RoboDevOps

Introduction

Robot development has moved from a mainly hardware related activity to a mainly software related activity. This transformation has only sparsely led to changes in best practice. The number of highly trained engineers that still run after their newly developed robot is still way too high. Best practices from software engineering are waiting to be adopted in robotic development. This short white paper describes what is needed to take the first steps.

Why do it?

Classic robot development starts from the hardware. That was logical since hardware was both very costly and the hardware defined the main possibilities of the robot. However, with the costs of hardware dropping, hardware is no longer the most expensive part of a robot. Also, the behavior of a robot in its operation environment is now much more important. In other words, starting from hardware is no longer the logical first step. Starting from behavior is.

If the real robot is no longer necessary then you can scale the team and specialize similar to software developers. Best practices like automated unit- and scenario testing become feasible and solving issues can be facilitated by the possibility to "recreate" the problem. So faster and lighter development and easier testing. That sounds great but what does it take?

What does it take?

But testing behavior without hardware can only happen if you have the right alternative to a real robot and its real environment. You need a so-called digital twin of the robot and its operating environment. A good environment to do this in is Asimovo. It is a cost effective robotic devops environment that gives you the following main features:
- A state or the art Gazebo simulation environment that you can scale to your needs.
- The latest ROS2 distributions for use in the cloud and on your desktop
- The ability to work with your whole team on a single robot
- Building blocks for worlds, robots, behavior etc in the form of a resource library.
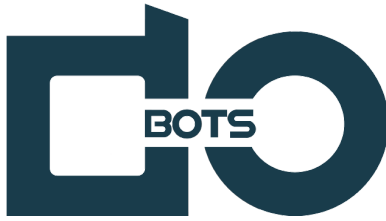
We can help you set up that environment and kick off or migrate your current projects to this environment.

What does it take?

A typical training for a team of no more than six engineers takes two days. In that time we help you configure the service, set up the environment and run through a first project. Of the team ROS knowledge, simple sysadmin skills in Linux and the ideas for a first robot project are expected.

How can I get one?

You can get a demo, a training or request a joint project by simply reaching out to info@dobots.nl. Our sales team will get in touch with you to help you get started.