

# Install Ruby 3.1 · macOS

audience

developer

level

all

topic

Ruby

subtopic

Installation

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About the Author  
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How to **install Ruby on Mac** (M1 or Intel). Installing Ruby 3.1 on macOS Monterey. Up-to-date and kitchen-tested instructions, with troubleshooting tips, from the author of the book, [Learn Ruby on Rails](#).

With this article, you'll set up a development environment with Ruby on a Mac. This complete Ruby installation guide is for beginners as well as experienced developers setting up a new computer. For the Rails web application framework, see [Install Ruby on Rails on macOS](#), adding the Rails gem.

This installation guide provides complete details with explanations for each step:

*This is the most complete guide to installing Ruby on a Mac.*

- [Update macOS for Ruby.](#)
- [Install Xcode Command Line Tools.](#)
- [Install Homebrew.](#)
- [Configure Git.](#)
- [Install a software version manager.](#)

*I'll recommend choices and explain why*

- [Install Ruby 3.1.](#)
- [Update gems.](#)
- tips
- troubleshooting

## Installation steps

Here are steps to install Ruby (details in this complete guide).

- Prepare your Mac.
- Install Homebrew or a software version manager.
- Install Ruby.
- Update settings in the `~/.zshrc` file (as needed).

Setting up your development environment includes checking that macOS is up to date, installing the Xcode Command Line Tools (to add needed Unix utilities), configuring Git (an important tool for save-as-you-go file storage), installing the Homebrew package manager (to add more software packages), and choosing a software version manager for Ruby.

## Choosing the best Ruby version manager for macOS

Before you install Ruby, you should choose a software version manager. Here's a comparison of Ruby version managers (plus Homebrew and Docker):

- [asdf](#) (recommended for multiple languages)
- [frum](#) (recommended if you just need Ruby)
- [chruby](#)
- [rbenv](#)
- [rvm](#)
- [Docker](#)
- [Homebrew](#) (recommended for casual users)
- system Ruby

First, understand the difference between Homebrew and software version managers. Homebrew is a package manager that adds Ruby, other languages, and software packages to the Mac. It can install one (and only one!) version of Ruby (the latest version). You can also use Homebrew to install software version managers that install and switch between multiple versions of a language such as Ruby. Finally, some developers use Docker, which is a container system that sets up multiple development environments (like having multiple computers with different configurations). Here's how to choose.

Install with **Homebrew** if you're building only one project with Ruby (for example, if you are a student learning Ruby). If you're a solo developer and you need to juggle multiple projects that can't be updated all at once, use asdf or frum. Choose **asdf** if you're using multiple languages such as Ruby, Node, and Python; otherwise **frum** is the newest and fastest version manager purely for Ruby. Finally, use **Docker** (or [Nix](#)) if you're on a team with a complex project environment (for example, Ruby, Node, Redis, and PostgreSQL all in one project). Here are details.

*asdf is a universal version manager*

[Asdf](#) and [frum](#) are software version managers. **Asdf** is a good choice because it is a universal version manager that installs and manages Ruby, JavaScript, Python, Elixir, and several other languages. **Frum** is simple and fast, working only with Ruby. **Chruby** works only for Ruby but (unlike Frum) requires installation of a separate installer utility.

[Rbenv](#) and [rvm](#) are also popular as Ruby version managers. Sam Stephenson's **rbenv** has a more complex implementation than frum or chruby (it installs extra "shim" files). **RVM** was once the most popular of Ruby version managers but its additional features (gemsets) are no longer needed and add unnecessary complexity.

**Docker** is a containerization tool that some developers use for version management. The primary use case for Docker is to create a reproducible virtual server that contains a configured version of any software dependency needed to run an application (language, databases, message queues). As such, it is ideal for creating a "frozen" version of a development environment for deployment to a server. You can also develop locally within a container but it will run slower, require more memory, and adds configuration complexity compared to a simple version manager. To keep things simple, don't use Docker for local development unless your application is disturbingly complex.

If you don't need a version manager, install Ruby using the [Homebrew](#) package manager. Use this approach if you are only building a casual project that you will not maintain, or if you are just trying out Ruby to learn the language. You can easily remove Ruby after installing with Homebrew (and re-install a newer version when you need it). Don't install Ruby with Homebrew if you need to switch among Ruby versions (use asdf or frum in this case).

Finally, you should know that macOS comes with a **system Ruby** pre-installed. macOS Monterey includes Ruby 2.6.8 which is not the newest version. If you use the system Ruby you'll need root access (sudo) to install gems (introducing a security risk). And you'll end up with a cluster of (sometimes incompatible) gems that can't be easily removed to restore your system to a clean state. Please use either asdf, frum, or Homebrew.

You'll find instructions here for installing Ruby using asdf, frum, or Homebrew.

In the next sections, you'll [check your macOS version](#), [install Xcode Command Line Tools](#), [install Homebrew](#) so you can either directly install Ruby or [install a software version manager](#), and finally install Ruby with either asdf, frum, or Homebrew.

Continue to the next section to check your computer before installing Ruby.

Page 2: **Update macOS** »

## FAQ

- **What is Ruby on Mac?**
- **What (and where) is the macOS Terminal?**
- **What is the latest Ruby version?**
- **What version of Ruby should I use?**
- **Where is the Ruby download?**
- **Is Ruby Installed on a Mac?**
- **What is the macOS Monterey Ruby version?**
- **How to check the Ruby version on Mac?**
- **How to test if Ruby is installed on Mac?**
- **Where is Ruby installed on Mac?**
- **Can I use the Mac system Ruby?**
- **How to update the Ruby version on Mac?**
- **How long does it take to install Ruby on Mac?**
- **How do I install Ruby on macOS Big Sur?**
- **How do I install Ruby on macOS Catalina?**
- **How to install Ruby on Mac with Terminal?**
- **Can you install Ruby on Mac M1 (Apple Silicon)?**
- **How to brew install Ruby with Mac Homebrew?**
- **How to switch the Homebrew Ruby version on Mac?**
- **What is the best Ruby version manager on Mac?**
- **What are rvm, rbenv, chruby, and asdf?**
- **Which is best? rvm vs rbenv vs chruby vs asdf?**
- **Should you use a Ruby installer for Mac?**
- **How to brew install asdf with Mac Homebrew?**
- **How to install Ruby with asdf on Mac?**
- **How to switch Ruby version using asdf on Mac?**
- **Where is the file asdfrc on Mac?**
- **How to uninstall Ruby with asdf on Mac?**
- **Should you install Ruby with rvm on a Mac?**
- **Should you install Ruby with rbenv on a Mac?**
- **Should you install Ruby with chruby on a Mac?**
- **How to change the Ruby version with rbenv?**
- **How to uninstall Ruby on Mac?**
- **How to brew uninstall Ruby with Mac Homebrew?**
- **How to change the Ruby version on Mac?**
- **How to downgrade Ruby on Mac?**
- **Where is the Ruby on Rails installation guide?**

### mac.install.guide sitemap

Community-authored installation guides for the Mac.



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### Install Ruby

- [Update macOS](#)
- [Xcode Command Line Tools](#)
- [Install Homebrew](#)
- [Configure Git on Mac](#)
- [Install Asdf Version Manager](#)
- [Install Ruby with Asdf](#)
- [Update Gems](#)
- [Deploy Ruby](#)
- [Uninstall Ruby on Mac](#)
- [Troubleshooting](#)
- [Where to Get Help](#)
- [Install Ruby with Chruby](#)
- [Install Ruby with Homebrew](#)
- [Install Ruby with Frum](#)
- [Finding and Using the Mac Terminal](#)

### Ruby FAQ

- [Do not use the Mac system Ruby](#)
- [Is Ruby installed](#)
- [Where is Ruby installed](#)
- [Check Ruby version on Mac](#)
- [Change Ruby version on Mac](#)
- [Downgrade Ruby on Mac](#)