

# Making Code Contributions Seamless with the R Dev Container

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## Abstract

The R Dev Container simplifies the process of setting up a development environment for contributing to the code and documentation that make up the base R distribution. This talk will cover the challenges new open source developers face when on-boarding to new projects/codebases and how the R Dev Container reduces friction for contributors by providing a standardized cross-platform environment that eliminates set-up problems and includes utilities and documentation to support fundamental steps in the contributor workflow. Participants will learn how they can use this tool to develop patches (proposed changes) to the code and documentation of base R.

## Background

In order to encourage users to contribute to R, it is important to lower the on-ramp to contribution so that people are not frustrated by set-up issues and that they feel that the time volunteered is being spent on useful work. A common challenge is getting a development environment set up with all the prerequisites and configurations to build R from source. Difficulties can be caused by different operating systems, ways of managing software on those systems and interactions with personal set-ups. The R Dev Container provides a standardized environment that can be accessed through a web browser meaning that a contributor can get started with building R in less than an hour, rather than spending several hours finding out how to set up their own machine.

## Features

The R Dev Container is a Docker container that provides an Ubuntu Linux environment with prerequisite software installed that can be opened as a VSCode workspace through GitHub Codespaces. (A version that can be run on GitPod is in development and we expect this will be released before LatinR.) We also define environment variables and provide some helper scripts to facilitate the contributor workflow. There are two scripts: `set_build_r`, which allows contributors to set up a new environment variable and build different R versions based on it, and `which_r`, which enables seamless switching between R console versions. This is complemented by documentation that can be accessed within the workspace or via a separate website that provides step-by-step guides. Github Codespaces and Gitpod both provide a free tier of usage that is suitable for the occasional use required by most open source contributors.

## Case Study and Practical Use

This presentation will demonstrate how the R Dev Container can be used to develop contributions to R, using a past bug report and the subsequent fix as a case study. We will also discuss how the R Dev Container supports collaboration through Live Share and share feedback from contributors that have used the project in practice.

Project Github Link : <https://github.com/r-devel/r-dev-env>

Project Documentation : <https://contributor.r-project.org/r-dev-env/>