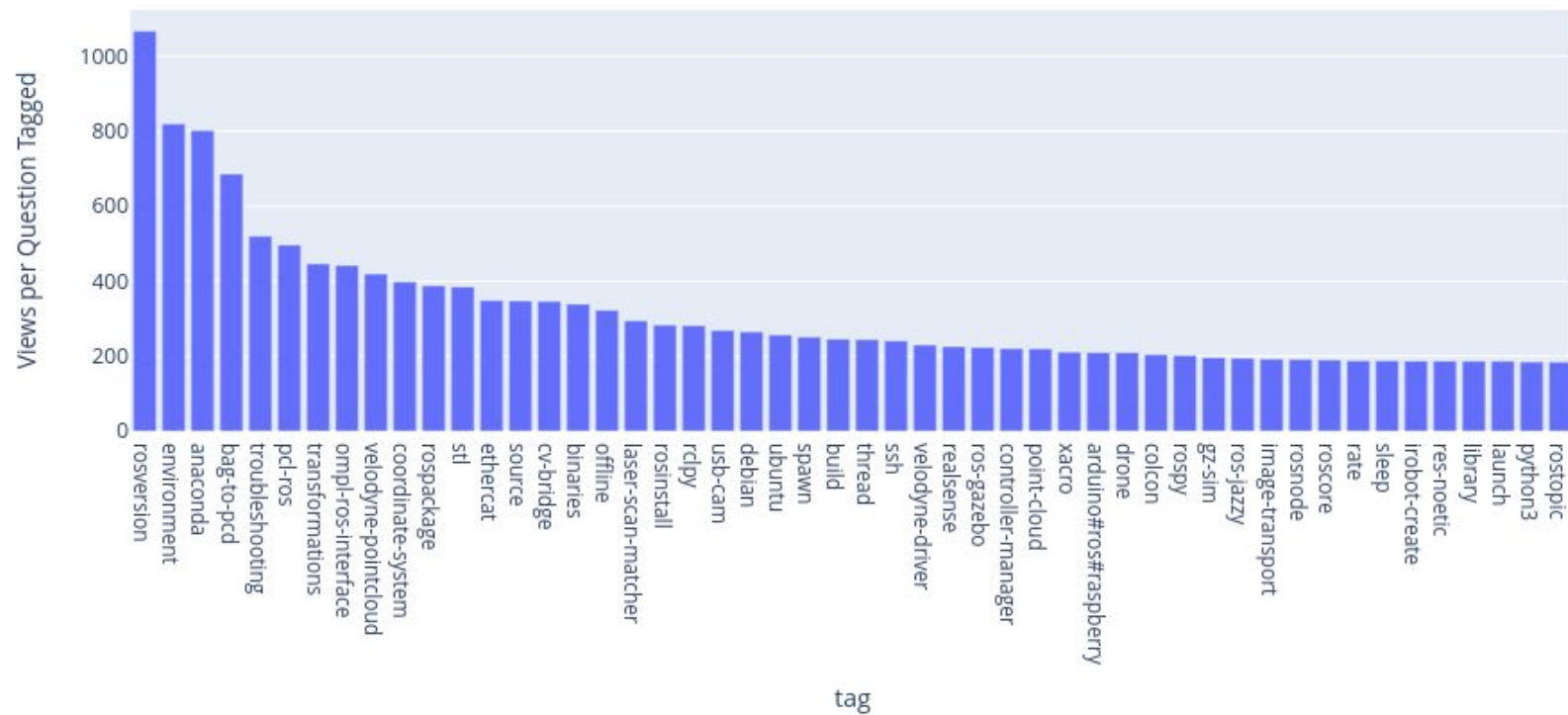
Robotics Stack Overflow Questions Per Month



Top ROS Question Tags on Robot Stack Exchange Tags for 2024

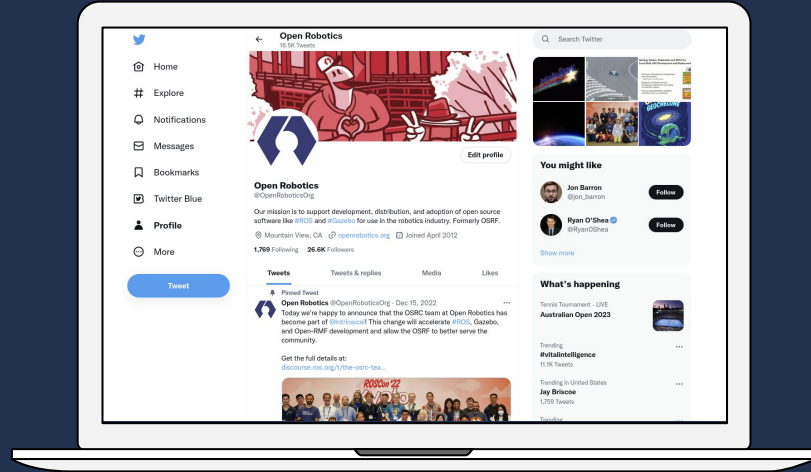


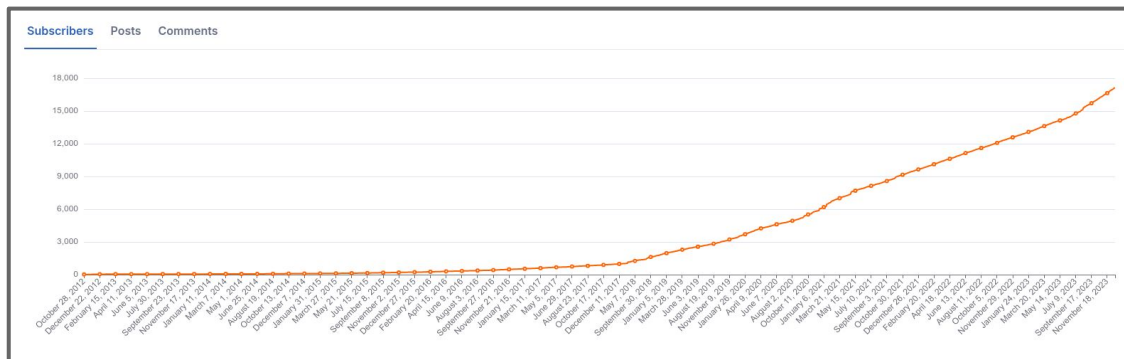
RSE ROS Question Tags with a High Number of Views Per Question



ROS on Social Media

Spreading awareness of the project.





reddit.com/r/ROS

Meeting community where they're at. Taken 1/23/2025. Graph from socialrise.com.

Robot Operating System

This subreddit is for discussions around the Robot Operating System, or ROS.

Created Oct 26, 2010

Public

2024

25K

ROS developers

9

turtle
aficionados here
now

Top 4%

Rank by size ↗

Robot Operating System

This subreddit is for discussions around the Robot Operating System, or ROS.

18K

Members

55

Online

Top 4%

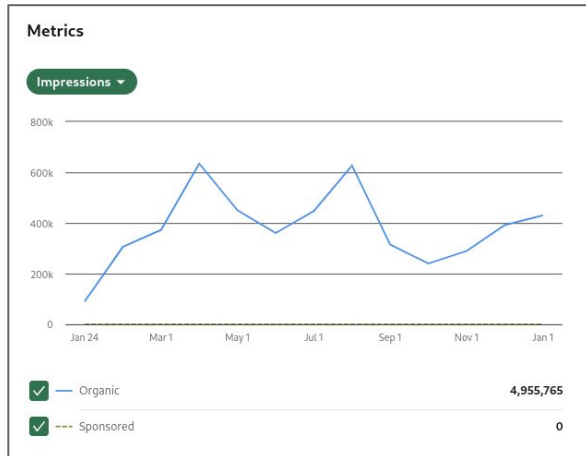
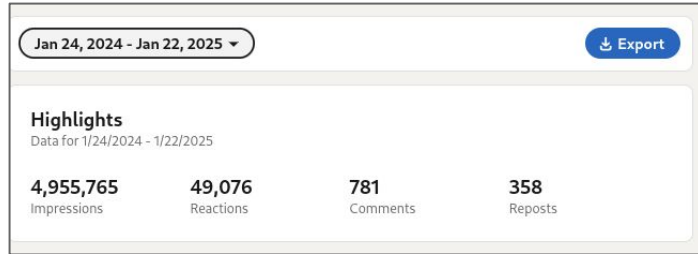
Rank by size ↗

USER FLAIR

2023

ROS™

LinkedIn



~160,000 Followers

As of 1/2024. In Jan 2023 it was 112,000. **An increase of 43%!**

@ROSOrg Twitter



~18,700 Followers

As of January 2025, an increase of 17.6%
(In 2024 it was 15,900)



Twitter



**~35,300
Followers**

As of January 2025 an **increase of 14.6%** (in 2024 it was 30,800)

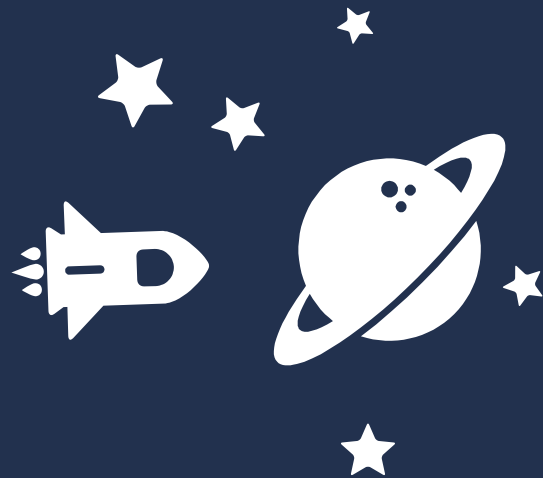
3.

Distro, Package, and Download Metrics

What packages, distros, and chip architectures are downloaded most by the ROS community?

ROS Package Downloads

Every year we sample download data from
our servers at Oregon State University.



October 2024

Debs Downloads, Visitors, Packages



	October 2023	October 2024	YoY Change
Total Unique Packages (packages across versions, distros, syncs, etc)	156,232	94,967	-39.21%
Different Packages	26,931	26,978	+00.17%
Deb Downloads	48,510,685	48,943,663	+00.89%
Unique Visitors	845,884	843,959	-00.22%

<https://awstats.osuosl.org/reports/packages.ros.org/2024/10/awstats.packages.ros.org.html>

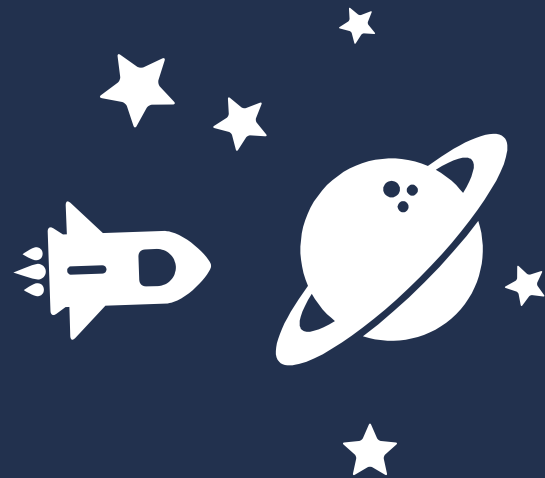
2024 Total Debs Downloads, Data,



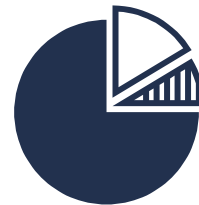
	2023	2024	YoY Change
Total Packages (packages across versions, distros, rebuilds, syncs, etc)	391,312	423,514	+8.23%
Different Packages	27,773	31,713	+14.19%
Deb Downloads	550,365,601	531,452,142	-3.36%
Data Served (TB)	165.29	177.99	+7.68

Distro Data

ROS usage data by version



Distros by Year /

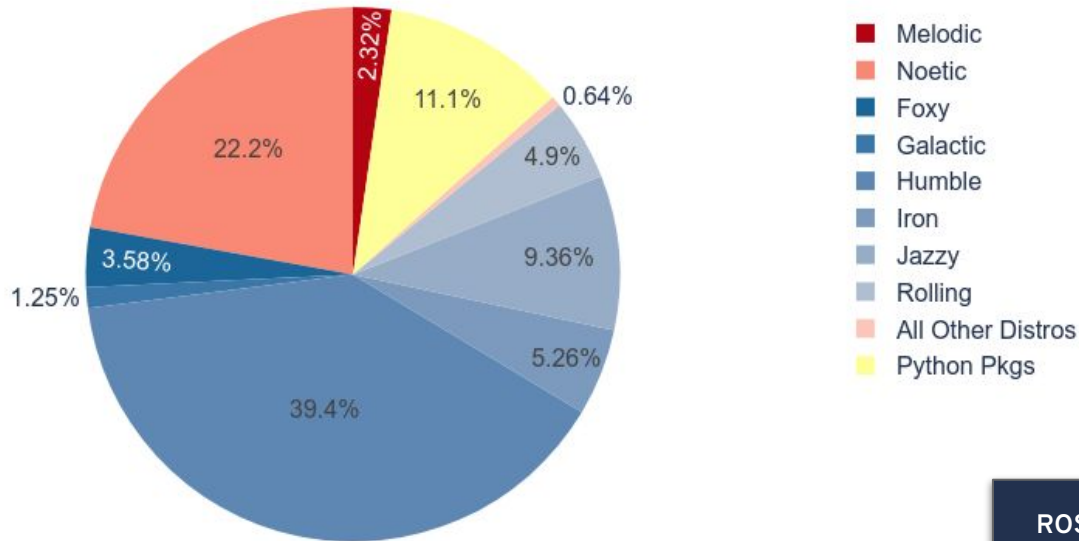


Distro	October 2024	October 2023	YoY Change
Melodic	2.32%	5.66%	-3.34
Noetic	22.18%	30.51%	-8.33
Foxy	3.58%	6.37%	-2.79
Galactic	1.25%	2.33%	-1.08
Humble	39.38%	32.79%	+6.59
Iron	5.26%	4.97%	+0.29
Jazzy	9.36%	N/A	+9.36
Rolling	4.90%	4.82%	+0.08

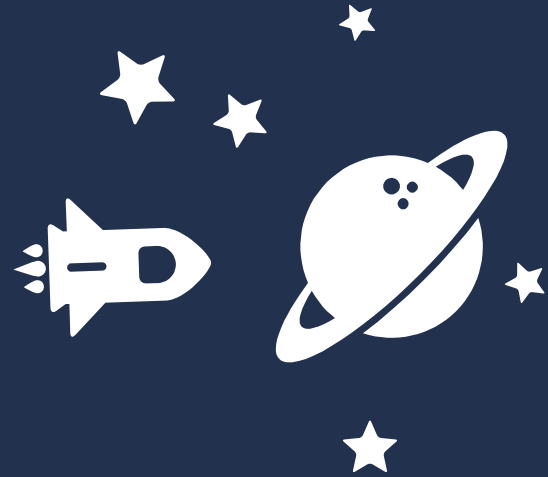
Package downloads, by distro, as a percentage of all downloads from the ROS servers in October of 2023, and 2024.

Composition of Distro Downloads

ROS Package Distro Percentages October 2024



ROS.org metrics only.
Does not include mirrors



ROS by Version

ROS vs ROS 2 downloads and overall downloads.



46,472,908

Total packages downloaded October 2023



47,206,990

Total packages downloaded in October 2024



1.58%

Increase in total package downloads for October 2024

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



531,452,142

Total ROS downloads for 2024 (down -3.36% from last year)



 **ROS™**



25,046,489

ROS 2 packages downloaded in October 2023



31,289,068

ROS 2 packages downloaded October 2024



+24.92%

Increase in ROS 2 packages downloaded in October 2024



375,468,816

Estimated number of ROS 2 packages downloaded in all of 2024



ROS™



12,207,096

ROS 1 packages downloaded in October 2024



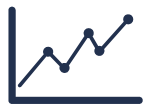
31,289,068

ROS 2 packages downloaded in October 2024



71.93%

Percent of ROS downloads that are ROS 2 in October 2024



+14.03%

Increase in Oct ROS 2 downloads over the previous year!

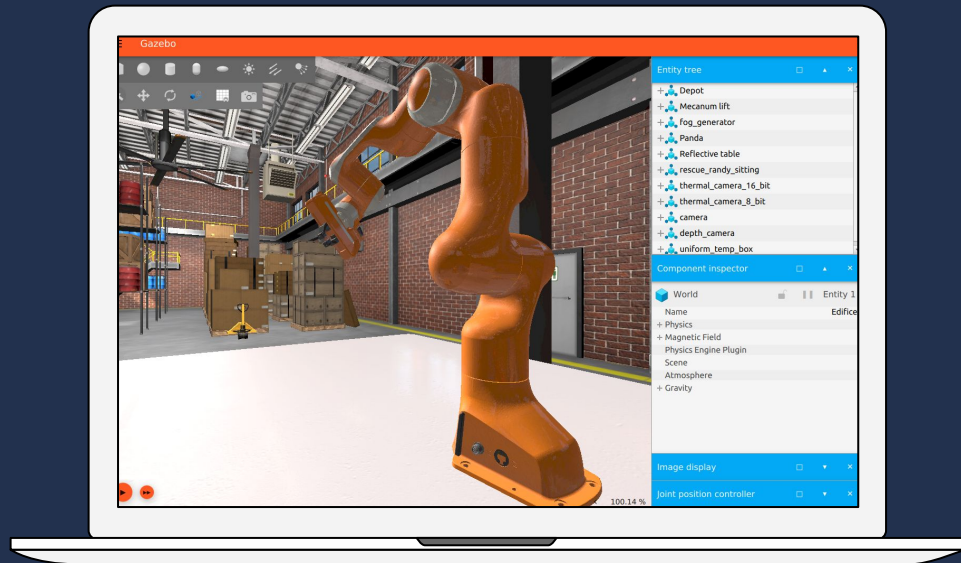
ROS 2 was just 57.91% of downloads in October 2023.



 **ROS**[™]

Gazebo Metrics

For 2024 we've calculated metrics for Gazebo!



Gazebo Considerations



- There are presently two major versions of the Gazebo simulator: Gazebo Classic, denoted by release numbers, and Gazebo, formerly Ignition, denoted by alphabetic release names.
- Gazebo Classic is distributed as a monolithic binary with a handful of supporting libraries. Modern Gazebo consists of dozens of independent binary packages per installation. As such, it is difficult to report an estimated number of installations for each version.
- OSRF hosts Gazebo binaries in two locations: the Oregon State University Open Source Lab (OSU-OSL, packages.ros.org), and the OSRF Amazon Web Services account (packages.osrfoundation.org). We report download data from these servers only. We do not report download data from mirrors and other sources (e.g. upstream Ubuntu).



GAZEBO

3,543,896

Total Gazebo packages downloaded in December 2024



3,068,920

Modern Gazebo (Ignition) Packages downloaded in Dec 2024



86.60%*

Percent of Gazebo Downloads that are Modern Gazebo (Ignition)



~42,500,000

Estimated number of Gazebo downloads in 2024

ROS™

Total Gazebo Downloads

	Nov 2023	Dec 2024	Change
OSRF AWS Server	776,227	3,521,442*	+354%
OSU OSL Server	755,172	771,020	+2.10%
Total	1,531,399	4,292,462	+180%

*Gazebo has two primary servers, the OSU OSL (packages.ros.org) server that serve ROS packages like *ros-desktop-full*, and the OSRF AWS server (packages.osrfoundation.org) that is primarily used for desktop installs of stand-alone Gazebo. We do not have historical data for the OSRF AWS Server.*

** We noticed significant mirror-like activity in December of 2024. Over a dozen IPs (mainly GCP, Amazon, and Digital Ocean) downloaded a copy of every file on our servers*

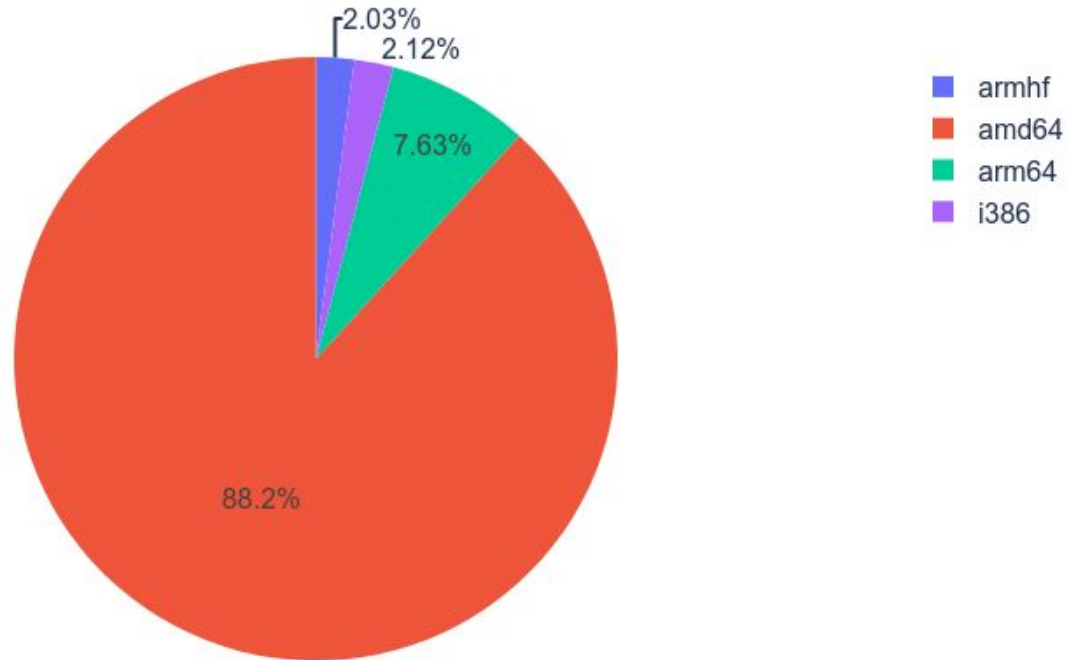
Gazebo Downloads By Version (December 2024)

	Gazebo Classic	New Gazebo	Total
OSRF AWS Server**	84,465	2,688,411	2,772,876
OSU OSL Server	390,511	380,509	771,020
Total	474,976	3,068,920	3,543,896
Percentage	13.40%	86.60%*	

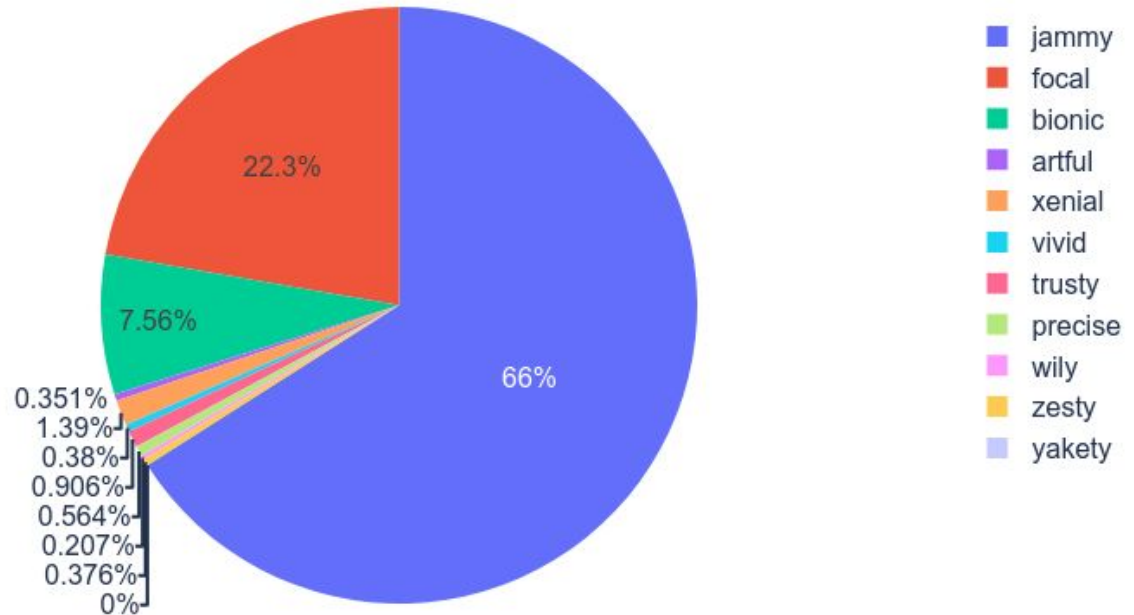
** Modern Gazebo consists of multiple packages per install. We report the ratio of downloads, not the ratio of installs.*

*** These numbers may be skewed due to mirroring activity, see prev slide.*

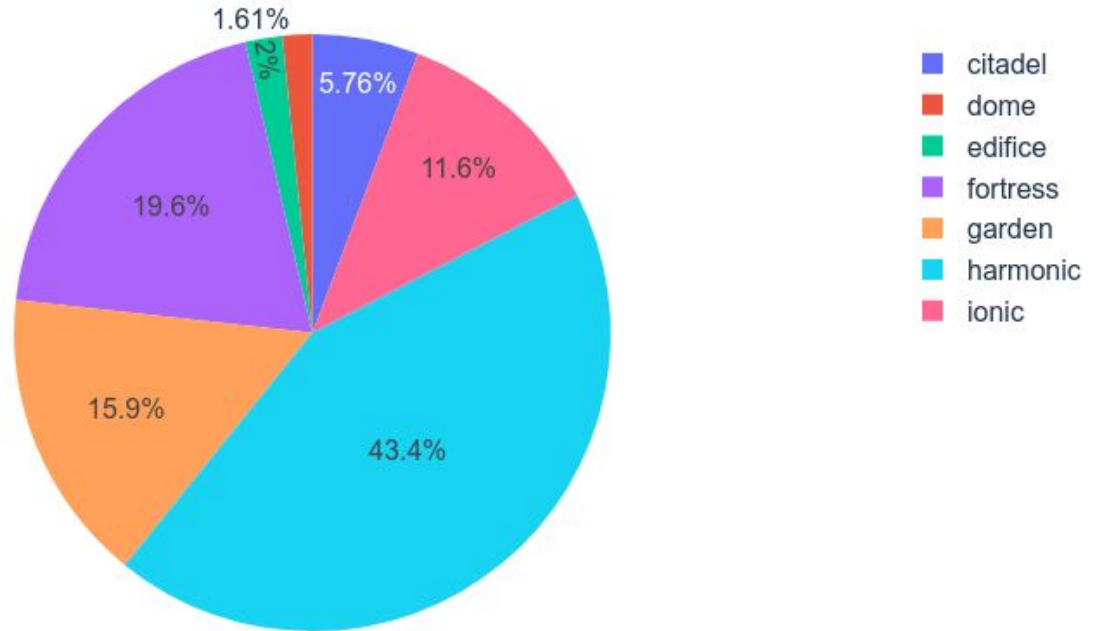
packages.osrfoundation.org Gazebo Downloads By Arch (December 2024)



packages.osrfoundation.org Gazebo Downloads By Distro (December 2024)



packages.osrfoundation.org Downloads of Gazebo by Release December 2024



4.

Source Code & Academic Metrics

Source code and citations



13,335

Citations of “ROS: an open-source Robot Operating System” (Quigley et al., 2009) on
2024-01-22.

There were 11,701 citations on 2023-11-14, an increase of 14%





1,016

Citations of “Robot Operating System 2: Design, architecture, and uses in the wild”
(Macenski et al., 2022)

There were 302 citations on 2023-11-14, an increase of 236.4%!



1250+

Companies Using ROS

Open Robotics maintains a list of companies using ROS culled from job listings, ROS Discourse posts, and other sources. This isn't a definitive list, it is simply the companies we know about!

At the end of 2023 we knew 910 companies, an increase of 37%!



ROS 2 Github Org Metrics

	2023	2024	YoY Change
Contributors	250	258	+3.2%
Pull Requests	9,071	10,897	+20.13%
Additions	293,513	289,639	-1.32%
Subtractions	95,340	147,704	54.92%

These metrics cover every PR to every repository in the ros2 organization.



Gazebo Github Org Metrics

	2023	2024	YoY Change
Contributors	85	111	+30.59%
Pull Requests	6,109	6,032	-1.16%
Additions	5,825,381	943,622	-83.80%
Subtractions	818,013	670,599	-18.02%

These metrics cover every PR to every repository in the gazebo-sim organization.



Open-RMF Github Org Metrics

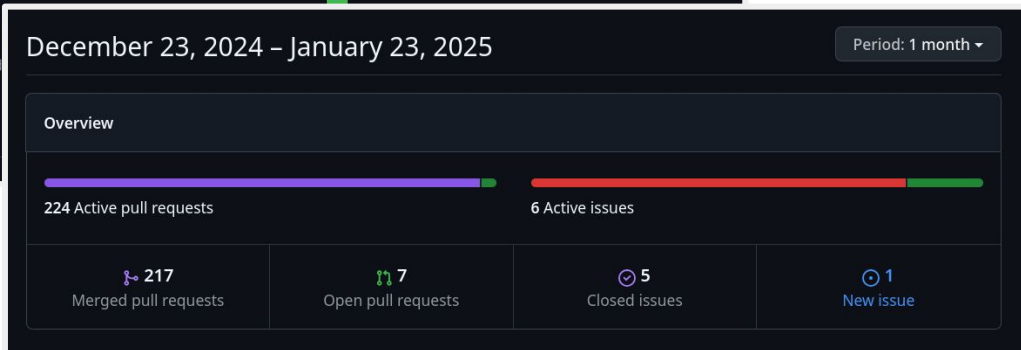
	2023	2024	YoY Change
Contributors	26	32	+23.08%
Pull Requests	1,966	2,101	+6.87%
Additions	390,795	334,935	-14.29%
Subtractions	144,257	193,057	33.83%

These metrics cover every PR to every repository in the Open-RMF organization.





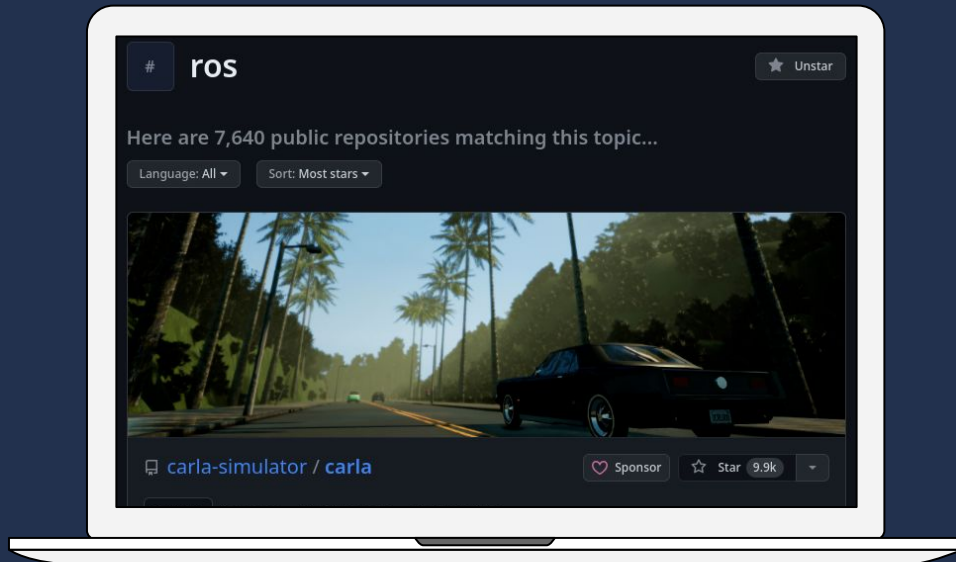
The roswdistro is the repository where releases are managed and the main index of publicly announced ROS packages. Most pull requests on this repository are requests for indexing or packaging of ROS packages.



8,349

Number of Github
repositories tagged with
#ROS on 2025-01-22

On 2023-11-14 there were
7,640, an increase of 9.28%



2,760

Number of Github repositories
tagged with #ROS2 on
2025-01-22.

There were 1,680 repositories
tagged #ROS2 on 2022-11-14,
an increase of 68%

