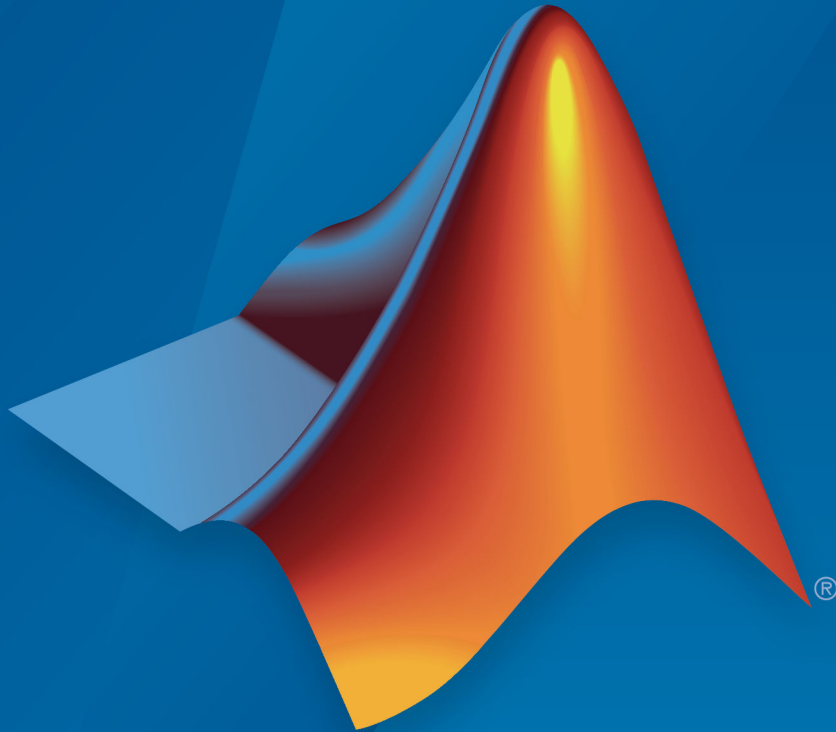


ROS Toolbox Release Notes



MATLAB® & SIMULINK®

How to Contact MathWorks



Latest news: www.mathworks.com
Sales and services: www.mathworks.com/sales_and_services
User community: www.mathworks.com/matlabcentral
Technical support: www.mathworks.com/support/contact_us



Phone: 508-647-7000



The MathWorks, Inc.
1 Apple Hill Drive
Natick, MA 01760-2098

ROS Toolbox Release Notes

© COPYRIGHT 2019 by The MathWorks, Inc.

The software described in this document is furnished under a license agreement. The software may be used or copied only under the terms of the license agreement. No part of this manual may be photocopied or reproduced in any form without prior written consent from The MathWorks, Inc.

FEDERAL ACQUISITION: This provision applies to all acquisitions of the Program and Documentation by, for, or through the federal government of the United States. By accepting delivery of the Program or Documentation, the government hereby agrees that this software or documentation qualifies as commercial computer software or commercial computer software documentation as such terms are used or defined in FAR 12.212, DFARS Part 227.72, and DFARS 252.227-7014. Accordingly, the terms and conditions of this Agreement and only those rights specified in this Agreement, shall pertain to and govern the use, modification, reproduction, release, performance, display, and disclosure of the Program and Documentation by the federal government (or other entity acquiring for or through the federal government) and shall supersede any conflicting contractual terms or conditions. If this License fails to meet the government's needs or is inconsistent in any respect with federal procurement law, the government agrees to return the Program and Documentation, unused, to The MathWorks, Inc.

Trademarks

MATLAB and Simulink are registered trademarks of The MathWorks, Inc. See www.mathworks.com/trademarks for a list of additional trademarks. Other product or brand names may be trademarks or registered trademarks of their respective holders.

Patents

MathWorks products are protected by one or more U.S. patents. Please see www.mathworks.com/patents for more information.

R2019b

Network Connection and Exploration: Communicate with ROS and ROS 2 nodes in a network using MATLAB and Simulink	1-2
Multiplatform Support: Access ROS functionality from Windows, Mac, and Linux	1-2
Publishers and Subscribers: Send and receive ROS and ROS 2 messages with MATLAB and Simulink via a ROS network	1-2
Custom Messages: Generate custom messages to use on both ROS and ROS 2 networks based on specified packages	1-2
Log File Playback: Import ROS log files (rosbags) to filter, visualize, and analyze logged data	1-3
Deployment of ROS Nodes: Deploy ROS and ROS 2 nodes to target hardware using Simulink Coder	1-3
ROS Toolbox Support Package for TurtleBot-Based Robots: Connect to TurtleBot hardware	1-3

R2019b

Version: 1.0

New Features

Network Connection and Exploration: Communicate with ROS and ROS 2 nodes in a network using MATLAB and Simulink

Connect to ROS and ROS 2 to prototype robotics applications and access robotics hardware or simulators over a ROS network. You can create your own ROS network using MATLAB® or connect to an existing ROS network. To set up a ROS network, start by calling `rosinit`. For ROS 2 networks, see `ros2node`.

For more information, see “Network Connection and Exploration”.

Multiplatform Support: Access ROS functionality from Windows, Mac, and Linux

The ROS Toolbox enables you to connect to and run ROS and ROS 2 networks on Windows®, Mac, and Linux platforms.

Publishers and Subscribers: Send and receive ROS and ROS 2 messages with MATLAB and Simulink via a ROS network

ROS shares information using messages. Messages are a simple data structure for sharing data. To receive, or subscribe to, a message, use `rossubscriber` or `ros2subscriber`. To send, or publish, a message, use `rospublisher` or `ros2publisher`. For an example of sending and receiving messages, see “Exchange Data with ROS Publishers and Subscribers” or “Exchange Data with ROS 2 Publishers and Subscribers”.

For more information, see “Publishers and Subscribers”.

Custom Messages: Generate custom messages to use on both ROS and ROS 2 networks based on specified packages

You can create your own ROS custom messages and use them in MATLAB and Simulink® with ROS networks to transmit information. For ROS custom messages, use `rosAddons` to install the necessary addon, and then use the `rosgenmsg` function. To learn the requirements for generating custom messages, see “ROS Custom Message Support”. For ROS 2, use `ros2genmsg` with your custom message packages and see the “ROS 2 Custom Message Support” example.

Log File Playback: Import ROS log files (rosbags) to filter, visualize, and analyze logged data

ROS topics are stored in log files called rosbags. You can access and filter information from rosbags in MATLAB. For an example of working with rosbags, see “Work with rosbag Logfiles”.

You can access transformations between coordinate systems as ROS topics and use them to transform data in MATLAB. For more information, see “Access the tf Transformation Tree in ROS”.

For more information, see “ROS Log Files and Transformations”

Deployment of ROS Nodes: Deploy ROS and ROS 2 nodes to target hardware using Simulink Coder

For examples that generate code for standalone ROS nodes, see:

- “Generate a Standalone ROS Node from Simulink®”
- “Generate a Standalone ROS 2 Node from Simulink®”

ROS Toolbox Support Package for TurtleBot-Based Robots: Connect to TurtleBot hardware

For more information, see “ROS Toolbox Support Package for TurtleBot-Based Robots”.

