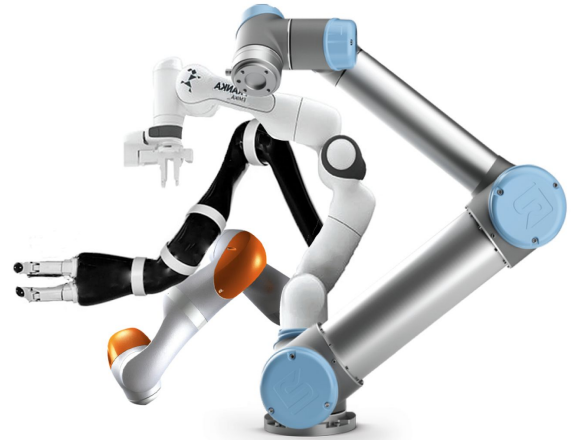


Movelt!

ONGOING SUPPORT

From PickNik Consulting



- Keep your robotics team moving quickly and efficiently as they integrate Movelt
- Gain valuable access to the core Movelt development team when problems arise
- Maximize effectiveness of open source software by having experts de-risk your project
- Utilize cost-effective and reliable long-term support

Continuous value in every phase of your development

PickNik is the organization behind the Movelt Motion Planning Framework. With a subscription to PickNik's Movelt ROS Support package, you get trusted knowledge and technical support from engineers deeply involved with Movelt's development. Your subscription offers value during each phase of your product development and empowers you to take full advantage of the open source robotics ecosystem.

Our ongoing support of the Movelt project ensures that our team is uniquely qualified to be available to assist your team in integration and customization of Movelt. From high level architecture decisions, to resolving common issues, this low-hassle engagement will help de-risk your robotics projects and provide enormous value to your organization.

PickNik offers two support packages that will help keep your Movelt ROS based project on track and your engineers focused on the problems that matter most to your core technologies:

- Basic
 - Get up and running quickly with email support and priority tracking of your Movelt related Github issues and pull requests.
- Dedicated
 - In addition to the Standard plan, we assign a dedicated support engineer, provide phone and video call support, and prioritize our engineers to fix Movelt related bugs impacting your development.



Movelt Support Plans at a Glance

PickNik offer 2 levels of paid support.

	Community Support	Basic Support	Dedicated Support
	<i>Get started</i>	<i>Best for small startups</i>	<i>Best for growing businesses</i>
Minimum plan duration		12 months	6 months
Download, install, upgrade			
Open source community support			
Prevent slowdowns and hold ups			
Expert email support			
Priority Github issue and pull request review ¹			
Number of contacts ²		1	3
Onsite consulting and integration support ³		Available	Available
Phone / video call support ⁴			
Assigned support engineer			
Prioritize bug fixes from PickNik engineers ⁵			
Code review of custom applications ³			Available
Custom code development ³			Available

1. Does not include custom code development
2. Number of customer point of contacts that PickNik will support
3. Additional costs apply
4. Hours 9am - 5pm MST. Support is not available during public holidays and weekends
5. Within reasonable efforts; not every bug is fixable as part of Movelt Support



Movelt Support Developers

Our support developers are the cornerstone of our commitment to support you.

They are roboticists with strong software development backgrounds and extensive experience building motion planning applications across many different industries. Our customers tell us that our Movelt support developers dramatically raise both the effectiveness and the efficiency of their own internal engineering teams.

Your support developers' responsibilities

The primary goal of your support developers is to provide you with solutions for Movelt-related issues, including bigger picture ROS issues. Your support developers can:

- Prioritize the Movelt developer team's development effort
- Track and update issues, keeping you informed on their progress via the support tickets
- Assist with Movelt-related technical questions and issues, and make recommendations on how to use Movelt most effectively in your application
- Isolate and reproduce Movelt-related issues on supported reference platforms
- Provide pseudo-code or examples of code to assist you with your applications



Contacting Movelt Support

Timely access to support engineers is vital to the development, progress, and ultimate success of your projects.

Expert email support

The primary communication mode of Movelt support is through email. We use an email ticketing system that will ensure a case ID is created and your questions responded to with quick turn-around.

Priority Github issue response

The Movelt open source project is hosted on the popular Github code repository platform. We welcome questions that have already been posted on Github to be escalated to our support engineers through our paid support program. Due to limited resources, many of the community issues are left unanswered. Through this support program, you can prioritize those issues via email requests linking to the Github issue you'd like answered. If your question is under NDA or very specific to your project, you are always welcomed to just email us directly.

Priority Github pull request review

The Movelt support team puts significant resources into reviewing incoming pull requests from the community. Still, the volume of

contributions is never ending and response time can be slow. This Movelt Support program allows you to request immediate review of your pull requests and priority support of them.

Onsite consulting and integration support

We can support you and your team locally through travel to your workplace. This can greatly aid in hardware integration and debugging. Please contact your PickNik representative for more details. Additional costs apply.

Phone / video call support

Our Movelt support developers are available for phone call or video conference call support with your team. During the initial phase of support, we like to set up a standing weekly or every other week meeting to make scheduling easier and ensure availability.

Support business hours

Movelt support business hours are Monday to Friday 9 A.M. – 5 P.M. Mountain Standard Time (North America). These hours exclude US federal holidays.



Reporting and Tracking Issues

Issue resolution depends not just on your PickNik support developer's technical knowledge and expertise, but also on the quality of the information you provide and on the developer's ability to isolate and reproduce the issue.

Providing information

To provide the fastest resolution possible, we recommend that you provide us with the following to help us start working on a solution for you:

- A synopsis that briefly and accurately describes the issue
- Your assessment of the issue's severity and priority, based on its impact on your project, i.e. schedule and cost implications to your project pending issue resolution
- A detailed description of the issue, with its symptoms and characteristics
- The specific robot hardware you are working with, and the software versions you are using
- Any error files or messages that may have been produced at the time the problem occurred
- The test case that appears to have triggered the issue – perhaps the most important piece of information you can provide.

It is in your best interest to isolate the problem as much as possible. The test case should provide exact steps to accurately reproduce the problem and isolate it as much as possible to a specific source area.

If you are reporting multiple issues, separate them into different cases and provide all the

relevant information for each, as described above.

Creating and tracking cases

Movelt support creates a unique case to track each customer issue from start to finish; each case records the issue's history, updates, progress, and current status. You can use the Movelt support portal to track the progress of the case, viewing communications and updates, and checking status at any time.

Isolating and reproducing issues

Ideally, when submitting an issue and opening a case, you have been able to isolate and reproduce the problem, and you can provide your technical support developer with a test case that identifies the offending area of software. We highly recommend that you provide as much problem isolation detail as you can. The better the information you provide, the less the time that will be required to isolate the issue. If you have not been able to isolate a problem, a reproducible test case will help your support developer immensely.

Movelt problem reports

After you have submitted a case, a support developer will attempt to reproduce the issue and isolate the offending code. After confirming that the issue is indeed a Movelt error, the support developer will open a Movelt problem report on your behalf, indicating the issue's severity and priority. He or she will then plan a



course of action, either a workaround or solution based on the issue's severity, and keep you posted on progress through updates to the case. If your support developer determines that the cause of an issue you submitted is not a Movelt package; that is, the error is in your application or a third-party application, then he or she will promptly inform you of this finding so that you can resolve the problem.

Onsite support

PickNik Movelt support services are designed to address support issues in a timely manner via email and phone call interactions. By design, our support plans do not include on-site consulting or training, but these services are available to all our customers. Please contact us for more information.



Solutions

The goal of the Movelt support plans is to provide you, the customer, with solutions to issues you encounter with Movelt packages.

These solutions must be cost-effective and they must accurately respond to your needs and meet your timelines. The following are brief descriptions of the types of solutions Movelt Support provides:

Full Solutions

In many cases, PickNik will be able to isolate and fix the reported bug or issue. You will be given a summary of the fix and any details that you need in order to implement the fix within your project. If the problem cannot be isolated or cannot be fixed within a reasonable timeline for your project, a workaround may be provided.

Workarounds

To get you up and running quickly, our support developers may provide you with a workaround solution. A workaround is a solution that may serve as a short-term fix or, in some instances,

a cost effective long-term fix. A workaround may not provide the optimal solution, but in situations where you have encountered a critical issue that impacts operations or development, it will allow operations and development to resume, and reduce the severity of the reported issue. Typically, our support developers will provide you with a workaround within a short time frame, along with a longer-term plan for a complete solution.

Engineering Services

The PickNik engineering team can assist you if you require new features or specific enhancements to Movelt. These services are typically outside the intended scope of PickNik's Movelt support offering and would be undertaken under a project specific work scope basis. Please contact us for further details.



Types of Issues

Issue types define the categorization of a customer issue into a specific area. Case types are described in the following list:

- Bug
 - The customer or the support developer believes the issue is related to a Movelt error.
- Design consultation
 - The customer is requesting Movelt application assistance on a specific component.
- Documentation
 - The customer has a question or issue relating to Movelt documentation.
- Installation
 - The customer has a question or issue relating to Movelt installation.
- Patch request
 - The customer is requesting a source patch.
- Feature request
 - The customer is requesting a feature change, or creation of a new feature. These requests are not formally tracked by the support developer, and are usually addressed by Movelt engineering services. You should send feature requests (including urgent feature requests) to your Movelt representative.
- General question / Other
 - The customer has a question or issue which does not fall into any of the above categories.



Supported ROS Packages

The ROS ecosystem of packages is enormous and no one organization could possibly support it all. Our MoveIt Support program focuses on MoveIt, while also providing support for related ROS packages and software required to successfully use and deploy MoveIt. As a general guide, we specialize in supporting the following popular packages:

<code>moveit_core</code>	Core functionality including RobotModel, RobotState, collision checking
<code>moveit_ros_planning</code>	planning components, execution manager, plugin loaders
<code>moveit_ros_move_group</code>	The <code>move_group</code> main node for using MoveIt via ROS messages
<code>moveit_ros_planning_interface</code>	Python and ROS msg interfaces to communicate with <code>move_group</code>
<code>moveit_ros_perception</code>	Octomap and other perception plugins
<code>moveit_ros_manipulation</code>	High level pick and place pipeline
<code>moveit_ros_robot_interaction</code>	Interactive marker tools for Rviz
<code>moveit_ros_visualization</code>	Rviz tools
<code>moveit_ros_warehouse</code>	Database plugins for storing scene and configuration data
<code>moveit_ros_benchmarks</code>	Benchmarking using PlannerArena
<code>moveit_planners_ompl</code>	Open Motion Planning Library plugin
<code>moveit_commander</code>	terminal-based control interface using Python-like syntax
<code>moveit_setup_assistant</code>	GUI for quickly setting up MoveIt
<code>moveit_plugins</code>	plugins for controller managers
<code>chomp_motion_planner</code>	Gradient Optimization Techniques for Efficient Motion Planning
<code>chomp_interface</code>	adapter for using CHOMP with MoveIt
<code>moveit_msgs</code>	ROS messages
<code>moveit_robots</code>	Robot specific MoveIt configuration packages
<code>moveit_resources</code>	large file assets such as testing robots
<code>moveit_task_constructor</code>	An approach to hierarchical, multi-stage manipulation planning
<code>moveit_visual_tools</code>	display and debugging data in Rviz
<code>rviz_visual_tools</code>	display and debugging data in Rviz
<code>rqt_moveit</code>	Plugin for the GUI framework of ROS, RQT
<code>srdfdom</code>	Semantic Robot Description Format
<code>warehouse_ros</code>	Abstract interface for persisting ROS message data
<code>ros_control</code>	Framework for realtime-safe control with ROS
<code>ros_controllers</code>	Controllers for implementing various control laws of actuated systems





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