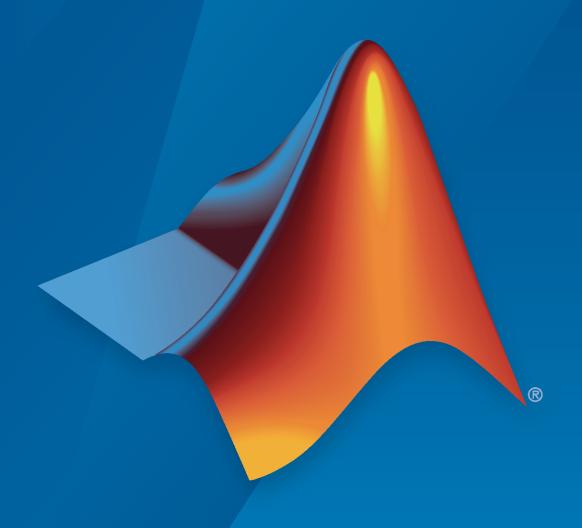
### **ROS Toolbox**

Getting Started Guide



# 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

T

Phone: 508-647-7000



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

ROS Toolbox Getting Started Guide

© COPYRIGHT 2019-2022 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

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

#### **Revision History**

September 2019	Online only	New for Version 1.0 (R2019b)
March 2020	Online only	Revised for Version 1.1 (R2020a)
September 2020	Online only	Revised for Version 1.2 (R2020b)
March 2021	Online only	Revised for Version 1.3 (R2021a)
September 2021	Online only	Revised for Version 1.4 (R2021b)
March 2022	Online only	Revised for Version 1.5 (R2022a)

# Contents

	Product Over	view
L		
	ROS Toolbox Product Description	1-2

## **Product Overview**

#### **ROS Toolbox Product Description**

#### Design, simulate, and deploy ROS-based applications

ROS Toolbox provides an interface connecting MATLAB® and Simulink® with the Robot Operating System (ROS and ROS 2), enabling you to create a network of ROS nodes. The toolbox includes MATLAB functions and Simulink blocks to import, analyze, and play back ROS data recorded in rosbag files. You can also connect to a live ROS network to access ROS messages.

The toolbox lets you verify ROS nodes via desktop simulation and by connecting to external robot simulators such as Gazebo. ROS Toolbox supports C++ code generation (with Simulink Coder<sup>m</sup>), enabling you to automatically generate ROS nodes from a Simulink model and deploy to simulated or physical hardware. Support for Simulink external mode lets you view messages and change parameters while your model is running on hardware.